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

FORM 10-K

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

For the fiscal year ended December 31, 2022

Remark Holdings

Commission File Number 001-33720
Remark Holdings, Inc.

Delaware	33-1135689
State of Incorporation	IRS Employer Identification Number

800 S. Commerce St.
Las Vegas, NV 89106

Address, including zip code, of principal executive offices

702-701-9514

Registrant's telephone number, including area code

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

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

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

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐

No ☑

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐

No ☑

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

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

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

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

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

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

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

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

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

As of June 30, 2022, the aggregate market value of our voting and non-voting common equity held by non-affiliates was $43.7 million.

As of April 14, 2023, a total of 13,633,992 shares of our common stock were outstanding.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

The matters discussed in this Annual Report on Form 10-K (this "Form 10-K") include "forward-looking statements" about the plans, strategies, objectives, goals or expectations of Remark Holdings, Inc. and subsidiaries ("Remark", "we", "us", "our"). You will find forward-looking statements principally in the sections entitled Risk Factors and Management's Discussion and Analysis of Financial Condition and Results of Operations. Such forward-looking statements are identifiable by words or phrases indicating that Remark or management "expects," "anticipates," "plans," "believes," or "estimates," or that a particular occurrence or event "will," "may," "could," "should," or "will likely" result, occur or be pursued or "continue" in the future, that the "outlook" or "trend" is toward a particular result or occurrence, that a development is an "opportunity," "priority," "strategy," "focus," that we are "positioned" for a particular result, or similarly-stated expectations. You should not place undue reliance on these forward-looking statements, which speak only as of the date of this report or such other report, release, presentation, or statement.

In addition to other risks and uncertainties described in connection with the forward-looking statements contained in this report and other periodic reports filed with the Securities and Exchange Commission ("SEC"), there are many important factors that could cause actual results to differ materially. Such risks and uncertainties include general business conditions, changes in overall economic conditions, our ability to integrate acquired assets, the impact of competition and other factors which are often beyond our control.

This should not be construed as a complete list of all of the economic, competitive, governmental, technological and other factors that could adversely affect our expected consolidated financial position, results of operations or liquidity. Additional risks and uncertainties not currently known to us or that we currently believe are immaterial also may impair our business, operations, liquidity, financial condition and prospects. We undertake no obligation to update or revise our forward-looking statements to reflect developments that occur or information that we obtain after the date of this report.

PART I

ITEM 1. BUSINESS

OVERVIEW

Remark Holdings, Inc. and its subsidiaries ("Remark", "we", "us", or "our") constitute a diversified global technology business with leading artificial intelligence ("AI") and data-analytics, as well as a portfolio of digital media properties.

Our innovative artificial intelligence ("AI") and data analytics solutions continue to gain worldwide awareness and recognition through comparative testing, product demonstrations, media exposure, and word of mouth. We continue to see positive responses and increased acceptance of our software and applications in a growing number of industries. We intend to expand our business in three major regions, Asia-Pacific, North America, and Europe. The Asia-Pacific region has a fast-growth AI market with significant opportunities for our solutions. In North America, primarily in the United States, and in Europe, we see robust demand for AI products and solutions in a growing number of industries, including potential growth opportunities particularly in the workplace, schools, transportation and public safety markets. Despite such opportunities, the economic and geopolitical conditions, particularly in international markets, could adversely affect our business. We continue to pursue large business opportunities where we can quickly deploy our software solutions in the market segments we have identified, in which we may face a number of large, well-known competitors.

Our corporate headquarters and U.S. operations are based in Las Vegas, Nevada, and we also maintain operations in London, England and Chengdu, China. Our common stock, par value $0.001 per share, is listed on the Nasdaq Capital Market under the ticker symbol MARK.

On December 21, 2022, we effected a 1-for-10 reverse split of our common stock (the "Reverse Split"). All references made to share or per share amounts in this Form 10-K have been retroactively adjusted to reflect the effects of the Reverse Split.

OUR BUSINESS

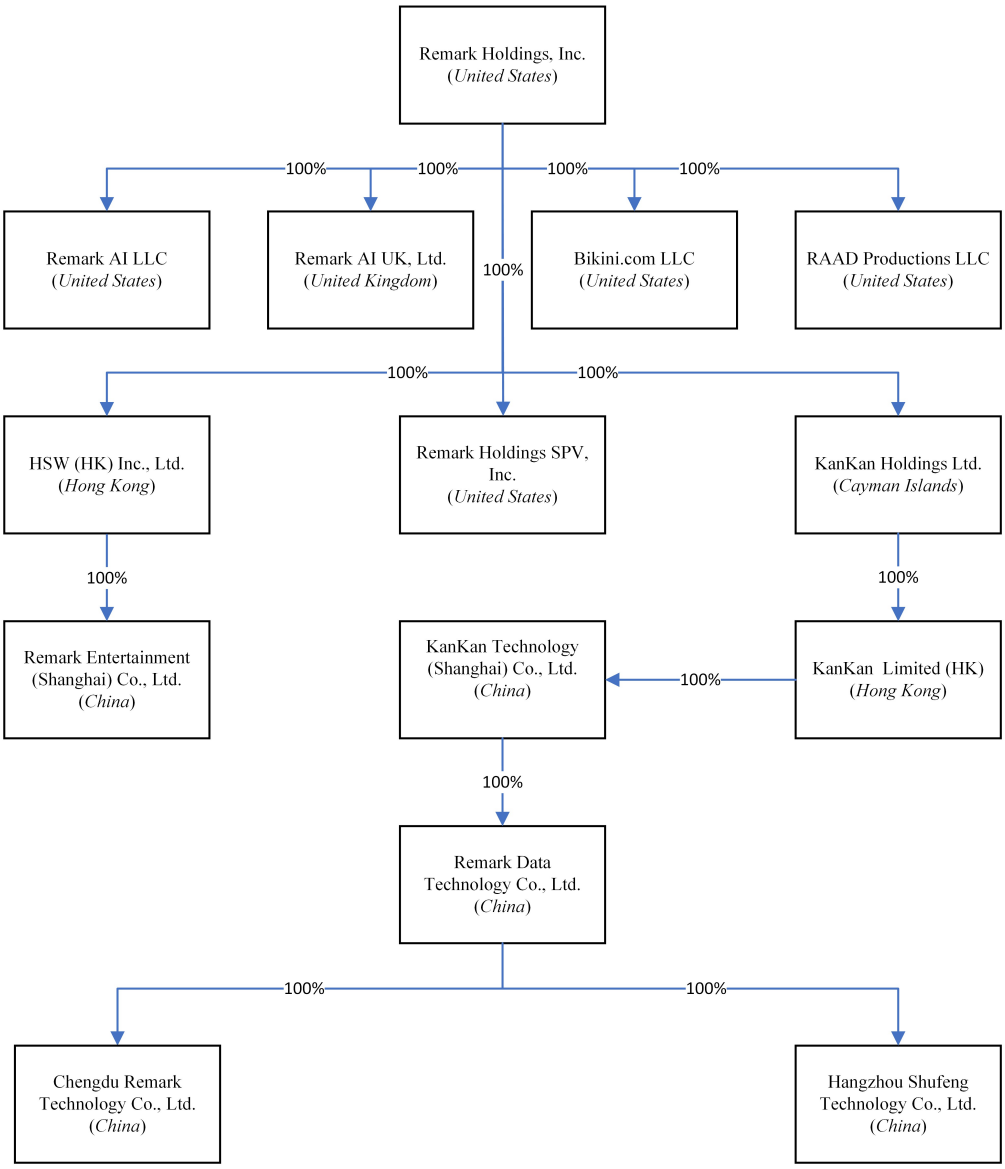
Corporate Structure

We are a holding company incorporated in Delaware and not a Chinese operating company. As a holding company, we conduct most of our operations through our subsidiaries, each of which is wholly owned. We have historically conducted a significant part of our operations through contractual arrangements between our wholly-foreign-owned enterprise ("WFOE") and certain variable interest entities ("VIEs") based in China to address challenges resulting from laws, policies and practices that may disfavor foreign-owned entities that operate within industries deemed sensitive by the Chinese government. We were the primary beneficiary of the VIEs because the contractual arrangements governing the relationship between the VIEs and our WFOE, which included an exclusive call option agreement, exclusive business cooperation agreement, a proxy agreement and an equity pledge agreement, enabled us to (i) exercise effective control over the VIEs, (ii) receive substantially all of the economic benefits of the VIEs, and (iii) have an exclusive call option to purchase, at any time, all or part of the equity interests in and/or assets of the VIEs to the extent permitted by Chinese laws. Because we were the primary beneficiary of the VIEs, we consolidated the financial results of the VIEs in our consolidated financial statements in accordance with generally accepted accounting principles ("GAAP").

We terminated all of the contractual arrangements between the WFOE and the VIEs and exercised our rights under the exclusive call option agreements between the WFOE and the VIEs such that, effective as of September 19, 2022, we obtained 100% of the equity ownership of the entities we formerly consolidated as VIEs and which we now consolidate as wholly-owned subsidiaries.

The following diagram illustrates our corporate structure, including our significant subsidiaries, as of the date of this Form 10-K. The diagram omits certain entities which are immaterial to our results of operations and financial condition.

REMARK HOLDINGS, INC. AND SUBSIDIARIES
Entity Organizational Chart



We are subject to certain legal and operational risks associated with having a significant portion of our operations in China. Chinese laws and regulations governing our current business operations, including the enforcement of such laws and regulations, are sometimes vague and uncertain and can change quickly with little advance notice. The Chinese government may intervene in or influence the operations of our China-based subsidiaries at any time and may exert more control over offerings conducted overseas and/or foreign investment in China-based issuers, which could result in a material change in our operations and/or the value of our securities. In addition, any actions by the Chinese government to exert more oversight and control over offerings that are conducted overseas and/or foreign investment in China-based issuers could significantly limit or completely hinder our ability to offer or continue to offer our securities to investors and cause the value of such securities to

significantly decline or become worthless. In recent years, the Chinese government adopted a series of regulatory actions and issued statements to regulate business operations in China, including those related to the use of variable interest entities, cybersecurity, data security, export control and anti-monopoly concerns. As of the date of this Form 10-K, we have neither been involved in any investigations on cybersecurity review initiated by any Chinese regulatory authority, nor received any inquiry, notice or sanction. As of the date of this Form 10-K, no relevant laws or regulations in China explicitly require us to seek approval from the China Securities Regulatory Commission (the "CSRC") for any securities listing. As of the date of this Form 10-K, we have not received any inquiry, notice, warning or sanctions regarding our planned overseas listing from the CSRC or any other Chinese governmental authorities relating to securities listings. However, since these statements and regulatory actions are newly published, official guidance and related implementation rules have not all been issued. It is highly uncertain what potential impact such modified or new laws and regulations will have on our ability to conduct our business, accept investments or list or maintain a listing on a U.S. or foreign exchange.

As of the date of this Form 10-K, we are not required to seek permissions from the CSRC, the Cyberspace Administration of China (the "CAC"), or any other entity that is required to approve our operations in China. Nevertheless, Chinese regulatory authorities may in the future promulgate laws, regulations or implement rules that require us or our subsidiaries to obtain permissions from such regulatory authorities to approve our operations or any securities listing.

Holding Foreign Companies Accountable Act

The Holding Foreign Companies Accountable Act (the "HFCA Act") was enacted on December 18, 2020. The HFCA Act states that if the Securities and Exchange Commission (the "SEC") determines that a company has filed audit reports issued by a registered public accounting firm that has not been subject to inspection by the Public Company Accounting Oversight Board (the "PCAOB") for three consecutive years beginning in 2021, the SEC shall prohibit such shares from being traded on a national securities exchange or in the over the counter trading market in the United States. On December 2, 2021, the SEC adopted amendments to finalize rules implementing the submission and disclosure requirements in the HFCA Act. The rules apply to registrants that the SEC identifies as having filed an annual report with an audit report issued by a registered public accounting firm that is located in a foreign jurisdiction and that the PCAOB is unable to inspect or investigate completely because of a position taken by an authority in a foreign jurisdiction. The Consolidated Appropriations Act, 2023, which was signed into law on December 29, 2022, amended the HFCA Act to reduce the number of consecutive non-inspection years required to trigger the trading prohibition under the HFCA Act from three years to two years.

On December 16, 2021, the PCAOB issued a report on its determination that it is unable to inspect or investigate completely PCAOB-registered public accounting firms headquartered in mainland China and in Hong Kong because of positions taken by Chinese and Hong Kong authorities in those jurisdictions.

On August 26, 2022, the CSRC, the Ministry of Finance of the PRC, and the PCAOB signed a Statement of Protocol, taking the first step toward opening access for the PCAOB to completely inspect and investigate registered public accounting firms headquartered in mainland China and Hong Kong.

On December 15, 2022, the PCAOB vacated its 2021 determination that the positions taken by authorities in mainland China and Hong Kong prevented it from inspecting and investigating completely registered public accounting firms headquartered in those jurisdictions. In view of the PCAOB's decision to vacate its 2021 determination and until such time as the PCAOB issues any new adverse determination, the SEC has stated that there are no issuers at risk of having their securities subject to a trading prohibition under the HFCA Act. Each year, the PCAOB will reassess its determinations on whether it can inspect and investigation completely audit firms in China, and if, in the future, the PCAOB determines it cannot do so, or if Chinese authorities do not allow the PCAOB complete access for inspections and investigations for two consecutive years, companies engaging China-based public accounting firms would be delisted pursuant to the HFCA Act.

Our auditor, Weinberg & Company, an independent registered public accounting firm headquartered in the United States is currently subject to PCAOB inspections and has been inspected by the PCAOB on a regular basis. However, if the PCAOB is unable to inspect the work papers of our accounting firm in the future, such lack of inspection could cause trading in our common stock to be prohibited under the HFCA Act, and as a result, an exchange may determine to delist our common stock. The delisting and the cessation of trading of our common stock, or the threat of our common stock being delisted and prohibited from being traded, may materially and adversely affect the value of our common stock.

Business Model

We currently earn the majority of our revenue from sales of AI-based products and services. Excluding general and administrative expense, the primary costs we incur to earn the revenue described below include:

- software development costs, including licensing costs for third-party software
- cost of equipment related to customized AI products
- costs associated with marketing our brands

AI Business

We generate revenue by using the proprietary data and AI software platform we developed to deliver AI-based computer vision products, computing devices and software-as-a-service solutions for businesses in many industries. We continue to partner with top universities on research projects targeting algorithm, artificial neural network and computing architectures which we believe will keep us among the leaders in technology development.

The primary focus of our business is promoting and facilitating the safety of our customers and their customers through our Smart Safety Platform (the "SSP"). The SSP, having won numerous industry and government benchmark tests for accuracy and speed, is a leading software solution for using computer vision to detect persons, objects and behavior in video feeds. Real-time alerts from the SSP allow operations staff to respond rapidly to prevent any events or activities that can endanger public security or workplace safety.

We deploy the SSP to integrate with each customer's IT infrastructure, including, in many cases, cameras already in place at the customer's location(s). When necessary, we also sell and deploy hardware to create or supplement the customer's monitoring capabilities. Such hardware includes, among other items, cameras, edge computing devices and/or our Smart Sentry units. The Smart Sentry is a large mobile camera unit with a telescoping mast on which a high-quality camera is mounted. Based upon customer needs, the camera may have either standard vision and/or thermal vision capability. The camera works in conjunction with an edge computing device that is also mounted to the unit. The Smart Sentry is an example of how we incorporate the SSP in modern IT architectural concepts, including edge computing and micro-service architectures. Edge computing, for example, allows the SSP to conduct expensive computing tasks at distributed locations without requiring large data transmission over the internet, thereby dramatically reducing costs while integrating numerous and varied sensors at distributed locations.

We customize and sell our innovative AI-based computer vision products and solutions, including the SSP, to customers in the retail, construction, public safety, workplace safety and public sector markets. We have also developed versions of our solutions for application in the transportation and energy markets.

Competition

We compete for business primarily on the basis of the quality and reliability of our products and services, and primarily in the AI marketplace, which is intensely competitive and rapidly evolving.

Our AI-based products and services represent a significant opportunity for us in the future. We offer AI products and we also build and deploy custom AI solutions. Our AI products compete with companies such as SenseTime, Face++, Google, GoGoVan, WeLab and others, while we compete with companies such as PricewaterhouseCoopers, Hewlett Packard, Baidu and others for business in the AI solutions market space.

Some of the companies we compete against, or may compete against in the future, may have greater brand recognition and may have significantly greater financial, marketing and other resources than we have. As a result of the potentially greater brand recognition and resources, some of our competitors may bring new products and services to market more quickly, and they may be able to adopt more aggressive pricing policies than we could adopt.

Intellectual Property

We rely upon trademark, copyright and trade secret laws in various jurisdictions, as well as confidentiality procedures and contractual provisions to protect our proprietary assets and brands. We own 33 copyright registrations and nine AI-related patents, with 27 AI-related patents pending in China.

Technology

Our technologies include software applications built to run on third-party cloud hosting providers including Amazon Web Services and Alibaba located in North America and Asia. We make substantial use of off-the-shelf available open-source technologies such as Linux, PHP, MySQL, Drupal, mongoDB, Memcache, Apache, Nginx, CouchBase, Hadoop, HBase, ElasticSearch, Lua, Java, Redis, Akka and Wordpress, in addition to commercial platforms such as Microsoft, including Windows Operating Systems, SQL Server, and .NET. Such systems are connected to the Internet via load balancers, firewalls, and routers installed in multiple redundant pairs. We also utilize third-party services to geographically deliver data using major content distribution network providers. We rely heavily on virtualization throughout our technology architecture, which enables the scaling of dozens of digital media properties in an efficient and cost-effective manner.

We use third-party cloud hosting providers to host most of our public-facing websites and applications, as well as many of our back-end business intelligence and financial systems. Each of our significant websites is designed to be fault-tolerant, with collections of application servers, typically configured in a load-balanced state, to provide additional resiliency. The infrastructure is equipped with enterprise-class security solutions to combat events such as large-scale distributed denial of service attacks. Our environment is staffed and equipped with a full-scale monitoring solution.

Governmental Regulation

The services we provide are subject to various laws and regulations. We are subject to a number of U.S. federal and state and foreign laws and regulations that affect companies conducting business on the Internet. These laws and regulations may involve privacy, rights of publicity, data protection, content regulation, intellectual property, competition, protection of minors, consumer protection, taxation or other subjects. Many of these laws and regulations are still evolving and being tested in courts and could be interpreted in ways that could harm our business. In addition, the application and interpretation of these laws and regulations often are uncertain, particularly in the new and rapidly evolving industry in which we operate. There are a number of legislative proposals pending before federal, state, and foreign legislative and regulatory bodies concerning data protection that may affect us. We incorporated the principles of the European Union (“EU”) General Data Protection Regulation (“GDPR”) into our internal data protection policy for our product development and solution implementation. In addition, we voluntarily hired an independent, authorized third party in Germany to conduct a GDPR audit of our privacy practices. The audit found that we are compliant with the GDPR principles.

We post our privacy policy and practices concerning the use and disclosure of any user data on our web properties and our distribution applications. Any failure by us to comply with posted privacy policies, federal and state regulatory requirements or foreign privacy-related laws and regulations could result in proceedings by governmental or regulatory bodies that could potentially harm our businesses, results of operations and financial condition.

Foreign data protection, privacy, and other laws and regulations can be more restrictive than those in the United States. The Chinese government has at times taken measures to restrict digital platforms, publishers or specific content themes from consumption by its citizens. We invest significant efforts into ensuring that our published content in China is consistent with our most current understanding of prevailing Chinese laws, regulations, and policies; and to date our published content in China has been met with successful distribution and no action or inquiry from the Chinese government. However, unforeseen regulatory restrictions or policy changes in China regarding digital content could have a material adverse effect on our business.

The Chinese government has not yet adopted a clear regulatory framework governing the new and rapidly-evolving artificial intelligence industry in which we operate. The Chinese government’s adoption of more stringent laws or enforcement protocols affecting participants in such industries (including, without limitation, restrictions on foreign investment, capital requirements and licensing requirements) could have a material adverse effect on our business.

Transfer of Cash or Assets

Dividend Distributions

As of the date of this Form 10-K, none of our subsidiaries have made any dividends or distributions to the parent company.

We have never declared or paid dividends or distributions on our common equity. We currently intend to retain all available funds and any future consolidated earnings to fund our operations and continue the development and growth of our business; therefore, we do not anticipate paying any cash dividends.

Under Delaware law, a Delaware corporation's ability to pay cash dividends on its capital stock requires the corporation to have either net profits or positive net assets (total assets less total liabilities) over its capital. If we determine to pay dividends on any of our common stock in the future, as a holding company, we may rely on dividends and other distributions on equity from our subsidiaries for cash requirements, including the funds necessary to pay dividends and other cash contributions to our stockholders.

Our WFOE's ability to distribute dividends is based upon its distributable earnings. Current Chinese regulations permit our WFOE to pay dividends to its shareholder only out of its registered capital amount, if any, as determined in accordance with Chinese accounting standards and regulations, and then only after meeting the requirement regarding statutory reserve. If our WFOE incurs debt in the future, the instruments governing the debt may restrict its ability to pay dividends or make other payments to us. Any limitation on the ability of our WFOE to distribute dividends or other payments to us could materially and adversely limit our ability to grow, make investments or acquisitions that could be beneficial to our businesses, pay dividends or otherwise fund and conduct our business. In addition, any cash dividends or distributions of assets by our WFOE to its stockholder are subject to a Chinese withholding tax of as much as 10%.

The Chinese government also imposes controls on the conversion of Chinese Renminbi ("RMB") into foreign currencies and the remittance of currencies out of China. Therefore, we may experience difficulties in completing the administrative procedures necessary to obtain and remit foreign currency for the payment of dividends from our profits, if any. If we are unable to receive all of the revenues from our operations through our China-based subsidiaries, we may be unable to pay dividends on our common stock.

Employees

We employed 88 people as of April 14, 2023, all of whom are full-time employees.

ADDITIONAL INFORMATION

We were originally incorporated in Delaware in March 2006 as HSW International, Inc., we changed our name to Remark Media, Inc. in December 2011, and as our business continued to evolve, we changed our name to Remark Holdings, Inc. in April 2017.

As soon as reasonably practicable after we electronically file such materials with, or furnish them to, the SEC, we provide free access through our website (www.remarkholdings.com) to our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and all amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). We do not incorporate any information found on our website into the materials we file with, or furnish to, the SEC; therefore, you should not consider any such information a part of any filing we make with the SEC. You may also obtain the reports noted above at the SEC's website (www.sec.gov), which contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC.

ITEM 1A. RISK FACTORS

Investing in our common stock involves a high degree of risk. You should carefully consider the following risk factors, as well as the other information contained in this Form 10-K, including our consolidated financial statements and notes thereto, before deciding whether to invest in our common stock. Additional risks and uncertainties that we are unaware of may become important factors that affect us. If any of these risks actually occur, our business, financial condition or operating results may suffer, the trading price of our common stock could decline, and you may lose all or part of your investment.

Risk Factor Summary:

Our business is subject to numerous risks and uncertainties, including those highlighted in the section titled "Risk Factors" immediately following this summary. These risks include, among others, the following:

Risks Relating to Our Corporate Structure

- We have historically relied on contractual arrangements with the VIEs and their shareholders for a significant portion of our business operations. If the Chinese government determines that such contractual arrangements did not comply with Chinese regulations, or if these regulations change or are interpreted differently in the future, we could be subject to penalties, and our common stock may decline in value or even become worthless.

- Our contractual arrangements with the former VIEs may be subject to scrutiny by China's tax authorities. Any adjustment of related party transaction pricing could lead to additional taxes, and therefore substantially reduce our consolidated net income and the value of your investment.

Risks Relating to Doing Business in China

- Changes in China's economic, political, social or geopolitical conditions or in U.S.-China relations, as well as possible interventions and influences of any government policies and actions, could have a material adverse effect on our business and operations and the value of our common stock.

- Uncertainties with respect to the Chinese legal system could adversely affect us.

- We may be liable for improper use or appropriation of personal information provided by our customers and any failure to comply with Chinese laws and regulations over data security could result in materially adverse impact on our business, results of operations and the value of our common stock.

- Trading in our securities may be prohibited under the Holding Foreign Companies Accountable Act if the PCAOB determines that it cannot inspect or fully investigate our auditors, and as a result, Nasdaq may determine to delist our securities.

Risks Relating to Our Business and Industry

- The continuing impacts of COVID-19 are highly unpredictable and could be significant, and may have an adverse effect on our business and financial results.

- Laws and regulations concerning data privacy are continually evolving. Failure to comply with these laws and regulations could harm our business.

- Our continuous access to publicly-available data and to data from partners may be restricted, disrupted or terminated, which would restrict our ability to develop new products and services, or to improve existing products and services, which are based upon our AI platform.

- Our AI software and our application software are highly technical and run on very sophisticated third-party hardware platforms. If such software or hardware contains undetected errors, our AI solutions may not perform properly and our business could be adversely affected.
- The successful operation of our AI platform will depend upon the performance and reliability of the Internet infrastructure in China.
- Our outstanding senior secured loan agreements contain certain covenants that restrict our ability to engage in certain transactions and may impair our ability to respond to changing business and economic conditions.
- Unauthorized use of our intellectual property by third parties, and the expenses incurred in protecting our intellectual property rights, may adversely affect our business.
- We may be subject to intellectual property infringement claims, which may force us to incur substantial legal expenses and, if determined adversely against us, materially disrupt our business.
- We face intense competition from larger, more established companies, and we may not be able to compete effectively, which could reduce demand for our services.
- If we do not effectively manage our growth, our operating performance will suffer and our financial condition could be adversely affected.

Risks Relating to our Company

- We have a history of operating losses and we may not generate sufficient revenue to support our operations.
- We may not have sufficient cash to repay our outstanding senior secured indebtedness.
- Our independent registered public accounting firm's reports for the fiscal years ended December 31, 2022 and 2021 have raised substantial doubt regarding our ability to continue as a "going concern."
- We continue to evolve our business strategy and develop new brands, products and services, and our future prospects are difficult to evaluate.

Risks Relating to Our Common Stock

- Our failure to meet the continued listing requirements of the Nasdaq Stock Market could result in a delisting of our common stock.
- Our stock price has fluctuated considerably and is likely to remain volatile, and various factors could negatively affect the market price or market for our common stock.
- Holders of our warrants will have no rights as a common stockholder until they exercise their warrants and acquire our common stock.
- The concentration of our stock ownership may limit individual stockholder ability to influence corporate matters.
- A significant number of additional shares of our common stock may be issued under the terms of existing securities, which issuances would substantially dilute existing stockholders and may depress the market price of our common stock.
- Provisions in our corporate charter documents and under Delaware law could make an acquisition of Remark more difficult, which acquisition may be beneficial to stockholders.

Risks Relating to Our Corporate Structure

We have historically relied on contractual arrangements with the VIEs and their shareholders for a significant portion of our business operations. If the Chinese government determines that such contractual arrangements did not comply with Chinese regulations, or if these regulations change or are interpreted differently in the future, we could be subject to penalties, and our common stock may decline in value or even become worthless.

Prior to the termination of our contractual arrangements with the VIEs, we relied on such contractual arrangements with the former VIEs to operate our business in China. The revenues contributed by the former VIEs constituted a majority of our total revenues for the fiscal years ended December 31, 2022 and 2021.

In recent years, the Chinese government adopted a series of regulatory actions and issued statements to regulate business operations in China, including those related to variable interest entities. These recent statements indicate an intent by the Chinese government to exert more oversight and control over offerings that are conducted overseas and/or foreign investment in China-based issuers. As of the date of this Form 10-K, there are no relevant laws or regulations in China that prohibit our Company or any of our subsidiaries from listing or offering securities in the United States. However, official guidance and related implementation rules have not been issued. Future action taken by the Chinese government could significantly limit or completely hinder our ability to offer or continue to offer securities to investors and cause the value of our common stock to significantly depreciate or become worthless. In addition, although we believe that our historical contractual arrangements with the former VIEs complied with applicable Chinese laws and regulations, the Chinese government may determine at any time that such contractual arrangements with the former VIEs did not apply with Chinese regulations, or such regulations may change or be interpreted differently in the future. If the Chinese government determines that our contractual arrangements with the former VIEs did not comply with Chinese regulations or if these regulations change or are interpreted differently in the future, we may be subject to penalties imposed by the Chinese government, and our common stock may decline in value or become worthless.

Our contractual arrangements with the former VIEs may be subject to scrutiny by China's tax authorities. Any adjustment of related party transaction pricing could lead to additional taxes, and therefore substantially reduce our consolidated net income and the value of your investment.

The tax regime in China is rapidly evolving and there is significant uncertainty for Chinese taxpayers as Chinese tax laws may be interpreted in significantly different ways. China's tax authorities may assert that we or the former VIEs or their shareholders are required to pay additional taxes on previous or future revenue or income. In particular, under applicable Chinese laws, rules and regulations, arrangements and transactions among related parties, such as the contractual arrangements with the former VIEs, may be subject to audit or challenge by China's tax authorities. If China's tax authorities determine that any contractual arrangements were not entered into on an arm's length basis and therefore constitute a favorable transfer pricing, the China tax liabilities of the relevant subsidiaries, the former VIEs or the shareholders of the former VIEs could be increased, which could increase our overall tax liabilities. In addition, China's tax authorities may impose interest on late payments. Our net income may be materially reduced if our tax liabilities increase. It is uncertain whether any new China laws, rules or regulations relating to VIE structures will be adopted or, if adopted, what they would provide.

If we or any of the former VIEs are found to be in violation of any existing or future China laws, rules or regulations, or if we fail to obtain or maintain any of the required permits or approvals, the relevant China regulatory authorities would have broad discretion to take action in dealing with these violations or failures, including revoking the business and operating licenses of the former VIEs, requiring us to discontinue or restrict our operations, restricting our right to collect revenue, blocking one or more of our websites, requiring us to restructure our operations or taking other regulatory or enforcement actions against us. The imposition of any of these measures could result in a material adverse effect on our ability to conduct all or any portion of our business operations. In addition, it is unclear what impact Chinese government actions would have on us and on our ability to consolidate the financial results of any of the former VIEs in our consolidated financial statements, if Chinese governmental authorities were to find our former corporate structure and historical contractual arrangements to be in violation of Chinese laws, rules and regulations. If the imposition of any governmental actions causes us to lose our right to direct the activities of any of the former VIEs or otherwise separate from any of these entities, and if we are not able to restructure our ownership structure and operations in a satisfactory manner, we would no longer be able to consolidate the financial results of the former VIEs in our consolidated financial statements. Any of these events would have a material adverse effect on our business, financial condition and results of operations.

Risks Relating to Doing Business in China

Changes in China's economic, political, social or geopolitical conditions or in U.S.-China relations, as well as possible interventions and influences of any government policies and actions, could have a material adverse effect on our business and operations and the value of our common stock.

A significant portion of our operations are conducted through our China-based subsidiaries. Accordingly, our business, financial condition, results of operations and prospects may be influenced to a significant degree by political, economic, social conditions and government policies in China generally. The Chinese economy differs from the economies of most developed countries in many respects, including the level of government involvement, level of development, growth rate, control of foreign exchange and allocation of resources. Although the Chinese government has implemented measures emphasizing the utilization of market forces for economic reform, the reduction of state ownership of productive assets, and the establishment of improved corporate governance in business enterprises, a substantial portion of productive assets in China is still owned by the government. In addition, the Chinese government continues to play a significant role in regulating industry development by imposing industrial policies. The Chinese government also exercises significant control over China's economic growth through allocating resources, controlling payment of foreign currency-denominated obligations, setting monetary policy, and providing preferential treatment to particular industries or companies.

While the Chinese economy has experienced significant growth over the past decades, growth has been uneven, both geographically and among various sectors of the economy. Any adverse changes in economic conditions in China, in the policies of the Chinese government or in the laws and regulations in China could have a material adverse effect on the overall economic growth of China. Such developments could adversely affect our business and operating results, lead to reduction in demand for our services and adversely affect our competitive position. The COVID-19 pandemic has had a severe and negative impact on the Chinese and global economy. In particular, the preventative measures in China as a result of the Chinese government's "Zero-COVID" policy have significantly limited the operational capabilities of our China-based subsidiaries, caused a material adverse impact on our business and, though the preventative measures have been eased somewhat, may continue to have an adverse impact on our operations in China.

The Chinese government has implemented various measures to encourage economic growth and guide the allocation of resources. Some of these measures may benefit the overall Chinese economy, but may have a negative effect on us. In addition, in the past the Chinese government has implemented certain measures, including interest rate adjustment, to control the pace of economic growth. These measures may cause decreased economic activity in China, which may adversely affect our business and operating results.

Furthermore, we and our investors may face uncertainty about future actions by the government of China that could significantly affect the financial performance and operations of our China-based subsidiaries. Chinese laws and regulations, including the enforcement of such laws and regulations, can change quickly with little advance notice. The Chinese government may intervene or influence our operations at any time and may exert more control over offerings conducted overseas and/or foreign investment in China-based issuers, which could result in a material change in our operations and/or the value of our securities. As of the date of this Form 10-K, neither Remark nor any of its subsidiaries has received or was denied permission from Chinese authorities to list on U.S. exchanges or conduct U.S. securities offerings. However, there is no guarantee that we will receive or not be denied permission from Chinese authorities to list on U.S. exchanges or conduct U.S. securities offerings in the future. China's economic, political and social conditions, as well as interventions and influences of any government policies, laws and regulations are uncertain and could have a material adverse effect on our business.

Uncertainties with respect to the Chinese legal system could adversely affect us.

The Chinese legal system is a civil law system based on written statutes. Unlike the common law system, prior court decisions under the civil law system may be cited for reference but have limited precedential value. Since these laws and regulations are relatively new and the Chinese legal system continues to rapidly evolve, the interpretations of many laws, regulations and rules are not always uniform and the enforcement of these laws, regulations and rules involves uncertainties.

In 1979, the Chinese government began to promulgate a comprehensive system of laws and regulations governing economic matters in general. The overall effect of legislation over the past three decades has significantly enhanced the

protections afforded to various forms of foreign investments in China. However, China has not developed a fully integrated legal system, and recently enacted laws and regulations may not sufficiently cover all aspects of economic activities in China. In particular, the interpretation and enforcement of these laws and regulations involve uncertainties. Since Chinese administrative and court authorities have significant discretion in interpreting and implementing statutory provisions and contractual terms, it may be difficult to evaluate the outcome of administrative and court proceedings and the level of legal protection we enjoy. These uncertainties may affect our judgment on the relevance of legal requirements and our ability to enforce our contractual rights or tort claims. In addition, the regulatory uncertainties may be exploited through unmerited or frivolous legal actions or threats in attempts to extract payments or benefits from us.

Furthermore, the Chinese legal system is based in part on government policies and internal rules, some of which are not published on a timely basis or at all and may have retroactive effect. As a result, we may not be aware of our violation of any of these policies and rules until sometime after the violation. In addition, any administrative and court proceedings in China may be protracted, resulting in substantial costs and diversion of resources and management attention.

In addition, we are subject to risks and uncertainties of the interpretations and applications of Chinese laws and regulations, and any such interpretations and applications could lead to future actions of the Chinese government that are detrimental to us and/or our China-based subsidiaries, which would likely result in material adverse changes in our operations and cause the value of our common stock to potentially depreciate significantly or become worthless.

We may be liable for improper use or appropriation of personal information provided by our customers and any failure to comply with Chinese laws and regulations over data security could result in materially adverse impact on our business, results of operations and the value of our common stock.

Our business involves collecting and retaining certain internal and external data and information including that of our customers and suppliers. The integrity and protection of such information and data are crucial to us and our business. Owners of such data and information expect that we will adequately protect their personal information. We are required by applicable laws to keep strictly confidential the personal information that we collect, and to take adequate security measures to safeguard such information.

The PRC Criminal Law, as amended by its Amendment 7 (effective on February 28, 2009) and Amendment 9 (effective on November 1, 2015), prohibits institutions, companies and their employees from selling or otherwise illegally disclosing a citizen’s personal information obtained in performing duties or providing services or obtaining such information through theft or other illegal ways. On November 7, 2016, the Standing Committee of the PRC National People’s Congress issued the Cyber Security Law of the PRC (the “Cyber Security Law”), which became effective on June 1, 2017. Pursuant to the Cyber Security Law, network operators must not, without users’ consent, collect their personal information, and may only collect users’ personal information necessary to provide their services. Providers are also obliged to provide security maintenance for their products and services and shall comply with provisions regarding the protection of personal information as stipulated under the relevant laws and regulations.

The Civil Code of the PRC (issued by the PRC National People’s Congress on May 28, 2020 and effective from January 1, 2021) provides legal basis for privacy and personal information infringement claims under the Chinese civil laws. Chinese regulators, including the CAC, the Ministry of Industry and Information Technology, and the Ministry of Public Security, have been increasingly focused on regulation in data security and data protection.

On August 20, 2021, the Standing Committee of the 13th National People's Congress of China issued the final version of the Personal Information Protection Law (the “PIPL”), which became effective on November 1, 2021. The PIPL imposes on China-based data processers (such as our China-based subsidiaries) significant obligations with respect to, among other things, obtaining, processing and cross-border transferring personal information. The PIPL may subject a data processor to a penalty of as much as RMB50 million or 5% of the preceding year’s turnover.

The Chinese regulatory requirements regarding cybersecurity are evolving. For instance, various regulatory bodies in China, including the CAC, the Ministry of Public Security and the State Administration for Market Regulation, have enforced data privacy and protection laws and regulations with varying and evolving standards and interpretations.

In November 2021, the CAC and other related authorities released the amended Cybersecurity Review Measures which became effective on February 15, 2022. Under the amended Cybersecurity Review Measures:

- companies who are engaged in data processing are also subject to the regulatory scope;
- the CSRC is included as one of the regulatory authorities for purposes of jointly establishing the state cybersecurity review working mechanism;
- the operators (including both operators of critical information infrastructure and relevant parties who are engaged in data processing) holding more than one million users/users' (which are to be further specified) individual information and seeking a listing outside China shall file for cybersecurity review with the Cybersecurity Review Office; and
- the risks of core data, material data or large amounts of personal information being stolen, leaked, destroyed, damaged, illegally used or transmitted to overseas parties and the risks of critical information infrastructure, core data, material data or large amounts of personal information being influenced, controlled or used maliciously shall be collectively taken into consideration during the cybersecurity review process.

As a result of the promulgation of the amended Cybersecurity Review Measures, we may become subject to enhanced cybersecurity review. Certain internet platforms in China have been reportedly subject to heightened regulatory scrutiny in relation to cybersecurity matters. As of the date of this Form 10-K, we have neither been subject to heightened regulatory scrutiny with respect to cybersecurity matters nor been informed by any Chinese governmental authority of any requirement that we file for a cybersecurity review. However, if we are deemed to be a critical information infrastructure operator or a company that is engaged in data processing and holds personal information of more than one million users, we could be subject to Chinese cybersecurity review.

As there remains significant uncertainty in the interpretation and enforcement of relevant Chinese cybersecurity laws and regulations, we could be subject to cybersecurity review, and if so, we may not be able to pass such review. In addition, we could become subject to enhanced cybersecurity review or investigations launched by Chinese regulators in the future. Any failure or delay in the completion of the cybersecurity review procedures or any other non-compliance with the related laws and regulations may result in fines or other penalties, including suspension of business, website closure, removal of our app from the relevant app stores, and revocation of prerequisite licenses, as well as reputational damage or legal proceedings or actions against us, which may have material adverse effect on our business, financial condition or results of operations. As of the date of this Form 10-K, we have neither been involved in any investigations on cybersecurity review initiated by the CAC or any other Chinese regulatory authority nor have we received any inquiry, notice or sanction in such respect. We believe that we are in compliance with the aforementioned regulations and policies that have been issued by the CAC.

On June 10, 2021, the Standing Committee of the National People's Congress of China (the "SCNPC") promulgated the PRC Data Security Law, which took effect on September 1, 2021. The PRC Data Security Law imposes data security and privacy obligations on entities and individuals carrying out data activities, and introduces a data classification and hierarchical protection system based on the importance of data in economic and social development, and the degree of harm it will cause to national security, public interests, or legitimate rights and interests of individuals or organizations when such data is tampered with, destroyed, leaked, illegally acquired or used. The PRC Data Security Law also provides for a national security review procedure for data activities that may affect national security and imposes export restrictions on certain data an information.

As of the date of this Form 10-K, we do not expect that the current Chinese laws on cybersecurity or data security or the PIPL would have a material adverse impact on our business operations. However, as uncertainties remain regarding the interpretation and implementation of these laws and regulations, we cannot assure you that we will comply with such regulations in all respects and we may be ordered to rectify or terminate any actions that are deemed illegal by regulatory authorities. We may also become subject to fines and/or other sanctions which may have material adverse effect on our business, operations and financial condition.

Trading in our securities may be prohibited under the Holding Foreign Companies Accountable Act if the PCAOB determines that it cannot inspect or fully investigate our auditors, and as a result, Nasdaq may determine to delist our securities.

The HFCA Act was enacted on December 18, 2020. The HFCA Act states if the SEC determines that a company has filed audit reports issued by a registered public accounting firm that has not been subject to inspection by the PCAOB for three consecutive years beginning in 2021, the SEC shall prohibit such shares from being traded on a national securities exchange or in the over the counter trading market in the United States. On December 2, 2021, the SEC adopted amendments to finalize rules implementing the submission and disclosure requirements in the HFCA Act. The rules apply to registrants that the SEC identifies as having filed an annual report with an audit report issued by a registered public accounting firm that is located in a foreign jurisdiction and that the PCAOB is unable to inspect or investigate completely because of a position taken by an authority in a foreign jurisdiction. The Consolidated Appropriations Act, 2023, which was signed into law on December 29, 2022, amended the HFCA Act to reduce the number of consecutive non-inspection years required to trigger the trading prohibition under the HFCA Act from three years to two years.

On December 16, 2021, the PCAOB issued a report on its determination that it is unable to inspect or investigate completely PCAOB-registered public accounting firms headquartered in mainland China and in Hong Kong because of positions taken by Chinese and Hong Kong authorities in those jurisdictions.

On August 26, 2022, the CSRC, the Ministry of Finance of the PRC, and the PCAOB signed a Statement of Protocol, taking the first step toward opening access for the PCAOB to completely inspect and investigate registered public accounting firms headquartered in mainland China and Hong Kong.

On December 15, 2022, the PCAOB vacated its 2021 determination that the positions taken by authorities in mainland China and Hong Kong prevented it from inspecting and investigating completely registered public accounting firms headquartered in those jurisdictions. In view of the PCAOB's decision to vacate its 2021 determination and until such time as the PCAOB issues any new adverse determination, the SEC has stated that there are no issuers at risk of having their securities subject to a trading prohibition under the HFCA Act. Each year, the PCAOB will reassess its determinations on whether it can inspect and investigation completely audit firms in China, and if, in the future, the PCAOB determines it cannot do so, or if Chinese authorities do not allow the PCAOB complete access for inspections and investigations for two consecutive years, companies engaging China-based public accounting firms would be delisted pursuant to the HFCA Act.

Our auditor, Weinberg & Company, an independent registered public accounting firm headquartered in the United States, is currently subject to PCAOB inspections and has been inspected by the PCAOB on a regular basis. However, if the PCAOB is unable to inspect the work papers of our accounting firm in the future, such lack of inspection could cause trading in our common stock to be prohibited under the HFCA Act, and as a result, an exchange may determine to delist our common stock. The delisting and the cessation of trading of our common stock, or the threat of our common stock being delisted and prohibited from being traded, may materially and adversely affect the value of our common stock.

These recent developments may result in prohibitions on the trading of our common stock on the Nasdaq Capital Market, if our auditors fail to meet the PCAOB inspection requirement in time.

Risks Relating to Our Business and Industry

The continuing impacts of COVID-19 are highly unpredictable and could be significant, and may have an adverse effect on our business and financial results.

The global outbreak of COVID-19 has impacted our business and could continue to have a significant impact on our business. The impact of COVID-19 on our business and future financial results could include, but may not be limited to:

- lack of revenue growth or decreases in revenue due to a lack of, or at least a decline in, customer demand and (or) deterioration in the credit quality of our customers;

- a significant increase in our need for external financing to maintain operations as a result of decreased revenue;

- significant decline in the debt and equity markets, thus impacting our ability to conduct financings on terms acceptable to us; and

- the rapid and broad-based shift to a remote working environment creates inherent productivity, connectivity, and oversight challenges. Preventative measures implemented by governmental authorities in China, such as travel restrictions, shelter-in-place orders and business closures, could significantly impact the ability of our employees and vendors to work productively. In addition, the changed environment under which we are operating could have an impact on our internal controls over financial reporting as well as our ability to meet a number of our compliance requirements in a timely or quality manner.

The extent of any ongoing impact of the pandemic on our business and financial results will depend largely on future developments, including the duration and severity of any outbreaks related to new variants of COVID-19, the length of the travel restrictions and business closures imposed by domestic and foreign governments, all of which can be highly uncertain and cannot be predicted. Though improving somewhat, the situation continues to evolve and additional impacts may arise that we are not aware of currently.

Laws and regulations concerning data privacy are continually evolving. Failure to comply with these laws and regulations could harm our business.

Our business involves collecting and retaining certain internal and external data and information including that of our customers and suppliers and third parties. The integrity and protection of such information and data are crucial to us and our business. Owners of such data and information expect that we will adequately protect their personal information. We are required by applicable privacy and data protection laws in the U.S. and internationally to keep strictly confidential the personal information that we collect, and to take adequate security measures to safeguard such information.

Our failure to comply with existing privacy or data protection laws and regulations could increase our costs, force us to change or limit the features of our AI solutions or result in proceedings or litigation against us by governmental authorities or others, any or all of which could result in significant fines or judgments against us, result in damage to our reputation, and result in negative effects on our financial condition and results of operations. Even if concerns raised by regulators, the media, or consumers about our privacy and data protection or consumer protection practices are unfounded, we could suffer damage to our reputation that causes significant negative effects on our financial condition and results of operations.

Privacy and data protection laws are rapidly changing and likely will continue to do so for the foreseeable future, which could have an impact on how we develop and customize our AI products and software. The growth and development of AI may prompt calls for more stringent consumer privacy protection laws that may impose additional burdens on companies such as ours. Any such changes would require us to devote legal and other resources to address such regulation.

For example, in the U.S., the California Consumer Privacy Act ("CCPA") became effective on January 1, 2020 and applies to processing of personal information of California residents. Other states, including Nevada, have enacted or are considering similar privacy or data protection laws that may apply to us. The U.S. government, including the Federal Trade Commission and the Department of Commerce, also continue to review the need for greater or different regulation over the collection of personal information and information about consumer behavior on the Internet and on mobile devices, and the U.S. Congress is considering a number of legislative proposals to regulate in this area. Various government and consumer agencies worldwide have also called for new regulation and changes in industry practices. For example, the GDPR became effective on May 25, 2018. GDPR would apply to us should we expand our AI business into member countries of the EU. Violations of the GDPR may result in significant penalties, and countries in the EU are still enacting national laws that correspond to certain portions of the GDPR.

Our continuous access to publicly-available data and to data from partners may be restricted, disrupted or terminated, which would restrict our ability to develop new products and services, or to improve existing products and services, which are based upon our AI platform.

The success of our AI-based solutions depends substantially on our ability to continuously ingest and process large amounts of data available in the public domain and provided by our partners, and any interruption to our free access to such

publicly-available data or to the data we obtain from our partners will restrict our ability to develop new products and services, or to improve existing products and services. While we have not encountered any significant disruption of such access to date, there is no guarantee that this trend will continue without costs. Public data sources may change their policies to restrict access or implement procedures to make it more difficult or costly for us to maintain access, and partners could decide to terminate our existing agreements with them. If we no longer have free access to public data, or access to data from our partners, our ability to maintain or improve existing products, or to develop new AI-based solutions may be severely limited. Furthermore, we may be forced to pay significant fees to public data sources or to partners to maintain access, which would adversely affect our financial condition and results of operations.

Our AI software and our application software are highly technical and run on very sophisticated third-party hardware platforms. If such software or hardware contains undetected errors, our AI solutions may not perform properly and our business could be adversely affected.

Our AI-based solutions and internal systems rely on software, including software developed or maintained internally or by third parties, that is highly technical and complex. In addition, our AI-based solutions and internal systems depend on the ability of such software to store, retrieve, process, and manage immense amounts of data. The software on which we rely has contained, and may now or in the future contain, undetected errors, bugs, or vulnerabilities. Some errors may only be discovered after the AI-based solution or application software has been released for external or internal use. Errors or other design defects within the software on which we rely may result in a negative experience for our customers, delay product introductions or enhancements, result in measurement or billing errors, or compromise our ability to protect our customers' data or our intellectual property. Any errors, bugs, or defects discovered in the software on which we rely could result in damage to our reputation, loss of users, loss of revenue, or liability for damages, any of which could adversely affect our business and financial results.

The successful operation of our AI platform will depend upon the performance and reliability of the Internet infrastructure in China.

The successful operation of KanKan will depend on the performance and reliability of the Internet infrastructure in China. Almost all access to the Internet is maintained through state-owned telecommunication operators under the administrative control and regulatory supervision of the Ministry of Industry and Information Technology of China. In addition, the national networks in China are connected to the Internet through state-owned international gateways, which are the only channels through which a domestic user can connect to the Internet outside of China. We may not have access to alternative networks in the event of disruptions, failures or other problems with China's Internet infrastructure. In addition, the Internet infrastructure in China may not support the demands associated with continued growth in Internet usage.

The failure of telecommunications network operators to provide us with the requisite bandwidth could also interfere with the speed and availability of KanKan. We have no control over the costs of the services provided by the national telecommunications operators. If the prices that we pay for telecommunications and Internet services rise significantly, our gross margins could be adversely affected. In addition, if Internet access fees or other charges to Internet users increase, our user traffic may decrease, which in turn may cause a decrease in our revenues.

Our outstanding senior secured loan agreements contain certain covenants that restrict our ability to engage in certain transactions and may impair our ability to respond to changing business and economic conditions.

On December 3, 2021, we entered into senior secured loan agreements (the "Original Mudrick Loan Agreements") with certain of our subsidiaries as guarantors (the "Guarantors") and certain institutional lenders affiliated with Mudrick Capital Management, LP (collectively, "Mudrick"), pursuant to which the Mudrick extended credit to us consisting of term loans in the principal amount of $30.0 million (the "Original Mudrick Loans"). On March 14, 2023, we entered into a Note Purchase Agreement with Mudrick (the "New Mudrick Loan Agreement") pursuant to which all of the Original Mudrick Loans were cancelled in exchange for new notes payable to Mudrick (the "New Mudrick Notes"). The New Mudrick Notes require us to satisfy various covenants, including restrictions on our ability to engage in certain transactions without Mudrick's consent, and may limit our ability to respond to changing business and economic conditions. The restrictions include, among other things, limitations on our ability and the ability of our subsidiaries to:

- change its name or corporate form or jurisdiction of organization;
- merge with another entity (other than an affiliate of Mudrick),consolidate, or sell or dispose of any material portion of our assets;
- sell, lease, license, convey, assign (by operation of law or otherwise), exchange or otherwise voluntarily or involuntarily transfer or dispose of any interest in any of its assets (other than upon receipt of fair consideration for obsolete assets, trade-ins and disposition, sales or licenses in the ordinary course of business) or any portion thereof or encumber, or hypothecate, or create, incur or permit to exist any pledge, mortgage, lien, security interest, charge, encumbrance or adverse claim upon or other interest in or with respect to any of its assets (other than permitted liens); and
- directly or indirectly enter into or permit to exist any transaction with any of our affiliates (other than a wholly-owned subsidiary).

Unauthorized use of our intellectual property by third parties, and the expenses incurred in protecting our intellectual property rights, may adversely affect our business.

We regard our copyrights, service marks, trademarks, trade secrets and other intellectual property as critical to our success. Unauthorized use of our intellectual property by third parties may adversely affect our business and reputation. We rely on trademark and copyright law, trade secret protection and confidentiality agreements with our employees, customers, business partners and others to protect our intellectual property rights. Despite our precautions, it is possible for third parties to obtain and use our intellectual property without authorization. Furthermore, the validity, enforceability and scope of protection of intellectual property in Internet related industries are uncertain and still evolving. In particular, the laws of the People's Republic of China are uncertain or do not protect intellectual property rights to the same extent as do the laws of the United States. Moreover, litigation may be necessary in the future to enforce our intellectual property rights, to protect our trade secrets or to determine the validity and scope of the proprietary rights of others. Future litigation could result in substantial costs and diversion of resources.

We may be subject to intellectual property infringement claims, which may force us to incur substantial legal expenses and, if determined adversely against us, materially disrupt our business.

We cannot be certain that our brands and services will not infringe valid patents, copyrights or other intellectual property rights held by third parties. We cannot provide assurance that we will avoid the need to defend against allegations of infringement of third-party intellectual property rights, regardless of their merit. Intellectual property litigation is very expensive, and becoming involved in such litigation could consume a substantial portion of our managerial and financial resources, regardless of whether we win. Substantially greater resources may allow some of our competitors to sustain the cost of complex intellectual property litigation more effectively than us; we may not be able to afford the cost of such litigation.

Should we suffer an adverse outcome from intellectual property litigation, we may incur significant liabilities, we may be required to license disputed rights from third parties, or we may have to cease using the subject technology. If we are found to infringe upon third-party intellectual property rights, we cannot provide assurance that we would be able to obtain licenses to

such intellectual property on commercially reasonable terms, if at all, or that we could develop or obtain alternative technology. If we fail to obtain such licenses at a reasonable cost, such failure may materially disrupt the conduct of our business, and could consume substantial resources and create significant uncertainties. Any legal action against us or our collaborators could lead to:

- payment of actual damages, royalties, lost profits, potentially treble damages and attorneys' fees if we are found to have willfully infringed a third party's patent rights;
- injunctive or other equitable relief that may effectively block our ability to further develop, commercialize and sell our products;
- us or our collaborators having to enter into license arrangements that may not be available on commercially acceptable terms, if at all; or
- significant cost and expense, as well as distraction of our management from our business.

The negative outcomes discussed above could adversely affect our ability to conduct business, financial condition, results of operations and cash flows.

We face intense competition from larger, more established companies, and we may not be able to compete effectively, which could reduce demand for our services.

The market for the services we offer is increasingly and intensely competitive. Nearly all our competitors have longer operating histories, larger customer bases, greater brand recognition and significantly greater financial, marketing and other resources than we do. Our competitors may secure more favorable revenue arrangements with advertisers, devote greater resources to marketing and promotional campaigns, adopt more aggressive growth strategies and devote substantially more resources to website and systems development than we do. In addition, the Internet media and advertising industries continue to experience consolidation, including the acquisitions of companies offering travel and finance-related content and services and paid search services. Industry consolidation has resulted in larger, more established and well-financed competitors with a greater focus. If these industry trends continue, or if we are unable to compete in the Internet media and paid search markets, our financial results may suffer.

Additionally, larger companies may implement policies and/or technologies into their search engines or software that make it less likely that consumers can reach our websites and less likely that consumers will click-through on sponsored listings from our advertisers. The implementation of such technologies could result in a decrease in our revenues. If we are unable to successfully compete against current and future competitors, our operating results will be adversely affected.

If we do not effectively manage our growth, our operating performance will suffer and our financial condition could be adversely affected.

Substantial future growth will be required for us to realize our business objectives. To the extent we are capable of achieving this growth, it will place significant demands on our managerial, operational and financial resources. Additionally, this growth will require us to make significant capital expenditures, hire, train and manage a larger work force, and allocate valuable management resources. We must manage any such growth through appropriate systems and controls in each of these areas. If we do not manage the growth of our business effectively, our business, financial condition, results of operations and cash flows could be materially and adversely affected.

In addition, as our business grows, our technological and network infrastructure must keep in-line with our needs. Future demand is difficult to forecast and we may not be able to adequately handle large increases unless we spend substantial amounts to augment our ability to handle increased traffic. Additionally, the implementation of increased network capacity contains some execution risks and may lead to ineffectiveness or inefficiency. This could lead to a diminished experience for our consumers and advertisers and damage our reputation and relationship with them, leading to lower marketability and negative effects on our operating results. Moreover, the pace of innovative change in network technology is fast and if we do not keep up, we may lag behind competitors. The costs of upgrading and improving technology could be substantial and negatively affect our business, financial condition, results of operations and cash flows.

Risks Relating to our Company

We have a history of operating losses and we may not generate sufficient revenue to support our operations.

During the year ended December 31, 2022, and in each fiscal year since our inception, we have incurred net losses and generated negative cash flow from operations, resulting in an accumulated deficit of $(388.5) million.

We cannot provide assurance that revenue generated from our businesses will be sufficient to sustain our operations in the long term. We have implemented measures to reduce operating costs, and we continuously evaluate other opportunities to reduce costs further. Additionally, we are working with our advisors to evaluate strategic alternatives, including the potential sale of certain non-core assets, investment assets and operating businesses. We may also need to obtain additional capital through equity financing or debt financing. Should we fail to successfully implement our plans described herein, such failure would have a material adverse effect on our business, including the possible cessation of operations.

Conditions in the debt and equity markets, as well as the volatility of investor sentiment regarding macroeconomic and microeconomic conditions (in particular, as a result of the COVID-19 pandemic, global supply chain disruptions, inflation and other cost increases, and the geopolitical conflict in Ukraine) will play primary roles in determining whether we can successfully obtain additional capital. We cannot be certain that we will be successful at raising capital, whether in an equity financing, debt financing, or by divesting of certain assets or businesses, on commercially reasonable terms, if at all. In addition, if we obtain capital by issuing equity, such transaction(s) may dilute existing stockholders.

We may not have sufficient cash to repay our outstanding senior secured indebtedness.

As of April 14, 2023, $16.2 million of aggregate principal remained outstanding under the New Mudrick Loans, which will be due and payable in full on October 31, 2023. Our available cash and other liquid assets are currently not sufficient to pay such obligations in full. If we do not pay the New Mudrick Notes in full on the scheduled maturity date, Mudrick will have available to them all rights under the New Mudrick Loan Agreements and applicable law, which include, without limitation, foreclosing on the collateral securing the New Mudrick Notes. Mudrick's exercise of any such rights could have a material adverse effect on our financial condition.

Our independent registered public accounting firm's reports for the fiscal years ended December 31, 2022 and 2021 have raised substantial doubt regarding our ability to continue as a "going concern."

Our independent registered public accounting firm indicated in its report on our audited consolidated financial statements as of and for the years ended December 31, 2022 and 2021 that there is substantial doubt about our ability to continue as a going concern. A "going concern" opinion indicates that the financial statements have been prepared assuming we will continue as a going concern and do not include any adjustments to reflect the possible future effects on the recoverability and classification of assets, or the amounts and classification of liabilities that may result if we do not continue as a going concern. Therefore, you should not rely on our consolidated balance sheet as an indication of the amount of proceeds that would be available to satisfy claims of creditors, and potentially be available for distribution to stockholders, in the event of liquidation. The presence of the going concern note to our financial statements may have an adverse impact on the relationships we are developing and plan to develop with third parties as we continue the commercialization of our products and could make it difficult for us to raise additional financing, all of which could have a material adverse impact on our business and prospects and result in a significant or complete loss of your investment.

We continue to evolve our business strategy and develop new brands, products and services, and our future prospects are difficult to evaluate.

We are in varying stages of development with regard to our business, including our artificial intelligence business driven by our AI platform, so our prospects must be considered in light of the many risks, uncertainties, expenses, delays, and difficulties frequently encountered by companies in the early stages of development of business models and products. Some of such risks and difficulties include our ability to, among other things:

- manage and implement new business strategies;
- successfully commercialize and monetize our assets;
- continue to raise additional working capital;
- manage operating expenses;
- establish and take advantage of strategic relationships;
- successfully avoid diversion of management's attention or of other resources from our existing business
- successfully avoid impairment of goodwill or other intangible assets such as trademarks or other intellectual property arising from acquisitions;
- prevent, or successfully temper, adverse market reaction to acquisitions;
- manage and adapt to rapidly changing and expanding operations;
- respond effectively to competitive developments; and
- attract, retain and motivate qualified personnel.

Because of the early stage of development of certain of our business operations, we cannot be certain that our business strategy will be successful or that it will successfully address the risks described or alluded to above. Any failure by us to successfully implement our new business plans could have a material adverse effect on our business, financial condition, results of operations and cash flows. Furthermore, growth into new areas may require changes to our cost structure, modifications to our infrastructure and exposure to new regulatory, legal and competitive risks.

If we fail to manage our growth, we may need to improve our operational, financial and management systems and processes which may require significant capital expenditures and allocation of valuable management and employee resources. As we continue to grow, we must effectively integrate, develop and motivate new employees, including employees in international markets, while maintaining the beneficial aspects of our company culture. If we do not manage the growth of our business and operations effectively, the quality of our platform and efficiency of our operations could suffer, which could harm our brand, results of operations and business.

We cannot assure you that these investments will be successful or that such endeavors will result in the realization of the full benefits of synergies, cost savings, innovation and operational efficiencies that may be possible or that we will achieve these benefits within a reasonable period of time.

Risks Relating to Our Common Stock

Our failure to meet the continued listing requirements of the Nasdaq Stock Market could result in a delisting of our common stock.

On February 25, 2022, we received written notice from Nasdaq's Listing Qualifications Department notifying us that, for a period of 30 consecutive business days, the bid price of our common stock closed below the minimum of $1.00 per share

required for continued listing on the Nasdaq Capital Market pursuant to the Bid Price Rule. In accordance with Nasdaq Listing Rule 5810(c)(3)(A), we had 180 calendar days, or until August 24, 2022, to regain compliance with the Bid Price Rule.

On August 30, 2022, we received a staff determination letter from Nasdaq stating that we did not regain compliance with the Bid Price Rule and we were not eligible for a second 180-day grace period because we did not comply with the minimum $5,000,000 Stockholders' Equity initial listing requirement for the Nasdaq Capital Market. We appealed Nasdaq's delisting determination to a hearings panel (the "Panel"), which heard our presentation at a hearing held on October 6, 2022.

On October 17, 2022, we received a written decision from the Panel granting our request for continued listing on Nasdaq, subject to the conditions that, on January 11, 2023, we will have demonstrated compliance with the Bid Price Rule by evidencing a closing price of $1.00 or more per share for a minimum of 10 consecutive trading sessions, and that we provide prompt notification of any significant events that occur during the period ending on January 11, 2023 that may affect our compliance with Nasdaq rules.

On January 11, 2023, we received a written notification from Nasdaq confirming that we have regained compliance with the Bid Price Rule and accordingly, the Panel has determined to continue the listing of our common stock on Nasdaq.

Even though we received a favorable decision from the Panel and have regained compliance with the Bid Price Rule, there can be no assurance that we will be able to continue to satisfy our continued listing requirements of the Nasdaq Capital Market going forward. Our failure to meet the continued listing requirements in the future could result in a delisting of our common stock. A delisting could harm our ability to raise capital through alternative financing sources on terms acceptable to us, or at all, and may result in the potential loss of confidence by investors, customers and employees and potential loss of business development opportunities. A delisting from Nasdaq could adversely affect our ability to raise additional financing through the public or private sale of equity securities, would significantly impact the ability of investors to trade our securities and would negatively impact the value and liquidity of our common stock.

Our stock price has fluctuated considerably and is likely to remain volatile, and various factors could negatively affect the market price or market for our common stock.

The trading price of our common stock has been and may continue to be volatile. From January 1, 2020, through April 14, 2023, the high and low sales prices for our common stock were $67.00 and $0.87, respectively (as adjusted for the Reverse Split). The trading price of our common stock may fluctuate significantly in response to numerous factors, many of which are beyond our control, including:

- general market and economic conditions;
- the low trading volume and limited public market for our common stock; and
- minimal third-party research regarding our company.

In addition, the stock market in general, and the market prices for Internet-related companies in particular, have experienced volatility that often has been unrelated to the operating performance of such companies. Such broad market and industry fluctuations may adversely affect the price of our stock, regardless of our operating performance.

Holders of our warrants will have no rights as a common stockholder until they exercise their warrants and acquire our common stock.

Until a holder of our warrants acquires shares of our common stock upon exercise of such warrants, such holder will have no rights with respect to shares of our common stock issuable upon exercise of the warrants. Upon exercise of warrants by, the holder shall become entitled to exercise the rights of a common stockholder only as to matters for which the record date occurs after the exercise date.

The concentration of our stock ownership may limit individual stockholder ability to influence corporate matters.

As of April 14, 2023, our Chairman and Chief Executive Officer, Kai-Shing Tao, may be deemed to beneficially own 1,020,062 shares, or 7.2% of our common stock, and Lawrence Rosen may be deemed to beneficially own 709,487 shares, or 5.2% of our common stock. The interests of these stockholders may not always coincide with the interests of other stockholders, and they may act in a manner that advances their best interests and not necessarily those of other stockholders, and might affect the prevailing market price for our securities.

If these stockholders act together, they may be able to exert significant control over our management and affairs requiring stockholder approval, including approval of significant corporate actions. Such concentration of ownership may have the effect of delaying or preventing a change in control and might adversely affect the market price of our common stock.

A significant number of additional shares of our common stock may be issued under the terms of existing securities, which issuances would substantially dilute existing stockholders and may depress the market price of our common stock.

As of April 14, 2023, we had outstanding stock options allowing for the purchase of as many as approximately 1.6 million shares of common stock. Also outstanding were (i) convertible debentures we issued to Ionic Ventures, LLC ("Ionic") with an aggregate outstanding balance of $2,778,000, (ii) shares of our common stock issuable upon exercise of a warrant we issued to Armistice Capital Master Fund Ltd. in a private placement (the "Investor Warrant"), which is exercisable for as many as 423,729 shares of common stock, (iii) warrants to purchase as many as an aggregate of 12,712 shares of our common stock issued to A.G.P./Alliance Global Partners and its designees (the "Financial Advisor Warrants"), which are exercisable for as many as an aggregate of 12,712 shares of common stock, (iv) warrants we issued as part of the consideration for our acquisition of assets of China Branding Group Limited ("CBG"), providing for the right to purchase 4,000 shares of common stock at a per-share exercise price of $100.00 (the "CBG Acquisition Warrants") and (v) warrants we issued pursuant to a settlement agreement that we entered into with CBG and its joint official liquidators, providing for the right to purchase 571,000 shares of common stock at a per share exercise price of $60.00 (the "CBG Settlement Warrants").

The Investor Warrant is immediately exercisable and will expire on October 31, 2027. However, we are prohibited from effecting an exercise of the Investor Warrant, and the holder thereof will not have the right to exercise any portion of its Investor Warrant, to the extent that, as a result of such exercise, the warrant holder would beneficially own more than 4.99% of the outstanding shares of our common stock immediately after giving effect to the issuance of shares of issuable upon exercise of the Investor Warrant. The Financial Advisor Warrants are immediately exercisable and will expire on the five-year anniversary of the date of issuance.

The CBG Acquisition Warrants and the CBG Settlement Warrants are exercisable on a cashless basis only, such that they cannot be exercised for the entire amount of shares purchasable under such warrants, and they effectively cannot be exercised to purchase shares of common stock unless the applicable market value of the common stock exceeds the applicable exercise price under the terms thereof.

The issuance of common stock pursuant to the warrants and the debentures described above would substantially dilute the proportionate ownership and voting power of existing stockholders, and their issuance, or the possibility of their issuance, may depress the market price of our common stock.

Provisions in our corporate charter documents and under Delaware law could make an acquisition of Remark more difficult, which acquisition may be beneficial to stockholders.

Provisions in our Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws, as well as provisions of the General Corporation Law of the State of Delaware ("DGCL"), which may discourage, delay or prevent a merger with, acquisition of or other change in control of Remark, even if such a change in control would be beneficial to our stockholders, include the following:

- only our Board of Directors may call special meetings of our stockholders;
- our stockholders may take action only at a meeting of our stockholders and not by written consent;

- we have authorized, undesignated preferred stock, the terms of which may be established and shares of which may be issued without stockholder approval.

Additionally, Section 203 of the DGCL prohibits a person who owns in excess of 15% of our outstanding voting stock from merging or combining with us for a period of three years after the date of the transaction in which the person acquired in excess of 15% of our outstanding voting stock, unless the merger or combination is approved in a prescribed manner. We have not opted out of the restriction under Section 203, as permitted under DGCL.

ITEM 1B. UNRESOLVED STAFF COMMENTS

Not applicable.

ITEM 2. PROPERTIES

We conduct our operations primarily from office space located in Las Vegas, Nevada, and Chengdu, China. The locations are leased pursuant to agreements expiring in March 2023 and October 2024, respectively. We also lease support offices in Shanghai and Hangzhou, China and in the Greater London region in England.

ITEM 3. LEGAL PROCEEDINGS

None.

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

Our common stock is listed on the Nasdaq Capital Market under the symbol MARK.

HOLDERS OF COMMON STOCK

We had 66 holders of record of our common stock as of April 14, 2023.

DIVIDENDS

We have never declared or paid dividends or distributions on our common equity. We currently intend to retain all available funds and any future consolidated earnings to fund our operations and continue the development and growth of our business; therefore, we do not anticipate paying any cash dividends.

ITEM 6. RESERVED

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

You should read our discussion and analysis of our financial condition and results of operations for the year ended December 31, 2022 in conjunction with our consolidated financial statements and notes thereto set forth in Part II, Item 8 of this Form 10-K. Such discussion and analysis includes forward-looking statements that involve risks and uncertainties and that are not historical facts, including statements about our beliefs and expectations. You should also read Business, Risk Factors and Special Note Regarding Forward-Looking Statements in this Form 10-K.

OVERVIEW

We are a diversified global technology business with leading AI and data-analytics, as well as a portfolio of digital media properties.

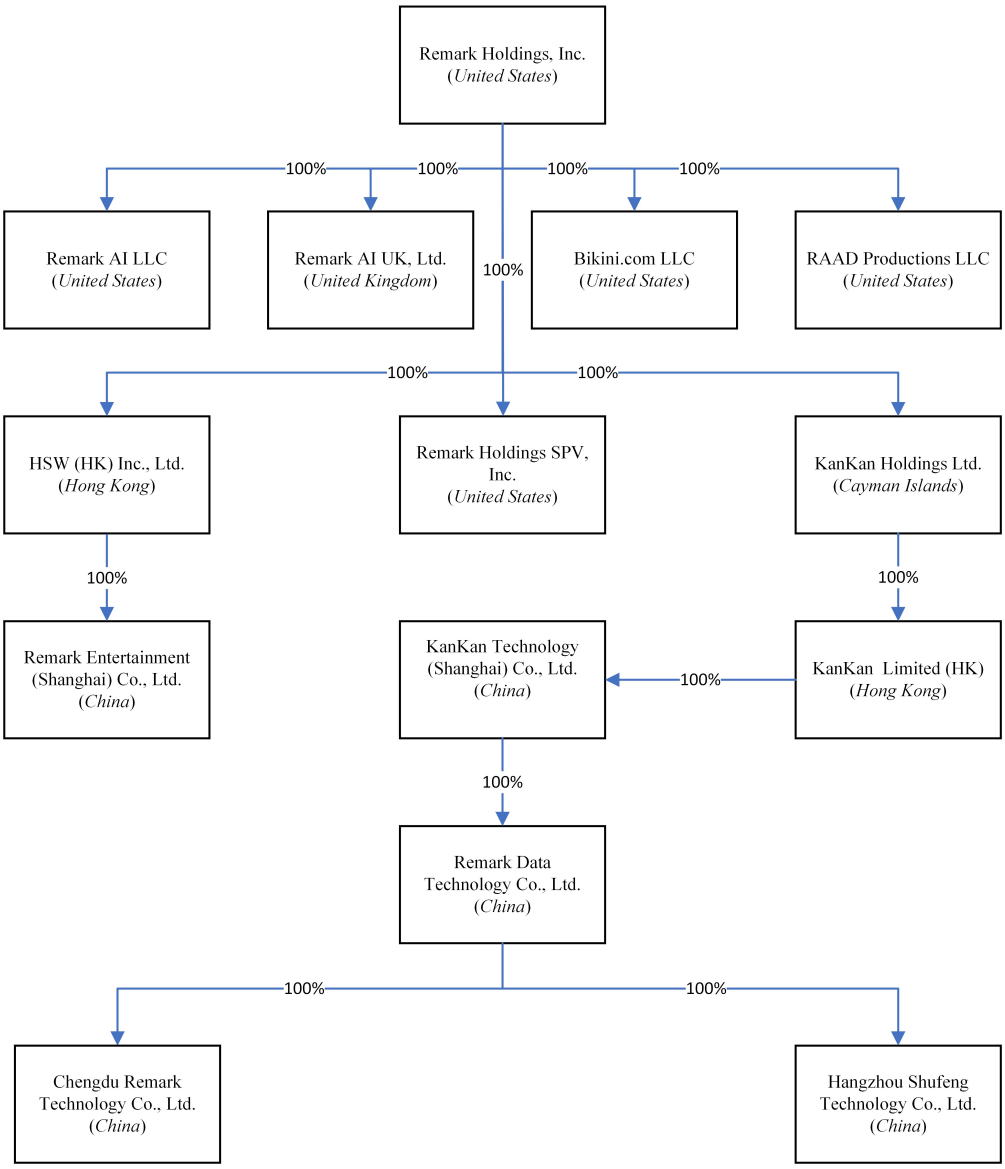
Corporate Structure

We are a holding company incorporated in Delaware and not a Chinese operating company. As a holding company, we conduct most of our operations through our subsidiaries, each of which is wholly owned. We have historically conducted a significant part of our operations through contractual arrangements between our WFOE and certain VIEs based in China to address challenges resulting from laws, policies and practices that may disfavor foreign-owned entities that operate within industries deemed sensitive by the Chinese government. We were the primary beneficiary of the VIEs because the contractual arrangements governing the relationship between the VIEs and our WFOE, which included an exclusive call option agreement, exclusive business cooperation agreement, a proxy agreement and an equity pledge agreement, enabled us to (i) exercise effective control over the VIEs, (ii) receive substantially all of the economic benefits of the VIEs, and (iii) have an exclusive call option to purchase, at any time, all or part of the equity interests in and/or assets of the VIEs to the extent permitted by Chinese laws. Because we were the primary beneficiary of the VIEs, we consolidated the financial results of the VIEs in our consolidated financial statements in accordance with GAAP.

We terminated all of the contractual arrangements between the WFOE and the VIEs and exercised our rights under the exclusive call option agreements between the WFOE and the VIEs such that, effective as of September 19, 2022, we obtained 100% of the equity ownership of the entities we formerly consolidated as VIEs and which we now consolidate as wholly-owned subsidiaries.

The following diagram illustrates our corporate structure, including our significant subsidiaries, as of the date of this Form 10-K. The diagram omits certain entities which are immaterial to our results of operations and financial condition.

REMARK HOLDINGS, INC. AND SUBSIDIARIES
Entity Organizational Chart



We are subject to certain legal and operational risks associated with having a significant portion of our operations in China. Chinese laws and regulations governing our current business operations, including the enforcement of such laws and regulations, are sometimes vague and uncertain and can change quickly with little advance notice. The Chinese government may intervene in or influence the operations of our China-based subsidiaries at any time and may exert more control over offerings conducted overseas and/or foreign investment in China-based issuers, which could result in a material change in our operations and/or the value of our securities. In addition, any actions by the Chinese government to exert more oversight and control over offerings that are conducted overseas and/or foreign investment in China-based issuers could significantly limit or completely hinder our ability to offer or continue to offer our securities to investors and cause the value of such securities to

significantly decline or become worthless. In recent years, the Chinese government adopted a series of regulatory actions and issued statements to regulate business operations in China, including those related to the use of variable interest entities, cybersecurity, data security, export control and anti-monopoly concerns. As of the date of this Form 10-K, we have neither been involved in any investigations on cybersecurity review initiated by any Chinese regulatory authority, nor received any inquiry, notice or sanction. As of the date of this Form 10-K, no relevant laws or regulations in China explicitly require us to seek approval from the CSRC for any securities listing. As of the date of this Form 10-K, we have not received any inquiry, notice, warning or sanctions regarding our planned overseas listing from the CSRC or any other Chinese governmental authorities relating to securities listings. However, since these statements and regulatory actions are newly published, official guidance and related implementation rules have not all been issued. It is highly uncertain what potential impact such modified or new laws and regulations will have on our ability to conduct our business, accept investments or list or maintain a listing on a U.S. or foreign exchange.

As of the date of this Form 10-K, we are not required to seek permissions from the CSRC, the CAC, or any other entity that is required to approve our operations in China. Nevertheless, Chinese regulatory authorities may in the future promulgate laws, regulations or implement rules that require us or our subsidiaries to obtain permissions from such regulatory authorities to approve our operations or any securities listing.

Holding Foreign Companies Accountable Act

The HFCA Act was enacted on December 18, 2020. The HFCA Act states that if the SEC determines that a company has filed audit reports issued by a registered public accounting firm that has not been subject to inspection by the PCAOB for three consecutive years beginning in 2021, the SEC shall prohibit such shares from being traded on a national securities exchange or in the over the counter trading market in the United States. On December 2, 2021, the SEC adopted amendments to finalize rules implementing the submission and disclosure requirements in the HFCA Act. The rules apply to registrants that the SEC identifies as having filed an annual report with an audit report issued by a registered public accounting firm that is located in a foreign jurisdiction and that the PCAOB is unable to inspect or investigate completely because of a position taken by an authority in a foreign jurisdiction. The Consolidated Appropriations Act, 2023, which was signed into law on December 29, 2022, amended the HFCA Act to reduce the number of consecutive non-inspection years required to trigger the trading prohibition under the HFCA Act from three years to two years.

On December 16, 2021, the PCAOB issued a report on its determination that it is unable to inspect or investigate completely PCAOB-registered public accounting firms headquartered in mainland China and in Hong Kong because of positions taken by Chinese and Hong Kong authorities in those jurisdictions.

On August 26, 2022, the CSRC, the Ministry of Finance of the PRC, and the PCAOB signed a Statement of Protocol, taking the first step toward opening access for the PCAOB to completely inspect and investigate registered public accounting firms headquartered in mainland China and Hong Kong.

On December 15, 2022, the PCAOB vacated its 2021 determination that the positions taken by authorities in mainland China and Hong Kong prevented it from inspecting and investigating completely registered public accounting firms headquartered in those jurisdictions. In view of the PCAOB's decision to vacate its 2021 determination and until such time as the PCAOB issues any new adverse determination, the SEC has stated that there are no issuers at risk of having their securities subject to a trading prohibition under the HFCA Act. Each year, the PCAOB will reassess its determinations on whether it can inspect and investigation completely audit firms in China, and if, in the future, the PCAOB determines it cannot do so, or if Chinese authorities do not allow the PCAOB complete access for inspections and investigations for two consecutive years, companies engaging China-based public accounting firms would be delisted pursuant to the HFCA Act.

Our auditor, Weinberg & Company, an independent registered public accounting firm headquartered in the United States, is currently subject to PCAOB inspections and has been inspected by the PCAOB on a regular basis. However, if the PCAOB is unable to inspect the work papers of our accounting firm in the future, such lack of inspection could cause trading in our common stock to be prohibited under the HFCA Act, and as a result, an exchange may determine to delist our common stock. The delisting and the cessation of trading of our common stock, or the threat of our common stock being delisted and prohibited from being traded, may materially and adversely affect the value of our common stock.

Transfer of Cash or Assets

Dividend Distributions

As of the date of this Form 10-K, none of our subsidiaries have made any dividends or distributions to the parent company.

We have never declared or paid dividends or distributions on our common equity. We currently intend to retain all available funds and any future consolidated earnings to fund our operations and continue the development and growth of our business; therefore, we do not anticipate paying any cash dividends.

Under Delaware law, a Delaware corporation's ability to pay cash dividends on its capital stock requires the corporation to have either net profits or positive net assets (total assets less total liabilities) over its capital. If we determine to pay dividends on any of our common stock in the future, as a holding company, we may rely on dividends and other distributions on equity from our subsidiaries for cash requirements, including the funds necessary to pay dividends and other cash contributions to our stockholders.

Our WFOE's ability to distribute dividends is based upon its distributable earnings. Current Chinese regulations permit our WFOE to pay dividends to its shareholder only out of its registered capital amount, if any, as determined in accordance with Chinese accounting standards and regulations, and then only after meeting the requirement regarding statutory reserve. If our WFOE incurs debt in the future, the instruments governing the debt may restrict its ability to pay dividends or make other payments to us. Any limitation on the ability of our WFOE to distribute dividends or other payments to us could materially and adversely limit our ability to grow, make investments or acquisitions that could be beneficial to our businesses, pay dividends or otherwise fund and conduct our business. In addition, any cash dividends or distributions of assets by our WFOE to its stockholder are subject to a Chinese withholding tax of as much as 10%.

The Chinese government also imposes controls on the conversion of RMB into foreign currencies and the remittance of currencies out of China. Therefore, we may experience difficulties in completing the administrative procedures necessary to obtain and remit foreign currency for the payment of dividends from our profits, if any. If we are unable to receive all of the revenues from our operations through our China-based subsidiaries, we may be unable to pay dividends on our common stock.

AI Business

We generate revenue by using the proprietary data and AI software platform we developed to deliver AI-based computer vision products, computing devices and software-as-a-service solutions for businesses in many industries. We continue to partner with top universities on research projects targeting algorithm, artificial neural network and computing architectures which we believe will keep us among the leaders in technology development.

The primary focus of our business is promoting and facilitating the safety of our customers and their customers through our Smart Safety Platform (the "SSP"). The SSP, having won numerous industry and government benchmark tests for accuracy and speed, is a leading software solution for using computer vision to detect persons, objects and behavior in video feeds. Real-time alerts from the SSP allow operations staff to respond rapidly to prevent any events or activities that can endanger public security or workplace safety.

We deploy the SSP to integrate with each customer's IT infrastructure, including, in many cases, cameras already in place at the customer's location(s). When necessary, we also sell and deploy hardware to create or supplement the customer's monitoring capabilities. Such hardware includes, among other items, cameras, edge computing devices and/or our Smart Sentry units. The Smart Sentry is a large mobile camera unit with a telescoping mast on which a high-quality camera is mounted. Based upon customer needs, the camera may have either standard vision and/or thermal vision capability. The camera works in conjunction with an edge computing device that is also mounted to the unit. The Smart Sentry is an example of how we incorporate the SSP in modern IT architectural concepts, including edge computing and micro-service architectures. Edge computing, for example, allows the SSP to conduct expensive computing tasks at distributed locations without requiring large data transmission over the internet, thereby dramatically reducing costs while integrating numerous and varied sensors at distributed locations.

We customize and sell our innovative AI-based computer vision products and solutions, including the SSP, to customers in the retail, construction, public safety, workplace safety and public sector markets. We have also developed versions of our solutions for application in the transportation and energy markets.

Overall Business Outlook

The innovative AI and data analytics solutions we sell continue to gain worldwide awareness and recognition through media exposure, comparative testing, product demonstrations and word of mouth resulting from positive customer experiences. We intend to expand our business not only in the Asia-Pacific region, where we believe there still are fast-growth AI market opportunities for our solutions, but also in the United States and Europe, where we see a tremendous number of requests for AI products and solutions in the workplace and public safety markets. However, the COVID-19 pandemic may also present challenges to our business, as could economic and geopolitical conditions in some international regions, and we do not yet know what will be the ultimate effects on our business. We continue to pursue large business opportunities, but anticipating when, or if, we can close these opportunities is difficult. In addition, we may face a large number of well-known competitors which would make deploying our software solutions in the market segments we have identified difficult.

Inflation and Supply Chain

Other than the impact of inflation on the general economy, we do not believe that inflation has had a material effect on our operations to date. However, there is a risk that our operating costs could be subject to inflationary pressures in the future, which would have the effect of increasing our operating costs and cause additional stress on our working capital resources.

We have not experienced any supply chain disruptions that have had a material effect on our operations to date. However, as we work to increase our sales of the SSP in the U.S. and thereby expand our business, we could be subjected to the risk of supply chain disruptions with regard to high-technology products such as servers and related equipment that we use to train our AI software algorithms and which we plan to sell to customers to support operation of the SSP.

Business Developments During 2022

The COVID-19 pandemic caused renewed lockdowns in China, which made it difficult for us to interact with our customers and vendors. While we were able to complete several larger projects during the first half of 2022, primarily during the first quarter, including construction projects obtained through an entity in China with whom we work to obtain business (our “China Business Partner”) and projects related to school campuses, ongoing lockdowns throughout the second, third and fourth quarters prevented us from being able to complete as many projects as we otherwise had planned to complete during the year ended December 31, 2022.

The following table presents our revenue categories as a percentage of total consolidated revenue during the years ended December 31, 2022 and 2021.

	Year Ended December 31,	
	2022	**2021**
AI-based products and services	94 %	93 %
Advertising and other	6 %	7 %

CRITICAL ACCOUNTING POLICIES

Management's discussion and analysis of our results of operations and liquidity and capital resources is based upon our financial statements. We prepare our financial statements in conformity with U.S. GAAP. Certain of our accounting policies require that we apply significant judgment in determining the estimates and assumptions for calculating estimates. By their nature, these judgments are subject to an inherent degree of uncertainty. We use, in part, our historical experience, terms of existing contracts, observance of trends in the industry and information obtained from independent valuation experts or other outside sources to make our judgments. We cannot assure you that our actual results will conform to our estimates. We regularly evaluate these estimates and assumptions, particularly in areas we consider to be critical accounting estimates, where changes in estimates and assumptions could have a material impact on our results of operations, financial position and, generally to a lesser extent, cash flows.

Senior management and the Audit Committee of the Board of Directors have reviewed the disclosures included herein about our critical accounting estimates, and have reviewed the processes to determine those estimates.

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions which affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expense during the period. Estimates incorporated into our consolidated financial statements include the reserve for bad debt, inventory reserve, the fair value of stock options issued under our equity incentive plans, and the estimated cash flows we use in assessing the recoverability of long-lived assets. Actual results could differ from those estimates.

Accounting for Share-Based Compensation

For grants of restricted stock or restricted stock units, we measure fair value using the closing price of our stock on the measurement date, while we use the Black-Scholes-Merton option pricing model (the "BSM Model") to estimate the fair value of stock options and similar instruments awarded.

The BSM Model requires the following inputs:

- **Expected volatility of our stock price.** We analyze the historical volatility of our stock price utilizing daily stock price returns, and we also review the stock price volatility of certain peers. Using the information developed from such analysis and our judgment, we estimate how volatile our stock price will be over the period we expect the stock options will remain outstanding.

- **Risk-free interest rate.** We estimate the risk-free interest rate using data from the Federal Reserve Treasury Constant Maturity Instruments H.15 Release (a table of rates downloaded from the Federal Reserve website) as of the valuation date for a security with a remaining term that approximates the period over which we expect the stock options will remain outstanding.

- **Stock price, exercise price and expected term.** We use an estimate of the fair value of our common stock on the measurement date, the exercise price of the option, and the period over which we expect the stock options will remain outstanding.

We do not currently issue dividends, but if we did so, then we would also include an estimated dividend rate as an input to the BSM model. Generally speaking, the BSM model tends to be most sensitive to changes in stock price, volatility or expected term.

We measure compensation expense as of the grant date for granted equity-classified instruments and as of the settlement date for granted liability-classified instruments (meaning that we re-measure compensation expense at each balance sheet date until the settlement date occurs).

Once we measure compensation expense, we recognize it over the requisite service period (generally the vesting period) of the grant, net of forfeitures as they occur.

Recently Issued Accounting Pronouncements

Please refer to Note 2 in the Notes to Consolidated Financial Statements included in this report for a discussion regarding recently issued accounting pronouncements which may affect us.

RESULTS OF OPERATIONS

The following tables summarize our operating results for the year ended December 31, 2022, and the discussion following the table explains material changes in such operating results compared to the year ended December 31, 2021.

(dollars in thousands)	Year Ended December 31,		Change	
	2022	2021	Dollars	Percentage
Revenue, including amounts from China Business Partner (See Note 19)	$ 11,666	$ 15,990	$ (4,324)	(27)%
Cost of revenue	11,331	11,455	(124)	(1)%
Sales and marketing	971	971	—	— %
Recovery of marketing expense - China Business Partner activity	—	(1,530)	1,530	(100)%
Technology and development	2,101	4,692	(2,591)	(55)%
General and administrative	18,399	14,120	4,279	30 %
Depreciation and amortization	166	191	(25)	(13)%
Interest expense	(6,073)	(2,308)	(3,765)	163 %
Finance cost on liability related to convertible debenture	(1,422)	—	(1,422)	
Change in fair value of warrant liability	—	123	(123)	(100)%
Gain (loss) on investment in marketable securities	(26,356)	43,642	(69,998)	(160)%
Gain on debt extinguishment	—	425	(425)	(100)%
Other gain (loss)	(339)	(492)	153	(31)%

Revenue. During the year ended December 31, 2022, our U.S. revenue decreased, with approximately $2.8 million of the decrease happening because we did not repeat the same or similar AI data intelligence services and advertising related to a daily fantasy sports project that we completed during the year ended December 31, 2021. Our U.S. revenue also decreased by approximately $0.4 million due to a decline in demand for our biosafety business. Our revenue from China decreased by approximately $0.8 million, primarily due to the lengthy lockdowns and other restrictive measures under China's Zero COVID

policy that were implemented and continued in many cities across China well into the fourth quarter of 2022. Such lockdowns and restrictive measures prevented us from completing as many projects as we had expected to complete.

Recovery of marketing expense - China Business Partner activity. We advanced approximately $1.5 million to our China Business Partner during the year ended December 31, 2020 which we recorded as marketing expense because our ability to collect the amounts advanced was uncertain. Because our China Business Partner repaid, during the year ended December 31, 2021, all of the approximately $1.5 million we advanced to it during the year ended December 31, 2020, we recorded such amount as a recovery of marketing expense during 2021. No similar activity occurred during the year ended December 31, 2022.

Technology and development. During the year ended December 31, 2022, consulting fees decreased $1.2 million because we no longer needed certain third-party services after our immaterial acquisition of our U.K. subsidiary in mid-2021. Additionally during 2022, we recorded a $0.5 million refundable tax credit we received from the government of the United Kingdom resulting from our research and development activities in its jurisdiction as a reduction of expense, and share-based compensation expense decreased $0.6 million during the same period.

General and administrative. During the year ended December 31, 2022, as a result of the ongoing lockdowns related to China's Zero-COVID policy, we have had to re-evaluate the amounts receivable from customers based on recent information and, as a result, we increased our reserve for doubtful accounts by $2.9 million, causing an increase in provision for doubtful accounts of $2.6 million. Additionally, we experienced an increase of $0.6 million in legal and other professional fees primarily in connection with financings and the filing of amendments to registration statements, and an increase of $1.5 million in certain business development expenses as we work to expand our customer base. Also during the year ended December 31, 2022, our payroll and benefits increased $0.9 million. The increases were partially offset by a decrease of $1.7 million in share-based compensation expense.

Interest expense. We executed the Original Mudrick Loan Agreements in December 2021, pursuant to which we obtained the Original Mudrick Loans in the aggregate principal amount of $30.0 million. The Original Mudrick Loans initially bore interest at 16.5% per annum until its maturity date in July 2022 and, following an amendment, bore interest at 18.5% per annum. The interest on the Original Mudrick Loans were the primary cause of the increase in interest expense during the year ended December 31, 2022. The same period of the prior year included significantly less debt principal outstanding, with such principal bearing lower interest rates in comparison to the interest rates on the Original Mudrick Loans. Included as part of interest expense during the year ended December 31, 2022 was $2.2 million of amortization of debt discount and debt issuance cost related to the Original Mudrick Loans, as well as a $0.3 million amendment and extension fee.

Finance cost on liability related to convertible debenture. We incurred finance cost on a liability related to a convertible debenture we issued to Ionic on October 6, 2022. We did not incur such finance cost during 2021.

Gain on investment in marketable securities. On July 1, 2021, as the result of a business combination involving Sharecare, Inc. and a special purpose acquisition company, our equity in Sharecare, Inc. converted into cash and shares of publicly traded common stock. As a result of the common stock of Sharecare being traded on a national securities exchange, we were able to remeasure our investment at fair value. Since July 1, 2021, the value of Sharecare's common stock has declined significantly, which caused the decrease from a large gain on investment during the prior year, to the loss of $26.4 million during the year ended December 31, 2022.

Gain on debt extinguishment. During the year ended December 31, 2021, we received notification during the third quarter of 2021 that our previously-outstanding loan under the Paycheck Protection Program had been forgiven, resulting in a gain of approximately $0.4 million. No similar activity occurred during 2022.

LIQUIDITY AND CAPITAL RESOURCES

Overview

During the year ended December 31, 2022, and in each fiscal year since our inception, we have incurred net losses which have resulted in an accumulated deficit of $(388.5) million within stockholders' deficit as of December 31, 2022. Additionally,

our operations have historically used more cash than they have provided. Net cash used in operating activities was $16.6 million during the year ended December 31, 2022. As of December 31, 2022, our cash balance was $0.1 million.

Mudrick Loans

On December 3, 2021, we entered into the Original Mudrick Loan Agreements pursuant to which we incurred the Original Mudrick Loans in the aggregate principal amount of $30.0 million. The Original Mudrick Loans initially bore interest at 16.5% per annum until the original maturity date of July 31, 2022 and, following an amendment we entered into with Mudrick in August 2022, bore interest at 18.5% per annum. The amendment also extended the maturity date of the Original Mudrick Loans from July 31, 2022 to October 31, 2022. However, we did not make the required repayment of the Original Mudrick Loans by October 31, 2022, which constituted an event of default under the Original Mudrick Loans and triggered an increase in the interest rate under the Original Mudrick Loans to 20.5%.

On March 14, 2023, we entered into the New Mudrick Loan Agreement pursuant to which all of the Original Mudrick Loans were cancelled in exchange for the New Mudrick Notes in the aggregate principal amount of $16.2 million. The New Mudrick Notes bear interest at a rate of 20.5% per annum, which shall be payable on the last business day of each month commencing on May 31, 2023. The interest rate will increase by 2% and the principal amount outstanding under the New Mudrick Notes and any unpaid interest thereon may become immediately due and payable upon the occurrence of any event of default under the New Mudrick Loan Agreement. All amounts outstanding under the New Mudrick Notes, including all accrued and unpaid interest, will be due and payable in full on October 31, 2023. See Note 20 in the Notes to Consolidated Financial Statements included in this Form 10-K for additional information regarding the New Mudrick Notes.

To secure the payment and performance of the obligations under the Original Mudrick Loan Agreements and the New Mudrick Loan Agreement, we, together with the Guarantors, have granted to TMI Trust Company, as the collateral agent for the benefit of Mudrick, a first priority lien on, and security interest in, all assets of Remark and the Guarantors, subject to certain customary exceptions.

In connection with our entry into the Original Mudrick Loan Agreements, we paid to Mudrick an upfront fee equal to 5.0% of the amount of the Original Mudrick Loans, which amount was netted against the drawdown of the Original Mudrick Loans. We recorded the upfront fee as a debt discount of $1.5 million, and recorded debt issuance cost totaling $1.1 million. We amortized the discount on the Original Mudrick Loans and the debt issuance cost over the life of the Original Mudrick Loans and, during the year ended December 31, 2022, we amortized $2.2 million of such discount and debt issuance cost. In consideration for the amendment we entered into with Mudrick in August 2022, we paid Mudrick an amendment and extension fee in the amount of 2.0% of the then unpaid principal balance of the Original Mudrick Loans, which was approximately $0.3 million, by adding such amount to the principal balance of the Original Mudrick Loans.

As of the date of this Form 10-K, the principal amount outstanding, together with interest on the unpaid principal balance of the New Mudrick Notes, is $16.2 million.

Ionic Transactions

On October 6, 2022, we entered into a debenture purchase agreement (the “2022 Debenture Purchase Agreement”) with Ionic, pursuant to which we issued a convertible subordinated debenture in the original principal amount of $2.8 million (the “2022 Debenture”) to Ionic for a purchase price of $2.5 million (See Note 15 in the Notes to Consolidated Financial Statements included in this report for additional detail).

In connection with the 2022 Debenture, on October 6, 2022, we also entered into a purchase agreement with Ionic (the “ELOC Purchase Agreement”), which provides that, upon the terms and subject to the conditions and limitations set forth therein, we have the right to direct Ionic to purchase up to an aggregate of $50.0 million of shares of our common stock over the 36-month term of the ELOC Purchase Agreement. Under the ELOC Purchase Agreement, after the satisfaction of certain commencement conditions, we have the right to present Ionic with a purchase notice directing Ionic to purchase any amount up to $3.0 million of our common stock per trading day, at the purchase price equal to 90% (or 80% if our common stock is not then trading on Nasdaq) of the average of the five lowest volume-weighted average prices (“VWAPs”) of our common stock over a specified measurement period. With each purchase under the ELOC Purchase Agreement, we are required to deliver to Ionic an additional number of shares equal to 2.5% of the number of shares of common stock deliverable upon such purchase (See Note 15 in the Notes to Consolidated Financial Statements included in this report for additional detail).

On November 7, 2022, we entered into an amendment to the 2022 Debenture Purchase Agreement with Ionic, pursuant to which we and Ionic agreed to amend and restate the 2022 Debenture to provide that (i) in no event will the conversion price under the 2022 Debenture be below a floor price of $0.10 (such price, as may be appropriately adjusted for any stock dividend, stock split, stock combination or other similar transaction, the "Floor Price"), and (ii) in the event the actual conversion price is less than the Floor Price, (A) Ionic will be entitled to that number of settlement conversion shares issuable with an assumed conversion price equal to the Floor Price, and (B) we will be required to make a cash payment to Ionic on or prior to the maturity date of an amount that is calculated by subtracting the number of shares of common stock issuable at an assumed conversion price equal to the Floor Price from the number of shares of common stock issuable at the actual conversion price, multiplied by a price equal to the average of the ten lowest VWAPs during the specified measurement period.

On January 5, 2023, we and Ionic entered into a letter agreement (the "Letter Agreement") which amended the ELOC Purchase Agreement. Under the Letter Agreement, the parties agreed, among other things, to (i) amend the floor price below which Ionic will not be required to buy any shares of our common stock under the ELOC Purchase Agreement from $0.25 to $0.20, determined on a post-reverse split basis, (ii) amend the per share purchase price for purchases under the ELOC Purchase Agreement to 90% of the average of the two lowest daily VWAPs over a specified measurement period, which will commence at the conclusion of the applicable measurement period related to the 2022 Debenture and (iii) waive certain requirements in the ELOC Purchase Agreement to allow for a one-time $0.5 million purchase under the ELOC Purchase Agreement. See Note 20 in the Notes to Consolidated Financial Statements included in this report for additional detail.

On March 14, 2023, we entered into another debenture purchase agreement (the "2023 Debenture Purchase Agreement") with Ionic pursuant to which we authorized the issuance and sale of two convertible subordinated debentures in the aggregate principal amount of $2.8 million for an aggregate purchase price of $2.5 million. The first debenture is in the original principal amount of $1.7 million for a purchase price of $1.5 million (the "First Debenture"), which was issued on March 14, 2023, and the second debenture is in the original principal amount of $1.1 million for a purchase price of $1.0 million (the "Second Debenture" and collectively with the First Debenture, the "2023 Debentures"). The terms of the 2023 Debentures are further described in Note 20 in the Notes to Consolidated Financial Statements included in this report.

General

Our history of recurring operating losses, working capital deficiencies and negative cash flows from operating activities give rise to substantial doubt regarding our ability to continue as a going concern.

We intend to fund our future operations and meet our financial obligations through revenue growth from our AI offerings, as well as through sales of our thermal-imaging products. We cannot, however, provide assurance that revenue, income and cash flows generated from our businesses will be sufficient to sustain our operations in the twelve months following the filing of this Form 10-K. As a result, we are actively evaluating strategic alternatives including debt and equity financings and potential sales of investment assets or operating businesses.

Conditions in the debt and equity markets, as well as the volatility of investor sentiment regarding macroeconomic and microeconomic conditions (in particular, as a result of the COVID-19 pandemic, global supply chain disruptions, inflation and other cost increases, and the geopolitical conflict in Ukraine), will play primary roles in determining whether we can successfully obtain additional capital. We cannot be certain that we will be successful at raising additional capital.

A variety of factors, many of which are outside of our control, affect our cash flow; those factors include the effects of the COVID-19 pandemic, regulatory issues, competition, financial markets and other general business conditions. Based on financial projections, we believe that we will be able to meet our ongoing requirements for at least the next 12 months with existing cash, cash equivalents and cash resources, and based on the probable success of one or more of the following plans:

- develop and grow new product line(s)
- monetize existing assets
- obtain additional capital through equity issuances.

However, projections are inherently uncertain and the success of our plans is largely outside of our control. As a result, there is substantial doubt regarding our ability to continue as a going concern, and we may fully utilize our cash resources prior to June 30, 2023.

Cash Flows - Operating Activities

During the year ended December 31, 2022, we used $3.6 million less cash in operating activities than we did during the same period of the prior year. The decrease in cash used in operating activities is primarily the result of the timing of payments related to elements of working capital.

Cash Flows - Investing Activities

Investing activities during the year ended December 31, 2022 provided $6.3 million in proceeds from the sale of a portion of our marketable securities, compared to $2.3 million received in the same period during year ended December 31, 2021 from the business combination of Sharecare, Inc. and a special purpose acquisition company, as a result of which the common stock of Sharecare, Inc. became publicly traded.

Cash Flows - Financing Activities

During the year ended December 31, 2022, we received $2.7 million of proceeds from financings, repaid $6.2 million of the Original Mudrick Loans, and received $3.3 million of advances from senior management representing various operating expense payments made on our behalf while we repaid $2.1 million of advances from senior management. The prior year period’s financing activity included $32.2 million of net debt proceeds plus $5.7 million of proceeds from issuances of our common stock shares. We also repaid $6.5 million of debt in the prior year.

Off-Balance Sheet Arrangements

We currently have no off-balance sheet arrangements.

Recently Issued Accounting Pronouncements

Please refer to Note 2 in the Notes to Consolidated Financial Statements included in this report for a discussion regarding recently issued accounting pronouncements which may affect us.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Not applicable.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

We have included the required financial statements and schedules in this Form 10-K beginning on page F-1.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

We maintain a set of disclosure controls and procedures designed to provide reasonable assurance that the information we must disclose in reports we file or submit under the Exchange Act, is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. We designed our disclosure controls with the objective of ensuring we accumulate and communicate this information to our management, including our principal executive officer and principal financial officer, as appropriate, to allow timely decisions regarding required disclosure.

Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of the design and operations of our disclosure controls and procedures, as such term is defined in Rules 13a-15(e) and 15d-15(e) under Exchange Act, as of the end of the period covered by this report. Based upon that evaluation, our management, including our principal executive officer and principal financial officer, concluded that, due to the identification of the material weaknesses in our internal control over financial reporting as further described below, our disclosure controls and procedures were not effective at a reasonable assurance level as of December 31, 2022. Notwithstanding the material weaknesses in our internal control over financial reporting, the consolidated financial statements included in this Annual Report on Form 10-K fairly present, in all material respects, our financial position, results of operations and cash flows for the periods presented in conformity with accounting principles generally accepted in the United States of America.

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 such term is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2022 based on the framework set forth in *Internal Control—Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (the “COSO Framework”).

Our internal control over financial reporting includes those policies and procedures that: (a) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect our transactions and dispositions of our assets; (b) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with U.S. GAAP, and that our receipts and expenditures are being made only in accordance with authorizations of our management and directors; and (c) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on our consolidated financial statements.

A material weakness is defined as a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our financial statements will not be prevented or detected on a timely basis. During 2018, management identified material weaknesses related to the sufficiency of

documentation of review and approval of manual journal entries. Specifically, we failed to retain documentary evidence that we had reviewed underlying information at a sufficient level of detail. As a result, we are unable to demonstrate our effective review prior to approval of manual journal entries. Management also identified a material weakness related to insufficient documentation of our consideration of appropriate revenue recognition criteria for certain contracts arising from our Technology and Data Intelligence segment. As a result, there is a risk that we could misapply the new revenue recognition guidance and improperly recognize revenue. During 2019, management identified a material weakness related to the valuation of its e-commerce inventory. Specifically, we failed to retain documentary evidence of all inventory purchases and our evaluation of the impact of discounted sales transactions on the valuation of our inventory was insufficient. As a result, there is a risk that we could fail to properly record our e-commerce inventory at the lower of cost or net realizable value.

During our fourth quarter evaluations in 2022 and 2021, management concluded that we did not select and develop control activities that contributed to the mitigation of risks to acceptable levels, as required by the control activities component of the COSO framework; specifically, we had not completed implementation of our remediation plan related to the material weaknesses we identified during 2018 and 2019. Such material weaknesses included deficiencies in the documentation of appropriate review and approval of manual journal entries, in our consideration of appropriate revenue recognition criteria for certain contracts arising from our business in China, and in our monitoring and activity-level controls specific to various business processes in our business in China. The failure to retain appropriate documentation of our review and approval of manual journal entries has a pervasive impact and, as such, this deficiency resulted in a risk that could have impacted virtually all financial statement account balances and disclosures. Regarding our business in China, the failure to document consideration of appropriate revenue recognition for certain contracts resulted in a risk that could have materially impacted revenue and cost of sales, while we noted deficiencies in our monitoring and activity-level controls related to processes including accounts payable, accrued liabilities, payroll and fixed assets. The deficiencies in the various business processes aggregate to a material weakness.

Based upon our evaluation, our management concluded that we did not maintain effective internal control over financial reporting as of December 31, 2022.

Changes in Internal Control over Financial Reporting

Except for the identified material weaknesses, there was no change in our internal control over financial reporting during the fiscal quarter ended December 31, 2022 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Remediation Efforts to Address the Material Weakness

We are committed to maintaining a strong internal control environment and will make remediation efforts to improve our controls. With the oversight of senior management, subsequent to December 31, 2018, a plan to remediate the underlying causes of the material weaknesses and improve the design and operating effectiveness of internal control over financial reporting and our disclosure controls was developed. Though the implementation of management's plans to remediate the material weaknesses identified in 2018 and 2019 have been slowed by various factors, including the COVID-19 pandemic and working capital restrictions, their implementation is still ongoing; therefore, their effects were not fully mitigated in 2022.

ITEM 9B. OTHER INFORMATION

None

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS.

Not applicable.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

We incorporate the information this item requires by referring to the information under the captions **Proposal 1: Election of Directors** in our proxy statement for our 2023 annual meeting of stockholders ("2023 Proxy Statement"), which we will file with the SEC pursuant to Regulation 14A.

ITEM 11. EXECUTIVE COMPENSATION

We incorporate the information this item requires by referring to the information under the caption **Executive Compensation** in our 2023 Proxy Statement, which we will file with the SEC pursuant to Regulation 14A.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

We incorporate the information this item requires by referring to the information under the caption **Security Ownership of Certain Beneficial Owners and Management** in our 2023 Proxy Statement, which we will file with the SEC pursuant to Regulation 14A.

Securities Authorized for Issuance Under Equity Compensation Plans

The following table presents certain information as of December 31, 2022 regarding our equity compensation plans (the 2010 Equity Incentive Plan, the 2014 Incentive Plan, the 2017 Incentive Plan, and the 2022 Incentive Plan, all of which were approved by our security holders):

Plan category	Number of Common Stock Shares to be Issued upon Exercise of Outstanding Options		Weighted Average Exercise Price of Outstanding Options	Number of Securities Remaining Available for Future Issuance under Plans
Approved by security holders	1,626,631	$	30.31	1,218,385
Not approved by security holders	—	$	—	—

The 2010 Equity Incentive Plan has expired, but options issued under the plan while it was active remain outstanding.

See more detailed information regarding our equity compensation plans in Note 17 in the Notes to Consolidated Financial Statements in this Form 10-K.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS AND DIRECTOR INDEPENDENCE

We incorporate the information this item requires by referring to the information under the captions **Proposal 1: Election of Directors** and **Corporate Governance** in our 2023 Proxy Statement, which we will file with the SEC pursuant to Regulation 14A.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

We incorporate the information this item requires by referring to the information under the caption **Proposal 2: Ratification of Appointment of Independent Registered Public Accounting Firm** in our 2023 Proxy Statement, which we will file with the SEC pursuant to Regulation 14A.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

The following documents are filed as part of this Form 10-K:

Consolidated Financial Statements

In Part II, Item 8, we have included our consolidated financial statements, the notes thereto and the report of our Independent Registered Public Accounting Firm.

Financial Statement Schedules

We have omitted schedules required by applicable SEC accounting regulations because they are either not required under the related instructions, are inapplicable, or we present the required information in the financial statements or notes thereto.

Exhibits

We describe the exhibits filed as part of, or incorporated by reference into, this Form 10-K in the attached Exhibit Index.

EXHIBIT INDEX

Exhibit Number	Description	Incorporated Herein By Reference To		
		Document	Filed On	Exhibit Number
3.1	Amended and Restated Certificate of Incorporation	8-K	12/30/2014	3.1
3.2	Certificate of Amendment to the Amended and Restated Certificate of Incorporation	8-K	01/12/2016	3.1
3.3	Certificate of Amendment to the Amended and Restated Certificate of Incorporation	8-K	06/08/2016	3.1
3.4	Certificate of Amendment to the Amended and Restated Certificate of Incorporation	8-K	04/11/2017	3.1
3.5	Certificate of Amendment to the Amended and Restated Certificate of Incorporation	8-K	07/09/2021	3.1
3.6	Certificate of Amendment to the Amended and Restated Certificate of Incorporation	8-K	12/21/2022	3.1
3.7	Amended and Restated Bylaws	8-K	02/13/2015	3.1
4.1	Specimen certificate of common stock of Remark Media, Inc. (n/k/a Remark Holdings, Inc.)	10-K	03/23/2012	4.1
4.2	Form of CBG Acquisition Warrant	8-K	09/26/2016	4.1
4.3	Registration Rights Agreement, dated as of March 3, 2020, by and between Remark Holdings, Inc. and Aspire Capital Fund, LLC.	8-K	03/04/2020	4.1
4.4	CBG Settlement Warrant	8-K	09/07/2021	4.1
4.5	Investor Warrant.	8-K	09/30/2021	4.1
4.6	Form of Financial Advisor Warrant.	8-K	09/30/2021	4.2
4.7	Description of Registrant's Securities	10-K	03/31/2021	4.4
4.8	Subordinated Convertible Debenture, dated as of October 6, 2022	8-K	10/11/2022	4.1
4.9	Amended and Restated Subordinated Convertible Debenture, dated November 7, 2022, by and between Remark Holdings, Inc. and Ionic Ventures, LLC.	10-Q	11/14/2022	4.1
4.10	Form of Subordinated Convertible Debenture, dated as of March 14, 2023, by and between Remark Holdings, Inc. and Ionic Ventures, LLC.	8-K	03/16/2023	4.1
10.1 [1]	2010 Equity Incentive Plan	8-K	06/21/2010	10.34
10.2 [1]	2014 Incentive Plan, as amended January 11, 2016	8-K	01/12/2016	10.1
10.3 [1]	2017 Incentive Plan	8-K	01/24/2018	10.1
10.4 [1]	2022 Incentive Plan	10-Q	11/14/2022	10.1
10.5	Common Stock Purchase Agreement, dated as of March 3, 2020, by and between Remark Holdings, Inc. and Aspire Capital Fund, LLC.	8-K	03/04/2020	10.1

Exhibit Number	Description	Incorporated Herein By Reference To		
		Document	Filed On	Exhibit Number
10.6	First Amendment to Common Stock Purchase Agreement, dated as of April 9, 2020, by and between Remark Holdings, Inc. and Aspire Capital Fund, LLC.	8-K	04/14/2020	10.1
10.7	Promissory Note dated December 30, 2020, between Remark Holdings, Inc. and SVBooth Investments III.	8-K	01/06/2021	10.1
10.8	Amendment No. 1 dated August 5, 2021, to Promissory Note dated December 30, 2020, between Remark Holdings, Inc. and SV Booth Investments III LLC.	8-K	08/10/2021	10.1
10.9	Settlement Agreement and Mutual General Release dated as of August 31, 2021, by and among Remark Holdings, Inc., KanKan Limited, China Branding Group Limited (In Official Liquidation), acting by and through its joint official liquidators.	8-K	09/07/2021	10.1
10.10	Securities Purchase Agreement dated September 27, 2021, between Remark Holdings, Inc. and the purchasers signatory thereto.	8-K	09/30/2021	10.1
10.11	Registration Rights Agreement dated September 27, 2021, between Remark Holdings, Inc. and the purchasers signatory thereto.	8-K	09/30/2021	10.2
10.12	Financial Advisor Agreement dated September 27, 2021, between Remark Holdings, Inc. and A.G.P./Alliance Global Partners.	8-K	09/30/2021	10.3
10.13	Form of Senior Secured Loan Agreement dated December 3, 2021.	8-K	12/07/2021	10.1
10.14	First Amendment to Senior Secured Loan Agreement dated as of August 3, 2022.	8-K	08/08/2022	10.1
10.15	Debenture Purchase Agreement, dated as of October 6, 2022, between Remark Holdings, Inc. and Ionic Ventures, LLC.	8-K	10/11/2022	10.1
10.16	Amendment No. 1 to Debenture Purchase Agreement, dated as of October 6, 2022, between Remark Holdings, Inc. and Ionic Ventures, LLC.	S-1	11/07/2022	10.2
10.17	Purchase Agreement, dated as of October 6, 2022, between Remark Holdings, Inc. and Ionic Ventures, LLC.	8-K	10/11/2022	10.2
10.18	Registration Rights Agreement, dated as of October 6, 2022, between Remark Holdings, Inc. and Ionic Ventures, LLC.	8-K	10/11/2022	10.3
10.19	Provisional Waiver and Consent Agreement, dated as of October 6, 2022, between Remark Holdings, Inc., certain of its subsidiaries party thereto, and Mudrick Capital Management, LP.	8-K	10/11/2022	10.4
10.20	Subordination and Intercreditor Agreement, dated as of October 6, 2022, among Ionic Ventures, LLC, Mudrick Capital Management, LP and Remark Holdings, Inc.	8-K	10/11/2022	10.5
10.21	Letter Agreement, dated as of January 5, 2023, by and between Remark Holdings, Inc. and Ionic Ventures, LLC.	8-K	01/11/2023	10.1
10.22	Debenture Purchase Agreement, dated as of March 14, 2023, by and between Remark Holdings, Inc. and Ionic Ventures, LLC.	8-K	03/16/2023	10.1
10.23	Registration Rights Agreement, dated as of March 14, 2023, by and between Remark Holdings, Inc. and Ionic Ventures, LLC.	8-K	03/16/2023	10.1

Exhibit Number	Description	Incorporated Herein By Reference To		
		Document	Filed On	Exhibit Number
10.24	Note Purchase Agreement, dated as of March 14, 2023, between Remark Holdings, Inc., certain of its subsidiaries party thereto, and Mudrick Capital Management, LP.	8-K	03/16/2023	10.1
21.1	List of subsidiaries			
23.1	Consent of Weinberg & Company			
31.1	Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes Oxley Act of 2002.			
31.2	Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes Oxley Act of 2002.			
32	Certification of Chief Executive Officer and Chief Financial Officer pursuant to Section 906 of the Sarbanes Oxley Act of 2002.			
101	The following financial statements from our Annual Report on Form 10-K for the year ended December 31, 2022, formatted in Inline XBRL: (i) Consolidated Balance Sheets as of December 31, 2022 and December 31, 2021; (ii) Consolidated Statements of Operations and Comprehensive Loss for the twelve months ended months ended December 31, 2022 and 2021; (iii) Consolidated Statements of Stockholders' Deficit for the twelve months ended months ended December 31, 2022 and 2021; (iv) Consolidated Statements of Cash Flows for the twelve months ended December 31, 2022 and 2021; and (v) Notes to Consolidated Financial Statements.			
104	The cover page from our Annual Report on Form 10-K for the year ended December 31, 2022, formatted in Inline XBRL (included as Exhibit 101).			

1. Management Contract or Compensation Plan or Arrangement.

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.

REMARK HOLDINGS, INC.

Date: April 17, 2023

By: */s/ Kai-Shing Tao*
Kai-Shing Tao
Chief Executive Officer and Chairman
(principal executive officer, principal financial officer and principal accounting officer)

POWER OF ATTORNEY

Each person whose individual signature appears below hereby authorizes and appoints Kai-Shing Tao, with full power of substitution and resubstitution and full power to act, 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 attorneys-in-fact and agents, full power and authority to do and perform each and every act and thing, ratifying and confirming all that said attorneys-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 in the capacities and on the dates indicated.

Name	Title	Date
/s/ Kai-Shing Tao Kai-Shing Tao	Chief Executive Officer and Chairman (principal executive officer, principal financial officer and principal accounting officer)	April 17, 2023
/s/ Theodore Botts Theodore Botts	Director	April 17, 2023
/s/ Brett Ratner Brett Ratner	Director	April 17, 2023
/s/ Elizabeth Xu Elizabeth Xu	Director	April 17, 2023
/s/ Daniel Stein Daniel Stein	Director	April 17, 2023

FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

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

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Remark Holdings, Inc. and its subsidiaries (the "Company") as of December 31, 2022 and 2021, the related consolidated statements of operations, stockholders' equity (deficit), and cash flows for the years then ended, 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 as of December 31, 2022 and 2021, and the results of its operations and its cash flows for the years then ended, in conformity with accounting principles generally accepted in the United States of America.

Going Concern

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the consolidated financial statements, the Company has suffered recurring losses from operations and negative cash flows from operating activities and has a negative working capital and a stockholders' deficit that raise substantial doubt about its ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 1. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("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 consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audit, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated 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 consolidated 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 consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

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

Accounts receivable in China

As described further in Note 4 and Note 6 to the consolidated financial statements, the Company has gross receivables of $7.2 million in accounts receivable from customers in China. The Company recorded an allowance for doubtful accounts of $4.1

million for these receivables, resulting in net accounts receivable of $3.1 million as of December 31, 2022. A significant portion of the China accounts receivable are from sales to the Company's China Business Partner which represented 36% of such receivables at December 31, 2022. The Company is actively working with these customers to arrange payment of the past due balances, and management expects to collect the net remaining balance outstanding of these receivables.

We identified the realization of these receivables as a critical audit matter because a high degree of auditor judgment was required to evaluate various qualitative factors used in the Company's evaluation of the realization of these receivables, including economic and business conditions in China, current operations of the customer, the financial viability and reputation of the China Business Partner and other customers, and the past collection history with customers.

Our audit procedures related to the realization of these receivables included the following, among others:

- We evaluated the reasonableness of management's methodology to determine its allowance for doubtful accounts, including testing and assessing for reasonableness the Company's key inputs and assumptions used to estimate the realization of the receivables.
- We confirmed with customers, or performed other procedures, to ensure that the Company's performance obligations related to the outstanding receivables had been met including delivery and acceptance by the customer as of December 31, 2022.
- We examined collections received by the Company subsequent to year end on certain of these receivables, and for those amounts yet uncollected, we verified past collection history with the customers. We also considered the viability of the customers given their size and reputation.
- We compared the Company's historical transactions with its customers to assess the Company's ability to accurately forecast collections. We also considered the traditional payment patterns and customs in China.
- We developed an independent expectation of the accounts receivable reserve and compared our independent expectation to the amount recorded in the financial statements.

Deferred Costs

As described further in Note 8 to the consolidated financial statements, deferred cost of revenue at December 31, 2022 totaled $7.5 million and represents amounts the Company has paid in advance to a certain vendor providing services in relation to various revenue projects in China. The cost of the services provided are deferred and recorded as a prepaid asset until as such time as the Company has completed its performance obligation under the contract, at which point the accumulated costs will be recognized as cost of sales, and the related revenue will be recorded.
We identified the existence and realization of these assets as a critical audit matter because a high degree of auditor judgment was required to evaluate various qualitative factors used in the Company's evaluation of the existence and realization of the assets, including economic and business conditions in China, the impact of Covid 19 related lockdowns, and assessment of the vendor's ability to perform the services when required.

Our audit procedures related to the realization of this asset included the following, among others:

- We obtained an understanding of Managements policy and process for assessing the existence and realization of these assets.
- We examined the underlying contracts related to the projects in progress.
- We tested the existence of the deferred costs through tracing cash payment and by direct confirmation with the vendor.
- We obtained, examined, and assessed for reasonableness the Company's schedule for final implementation of the future revenue projects including corroborating key terms with the vendor.

We have served as the Company's auditor since 2020.

/s/ Weinberg & Company

Weinberg & Company, P.A.
Los Angeles, California
April 17, 2023

REMARK HOLDINGS, INC. AND SUBSIDIARIES
Consolidated Balance Sheets
(dollars in thousands, except share amounts and par values)

	December 31,	
	2022	**2021**
Assets		
Cash	$ 52	$ 14,187
Trade accounts receivable, net	3,091	10,267
Inventory, net	308	1,346
Investment in marketable securities	—	42,349
Deferred cost of revenue	7,463	589
Prepaid expense and other current assets	1,374	5,774
Total current assets	12,288	74,512
Property and equipment, net	1,699	357
Operating lease assets	180	194
Other long-term assets	269	440
Total assets	$ 14,436	$ 75,503
Liabilities		
Accounts payable	$ 9,602	$ 10,094
Advances from related parties	1,174	—
Liability related to convertible debenture	1,892	—
Accrued expense and other current liabilities	7,222	5,963
Contract liability	308	576
Notes payable, net of unamortized discount and debt issuance cost of $0 and $2,189 at December 31, 2022 and 2021, respectively	14,607	27,811
Total current liabilities	34,805	44,444
Operating lease liabilities, long-term	56	25
Total liabilities	34,861	44,469
Commitments and contingencies		
Stockholders' Equity (Deficit)		
Preferred stock, $0.001 par value; 1,000,000 shares authorized; zero issued	—	—
Common stock, $0.001 par value; 175,000,000 shares authorized; 11,539,564 and 10,515,777 shares issued and outstanding at December 31, 2022 and 2021, respectively	12	11
Additional paid-in-capital	368,945	364,333
Accumulated other comprehensive loss	(859)	(270)
Accumulated deficit	(388,523)	(333,040)
Total stockholders' equity (deficit)	(20,425)	31,034
Total liabilities and stockholders' equity (deficit)	$ 14,436	$ 75,503

See Notes to Consolidated Financial Statements

REMARK HOLDINGS, INC. AND SUBSIDIARIES
Consolidated Statements of Operations and Comprehensive Income (Loss)
(dollars in thousands, except per share amounts)

	Year Ended December 31,	
	2022	**2021**
Revenue, including amounts from China Business Partner (See Note 19)	$ 11,666	$ 15,990
Cost and expense		
Cost of revenue (excluding depreciation and amortization)	11,331	11,455
Sales and marketing[1]	971	971
Recovery of marketing expense - China Business Partner activity	—	(1,530)
Technology and development[1]	2,101	4,692
General and administrative[1]	18,399	14,120
Depreciation and amortization	166	191
Total cost and expense	32,968	29,899
Operating loss	(21,302)	(13,909)
Other income (expense)		
Interest expense	(6,073)	(2,308)
Finance cost on liability related to convertible debenture	(1,422)	—
Change in fair value of warrant liability	—	123
Gain (loss) on investment	(26,356)	43,642
Gain on debt extinguishment	—	425
Other loss, net	(339)	(492)
Total other income (expense), net	(34,190)	41,390
Income (loss) from before income taxes	(55,492)	27,481
Benefit from (provision for) income taxes	9	(9)
Net income (loss)	$ (55,483)	$ 27,472
Other comprehensive loss		
Foreign currency translation adjustments	(589)	(44)
Comprehensive income (loss)	$ (56,072)	$ 27,428
Weighted-average shares outstanding, basic	10,630,771	10,136,210
Weighted-average shares outstanding, diluted	10,630,771	10,171,924
Net income (loss) per share, basic	$ (5.22)	$ 2.71
Net income (loss) per share, diluted	$ (5.22)	$ 2.70
[1] Includes share-based compensation as follows:		
Sales and marketing	$ 3	$ 147
Technology and development	(267)	293
General and administrative	1,961	3,620

See Notes to Consolidated Financial Statements

REMARK HOLDINGS, INC. AND SUBSIDIARIES
Consolidated Statements of Stockholders' Equity (Deficit)
(in thousands, except number of shares)

	Common Stock Shares	Common Stock Par Value	Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total
Balance at December 31, 2020	9,950,504	100	351,546	(226)	(360,512)	$ (9,092)
Adjustment for reverse stock split		(94)	94			—
Net income	—	—	—	—	27,472	27,472
Share-based compensation	—	—	4,300	—	—	4,300
Common stock and stock warrants issued for cash	423,729	4	4,610	—	—	4,614
Equity instrument exercises	54,795	—	1,077	—	—	1,077
Common stock issuance upon note payable conversion	87,649	1	1,104	—		1,105
Reclassification of warrant liability to equity	—	—	1,602	—		1,602
Foreign currency translation	—	—	—	(44)		(44)
Other	(900)	—	—	—	—	—
Balance at December 31, 2021	10,515,777	11	364,333	(270)	(333,040)	31,034
Net loss	—	—	—	—	(55,483)	(55,483)
Share-based compensation	—	—	2,104	—	—	2,104
Common stock issued as service compensation	125,000	—	500	—	—	500
Common stock issuance upon note payable conversion	898,854	1	2,003	—	—	2,004
Foreign currency translation	—	—	—	(589)	—	(589)
Adjustment for reverse stock split	(67)	—	5	—	—	5
Balance at December 31, 2022	11,539,564	$ 12	$ 368,945	$ (859)	$ (388,523)	$ (20,425)

See Notes to Consolidated Financial Statements

REMARK HOLDINGS, INC. AND SUBSIDIARIES
Consolidated Statements of Cash Flows
(dollars in thousands)

	Year Ended December 31,	
	2022	**2021**
Cash flows from operating activities:		
Net income (loss)	$ (55,483)	$ 27,472
Adjustments to reconcile net loss to net cash used in operating activities:		
Change in fair value of warrant liability	—	(123)
Depreciation, amortization and impairments	166	191
Share-based compensation	1,697	4,060
Amortization of debt issuance costs and discount	2,189	880
Cost of extending note payable	283	—
Finance cost on liability related to convertible debenture	1,422	—
Stock issuances for services performed	500	—
Loss (gain) on investment	26,356	(43,642)
Gain on debt extinguishment	—	(425)
Finance cost of converting note payable to common stock	—	44
Provision for doubtful accounts	2,882	297
Other	(182)	30
Changes in operating assets and liabilities:		
Accounts receivable	3,650	(5,733)
Inventory	1,033	(473)
Deferred cost of revenue	(6,874)	(488)
Prepaid expense and other assets	4,213	(3,632)
Operating lease assets	1	293
Accounts payable, accrued expense and other liabilities	1,745	967
Contract liability	(251)	277
Operating lease liabilities	37	(169)
Net cash used in operating activities	(16,616)	(20,174)
Cash flows from investing activities:		
Proceeds from sale of investment	6,332	2,322
Purchases of property, equipment and software	(448)	(223)
Payment of amounts capitalized to software in progress	(1,063)	—
Net cash provided by investing activities	4,821	2,099
Cash flows from financing activities:		
Proceeds from issuance of common stock, net	—	5,692
Proceeds from debt issuance	2,703	32,216
Advances from related parties	3,256	—
Repayments of debt	(6,217)	(6,500)
Repayment of advances from related parties	(2,082)	—
Net cash provided by (used in) financing activities	(2,340)	31,408
Net change in cash	(14,135)	13,333
Cash:		
Beginning of period	14,187	854
End of period	$ 52	$ 14,187
Supplemental cash flow information:		
Cash paid for interest	$ 3,238	$ 1,414
Supplemental schedule of non-cash investing and financing activities:		
Issuance of common stock upon note payable conversion	$ 2,804	$ 1,105
Transfer of marketable securities to partially settle debt	$ 9,662	$ —
Reclassification of warrant liability to equity	$ —	$ 1,602
Reclassification of investment to marketable securities	$ —	$ 1,030

See Notes to Consolidated Financial Statements

NOTE 1. ORGANIZATION AND BUSINESS

Organization and Business

Remark Holdings, Inc. and its subsidiaries ("Remark", "we", "us", or "our") constitute a diversified global technology business with leading artificial intelligence ("AI") and data-analytics solutions, as well as a portfolio of digital media properties. The common stock of Remark Holdings, Inc. is listed on the Nasdaq Capital Market under the ticker symbol MARK.

We primarily sell AI-based products and services. We currently recognize substantially all of our revenue from China, with additional revenue from sales in the U.S.

On December 21, 2022, we effected a 1-for-10 reverse split of our common stock (the "Reverse Split"). All references made to share or per share amounts in these financial statements have been retroactively adjusted to reflect the effects of the Reverse Split.

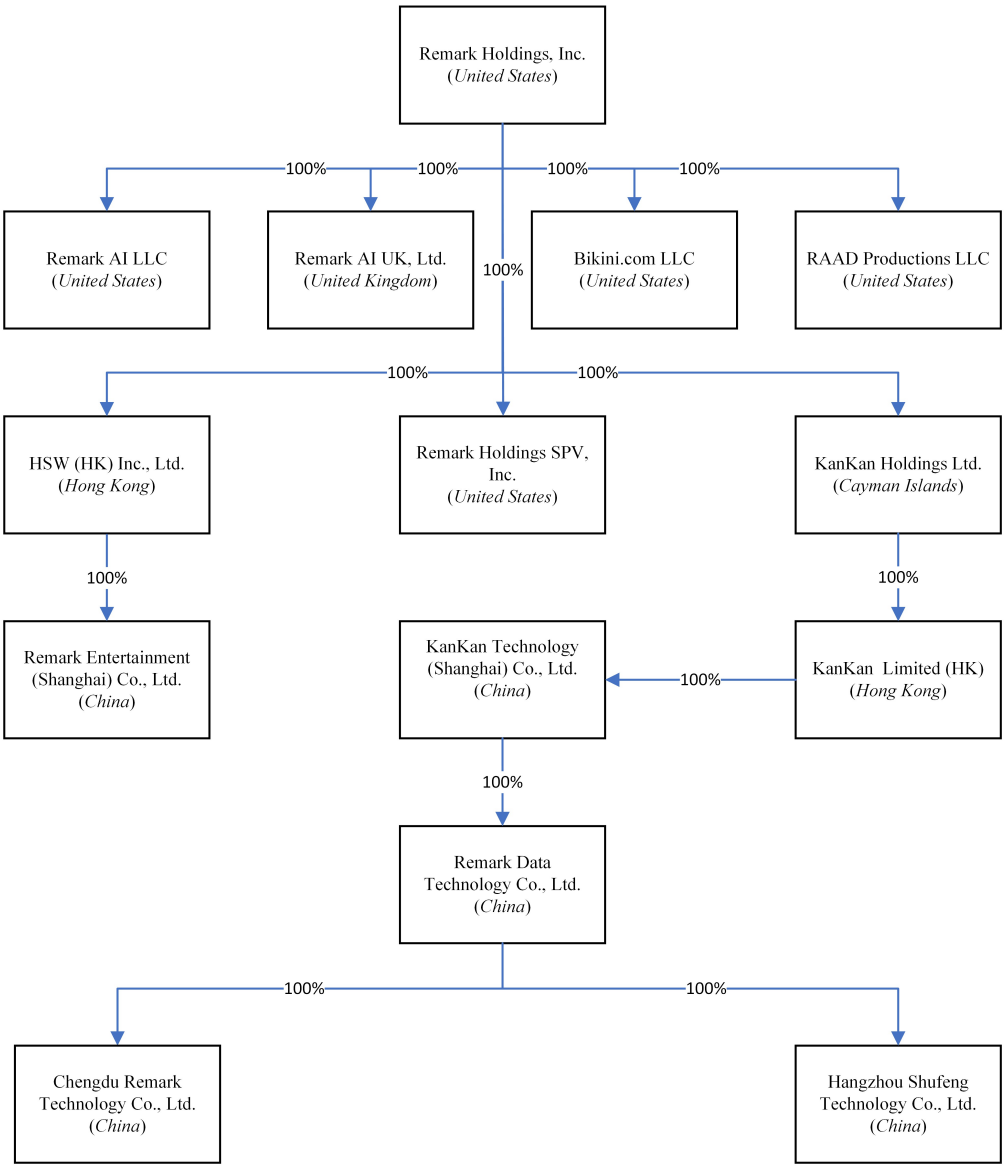
Corporate Structure

We are a holding company incorporated in Delaware and not a Chinese operating company. As a holding company, we conduct most of our operations through our subsidiaries, each of which is wholly owned. We have historically conducted a significant part of our operations through contractual arrangements between our wholly-foreign-owned enterprise ("WFOE") and certain variable interest entities ("VIEs") based in China to address challenges resulting from laws, policies and practices that may disfavor foreign-owned entities that operate within industries deemed sensitive by the Chinese government. We were the primary beneficiary of the VIEs because the contractual arrangements governing the relationship between the VIEs and our WFOE, which included an exclusive call option agreement, exclusive business cooperation agreement, a proxy agreement and an equity pledge agreement, enabled us to (i) exercise effective control over the VIEs, (ii) receive substantially all of the economic benefits of the VIEs, and (iii) have an exclusive call option to purchase, at any time, all or part of the equity interests in and/or assets of the VIEs to the extent permitted by Chinese laws. Because we were the primary beneficiary of the VIEs, we consolidated the financial results of the VIEs in our consolidated financial statements in accordance with generally accepted accounting principles ("GAAP").

We terminated all of the contractual arrangements between the WFOE and the VIEs and exercised our rights under the exclusive call option agreements between the WFOE and the VIEs such that, effective as of September 19, 2022, we obtained 100% of the equity ownership of the entities we formerly consolidated as VIEs and which we now consolidate as wholly-owned subsidiaries.

The following diagram illustrates our corporate structure, including our significant subsidiaries, as of the date of this Form 10-K. The diagram omits certain entities which are immaterial to our results of operations and financial condition.

REMARK HOLDINGS, INC. AND SUBSIDIARIES
Entity Organizational Chart



We are subject to certain legal and operational risks associated with having a significant portion of our operations in China. Chinese laws and regulations governing our current business operations, including the enforcement of such laws and regulations, are sometimes vague and uncertain and can change quickly with little advance notice. The Chinese government may intervene in or influence the operations of our China-based subsidiaries at any time and may exert more control over offerings conducted overseas and/or foreign investment in China-based issuers, which could result in a material change in our operations and/or the value of our securities. In addition, any actions by the Chinese government to exert more oversight and control over offerings that are conducted overseas and/or foreign investment in China-based issuers could significantly limit or completely hinder our ability to offer or continue to offer our securities to investors and cause the value of such securities to

significantly decline or become worthless. In recent years, the Chinese government adopted a series of regulatory actions and issued statements to regulate business operations in China, including those related to the use of variable interest entities, cybersecurity, data security, export control and anti-monopoly concerns. As of the date of this Form 10-K, we have neither been involved in any investigations on cybersecurity review initiated by any Chinese regulatory authority, nor received any inquiry, notice or sanction. As of the date of this Form 10-K, no relevant laws or regulations in China explicitly require us to seek approval from the China Securities Regulatory Commission (the "CSRC") for any securities listing. As of the date of this Form 10-K, we have not received any inquiry, notice, warning or sanctions regarding our planned overseas listing from the CSRC or any other Chinese governmental authorities relating to securities listings. However, since these statements and regulatory actions are newly published, official guidance and related implementation rules have not all been issued. It is highly uncertain what potential impact such modified or new laws and regulations will have on our ability to conduct our business, accept investments or list or maintain a listing on a U.S. or foreign exchange.

As of the date of this Form 10-K, we are not required to seek permissions from the CSRC, the Cyberspace Administration of China (the "CAC"), or any other entity that is required to approve our operations in China. Nevertheless, Chinese regulatory authorities may in the future promulgate laws, regulations or implement rules that require us or our subsidiaries to obtain permissions from such regulatory authorities to approve our operations or any securities listing.

Holding Foreign Companies Accountable Act

The Holding Foreign Companies Accountable Act (the "HFCA Act") was enacted on December 18, 2020. The HFCA Act states that if the Securities and Exchange Commission (the "SEC") determines that a company has filed audit reports issued by a registered public accounting firm that has not been subject to inspection by the Public Company Accounting Oversight Board (the "PCAOB") for three consecutive years beginning in 2021, the SEC shall prohibit such shares from being traded on a national securities exchange or in the over the counter trading market in the United States. On December 2, 2021, the SEC adopted amendments to finalize rules implementing the submission and disclosure requirements in the HFCA Act. The rules apply to registrants that the SEC identifies as having filed an annual report with an audit report issued by a registered public accounting firm that is located in a foreign jurisdiction and that the PCAOB is unable to inspect or investigate completely because of a position taken by an authority in a foreign jurisdiction. The Consolidated Appropriations Act, 2023, which was signed into law on December 29, 2022, amended the HFCA Act to reduce the number of consecutive non-inspection years required to trigger the trading prohibition under the HFCA Act from three years to two years.

On December 16, 2021, the PCAOB issued a report on its determination that it is unable to inspect or investigate completely PCAOB-registered public accounting firms headquartered in mainland China and in Hong Kong because of positions taken by Chinese and Hong Kong authorities in those jurisdictions.

On August 26, 2022, the CSRC, the Ministry of Finance of the PRC, and the PCAOB signed a Statement of Protocol, taking the first step toward opening access for the PCAOB to completely inspect and investigate registered public accounting firms headquartered in mainland China and Hong Kong.

On December 15, 2022, the PCAOB vacated its 2021 determination that the positions taken by authorities in mainland China and Hong Kong prevented it from inspecting and investigating completely registered public accounting firms headquartered in those jurisdictions. In view of the PCAOB's decision to vacate its 2021 determination and until such time as the PCAOB issues any new adverse determination, the SEC has stated that there are no issuers at risk of having their securities subject to a trading prohibition under the HFCA Act. Each year, the PCAOB will reassess its determinations on whether it can inspect and investigation completely audit firms in China, and if, in the future, the PCAOB determines it cannot do so, or if Chinese authorities do not allow the PCAOB complete access for inspections and investigations for two consecutive years, companies engaging China-based public accounting firms would be delisted pursuant to the HFCA Act.

Our auditor, Weinberg & Company, an independent registered public accounting firm headquartered in the United States, is currently subject to PCAOB inspections and has been inspected by the PCAOB on a regular basis. However, if the PCAOB is unable to inspect the work papers of our accounting firm in the future, such lack of inspection could cause trading in our common stock to be prohibited under the HFCA Act, and as a result, an exchange may determine to delist our common stock. The delisting and the cessation of trading of our common stock, or the threat of our common stock being delisted and prohibited from being traded, may materially and adversely affect the value of our common stock.

Transfer of Cash or Assets

Dividend Distributions

As of the date of this Form 10-K, none of our subsidiaries have made any dividends or distributions to the parent company.

We have never declared or paid dividends or distributions on our common equity. We currently intend to retain all available funds and any future consolidated earnings to fund our operations and continue the development and growth of our business; therefore, we do not anticipate paying any cash dividends.

Under Delaware law, a Delaware corporation's ability to pay cash dividends on its capital stock requires the corporation to have either net profits or positive net assets (total assets less total liabilities) over its capital. If we determine to pay dividends on any of our common stock in the future, as a holding company, we may rely on dividends and other distributions on equity from our subsidiaries for cash requirements, including the funds necessary to pay dividends and other cash contributions to our stockholders.

Our WFOE's ability to distribute dividends is based upon its distributable earnings. Current Chinese regulations permit our WFOE to pay dividends to its shareholder only out of its registered capital amount, if any, as determined in accordance with Chinese accounting standards and regulations, and then only after meeting the requirement regarding statutory reserve. If our WFOE incurs debt in the future, the instruments governing the debt may restrict its ability to pay dividends or make other payments to us. Any limitation on the ability of our WFOE to distribute dividends or other payments to us could materially and adversely limit our ability to grow, make investments or acquisitions that could be beneficial to our businesses, pay dividends or otherwise fund and conduct our business. In addition, any cash dividends or distributions of assets by our WFOE to its stockholder are subject to a Chinese withholding tax of as much as 10%.

The Chinese government also imposes controls on the conversion of Chinese Renminbi ("RMB") into foreign currencies and the remittance of currencies out of China. Therefore, we may experience difficulties in completing the administrative procedures necessary to obtain and remit foreign currency for the payment of dividends from our profits, if any. If we are unable to receive all of the revenues from our operations through our China-based subsidiaries, we may be unable to pay dividends on our common stock.

COVID-19

Our consolidated financial statements for the year ended December 31, 2022 were impacted by the effects of the COVID-19 pandemic. The response to COVID-19 will likely continue to adversely affect our business and financial results, as could economic and geopolitical conditions in some international regions, and we do not yet know what will be the ultimate effects on our business. The COVID-19 pandemic caused a broad shift towards remote working arrangements for many businesses worldwide and injected uncertainty and delay into decision-making processes for such businesses. Varying degrees of preventative measures are still in place in China and other parts of the world, including city-wide lockdowns, travel restrictions, closures of non-essential businesses and other quarantine measures. In particular, the preventative measures in China as a result of the Chinese government's former "Zero-COVID" policy significantly limited the operational capabilities of our China-based subsidiaries. Many cities across large swaths of China were fully or partially locked down for weeks or even months, including economically significant regions such as Shanghai. Such lockdowns have had a material adverse impact on our business, including on the collection of our accounts receivable, and we expect them to continue to have a material adverse impact on our business until their imposition is ceased.

The full extent of the impact of the pandemic on our business and financial results will depend largely on future developments, including resurgences and further spread of existing or new COVID-19 variants, the duration of any remaining preventative measures implemented by domestic and foreign governments, the impact on capital and financial markets and the related impact on the financial circumstances of our customers, all of which are highly uncertain and cannot be predicted. The pandemic-related situation continues to change rapidly, and additional impacts of which we are not currently aware may arise. We are closely monitoring worldwide developments and are continually assessing the potential impact on our business.

Going Concern

During the year ended December 31, 2022, and in each fiscal year since our inception, we have incurred operating losses which have resulted in a stockholders' deficit as of December 31, 2022. Additionally, our operations have historically used more cash than they have provided. We did not make the required repayment of the outstanding loans under the Original Mudrick Loan Agreements by October 31, 2022, the maturity date, resulting in an event of default which was only cured subsequent to the balance sheet date. Net cash used in operating activities was $16.6 million during the year ended December 31, 2022. As of December 31, 2022, our cash balance was $0.1 million.

Our history of recurring operating losses, working capital deficiencies and negative cash flows from operating activities give rise to, and management has concluded that there is, substantial doubt regarding our ability to continue as a going concern. Our independent registered public accounting firm, in its report on our consolidated financial statements for the year ended December 31, 2022, has also expressed substantial doubt about our ability to continue as a going concern. Our consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

We intend to fund our future operations and meet our financial obligations through revenue growth from our AI and data analytics offerings. We cannot, however, provide assurance that revenue, income and cash flows generated from our businesses will be sufficient to sustain our operations in the twelve months following the filing of this Form 10-K. As a result, we are actively evaluating strategic alternatives including debt and equity financings.

Conditions in the debt and equity markets, as well as the volatility of investor sentiment regarding macroeconomic and microeconomic conditions (in particular, as a result of the COVID-19 pandemic, global supply chain disruptions, inflation and other cost increases, and the geopolitical conflict in Ukraine), will play primary roles in determining whether we can successfully obtain additional capital. We cannot be certain that we will be successful at raising additional capital.

A variety of factors, many of which are outside of our control, affect our cash flow; those factors include the effects of the COVID-19 pandemic, regulatory issues, competition, financial markets and other general business conditions. Based on financial projections, we believe that we will be able to meet our ongoing requirements for at least the next 12 months with existing cash and based on the probable success of one or more of the following plans:

- develop and grow new product line(s)
- obtain additional capital through debt and/or equity issuances.

However, projections are inherently uncertain and the success of our plans is largely outside of our control. As a result, there is substantial doubt regarding our ability to continue as a going concern, and we may fully utilize our cash resources prior to June 30, 2023.

NOTE 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Consolidation

We include all of our subsidiaries in our consolidated financial statements, eliminating all significant intercompany balances and transactions during consolidation.

Use of Estimates

We prepare our consolidated financial statements in conformity with GAAP. While preparing our financial statements, we make estimates and assumptions that affect amounts reported and disclosed in the consolidated financial statements and accompanying notes. Accordingly, actual results could differ from those estimates. On an ongoing basis, we evaluate our estimates, including those related to accounts receivable, deferred cost of revenue, share-based compensation, deferred income taxes, and inventory reserve, among other items.

The impact of the COVID-19 pandemic continues to unfold. As a result, many of our estimates and assumptions required increased judgment and carry a higher degree of variability and volatility. As events continue to evolve and additional information becomes available, our estimates may change materially in future periods.

Cash

Our cash consists of funds held in bank accounts.

We maintain cash balances in United States dollars ("USD") and British pounds ("GBP"), while the VIEs maintain cash balances in USD, Chinese Renminbi ("RMB") and Hong Kong dollars ("HKD"). The following table, reported in USD, disaggregates our cash balances by currency denomination (in thousands):

	December 31,	
	2022	2021
Cash denominated in:		
USD	$ 11	$ 13,27
RMB	19	25
GBP	17	64
HKD	5	
Total cash	$ 52	$ 14,18

We maintain substantially all of our USD-denominated cash at a U.S. financial institution where the balances are insured by the Federal Deposit Insurance Corporation up to $250,000. At times, however, our cash balances may exceed the FDIC-insured limit. As of December 31, 2022, we do not believe we have any significant concentrations of credit risk. Cash held by our non-U.S. subsidiaries subject to foreign currency fluctuations against the USD, although such risk is somewhat mitigated because we transfer U.S. funds to our non-U.S. subsidiaries to fund local operations. If, however, the USD is devalued significantly against the RMB, our cost to further expand our business in China could exceed original estimates.

Marketable Securities

Investment in marketable securities consisted of marketable equity securities. We classify marketable securities as current or noncurrent based on the nature of the securities and their availability for use in current operations. Marketable securities are stated at fair value with all realized and unrealized gains and losses recognized in our Statement of Operations. The realized and unrealized gains and losses on marketable securities are determined using the specific identification method and quoted prices in an active market.

Leases

We adopted Accounting Standards Codification Topic 842, *Leases* ("ASC 842"), as of January 1, 2019. When adopting ASC 842 we elected several practical expedients permitted under the transition guidance within ASC 842, which, among other things, allowed us to carry forward the historical lease classification and to avoid recording leases that had expired prior to the date of adoption. We also elected to combine the lease and non-lease components of our leases for office space (which represent the largest portion of our operating lease assets and liabilities) and not to record leases with initial terms of 12 months or less (short-term leases) on the balance sheet. We amortize the cost of short-term leases on a straight-line basis over the lease term.

Fair Value of Financial Instruments

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants (an exit price). When reporting the fair values of our financial instruments, we prioritize those fair value measurements into one of three levels based on the nature of the inputs, as follows:

Level 1: Valuations based on quoted prices in active markets for identical assets and liabilities;

Level 2: Valuations based on observable inputs that do not meet the criteria for Level 1, including quoted prices in inactive markets and observable market data for similar, but not identical instruments; and

Level 3: Valuations based on unobservable inputs, which are based upon the best available information when external market data is limited or unavailable.

The fair value hierarchy requires us to use observable market data, when available, and to minimize the use of unobservable inputs when determining fair value. For some products or in certain market conditions, observable inputs may not be available.

We believe the reported carrying amounts for cash, marketable securities, receivables, prepaids and other current assets, accounts payable, accrued expense and other current liabilities, and short-term debt approximate their fair values because of the short-term nature of these financial instruments.

Foreign Currency Translation

We report all currency amounts in USD. Our China subsidiaries, however, maintain their books and records in their functional currency, which is RMB.

In general, when consolidating our subsidiaries with non-USD functional currencies, we translate the amounts of assets and liabilities into USD using the exchange rate on the balance sheet date, and the amounts of revenue and expense are translated at the average exchange rate prevailing during the period. The gains and losses resulting from translation of financial statement amounts into USD are recorded as a separate component of accumulated other comprehensive loss within stockholders' deficit.

We used the exchange rates in the following table to translate amounts denominated in non-USD currencies as of and for the periods noted:

	2022	2021
Exchange rates at December 31st:		
GBP:USD	1.209	1.351
RMB:USD	0.145	0.157
HKD:USD	0.128	0.128
Average exchange rate during the twelve months ended December 31st:		
RMB:USD	0.149	0.155

Revenue Recognition

AI-Based Products

We generate revenue by developing AI-based products, including fully-integrated AI solutions which combine our proprietary technology with third-party hardware and software products to meet end-user specifications. Under one type of contract for our AI-based products, we provide a single, continuous service to customers who control the assets as we create them. Accordingly, we recognize the revenue over the period of time during which we provide the service. Under another type of contract, we have performance obligations to provide fully-integrated AI solutions to our customer and we recognize revenue at the point in time when each performance obligation is completed and delivered to, tested by and accepted by our customer.

We recognize revenue when we transfer control of the promised goods or services to our customers, and we recognize an amount that reflects the consideration to which we expect to be entitled in exchange for those goods or services. If there is uncertainty related to the timing of collections from our customer, which may be the case if our customer is not the ultimate end user of our goods, we consider this to be uncertainty of the customer's ability and intention to pay us when consideration is due. Accordingly, we recognize revenue only when we have transferred control of the goods or services and collectability of consideration from the customer is probable.

When customers pay us prior to when we satisfy our obligation to transfer control of promised goods or services, we record the amount that reflects the consideration to which we expect to be entitled as a contract liability until such time as we satisfy our performance obligation.

For our contracts with customers, we generally extend short-term credit policies to our customers, typically up to one year for large-scale projects.

We record the incremental costs of obtaining contracts as an expense when incurred.

We offer extended warranties on our products for periods of one to three years. Revenue from these extended warranties is recognized on a straight-line basis over the warranty contract term.

Other

We generate revenue from other sources, such as from advertising and marketing services, e-commerce activity in which we sell goods to our customers, or media production which involves the production of video or Internet-based content for our customers. We recognize the revenue from these contracts at the point in time when we transfer control of the goods sold to the customer or when we deliver the promised promotional materials or media content. Substantially all of our contracts with customers that generate Other revenue are completed within one year or less.

Share-Based Compensation

For grants of restricted stock or restricted stock units, we measure fair value using the closing price of our stock on the measurement date, while we use the Black-Scholes-Merton option pricing model (the "BSM Model") to estimate the fair value of stock options and similar instruments awarded.

The BSM Model requires the following inputs:

- **Expected volatility of our stock price.** We analyze the historical volatility of our stock price utilizing daily stock price returns, and we also review the stock price volatility of certain peers. Using the information developed from such analysis and our judgment, we estimate how volatile our stock price will be over the period we expect the stock options will remain outstanding.

- **Risk-free interest rate.** We estimate the risk-free interest rate using data from the Federal Reserve Treasury Constant Maturity Instruments H.15 Release (a table of rates downloaded from the Federal Reserve website) as of the valuation date for a security with a remaining term that approximates the period over which we expect the stock options will remain outstanding.

- **Stock price, exercise price and expected term.** We use an estimate of the fair value of our common stock on the measurement date, the exercise price of the option, and the period over which we expect the stock options will remain outstanding.

We do not currently issue dividends, but if we did so, then we would also include an estimated dividend rate as an input to the BSM model. Generally speaking, the BSM model tends to be most sensitive to changes in stock price, volatility or expected term.

We measure compensation expense as of the grant date for granted equity-classified instruments and as of the settlement date for granted liability-classified instruments (meaning that we re-measure compensation expense at each balance sheet date until the settlement date occurs).

Once we measure compensation expense, we recognize it over the requisite service period (generally the vesting period) of the grant, net of forfeitures as they occur.

Accounts Receivable

We regularly evaluate the collectability of trade receivable balances based on a combination of factors such as customer credit-worthiness, past transaction history with the customer, current economic industry trends and changes in customer payment patterns. If we determine that a customer will be unable to fully meet its financial obligation, such as in the case of a bankruptcy filing, severe limitations on its operational capability as a result of COVID-19-related restrictions or other material events impacting its business, a specific reserve for bad debt will be recorded to reduce the related receivable to the amount expected to be recovered.

Income Taxes

We recognize deferred tax assets (“DTAs”) and deferred tax liabilities (“DTLs”) to account for the effects of temporary differences between the tax basis of an asset or liability and its amount as reported in our consolidated balance sheets, using enacted tax rates expected to apply to taxable income in the years in which we expect those temporary differences to be recovered or settled. Any effect on DTAs or DTLs resulting from a change in enacted tax rates is included in income during the period that includes the enactment date.

We reduce the carrying amounts of DTAs by a valuation allowance if, based upon all available evidence (both positive and negative), we determine that it is more likely than not that such DTAs will not be realizable. Such assessment considers, among other matters, the nature, frequency and severity of current and cumulative losses, our forecasts of future profitability, tax planning strategies, the duration of statutory carryforward periods, and our experience with the utilization of operating loss and tax credit carryforwards before expiration.

We apply a recognition threshold and measurement attribute related to uncertain tax positions taken or expected to be taken on our tax returns. We recognize a tax benefit for financial reporting of an uncertain income tax position when it has a greater than 50% likelihood of being sustained upon examination by the taxing authorities. We measure the tax benefit of an uncertain tax position based on the largest benefit that has a greater than 50% likelihood of being ultimately realized, including evaluation of settlements.

Inventory

We use the first-in first-out method to determine the cost of our inventory, then we report inventory at the lower of cost or net realizable value. We regularly review our inventory quantities on hand and record a provision for excess and obsolete inventory based primarily on our estimated sales forecasts. At December 31, 2022 and 2021, reserve for inventory was $2.2 million and $1.0 million, respectively.

Advertising Expense

Advertising expense is recorded during the period in which it is incurred. We did not incur a material amount of advertising expense during the years ended December 31, 2022 or 2021.

Research and Development

Engineering cost is recorded as technology and development expense during the period in which it is incurred.

Product Warranties

We offer extended warranties on our products for periods of one to three years. To estimate our warranty cost, we use historical warranty claim experience and we then net such cost against the related product revenue. Warranty costs were not material for the years ended December 31, 2022 and 2021.

Property, Equipment and Software

We state property and equipment at cost and depreciate such assets using the straight-line method over the estimated useful lives of each asset category. For leasehold improvements, we determine amortization using the straight-line method over the shorter of the lease term or estimated useful life of the asset. We expense repairs and maintenance costs as incurred, while capitalizing betterments and capital improvements and depreciating such costs over the remaining useful life of the related asset.

We capitalize qualifying costs of computer software that we incur during the application development stage, as well as the cost of upgrades and enhancements that result in additional functionality, and we amortize such costs using the straight-line method over a period of three years, the expected period of the benefit.

Net Income (Loss) per Share

We calculate basic net income (loss) per share using the weighted-average number of common stock shares outstanding during the period. For the calculation of diluted net income (loss) per share, we give effect to all the shares of common stock that were outstanding during the period plus the number of additional common shares that would have been outstanding if all dilutive potential common shares had been issued, using the treasury stock method. Potential common shares are excluded from the computation when their effect is anti-dilutive. Dilutive potential shares of common stock consist of incremental shares of common stock issuable upon exercise of stock options and warrants.

For the years ended December 31, 2022 and 2021, there were no reconciling items related to the numerators of the net income (loss) per share calculations. The following table presents a reconciliation of the denominator of the basic net income (loss) per share calculation to that of the diluted net income (loss) per share calculation (in thousands):

	Year Ended December 31,	
	2022	**2021**
Weighted-average shares outstanding, basic	10,630,771	10,136,210
Incremental shares resulting from assumed exercises of in-the-money stock options	—	35,714
Weighted-average shares outstanding, diluted	10,630,771	10,171,924

Securities which may have affected the calculation of diluted earnings per share for the years ended December 31, 2022 and 2021 if their effect had been dilutive include 1,626,631 total options outstanding and 1,435,471 outstanding out-of-the-money stock options, respectively, and 1,011,441 outstanding stock warrants in both years.

Segments

Existing GAAP, which establishes a management approach to segment reporting, defines operating segments as components of an entity about which separate, discrete financial information is available for evaluation by the chief operating decision maker. We have identified our Chief Executive Officer as our chief operating decision maker, who reviews operating results to make decisions about allocating resources and assessing performance based upon only one operating segment.

Commitments and Contingencies

We record a liability for a loss contingency when we determine that it is probable that we have incurred such liability and we can reasonably estimate the amount.

Impairments

Long-Lived Assets Other Than Indefinite-Lived Intangible Assets

When events or changes in circumstances indicate that the carrying amount of a long-lived asset may not be recoverable, we evaluate long-lived assets for potential impairment, basing our testing method upon whether the assets are held for sale or held for use. For assets classified as held for sale, we recognize the asset at the lower of carrying value or fair market value less costs of disposal, as estimated based on comparable asset sales, offers received, or a discounted cash flow model. For assets held and used, we estimate the future undiscounted cash flows expected to result from the use of the asset and its eventual disposition. If the sum of the expected undiscounted future cash flows is less than the carrying value of the asset, we recognize an impairment loss for the difference between the carrying value of the asset and its fair value.

Recently Issued Accounting Pronouncements

In August 2020, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2020-06 ("ASU 2020-06"), *Debt—Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity's Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity's Own Equity*. The ASU will simplify the accounting for convertible instruments by reducing the number of accounting models for convertible debt instruments and convertible preferred stock. Limiting the accounting models will result in fewer embedded conversion features being separately recognized from the host contract as compared with current GAAP. Convertible instruments that continue to be subject to separation models are (1) those with embedded conversion features that are not clearly and closely related to the host contract, that meet the definition of a derivative, and that do not qualify for a scope exception from derivative accounting and (2) convertible debt instruments issued with substantial premiums for which the premiums are recorded as paid-in capital. The ASU also amends the guidance for the derivatives scope exception for contracts in an entity's own equity to reduce form-over-substance-based accounting conclusions. With regard to our financial reporting, ASU 2020-06 will be effective January 1, 2024, and early adoption is permitted, but no earlier than January 1, 2021, including interim periods within that year. We are currently evaluating what effect(s) the adoption of ASU 2020-06 may have on our consolidated financial statements, but we do not believe the impact of the ASU will be material to our financial position, results of operations and cash flows. The effect will largely depend on the composition and terms of the financial instruments at the time of adoption.

In June 2016, the FASB issued ASU 2016-13, *Measurement of Credit Losses on Financial Instruments (Topic 326)*. The ASU requires entities to use a forward-looking approach based on current expected credit losses to estimate credit losses on certain types of financial instruments, including trade receivables, which may result in the earlier recognition of allowances for losses. With regard to our financial reporting, ASU 2016-13 will be effective beginning January 1, 2023, and early adoption is permitted. We do not believe the impact of the ASU will be material to our financial position, results of operations and cash flows.

We have reviewed all accounting pronouncements recently issued by the FASB and the SEC. The authoritative pronouncements that we have already adopted did not have a material effect on our financial condition, results of operations, cash flows or reporting thereof, and except as otherwise noted above, we do not believe that any of the authoritative

pronouncements that we have not yet adopted will have a material effect upon our financial condition, results of operations, cash flows or reporting thereof.

NOTE 3. CONCENTRATIONS OF RISK

Revenue and Accounts Receivable

The disaggregation of revenue tables in Note 4 demonstrate the concentration in our revenue from certain products and the geographic concentration of our business. We also have a concentration in the volume of business we transacted with customers, as during the year ended December 31, 2022, two of our customers represented 46% and 20%, respectively, of our revenue, while during the year ended December 31, 2021, three of our customers represented about 24%, 18% and 12%, respectively, of our revenue. At December 31, 2022, accounts receivable from three of our customers represented about 23%, 16%, and 10%, respectively, while at December 31, 2021, accounts receivable from three of our customers represented about 25%, 24% and 10%, respectively.

Deferred Cost of Revenue

See Note 8 for a discussion of a risk concentration regarding our deferred cost of revenue.

Cost of Sales and Accounts Payable

The various hardware we purchase to fulfill our contracts with customers is not especially unique in nature. Based on our analysis, we believe that should any disruption in our current supply chain occur, a sufficient number of alternative vendors is available to us, at reasonably comparable specifications and price, such that we would not experience a material negative impact on our ability to procure the hardware we need to operate our business.

NOTE 4. REVENUE

We primarily sell AI-based products and services. In the U.S., that has included our Remark AI Thermal Kits and rPads, while in China we sell various customized products based upon computer vision and other technologies.

We do not include disclosures related to remaining performance obligations because substantially all our contracts with customers have an original expected duration of one year or less or, with regard to our stand-ready obligations, the amounts involved are not material.

Disaggregation of Revenue

The following table presents a disaggregation of our revenue by category of products and services (in thousands):

	Year Ended December 31,	
	2022	2021
AI-based products and services, including $5.4 million and $3.8 million, respectively, from China Business Partner (See Note 19)	$ 10,964	$ 14,792
Other	702	1,198
Revenue	$ 11,666	$ 15,990

The following table presents a disaggregation of our revenue by country (in thousands):

	Year Ended December 31,	
	2022	2021
China	$ 11,402	$ 12,218
United States	264	3,772
Revenue	$ 11,666	$ 15,990

Significant Judgments

When accounting for revenue we make certain judgments, such as whether we act as a principal or as an agent in transactions or whether our contracts with customers fall within the scope of current GAAP regarding revenue, that affect the determination of the amount and timing of our revenue from contracts with customers. Based on the current facts and circumstances related to our contracts with customers, none of the judgments we make involve an elevated degree of qualitative significance or complexity such that further disclosure is warranted in terms of their potential impact on the amount and timing of our revenue.

Contract Assets and Contract Liabilities

We do not currently generate material contract assets. During the year ended December 31, 2022, our contract liability changed only as a result of routine business activity.

During the years ended December 31, 2022 and 2021, the amount of revenue we recognized that was included in the beginning balance of Contract liability was not material.

During the years ended December 31, 2022 and 2021, we did not recognize revenue from performance obligations that were satisfied in previous periods.

NOTE 5. LIABILITIES RELATED TO WARRANTS TO PURCHASE COMMON STOCK

At the end of each reporting period through June 30, 2021, we had been using an option pricing model to estimate and report the fair value of liabilities related to warrants to purchase an aggregate of 575,000 shares of our common stock, consisting of a warrant to purchase 4,000 of our common stock that we issued and warrants to purchase 571,000 shares of our common stock that we were obligated to issue as part of the consideration for our acquisition (the “CBG Acquisition”) of assets of China Branding Group Limited (“CBG”) in September 2016.

On August 31, 2021 (the “CBG Settlement Effective Date”), we entered into a settlement agreement (the “CBG Settlement Agreement”) with CBG and its joint official liquidators to settle the parties’ claims against each other in the legal proceeding we filed arising from the CBG Acquisition (the “CBG Litigation”).

Pursuant to the terms of the CBG Settlement Agreement, in consideration for a settlement of the parties’ claims and a mutual release, we released to CBG the $375,000 held in escrow in connection with the CBG Acquisition and issued to CBG, as of the CBG Settlement Effective Date, warrants to purchase as many as 571,000 shares of our common stock at a per share exercise price of $60.00 (the “CBG Settlement Warrants”), which warrants are exercisable for a period of five years from the CBG Settlement Effective Date. Additionally, if the closing price of our common stock is $80.00 or greater for any five days (which may be non-consecutive) in any consecutive 30-day trading period, we have the right to cause the holder of the CBG Settlement Warrants to exercise, at our election, all or any portion of the CBG Settlement Warrants on a cashless basis at a deemed exercise price of $80.00 per share. We evaluated the terms of the CBG Settlement Warrants and determined that they should now be classified as equity. As a result, there is no longer a liability associated with any of our outstanding warrants.

When reclassifying the previously liability-classified warrants as equity on August 31, 2021, we used Level 3 inputs to our model consisting of an expected volatility of 85%, a risk-free interest rate of 0.77%, and an expected remaining term of five years.

The following table presents the change in the liability balance associated with our liability-classified warrants (in thousands) during the prior year ended December 31, 2021:

Balance at beginning of period	$	1,725
Expiration of warrants		—
Increase (decrease) in fair value of liability		(123)
Fair value of warrants reclassified to equity		(1,602)
Balance at end of period	$	—

NOTE 6. TRADE ACCOUNTS RECEIVABLE

	December 31,	
	2022	**2021**
Gross accounts receivable balance	$ 7,213	$ 11,551
Allowance for bad debt	(4,122)	(1,284)
Accounts receivable, net	$ 3,091	$ 10,267

Generally, it is not unusual for Chinese entities to pay their vendors on longer timelines than the timelines typically observed in U.S. commerce. Trade receivables related to our China AI projects in the years ended December 31, 2022 and 2021; including $1.1 million and $2.7 million, respectively, of trade receivables from projects related to work with our China Business Partner (see Note 19 for more information regarding our China Business Partner and related accounting), respectively; represented essentially all our gross trade receivables in each such period. Despite the longer collection timelines normally observed with Chinese entities, we have noted that the COVID-19-related lockdowns that persisted in China for most of 2022 have caused further delay in our ability to collect all balances due from some of our customers in China. As a result of our inability to assure collection of all amounts due from such customers within a short period of time, we recorded a reserve for bad debt of approximately $2.8 million for all accounts receivable from China customers that are more than one year past due.

NOTE 7. INVESTMENT

In 2009, we co-founded a U.S.-based venture, Sharecare, Inc. (“Legacy Sharecare”), to build a web-based platform that simplifies the search for health and wellness information. The other co-founders of Legacy Sharecare were Dr. Mehmet Oz, HARPO Productions, Discovery Communications, Jeff Arnold and Sony Pictures Television. At December 31, 2021, we reported our $1.0 million investment in Legacy Sharecare as an investment in unconsolidated affiliate.

On July 1, 2021, Legacy Sharecare completed a business combination with Falcon Capital Acquisition Corp., a special purpose acquisition company, as a result of which the common stock of the surviving entity of such business combination (“New Sharecare”) became listed on the Nasdaq Stock Market LLC. In connection with the completion of such business combination, the shares of common stock of Legacy Sharecare that we held immediately prior to the business combination converted into approximately $2.3 million in cash and approximately 9.4 million shares of common stock of New Sharecare. We do not maintain a seat on the board of directors of New Sharecare. The cash received was recorded as a realized gain on the investment, and the investment is revalued at fair value at the end of each reporting period using the closing sales price of the shares on the principal securities exchange on which such shares are then traded.

As of December 31, 2021, the value of our 9,431,920 shares of common stock of New Sharecare was $42.3 million based upon the closing stock price of New Sharecare, an input we classify in Level 1 of the fair value hierarchy. We sold 3,181,920 shares of New Sharecare during the year ended December 31, 2022 for cash of $6.3 million.

On July 2, 2022, we received a Notice of Trigger Event and Mandatory Payment from our senior lenders, which required that we make a prepayment of our senior secured loans (which are described in Note 14) by delivering to each lender shares of common stock of New Sharecare in the fair market amount applicable to each such lender to prepay our senior secured loans. On July 11, 2022, we delivered our remaining 6,250,000 shares of New Sharecare, which reduced the outstanding principal amount on our senior secured loans by approximately $9.7 million, and as a result, we no longer own any equity interests in New Sharecare as of such date.

The total net loss on investment during the year ended December 31, 2022 was $26.4 million.

NOTE 8. DEFERRED COST OF REVENUE

Deferred cost of revenue during years ended December 31, 2022 and 2021 of $7.5 million and $0.6 million, respectively, represents amounts we have paid in advance of the vendor providing services to us in relation to various projects in China. Specifically, the deferred cost of revenue balance during year ended December 31, 2022, a large percentage of which was related to project installations we expected would be provided to us through our China Business Partner (described in more detail in Note 19), was paid almost entirely to a single vendor which will be visiting numerous sites across various regions of China to install our software solutions and/or hardware for our customers and perform other services for us pursuant to customer requirements. Because most of the projects for which we have engaged the vendor require purchases of hardware, equipment and/or supplies in advance of site visits, we made the prepayments during 2022 in anticipation of what we expected would be several large batches of project installations so that we would be ready to meet customer expectations. The lengthy COVID-19-related lockdowns that occurred in various regions in China, however, prevented us and the vendor from being able to complete as many projects as originally expected and they caused customers to delay installations. Given that the delays were related to COVID-19-related lockdowns that had ended by December 31, 2022 and were not a result of the vendor's inability to either perform the services or refund the amounts we advanced, we believe the balance at December 31, 2022 will be fully recovered.

NOTE 9. PREPAID EXPENSE AND OTHER CURRENT ASSETS

The following table presents the components of prepaid expense and other current assets (in thousands):

	December 31,	
	2022	2021
Receivable from China Business Partner	$ —	$ 3,980
Other receivables	23	9
Prepaid expense	1,144	1,558
Deposits	201	221
Other current assets	6	6
Total	$ 1,374	$ 5,774

NOTE 10. PROPERTY AND EQUIPMENT

Property and equipment consist of the following (in thousands, except estimated lives):

	Estimated Life (Years)	December 31, 2022	December 31, 2021
Vehicles	3	153	—
Computers and equipment	3	1,170	1,133
Furniture and fixtures	3	42	42
Software	3	5,160	5,055
Leasehold improvements	3	204	196
Software development in progress		1,199	128
Total property, equipment and software		$ 7,928	$ 6,554
Less accumulated depreciation		(6,229)	(6,197)
Total property, equipment and software, net		$ 1,699	$ 357

For the years ended December 31, 2022 and 2021, depreciation (and amortization of software) expense was $0.2 million and $0.2 million, respectively.

NOTE 11. LEASES

We lease office space under contracts we classify as operating leases. None of our leases are financing leases.

The following table presents the detail of our lease expense, which is reported in General and administrative expense (in thousands):

	Year Ended December 31, 2022	Year Ended December 31, 2021
Operating lease expense	$ 287	$ 304
Short-term lease expense	1,343	982
Lease expense	$ 1,630	$ 1,286

We reported within operating cash flows for the years ended December 31, 2022 and 2021, $0.2 million and $0.2 million, respectively, of cash paid for amounts included in the measurement of operating lease liabilities.

As of December 31, 2022, our operating leases had a weighted-average remaining lease term of approximately 12 months, and we used a weighted-average discount rate of approximately 13%, which approximates our incremental borrowing rate, to measure our operating lease liabilities.

Maturity of Lease Liabilities

The following table presents information regarding the maturities of undiscounted remaining operating lease payments, with a reconciliation to the amount of the liabilities representing such payments as presented in our December 31, 2022 Consolidated Balance Sheet (in thousands):

Operating lease liabilities maturing during the next:		
One year	$	155
Two years		60
Total undiscounted cash flows	$	215
Present value of cash flows	$	194
Lease liabilities on balance sheet:		
Short-term (included in accrued expenses)	$	138
Long-term		56
Total lease liabilities	$	194

Significant Judgments

When accounting for our leases, we make certain judgments, such as whether a contract contains a lease or what discount rate to use, that affect the determination of the amount of our lease assets and liabilities. Based on the current facts and circumstances related to our contracts, none of the judgments we make involve an elevated degree of qualitative significance or complexity such that further disclosure is warranted.

NOTE 12. INCOME TAX

For the years ended December 31, 2022 and 2021, we did not have a material tax provision or a tax benefit to report, as we only had a de minimis foreign income tax expense for the year ended December 31, 2021, which amount was refunded to us during the year ended December 31, 2022.

The following table presents a reconciliation between the income tax benefit computed by applying the federal statutory rate and our actual income tax expense:

	Year Ended December 31,	
	2022	2021
Income tax benefit (provision) at federal statutory rate	$ (11,653)	$ 5,771
Change in deferred tax asset valuation allowance	10,611	(5,241)
Tax impact of warrants	—	(26)
Tax effects of:		
Statutory differences	883	327
R&D expense	(280)	(210)
Foreign tax rates different than U.S. federal statutory rate	(123)	68
Other permanent items	(42)	(331)
Deferred adjustments	404	99
Other	209	(466)
Income tax benefit (provision) as reported	$ 9	$ (9)

Our 2022 and 2021 effective tax rates were significantly impacted by maintaining a valuation allowance against net deferred tax assets in all jurisdictions, both domestic and foreign, as well as permanent book-tax adjustments in foreign jurisdictions and the fact that our earnings are generated in jurisdictions with rates that differ from the US federal statutory rate.

The following table presents loss before income tax attributable to domestic and to foreign operations (in thousands):

	Year Ended December 31,	
	2022	2021
Domestic	$ (49,297)	$ 28,036
Foreign	(6,195)	(555)
Loss before income taxes	$ (55,492)	$ 27,481

Deferred Tax Assets and Liabilities

We assessed the available positive and negative evidence to estimate whether sufficient future taxable income will be generated to permit use of existing DTAs in each jurisdiction. The realization of DTAs is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. The Company considered the scheduled reversal of existing deferred tax liabilities, projected future taxable income, and tax planning strategies in making this assessment. The Company evaluated both positive and negative evidence in determining the need for a valuation allowance. The Company continues to assess the realizability of DTAs and concluded that in each jurisdiction, it has not met the “more likely than not” threshold. As of December 31, 2022, the Company continues to provide a valuation allowance against its DTAs that cannot be offset by existing deferred tax liabilities. In accordance with ASC Topic 740, this assessment has taken into consideration the jurisdictions in which these DTAs reside.

The following table presents the components of our DTAs and DTLs (in thousands):

	December 31,	
	2022	2021
Deferred Tax Assets		
Net operating loss carryforwards	$ 42,744	$ 43,375
Amortization of intangibles	2,371	1,979
Share-based compensation expense	7,865	7,423
Depreciation of fixed assets	33	—
Other	5,427	3,503
Gross deferred tax assets	$ 58,440	$ 56,280
Valuation allowance	(58,440)	(47,857)
Deferred tax assets, net of valuation allowance	$ —	$ 8,423
Deferred Tax Liabilities		
Deferred gain	—	(8,444)
Depreciation of fixed assets	—	21
Gross deferred tax liabilities	—	(8,423)
Net deferred tax liability	$ —	$ —

Net operating losses available at December 31, 2022 to offset future taxable income in the U.S. federal, U.S. state, Hong Kong and China jurisdictions are $177.8 million, $33.1 million, $1.7 million and $11.7 million, respectively. The statutory income tax rates in Hong Kong, China and the United Kingdom are 16.5%, 25% and 19%, respectively.

The U.S. net operating losses generated prior to 2018 expire between 2027 and 2037. The US net operating losses generated in 2018 to 2022 have no expiration date and carry forward indefinitely. The net operating losses generated in Hong Kong and United Kingdom have no expiration date and carry forward indefinitely, while the net operating losses generated in China have a five-year carryforward period.

We file income tax returns in various domestic and foreign tax jurisdictions with varying statutes of limitation. We are generally not subject to examinations in the U.S. for periods prior to 2019. However, as we utilize our net operating losses prior periods can be subject to examination. In significant foreign jurisdictions, we are generally not subject to examination for periods prior to 2019.

Under the Internal Revenue Code of 1986, as amended (the “Code”), if an ownership change (as defined for income tax purposes) occurs, §382 of the Code imposes an annual limitation on the amount of a corporation’s taxable income that can be offset by net operating loss carryforwards. During our 2014 tax year, we analyzed recent acquisitions and ownership changes and determined that certain of such transactions qualified as an ownership change under §382. As a result, we will likely not be able to use a portion of our net operating loss carryforwards.

For the years ended December 31, 2022 and 2021, we have no unrecognized tax benefits, and we have not taken any tax positions which we expect might significantly change unrecognized tax benefits during the 12 months following December 31, 2022.

The 2017 Tax Cuts and Jobs Act requires taxpayers to capitalize research and experimental (“R&E”) expenditures effective for taxable years beginning after December 31, 2021. Any R&E expenditures attributable to U.S.-based research must be amortized over a period of 5 years and R&E expenditures attributable to research conducted outside of the U.S. must be amortized over a period of 15 years.

In August 2022, two pieces of U.S. tax legislation that have significant tax-related provisions were signed into law: (1) the Creating Helpful Incentives to Produce Semiconductors Act of 2022 (the "CHIPS Act"), which creates a new advanced manufacturing investment credit under new Internal Revenue Code Section 48D, and (2) the Inflation Reduction Act of 2022 (the "IRA"), which has a number of tax-related provisions, including: (a) a 15 percent book minimum tax on "adjusted financial statement income of applicable corporations," (b) a plethora of clean energy tax incentives in the form of tax credits, and (c) a one percent excise tax on certain corporate stock buybacks. We will monitor additional guidance and impact that the CHIPS Act, the IRA and other potential legislation may have on its income taxes. For the period ended December 31, 2022, we do not believe the provisions from these legislative updates will have a material impact on our income taxes.

NOTE 13. ACCRUED EXPENSE AND OTHER CURRENT LIABILITIES

The following table presents the components of Accrued expense and other current liabilities (in thousands):

	December 31,	
	2022	2021
Accrued compensation and benefit-related expense	$ 1,448	$ 821
Accrued interest	769	385
Other accrued expense	2,393	1,673
Other payables	2,234	2,324
Operating lease liability - current	138	187
China Cash Bonuses	32	439
Other current liabilities	208	134
Total	$ 7,222	$ 5,963

NOTE 14. DEBT

The following table presents our notes payable (in thousands) as of:

	December 31,	
	2022	2021
Principal balance of Original Mudrick Loans	$ 14,418	$ 30,000
Other notes payable	189	—
Unamortized discount and debt issuance cost	—	(2,189)
Notes payable, net of unamortized discount and debt issuance cost	$ 14,607	$ 27,811

On December 3, 2021, we entered into senior secured loan agreements (the "Original Mudrick Loan Agreements") with certain of our subsidiaries as guarantors (the "Guarantors") and certain institutional lenders affiliated with Mudrick Capital Management, LP (collectively, "Mudrick"), pursuant to which Mudrick extended credit to us consisting of term loans in the aggregate principal amount of $30.0 million (the "Original Mudrick Loans"). The Original Mudrick Loans bore interest at 16.5% per annum until the original maturity date of July 31, 2022 and, following an amendment we entered into with Mudrick in August 2022, bore interest at 18.5% per annum. The amendment also extended the maturity date of the Original Mudrick Loans from July 31, 2022 to October 31, 2022. However, we did not make the required repayment of the Original Mudrick Loans by October 31, 2022, which constituted an event of default under the Original Mudrick Loans and triggered an increase in the interest rate under the Original Mudrick Loans to 20.5%.

To secure the payment and performance of the obligations under the Original Mudrick Loan Agreements, we, together with the Guarantors, have granted to TMI Trust Company, as the collateral agent for the benefit of Mudrick, a first priority lien on, and security interest in, all assets of Remark and the Guarantors, subject to certain customary exceptions.

In connection with our entry into the Original Mudrick Loan Agreements, we paid to Mudrick an upfront fee equal to 5.0% of the amount of the Original Mudrick Loans, which amount was netted against the drawdown of the Original Mudrick Loans. We recorded the upfront fee as a debt discount of $1.5 million, and recorded debt issuance cost totaling $1.1 million. We amortized the discount on the Original Mudrick Loans and the debt issuance cost over the life of the Original Mudrick Loans and, during the year ended December 31, 2022, we amortized $2.2 million of such discount and debt issuance cost. In consideration for the amendment we entered into with Mudrick in August 2022, we paid Mudrick an amendment and extension payment in the amount of 2.0% of the then unpaid principal balance of the Original Mudrick Loans, or approximately $0.3 million, by adding such amount to the principal balance of the Original Mudrick Loans.

See Note 20 for more information regarding further developments involving the Original Mudrick Loans.

During the year ended December 31, 2022, we repaid $6.2 million of principal and, as described in more detail in Note 7, we delivered all remaining shares of New Sharecare to Mudrick on July 11, 2022, in partial settlement of the Original Mudrick Loans, resulting in a reduction of approximately $9.7 million of principal.

Other Notes Payable

The Other notes payable in the table above represent individually immaterial notes payable issued for the purchase of operating assets. Such notes payable bear interest at a weighted-average interest rate of approximately 6.2% and have a weighted-average remaining term of approximately 5.1 years.

Effective August 5, 2021 (the "Conversion Date"), pursuant to an amendment on such date to a promissory note with a private lender that we originally executed on December 30, 2020 (the "Private Lender Loan"), the outstanding $1.0 million principal amount of the Private Lender Loan plus all accrued but unpaid interest of approximately $0.1 million thereon through the Conversion Date was automatically converted into shares of our common stock at a conversion price of $1.21 per share, resulting in the issuance of 876,493 shares of our common stock with a fair value of $1.1 million and the recording of less than $0.1 million of additional interest expense.

NOTE 15. TRANSACTIONS WITH IONIC

Liability Related to Convertible Debenture

On October 6, 2022, we entered into a debenture purchase agreement (the "2022 Debenture Purchase Agreement") with Ionic Ventures, LLC ("Ionic"), pursuant to which we issued a convertible subordinated debenture in the original principal amount of $2.8 million (the "2022 Debenture") to Ionic for a purchase price of $2.5 million. The 2022 Debenture automatically converted into shares of our common stock (the "Settlement Shares") on November 17, 2022 upon the effectiveness of a registration statement we filed pursuant to a registration rights agreement we executed with Ionic. As of December 31, 2022, because the measurement period for determining the final conversion price pursuant to the 2022 Debenture Purchase Agreement was still ongoing, the number of Settlement Shares was estimated by dividing the outstanding balance under the 2022 Debenture (including accrued and unpaid interest) by a conversion price that was 80% of the average of the 10 lowest volume-weighted average prices ("VWAPs") during the period from November 18, 2022 through December 31, 2022. The VWAPs used to estimate the number of Settlement Shares for purposes of estimating the fair value of the liability related to the convertible debenture are classified as Level 3 inputs.

Using the guidance in ASC Topic 480, *Distinguishing Liabilities from Equity*, we evaluated the convertible debenture and determined that it represented an obligation that must or may be settled with a variable number of shares, the monetary value of which was based solely or predominantly on a fixed monetary amount known at inception. We, therefore, recorded a liability for the 2022 Debenture on October 6, 2022, by estimating the number of Settlement Shares and multiplying by the market price of the stock on such date, resulting in an initial liability of approximately $3.6 million. We recorded the $1.1 million excess of the initial liability amount over the purchase price as finance cost. The liability is being remeasured at each balance sheet date with the change in the liability also being reflected as finance cost. During the fourth quarter of 2022, we issued 898,854 Settlement Shares, with the $2.0 million fair value of such issued Settlement Shares reducing the liability. At December 31, 2022, we estimated that another 1,720,349 Settlement Shares would need to be issued, representing a liability of approximately $1.9 million. During the fourth quarter of 2022, we also recorded $0.3 million of finance cost related to changes in the fair value of the liability during the period.

Equity Line of Credit

Also, on October 6, 2022, we entered into a purchase agreement (the "ELOC Purchase Agreement") with Ionic, which provides that, upon the terms and subject to the conditions and limitations set forth therein, we have the right to direct Ionic to purchase up to an aggregate of $50.0 million of shares of our common stock over the 36-month term of the ELOC Purchase Agreement. Under the ELOC Purchase Agreement, after the satisfaction of certain commencement conditions, including, without limitation, the effectiveness of the Resale Registration Statement and that the 2022 Debenture shall have been fully converted into shares of common stock or shall otherwise have been fully redeemed and settled in all respects in accordance with the terms of the 2022 Debenture, we have the right to present Ionic with a purchase notice (each, a "Purchase Notice") directing Ionic to purchase any amount up to $3.0 million of our common stock per trading day, at a per share price equal to 90% (or 80% if our common stock is not then trading on Nasdaq) of the average of the five lowest VWAPs over a specified measurement period. With each purchase under the ELOC Purchase Agreement, we are required to deliver to Ionic an additional number of shares equal to 2.5% of the number of shares of common stock deliverable upon such purchase. The number of shares that we can issue to Ionic from time to time under the ELOC Purchase Agreement shall be subject to the condition that we will not sell shares to Ionic to the extent that Ionic, together with its affiliates, would beneficially own more than 4.99% of the outstanding shares of our common stock immediately after giving effect to such sale (the "Beneficial Ownership Limitation").

In addition, Ionic will not be required to buy any shares of our common stock pursuant to a Purchase Notice on any trading day on which the closing trade price of our common stock is below $0.25. We will control the timing and amount of sales of our common stock to Ionic. Ionic has no right to require any sales by us, and is obligated to make purchases from us as directed solely by us in accordance with the ELOC Purchase Agreement. The ELOC Purchase Agreement provides that we will not be required or permitted to issue, and Ionic will not be required to purchase, any shares under the ELOC Purchase Agreement if such issuance would violate Nasdaq rules, and we may, in our sole discretion, determine whether to obtain stockholder approval to issue shares in excess of 19.99% of our outstanding shares of common stock if such issuance would require stockholder approval under Nasdaq rules. Ionic has agreed that neither it nor any of its agents, representatives and affiliates will engage in any direct or indirect short-selling or hedging our common stock during any time prior to the termination of the ELOC Purchase Agreement.

The ELOC Purchase Agreement may be terminated by us at any time after commencement, at our discretion; provided, however, that if we sold less than $25.0 million to Ionic (other than as a result of our inability to sell shares to Ionic as a result of the Beneficial Ownership Limitation, our failure to have sufficient shares authorized or our failure to obtain stockholder approval to issue more than 19.99% of our outstanding shares), we will pay to Ionic a termination fee of $0.5 million, which is payable, at our option, in cash or in shares of common stock at a price equal to the closing price on the day immediately preceding the date of receipt of the termination notice. Further, the ELOC Purchase Agreement will automatically terminate on the date that we sell, and Ionic purchases, the full $50.0 million amount under the agreement or, if the full amount has not been purchased, on the expiration of the 36-month term of the ELOC Purchase Agreement. (See Note 20 for additional detail regarding certain amendments to the ELOC Purchase Agreement.)

On November 7, 2022, we entered into an amendment to the 2022 Debenture Purchase Agreement with Ionic, pursuant to which we and Ionic agreed to amend and restate the 2022 Debenture to provide that (i) in no event will the conversion price under the 2022 Debenture be below a floor price of $0.10 (such price, as may be appropriately adjusted for any stock dividend, stock split, stock combination or other similar transaction, the "Floor Price"), and (ii) in the event the actual conversion price is less than the Floor Price, (A) Ionic will be entitled to that number of settlement conversion shares issuable with an assumed conversion price equal to the Floor Price, and (B) we will be required to make a cash payment to Ionic on or prior to the maturity date of an amount that is calculated by subtracting the number of shares of common stock issuable at an assumed conversion price equal to the Floor Price from the number of shares of common stock issuable at the actual conversion price, multiplied by a price equal to the average of the ten lowest VWAPs during the specified measurement period.

NOTE 16. COMMITMENTS AND CONTINGENCIES

At December 31, 2022, we had no material commitments outside the normal course of business.

Contingencies

As of December 31, 2022, we were neither a defendant in any material pending legal proceeding nor are we aware of any material threatened claims against us and, therefore, we have not accrued any contingent liabilities.

Registration Rights Agreement

On September 27, 2021, we entered into a securities purchase agreement (the "Armistice Purchase Agreement") with Armistice Capital Master Fund Ltd. ("Armistice Capital") pursuant to which we issued shares of our common stock together with warrants to purchase our common stock, subject to certain customary anti-dilution adjustments (the "Armistice Warrants").

In connection with our entry into the Armistice Purchase Agreement, we also entered into a registration rights agreement with Armistice Capital, pursuant to which we were obligated to file one or more registration statements, as necessary, to register under the Securities Act of 1933, as amended, the resale of the shares we issued to Armistice Capital and the shares underlying the Armistice Warrants (collectively, the "Armistice Registrable Securities") and to obtain effectiveness of such registration statement no later than 90 days following September 27, 2021. The agreement provided that if we failed to satisfy our obligation to timely obtain effectiveness, we would incur a $0.1 million monthly penalty (up to a maximum of $1.0 million) until we achieved effectiveness. The registration statement to register the resale of the Armistice Registrable Securities was declared effective on October 31, 2022. As of December 31, 2021, we had accrued $0.6 million as an initial estimate of the penalty liability. During the year ended December 31, 2022, we accrued an additional $0.4 million to accrue for the maximum penalty, of which we paid $0.2 million of this amount, resulting in an unpaid amount of $0.8 million that is included in other accrued expense at December 31, 2022.

NOTE 17. STOCKHOLDERS' EQUITY, SHARE-BASED COMPENSATION AND NET LOSS PER SHARE

Equity Issuances

On September 29, 2021, we issued and sold to Armistice Capital 423,729 shares of our common stock at a purchase price of $11.80 per share together with the Armistice Warrants to purchase as many as 423,729 shares of our common stock at an exercise price of $13.50 per share, subject to certain customary anti-dilution adjustments, pursuant to the terms of the Armistice Purchase Agreement. We received net proceeds of $4.6 million from such sale. Concurrently with the entry into the Purchase Agreement, we also entered into a financial advisor agreement (the "Financial Advisor Agreement") with A.G.P./Alliance Global Partners ("A.G.P."), pursuant to which we agreed to pay A.G.P. a cash fee of approximately $0.4 million and to reimburse A.G.P. for certain legal and escrow expenses. In addition, pursuant to the terms of the Financial Advisor Agreement, on September 29, 2021, we issued to A.G.P. and its designees warrants (the "Financial Advisor Warrants" and together with the Armistice Warrants, the "Private Placement Warrants") to purchase as many as an aggregate of 12,712 shares of our common stock at an exercise price of $13.50 per share, subject to certain customary anti-dilution adjustments. Based on the terms of the Private Placement Warrants, we recorded such warrants as equity instruments.

Warrants

The following table summarizes information related to our equity-classified stock warrant issuances as of and for the dates and periods noted:

	Shares	Weighted Average Exercise Price Per Share	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value (in thousands)
Outstanding at December 31, 2020	4,000	$ 100.00		
Granted [1]	1,007,441	39.90		
Exercised	—	—		
Forfeited, cancelled or expired	—			
Outstanding at December 31, 2021	1,011,441	$ 40.10	4.7	$ —
Granted	—	—		
Exercised	—	—		
Forfeited, cancelled or expired	—	—		
Outstanding at December 31, 2022	1,011,441	$ 40.10	3.7	$ —

[1] Includes the 0.6 million warrants to purchase our common stock that we issued to CBG (see Note 5).

Share-Based Compensation

On September 2, 2022, we issued 125,000 shares of our common stock with a fair value of $0.5 million to a vendor in exchange for services performed.

We are authorized to issue equity-based awards under our 2014 Incentive Plan, our 2017 Incentive Plan and our 2022 Incentive Plan, each of which our stockholders have approved. We also award cash bonuses (“China Cash Bonuses”) to our employees in China, which grants are not subject to a formal incentive plan and which can only be settled in cash. We grant such awards to attract, retain and motivate eligible officers, directors, employees and consultants. Under each of the plans, we have granted shares of restricted stock and options to purchase common stock to our officers and employees with exercise prices equal to or greater than the fair value of the underlying shares on the grant date.

Stock options and China Cash Bonuses generally expire 10 years from the grant date. All forms of equity awards and China Cash Bonuses vest upon the passage of time, the attainment of performance criteria, or both. When participants exercise stock options, we issue any shares of our common stock resulting from such exercise from new authorized and unallocated shares available at the time of exercise.

We estimate the fair value of our stock option awards and China Cash Bonuses using the BSM Model. During the year ended December 31, 2022 and 2021, we applied the following weighted-average inputs, which we classify in Level 3 of the fair value hierarchy, to the BSM Model for our stock option awards:

	Year Ended December 31,	
	2022	2021
Expected term in years	6.0	6.0
Expected volatility	101.27 %	85 %
Expected dividends	— %	— %
Risk-free interest rate	3.56 %	0.40 %

During the year ended December 31, 2021 (we did not issue any China Cash Bonuses during 2022), we applied the following weighted-average inputs, which we classify in Level 3 of the fair value hierarchy, to the BSM Model for our China Cash Bonuses:

Expected remaining term in years	4.71
Expected volatility	110.14 %
Expected dividends	— %
Risk-free interest rate	1.06 %

We estimated the expected term based upon historical data. The risk-free interest rate is based on the U.S. Treasury yield curve appropriate for the expected term on the date of grant, and we estimate the expected volatility primarily using the historical volatility of our common stock. Actual compensation, if any, ultimately realized may differ significantly from the amount estimated using an option-pricing model.

The following table summarizes activity under our equity incentive plans related to equity-classified stock option grants as of and for the dates and periods noted:

	Shares	Weighted Average Exercise Price Per Share	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value (in thousands)
Outstanding at December 31, 2020	994,234	$ 42.90		
Granted	546,350	13.70		
Exercised	(54,794)	19.70		
Forfeited, cancelled or expired	(1,888)	15.50		
Outstanding at December 31, 2021	1,483,902	$ 33.00	6.1	$ 159
Granted	152,731	2.66		
Exercised	—	—		
Forfeited, cancelled or expired	(10,002)	14.11		
Outstanding at December 31, 2022	1,626,631	$ 30.31	5.5	$ 1
Exercisable at December 31, 2021	1,277,652	36.20	5.7	$ 957
Exercisable at December 31, 2022	1,549,681	31.41	5.3	$ 1

The following table summarizes the status of non-vested stock options as of and for the dates and periods noted:

	Shares	Weighted-Average Grant-Date Fair Value
Non-vested at December 31, 2020	16,088	$ 68
Vested	(354,788)	3,512
Forfeited, cancelled or expired	(1,400)	17
Non-vested at December 31, 2021	206,250	2,063
Granted	37,000	51
Vested	(160,100)	1,852
Forfeited, cancelled or expired	(6,200)	72
Non-vested at December 31, 2022	76,950	$ 529

No stock options were exercised during year ended December 31, 2022. We received proceeds from stock option exercises during the year ended December 31, 2021 totaling approximately $1.1 million, while the total intrinsic value on such stock option exercises was $1.0 million.

The following table summarizes activity related to our liability-classified China Cash Bonuses as of and for the dates and periods noted:

	Shares	Weighted Average Exercise Price Per Share	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value (in thousands)
Outstanding at December 31, 2020	105,500	$ 40.10		
Granted	—	—		
Forfeited, cancelled or expired	(1,900)	63.10		
Outstanding at December 31, 2021	103,600	$ 39.70	6.1	$ 159
Forfeited, cancelled or expired	(32,150)	47.99		
Outstanding at December 31, 2022	71,450	$ 35.99	6.1	$ —
Exercisable at December 31, 2021	88,600	44.10	4.9	$ —
Exercisable at December 31, 2022	68,450	36.97	6.1	$ —

The following table presents the change in the liability associated with our China Cash Bonuses included in Accrued expense and other current liabilities (in thousands):

	Year Ended December 31,	
	2022	2021
Balance at beginning of period	$ 439	$ 679
Share-based compensation expense related to China Cash Bonuses	(407)	(240)
Balance at end of period	$ 32	$ 439

On July 27, 2020, the compensation committee of our board of directors approved grants to employees, directors and other service providers, excluding our CEO, of options to purchase approximately 5.4 million shares of our common stock. The

option agreements governing the grants contain a stipulation that, regardless of vesting, such options do not become exercisable unless and until stockholders approve an amendment to our Amended and Restated Certificate of Incorporation to increase in the number of authorized shares of our common stock in an amount sufficient to allow for the exercise of the options and we have filed a corresponding Certificate of Amendment to our Amended and Restated Certificate of Incorporation reflecting such increase in the number of authorized shares of our common stock.

On July 8, 2021, our stockholders approved an amendment to our Amended and Restated Certificate of Incorporation to increase the number of authorized shares of our common stock to 175,000,000, and we filed a Certificate of Amendment to our Amended and Restated Certificate of Incorporation (the "Charter Amendment") with the Secretary of State of the State of Delaware on July 9, 2021 to reflect this amendment, which became effective immediately upon filing.

As a result of the increase in the number of authorized shares of our common stock, we determined that July 8, 2021 was the grant date for accounting purposes of the stock options we originally issued on July 27, 2020. The grant date fair value of the options granted on July 27, 2020 was approximately $6.3 million. To estimate the fair value of the options with an accounting grant date of July 8, 2021, we used the Black-Scholes-Merton option pricing model with an expected volatility of 85%, a risk-free interest rate of 0.34%, and expected term of six years and no expected dividends.

The following table presents a breakdown of share-based compensation cost included in operating expense (in thousands):

	Year Ended December 31,	
	2022	2021
Stock options	$ 2,104	$ 4,300
China Cash Bonuses	(407)	(240)
Total	$ 1,697	$ 4,060

We record share-based compensation expense in the books of the subsidiary that incurs the expense, while for equity-classified stock options we record the change in additional paid-in capital on the corporate entity because the corporate entity's equity underlies such stock options.

The following table presents information regarding unrecognized share-based compensation cost associated with stock options and China Cash Bonuses:

	December 31, 2022
Unrecognized share-based compensation cost for non-vested awards (in thousands):	
Stock options	198
China Cash Bonuses	—
Weighted-average years over which unrecognized share-based compensation expense will be recognized:	
Stock options	1.1
China Cash Bonuses	0.1

NOTE 18. RELATED PARTY TRANSACTIONS

As of December 31, 2022, we owed approximately $1.2 million to members of management representing various operating expense payments made on our behalf. Approximately $0.4 million was repaid during the first quarter of 2023.

NOTE 19. CHINA BUSINESS PARTNER

We interact with an unrelated entity (the "China Business Partner") in more than one capacity. First, since 2020, we have been working with the China Business Partner to earn revenue by obtaining business from some of the largest companies in China. Secondly, prior to the year ended December 31, 2022, our artificial intelligence business in the U.S. purchased substantially all of its inventory from a subsidiary of the China Business Partner which manufactures certain equipment to our

specifications; during the year ended December 31, 2022, we did not make any inventory purchases. In addition, a member of our senior leadership team maintains a role in the senior management structure of the China Business Partner.

During the year ended December 31, 2020, we advanced $1.5 million to the China Business Partner pursuant to an agreement between the two entities. Under the executed agreement, we had an obligation to advance as much as an aggregate amount of $5.1 million over the loan term of five years, and we could elect to convert amounts due to us under the agreement into equity of the China Business Partner upon any equity financing the China Business Partner undertook during the term of the agreement. The business purpose for the advances was to allow the China Business Partner to purchase and modify hardware to integrate with our software and market such integrated product to potential customers, including some of the largest companies in China.

During the year ended December 31, 2021, we advanced another $2.4 million to the China Business Partner pursuant to the agreement entered into in 2020. We initially determined that such advances by the VIE were effectively marketing costs because realizability of the advanced amounts was uncertain given the lack of a formalized business relationship with the China Business Partner and the nature of the use of funds. As a result, we initially recorded the advances to our China Business Partner in Sales and marketing expense.

As of December 31, 2021, as a result of the China Business Partner's repayment on January 25, 2022 of the $3.9 million we advanced to it, we recorded such amount in Other receivables, with $2.4 million of the repayment reducing sales and marketing expense for the 2021 advances and $1.5 million of the repayment shown as a recovery of marketing expense initially incurred during 2020 related to that year's advances.

Also, for the years ended December 31, 2022 and 2021, we recognized approximately $5.4 million and $3.8 million of revenue from the relationship with the China Business Partner. At December 31, 2022 and 2021, in addition to the outstanding accounts receivable balances from the China Business Partner described in Note 6, we had outstanding accounts payable to the China Business Partner of $0.7 million and $0.8 million, respectively.

NOTE 20. SUBSEQUENT EVENTS

Letter Agreement with Ionic

On January 5, 2023, we and Ionic entered into a letter agreement (the "Letter Agreement") which amended the ELOC Purchase Agreement. Under the Letter Agreement, the parties agreed, among other things, to (i) amend the floor price below which Ionic will not be required to buy any shares of our common stock under the ELOC Purchase Agreement from $0.25 to $0.20, determined on a post-reverse split basis, (ii) amend the per share purchase price for purchases under the ELOC Purchase Agreement to 90% of the average of the two lowest daily VWAPs over a specified measurement period, which will commence at the conclusion of the applicable measurement period related to the 2022 Debenture and (iii) waive certain requirements in the ELOC Purchase Agreement to allow for a one-time $0.5 million purchase under the ELOC Purchase Agreement.

As partial consideration for the waiver to allow for the $0.5 million purchase by Ionic, Remark agreed to issue to Ionic that number of shares equal to the difference between (x) the variable conversion price in the 2022 Debenture, and (y) the calculation achieved as a result of the following formula: 80% (or 70% if our common stock is not then trading on Nasdaq) of the lowest VWAP starting on the trading day immediately following the receipt of pre-settlement conversion shares following the date on which the 2022 Debenture automatically converts or other relevant date of determination and ending the later of (a) 10 consecutive trading days after (and not including) the Automatic Conversion Date (as defined in the ELOC Agreement) or such other relevant date of determination and (b) the trading day immediately after shares of our common stock in the aggregate amount of at least $13.9 million shall have traded on Nasdaq.

Issuances of Shares to Ionic

On January 19, 2023, we determined the final number of Settlement Shares related to the conversion of the 2022 Debenture to be 3,129,668. We had already issued 898,854 Settlement Shares during the year ended December 31, 2022, and during the quarter ended March 31, 2023, we issued another 2,094,428 Settlement Shares, resulting in 136,386 Settlement Shares yet to be issued to Ionic as of March 31, 2023. The difference between the $1.9 million fair value of the liability at December 31, 2022 and the $0.2 million fair value of the liability at March 31, 2023 will be reflected as a finance cost of approximately $1.7 million in the March 31, 2023 statement of operations.

New Convertible Subordinated Debentures

On March 14, 2023, we entered into a debenture purchase agreement (the "2023 Debenture Purchase Agreement") with Ionic pursuant to which we authorized the issuance and sale of two convertible subordinated debentures in the aggregate principal amount of $2.8 million for an aggregate purchase price of $2.5 million. The first debenture is in the original principal amount of $1.7 million for a purchase price of $1.5 million (the "First Debenture"), which was issued on March 14, 2023, and the second debenture is in the original principal amount of $1.1 million for a purchase price of $1.0 million (the "Second Debenture" and collectively with the First Debenture, the "2023 Debentures"), which was issued on April 12, 2022.

The 2023 Debentures accrue interest at a rate of 10% per annum, of which two years of interest is guaranteed and deemed earned in full on the first day following the issuance date. The interest rate on the 2023 Debentures increases to a rate of 15% per annum if the 2023 Debentures are not fully paid, converted or redeemed by the second anniversary of each debenture (each, a "Maturity Date") or upon the occurrence of certain trigger events, including, but not limited to, the suspension from trading or the delisting of our common stock from the Nasdaq Capital Market ("Nasdaq") for three consecutive trading days. If the 2023 Debentures are not fully paid or converted by their respective Maturity Dates, the original aggregate principal amount of the 2023 Debentures will be deemed to have been $3.3 million from their issuance dates.

The 2023 Debentures automatically convert into shares of common stock at the earlier of (i) the effectiveness of the initial registration statement registering the resale of certain Registrable Securities as such term is defined in the Registration Rights Agreement (as defined below) including, without limitation, the shares issuable upon conversion of the 2023 Debentures (the "Conversion Shares") (such registration statement, the "Resale Registration Statement"), and (ii) 181 days after the issuance date of each 2023 Debenture. The number of shares of common stock issuable upon conversion of each 2023 Debenture shall be determined by dividing the outstanding balance under each 2023 Debenture (including all accrued and unpaid interest and accrued and unpaid late charges, if any) by a conversion price that is the lower of (x) 80% (or 70% if our common stock is not then trading on Nasdaq) of the average of the two lowest VWAPs over a specified measurement period following the conversion date (the "Variable Conversion Price"), and (y) $1.40 (the "Fixed Conversion Price"), subject to full ratchet anti-dilution protection in the event we issue certain equity securities at a price below the then Fixed Conversion Price. The 2023 Debentures are unsecured and expressly junior to any of our existing or future debt obligations. Notwithstanding anything to the contrary, under no circumstances shall the Variable Conversion Price be less than the floor price of $0.20 as specified in the 2023 Debentures. Additionally, in the event of a bankruptcy, we are required to redeem the 2023 Debentures in cash in an amount equal to the then outstanding balance of the 2023 Debentures multiplied by 120%. The 2023 Debentures further provide that we will not effect the conversion of any portion of the 2023 Debentures, and the holder thereof will not have the right to a conversion of any portion of the 2023 Debentures, to the extent that after giving effect to such conversion, the holder together with its affiliates would beneficially own more than 4.99% of the outstanding shares of our common stock immediately after giving effect to such conversion. Furthermore, we may not issue shares of common stock underlying the 2023 Debentures if such issuance would require us to obtain stockholder approval under the Nasdaq rules or until such stockholder approval has been obtained.

Concurrently with entering into the 2023 Debenture Purchase Agreement, we also entered into a registration rights agreement with Ionic (the "2023 Registration Rights Agreement"), in which we agreed to file with the SEC one or more registration statements, as necessary, and to the extent permissible and subject to certain exceptions, to register under the Securities Act of 1933, as amended, the resale of the shares of our common stock issuable upon conversion of the 2023 Debentures and the shares of common stock that may be issued to Ionic if we fail to comply with our obligations in the 2023 Registration Rights Agreement. The 2023 Registration Rights Agreement requires that we file, within 15 calendar days after we file our Annual Report on Form 10-K for the fiscal year ended December 31, 2022, the Resale Registration Statement and use commercially reasonable efforts to have the Resale Registration Statement declared effective by the SEC on or before the earlier of (i) 90 days after signing of the 2023 Registration Rights Agreement (or 120 days if such registration statement is subject to full review by the SEC) and (ii) the 2nd business day after we are notified we will not be subject to further SEC review. If we fail to file or have the Resale Registration Statement declared effective by the specified deadlines, then in each instance, we will issue to Ionic 150,000 shares of our common stock within two trading days after such failure, and with respect to the Conversion Shares, we will additionally pay in cash, as liquidated damages, an amount equal to 2% of the amount then currently outstanding under the 2023 Debentures for failure to file and have the Resale Registration Statement declared effective by the same deadlines set forth above for each 30-day period after each such failure.

Mudrick Note Purchase Agreement

On March 14, 2023, we also entered into a Note Purchase Agreement (the "New Mudrick Loan Agreement") with Mudrick, pursuant to which all of the Original Mudrick Loans were cancelled in exchange for new notes payable to Mudrick (the "New Mudrick Notes") in the aggregate principal amount of $16.2 million.

The New Mudrick Notes bear interest at a rate of 20.5% per annum, which shall be payable on the last business day of each month commencing on May 31, 2023. The interest rate will increase by 2% and the principal amount outstanding under the New Mudrick Notes and any unpaid interest thereon may become immediately due and payable upon the occurrence of any event of default under the New Mudrick Loan Agreement.

All amounts outstanding under the New Mudrick Notes, including all accrued and unpaid interest, will be due and payable in full on October 31, 2023. To secure the payment and performance of our obligations under the New Mudrick Loan Agreement, we have granted to TMI Trust Company, as the collateral agent on behalf of the holders of the New Mudrick Notes, a continuing security interest in all assets of Remark, subject to certain exceptions as set forth in the New Mudrick Loan Agreement.

In connection with our entry into the New Mudrick Loan Agreement, we agreed to an extension fee of $0.8 million, which amount was paid in kind by capitalizing it to the principal of the New Mudrick Notes. All unpaid interest which had accrued under the Original Mudrick Loan Agreement to, but not including, March 14, 2023 was capitalized to the principal of the New Mudrick Notes.

NEITHER THIS SECURITY NOR THE SECURITIES INTO WHICH THIS SECURITY IS CONVERTIBLE HAVE BEEN REGISTERED WITH THE SECURITIES AND EXCHANGE COMMISSION OR THE SECURITIES COMMISSION OF ANY STATE IN RELIANCE UPON AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "ACT") AND APPLICABLE STATE SECURITIES LAWS, AND, ACCORDINGLY, MAY NOT BE OFFERED OR SOLD EXCEPT PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE ACT OR PURSUANT TO AN AVAILABLE EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE ACT AND IN ACCORDANCE WITH APPLICABLE STATE SECURITIES LAWS. NOTWITHSTANDING THE FOREGOING, THIS SECURITY AND THE SECURITIES ISSUABLE UPON CONVERSION OF THIS SECURITY MAY BE PLEDGED IN CONNECTION WITH A BONA FIDE MARGIN ACCOUNT OR OTHER LOAN OR FINANCING ARRANGEMENT SECURED BY SUCH SECURITIES. ANY TRANSFEREE OF THIS DEBENTURE SHOULD CAREFULLY REVIEW THE TERMS OF THIS DEBENTURE, INCLUDING SECTIONS 3(c)(iii) AND 16(a) HEREOF. THE PRINCIPAL AMOUNT REPRESENTED BY THIS DEBENTURE AND, ACCORDINGLY, THE SECURITIES ISSUABLE UPON CONVERSION HEREOF MAY BE LESS THAN THE AMOUNTS SET FORTH ON THE FACE HEREOF PURSUANT TO SECTION 3(c)(iii) OF THIS DEBENTURE.

THIS DEBENTURE HAS BEEN ISSUED WITH ORIGINAL ISSUE DISCOUNT ("OID"). PURSUANT TO TREASURY REGULATION §1.1275-3(b)(1), A REPRESENTATIVE OF THE COMPANY HEREOF WILL, BEGINNING TEN DAYS AFTER THE ISSUANCE DATE OF THIS DEBENTURE, PROMPTLY MAKE AVAILABLE TO THE HOLDER UPON REQUEST THE INFORMATION DESCRIBED IN TREASURY REGULATION §1.1275-3(B)(1)(I). THE CONTACT INFORMATION OF THE COMPANY REPRESENTATIVE IS SET FORTH IN THE DEBENTURE PURCHASE AGREEMENT.

Remark Holdings, Inc.

Amended and Restated Subordinated Convertible Debenture

Dated as of: November 7, 2022

Original Principal Amount: $2,778,000

Original Issuance Date: October 6, 2022 (the "**Issuance Date**")

Original Purchase Price: $2,500,000

FOR VALUE RECEIVED, Remark Holdings, Inc., a Delaware corporation (the "**Company**"), hereby promises to pay to the order of Ionic Ventures, LLC or its registered assigns (the "**Holder**") the amount set forth above as the Original Principal Amount (as reduced pursuant to the terms hereof pursuant to redemption, conversion or otherwise, the "**Principal**") when due, whether upon the Maturity Date (as defined below), or upon acceleration, redemption or otherwise (in each case in accordance with the terms hereof) and to pay interest ("**Interest**") on any outstanding Principal at the Standard Rate (as defined below) and if not fully paid or converted or redeemed on the Trigger Date (as defined herein), at the Trigger Rate (as defined below), until the same becomes due and payable, whether upon the Maturity Date (as defined herein), or upon acceleration, conversion, redemption or otherwise (in each case in accordance with the terms hereof). This Subordinated Convertible Debenture (including all Subordinated Convertible Debentures issued in exchange, transfer or replacement hereof in accordance with the terms hereof, this "**Debenture**") is the Debenture issued pursuant to that certain Debenture Purchase Agreement, dated as of October 6, 2022 (the "**Subscription Date**"), by and between the Company and the Buyer made a party thereto, as amended from time to time (the "**Debenture Purchase Agreement**").

The Company and the Holder hereby acknowledge and agree that on October 6, 2022, the Company issued to Holder the original Debenture (the "**Original Debenture**"), which is hereby cancelled and discharged and superseded in its entirety with this Amended and Restated Debenture, which has substantially the same terms and conditions as the Original Debenture with the exception of the addition of Section 3(c)(iii) herein which is being made solely at the request of Nasdaq. Upon execution and delivery of this Amended and Restated Debenture, the Original Debenture shall have no further force or effect and shall be surrendered to the Company.

Certain capitalized terms used herein are defined in Section 27. The Company hereby acknowledges and agrees that if this Debenture is not fully paid or converted (including, without limitation, all Principal, Interest and other penalties and payments hereon) in accordance with the terms herein on or prior to the Trigger Date, then the Original Principal Amount shall be deemed to have been $3,334,000 from the Subscription Date (and recalculations of all Interest, penalties and other payments shall be automatically adjusted accordingly).

1. PAYMENTS OF PRINCIPAL. On the Maturity Date, the Company shall pay to the Holder an amount in cash representing all outstanding Principal, accrued and unpaid Interest and accrued and unpaid Late Charges (as defined in Section 22(c)) on such Principal and Interest. Notwithstanding anything herein to the contrary, with respect to any redemption hereunder, the Company shall redeem First, all accrued and unpaid Late Charges on any Principal and Interest hereunder and Second, all accrued and unpaid Interest hereunder, and Third, after extinguishment of all such accrued and unpaid Interest and Late Charges, if any, all unpaid Principal outstanding hereunder.

2. INTEREST; INTEREST RATES. Interest shall accrue hereunder from the Issuance Date at eight percent (8%) per annum (the "**Standard Rate**") and shall be computed on the basis of a 365/6-day year and the actual number of days elapsed. If this Debenture is not fully paid or converted or redeemed by the Trigger Date or if a Trigger Event (as defined herein) shall have occurred, Interest on this Debenture shall accrue thereafter at fifteen percent (15.0%) per annum (the "**Trigger Rate**") and shall be computed on the basis of a 365/6-day year and the actual number of days elapsed. Accrued and unpaid Interest shall be payable in kind only by way of inclusion of such Interest in the Conversion Amount (as defined below) on the Automatic Conversion Date (as defined below) in accordance with Section 3(b)(i), or upon any earlier redemption in accordance with Section 10.

3. AUTOMATIC CONVERSION OF DEBENTURE. This Debenture shall be convertible into validly issued, fully paid and non-assessable Common Shares (as defined below), on the terms and conditions set forth in this Section 3.

(a) Automatic Conversion. Subject to the provisions of Section 3(d), on the Automatic Conversion Date, the outstanding and unpaid Conversion Amount shall be converted into validly issued, fully paid and non-assessable Common Shares in accordance with Section 3(c), at the Conversion Rate (as defined below). The Company shall not issue any fraction of a Common Share upon any conversion. If the issuance would result in the issuance of a fraction of a Common Share, the Company shall round such fraction of a Common Share up to the nearest whole share. The Company shall pay any and all transfer, stamp, issuance and similar taxes (except to the extent such tax is in respect of the Holder's instructions to issue Common Shares to a Person other than the Holder), costs and expenses (including, without limitation, fees and expenses of the transfer agent of the Company (the "**Transfer Agent**")) that may be payable with respect to the issuance and delivery of Common Shares upon conversion of any Conversion Amount.

(b) Conversion Rate. The number of Common Shares issuable upon conversion of the Conversion Amount pursuant to Section 3(a) shall be determined by dividing (x) such Conversion Amount by (y) the Conversion Price (the "**Conversion Rate**"). For purposes of this Debenture, the following terms shall have the following meanings:

(i) "**Automatic Conversion Date**" means the earlier of (i) the effectiveness of the initial Registration Statement (as defined in the RRA) covering the Registrable Securities (as defined in the RRA) and (ii) 181st day after the Subscription Date.

(ii) "**Conversion Amount**" means the sum of (x) the Principal outstanding as of the Automatic Conversion Date or other date of determination and (y) all accrued and unpaid Interest with respect to such Principal and accrued and unpaid Late Charges with respect to such Principal and such Interest, if any.

(iii) "**Conversion Price**" means, with respect to the Automatic Conversion Date or other date of determination, the lower of (x) the Variable Conversion Price then in effect and (y) the Fixed Conversion Price then in effect.

(vi) "**Fixed Conversion Price**" means, as of the Automatic Conversion Date or other date of determination, the price per share equal to $0.50, subject to adjustment as provided herein.

(vii) "**Trigger Conversion Price**" means, as of the Automatic Conversion Date or other date of determination, the product of (x) 0.85 and (y) the Conversion Price.

(viii) "**Variable Conversion Price**" means, as of the Automatic Conversion Date or other relevant date of determination, 80% (or 70% if the Common Shares are not then trading on a Principal Market) of the average of the ten (10) lowest VWAPs starting on the Trading Day immediately following the receipt of Pre-Settlement Conversion Shares (as defined below) following the Automatic Conversion Date or other relevant date of determination and ending the later of (a) ten (10) consecutive Trading Days after (and not including) the Automatic Conversion Date or such other relevant date of determination and (b) the Trading Day immediately after the Common Shares in the aggregate amount

of at least $13,900,000 shall have traded on the Principal Market after the Subscription Date (such period, the "**Variable Conversion Measuring Period**"); provided, however, that any trading day on which Buyer does not have free trading shares in its account for any reason will be excluded from the calculation of total trading. All such determinations to be appropriately adjusted for any stock dividend, stock split, stock combination, reclassification or similar transaction that proportionately affects the Common Shares during such Variable Conversion Measuring Period.

(c) Mechanics of Conversion.

(i) Pre-Settlement. No later than two (2) Trading Days after the Automatic Conversion Date ("**Pre-Settlement Conversion Share Delivery Deadline**"), the Company shall (A) transmit by electronic mail an acknowledgment of confirmation and representation, in the form attached hereto as Exhibit I (an "**Acknowledgement**") and (B) cause the Transfer Agent to deliver to the Investor such number of Common Shares (the "**Pre-Settlement Conversion Shares**") equal to the product of (A) the quotient of (y) the Conversion Amount divided by (z) the Pre-Settlement Conversion Price (as defined below), and as to which the Holder shall be the owner thereof as of such time of delivery of such Pre-Settlement Conversion Shares, multiplied by (B) 125%. The "**Pre-Settlement Conversion Price**" means 80% of the Closing Price on the date immediately preceding the Automatic Conversion Date. All such determinations to be appropriately adjusted for any share split, share dividend, share combination or other similar transaction during any such measuring period. Investor shall have the right to request additional Pre-Settlement Conversion Shares during the Variable Conversion Measuring Period at any time there is an anticipated shortfall determined in Investors sole discretion.

(ii) Settlement. No later than two (2) Trading Days after the Variable Conversion Measuring Period (the "**Conversion Settlement Date**"), the Company shall (A) transmit by electronic mail an Acknowledgment and (B) cause the Transfer Agent to deliver to the Investor such number of Common Shares (the "**Settlement Conversion Shares**") equal to the Conversion Amount divided by the Conversion Price; provided, however, that the number of Common Shares to be delivered by the Conversion Settlement Date shall be reduced by the number of Pre-Settlement Conversion Shares delivered. Notwithstanding anything herein to the contrary, if the number of Pre-Settlement Conversion Shares delivered to the Investor exceeds the number of Settlement Conversion Shares, then the Investor shall return such excess shares.

(iii) Floor Price. Notwithstanding anything herein to the contrary, in no event shall the Conversion Price be below $0.10 (the "**Floor Price**"). In the event that the Conversion Price is less than $0.10, then (A) the Holder shall be entitled to that number of Settlement Conversion Shares issuable with an assumed Conversion Price of $0.10, and (B) the Company shall make a cash payment to Holder on or prior to the Maturity Date (subject to the Senior Loan Agreements) of the Balance Amount (as defined below). The "**Balance Amount**" shall be calculated by subtracting the number of Settlement Conversion Shares issuable at an assumed Conversion Price of $0.10 from the number of Settlement Conversion Shares issuable at the actual Conversion Price, multiplied by a price equal to the average of the ten (10) lowest VWAPs during the Variable Conversion Measuring Period (provided, however, that any trading day on which the Holder does not have free trading shares in its account for any reason will be excluded from the calculation of total trading). The Floor Price, and all determinations above shall be appropriately adjusted for any stock dividend, stock split, stock combination, reclassification or similar transaction that proportionately affects the Common Shares.

(iv) Acknowledgments.

(A) Each Acknowledgement shall state that all Common Shares referenced therein are eligible to be resold pursuant to Rule 144 or Rule 144A promulgated under the 1933 Act (or a successor rule thereto) (collectively, "**Rule 144**") or an effective and available registration statement, to the Holder and the Transfer Agent which acknowledgement shall constitute an instruction to the Transfer Agent to process such issuance in accordance with the terms herein.

(B) On or before the Pre-Settlement Conversion Share Delivery Deadline and Conversion Settlement Date, as applicable (each a "**Share Delivery Deadline**"), the Company shall, (1) after the Resale Eligibility Date and provided that the Transfer Agent is participating in The Depository Trust Company's ("**DTC**") Fast Automated Securities Transfer Program, credit such aggregate number of Common Shares to which the Holder shall be entitled pursuant to such conversion to the Holder's or its designee's balance account with DTC through its Deposit/Withdrawal at Custodian system, which balance account Holder shall designate in writing to the Company or the Transfer Agent, or (2) prior to the Resale Eligibility Date or if the Transfer Agent is not participating in the DTC Fast Automated Securities Transfer Program, upon the request of the Holder, issue and send

(via reputable overnight courier) to the address as specified in writing to the Company or the Transfer Agent, a certificate, registered in the name of the Holder or its designee, for the number of Common Shares to which the Holder shall be entitled pursuant to such automatic conversion. The Person or Persons entitled to receive the Common Shares issuable upon automatic conversion of this Debenture shall be treated for all purposes as the record holder or holders of such Common Shares on the Automatic Conversion Date and Conversion Settlement Date, as applicable. Notwithstanding anything to the contrary contained in this Debenture or the RRA, after the Resale Eligibility Date, the Company shall cause the Transfer Agent to deliver unlegended Common Shares to the Holder (or its designee) in connection with any sale of Conversion Shares, and for which the Holder has not yet settled.

(v) Company's Failure to Timely Convert. If the Company shall fail, for any reason or for no reason, on or prior to the applicable Share Delivery Deadline, either (I) (x) prior to the Resale Eligibility Date or if the Transfer Agent is not participating in the DTC Fast Automated Securities Transfer Program, to issue and deliver to the Holder (or its designee) a certificate (if requested by the Holder) for the number of Common Shares to which the Holder is entitled and register such Common Shares on the Company's share register, or (y) after the Resale Eligibility Date and if the Transfer Agent is participating in the DTC Fast Automated Securities Transfer Program, to credit the balance account of the Holder or the Holder's designee with DTC for such number of Common Shares to which the Holder is entitled upon the conversion of this Debenture (as the case may be) or (II) if a Registration Statement covering the resale of the Common Shares that are the subject of the automatic conversion (the "**Unavailable Conversion Shares**") is not available for the resale of such Unavailable Conversion Shares and the Company fails to promptly, but in no event later than as required pursuant to the RRA (x) so notify the Holder and (y) deliver the Common Shares electronically without any restrictive legend by crediting such aggregate number of Common Shares to which the Holder is entitled pursuant to such automatic conversion to the Holder's or its designee's balance account with DTC through its Deposit/Withdrawal At Custodian system (the event described in the immediately foregoing clause (II) is hereinafter referred as a "**Notice Failure**" and together with the event described in clause (I) above, a "**Conversion Failure**"), then, in addition to all other remedies available to the Holder, the Company shall pay in cash to the Holder on each Trading Day after such applicable Share Delivery Deadline that the issuance of such Common Shares is not timely effected an amount equal to 2% of the product of (A) the aggregate number of Common Shares not issued to the Holder on or prior to the applicable Share Delivery Deadline and to which the Holder is entitled, multiplied by (B) the highest trading price of the Common Shares between the Automatic Conversion Date and the actual date of delivery. In addition to the foregoing, if on or prior to the applicable Share Delivery Deadline and after the Resale Eligibility Date either (A) if the Transfer Agent is not participating in the DTC Fast Automated Securities Transfer Program, the Company shall fail to issue and deliver to the Holder (or its designee) a certificate and register such Common Shares on the Company's share register or, if the Transfer Agent is participating in the DTC Fast Automated Securities Transfer Program, the Transfer Agent shall fail to credit the balance account of the Holder or the Holder's designee with DTC for the number of Common Shares to which the Holder is entitled upon the automatic conversion hereunder or pursuant to the Company's obligation pursuant to clause (II) below or (B) a Notice Failure occurs, and if after such applicable Share Delivery Deadline the Holder purchases (in an open market transaction or otherwise) Common Shares corresponding to all or any portion of the number of Common Shares issuable upon such automatic conversion that the Holder is entitled to receive from the Company and has not timely received from the Company in connection with such Conversion Failure or Notice Failure, as applicable (a "**Buy-In**"), then, in addition to all other remedies available to the Holder, the Company shall, within two (2) Business Days after receipt of the Holder's request and in the Holder's discretion, either: (I) pay cash to the Holder in an amount equal to the Holder's total purchase price (including reasonable brokerage commissions, borrow fees and any other out-of-pocket expenses, if any) for the Common Shares so purchased (including, without limitation, by any other Person in respect, or on behalf, of the Holder) (the "**Buy-In Price**"), at which point the Company's obligation to so issue and deliver such certificate (and to issue such Common Shares) or credit the balance account of such Holder or such Holder's designee, as applicable, with DTC for the number of Common Shares to which the Holder is entitled upon automatic conversion hereunder (as the case may be) (and to issue such Common Shares) shall terminate, or (II) promptly honor its obligation to so issue and deliver to the Holder a certificate or certificates representing such Common Shares or credit the balance account of such Holder or such Holder's designee, as applicable, with DTC for the number of Common Shares to which the Holder is entitled upon automatic conversion hereunder (as the case may be) and pay cash to the Holder in an amount equal to the excess (if any) of the Buy-In Price over the product of (x) such number of Common Shares subject to conversion multiplied by (y) the price at which the Holder sold such Common Shares in anticipation of the delivery thereof upon such applicable conversion (and if the Holder shall not have sold such shares, the price for purposes of this clause (y) shall equal the Buy-In Price divided by the number of Common Shares described in the immediately preceding clause (x)) (the "**Buy-In Payment Amount**"). Nothing

shall limit the Holder's right to pursue any other remedies available to it hereunder, at law or in equity, including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver certificates representing Common Shares (or to electronically deliver such Common Shares) upon automatic conversion of this Debenture as required pursuant to the terms hereof.

(vi) Registration; Book-Entry. The Company shall maintain at its principal executive offices, or such other office or agency of the Company as it may designate by notice to the Holder of this Debenture, a register (the "**Register**") for the recordation of the names and addresses of the Holder of this Debenture, the principal amount of this Debenture held by the Holder, and the number of Common Shares issuable upon conversion of this Debenture held by the Holder (the "**Registered Debenture**"). The entries in the Register shall be conclusive and binding for all purposes absent manifest error. The Company and the Holder of this Debenture shall treat each Person whose name is recorded in the Register as the owner of this Debenture for all purposes (including, without limitation, the right to receive payments of Principal, Interest and any Late Charges hereunder) notwithstanding notice to the contrary. Subject to compliance with applicable securities laws, a Registered Debenture may be assigned, transferred or sold in whole or in part only by registration of such assignment or sale on the Register. Upon its receipt of a written request to assign, transfer or sell all or part of any Registered Debenture by the Holder, the Company shall record the information contained therein in the Register and issue a new Registered Debenture in the same aggregate principal amount as the principal amount of the surrendered Registered Debenture to the designated assignee or transferee pursuant to Section 16, provided that if the Company does not so record an assignment, transfer or sale (as the case may be) of a Registered Debenture within two (2) Business Days of such a request, then the Register shall be automatically deemed updated to reflect such assignment, transfer or sale (as the case may be). Notwithstanding anything to the contrary set forth in this Section 3, following automatic conversion of this Debenture in accordance with the terms hereof, the Holder shall not be required to physically surrender this Debenture to the Company unless the full Conversion Amount represented by this Debenture is being converted (in which event this Debenture shall be delivered to the Company following conversion thereof). The Holder and the Company shall maintain records showing the Principal and Interest converted and/or paid (as the case may be) and the dates of such conversions and/or payments (as the case may be) or shall use such other method, reasonably satisfactory to the Holder and the Company, so as not to require physical surrender of this Debenture upon conversion. If the Company does not update the Register to record such Principal and Interest converted and/or paid (as the case may be) and the dates of such conversions, and/or payments (as the case may be) within two (2) Business Days of such occurrence, then the Register shall be automatically deemed updated to reflect such occurrence.

(d) Limitations on Conversions. The Company shall not effect the conversion of any portion of this Debenture, and the Holder shall not have the right to a conversion of any portion of this Debenture pursuant to the terms and conditions of this Debenture and any such conversion shall be null and void and treated as if never made, to the extent that after giving effect to such conversion, the Holder together with the other Attribution Parties collectively would beneficially own in excess of 4.99% (the "**Maximum Percentage**") of the Common Shares outstanding immediately after giving effect to such conversion. For purposes of the foregoing sentence, the aggregate number of Common Shares beneficially owned by the Holder and the other Attribution Parties shall include the number of Common Shares held by the Holder and all other Attribution Parties plus the number of Common Shares issuable upon conversion of this Debenture with respect to which the determination of such sentence is being made, but shall exclude Common Shares which would be issuable upon (A) conversion of the remaining, nonconverted portion of this Debenture beneficially owned by the Holder or any of the other Attribution Parties and (B) exercise or conversion of the unexercised or nonconverted portion of any other securities of the Company (including, without limitation, any convertible debentures or convertible preferred shares or warrants) beneficially owned by the Holder or any other Attribution Party subject to a limitation on conversion or exercise analogous to the limitation contained in this Section 3(d). For purposes of this Section 3(d), beneficial ownership shall be calculated in accordance with Section 13(d) of the 1934 Act. For purposes of determining the number of outstanding Common Shares the Holder may acquire upon the conversion of this without exceeding the Maximum Percentage, the Holder may rely on the number of outstanding Common Shares as reflected in (x) the Company's most recent Annual Report on Form 10-K, Quarterly Report on Form 10-Q, Current Report on Form 8-K or other public filing with the SEC, as the case may be, (y) a more recent public announcement by the Company or (z) any other written notice by the Company or the Transfer Agent, if any, setting forth the number of Common Shares outstanding (the "**Reported Outstanding Share Number**"). If the actual number of outstanding Common Shares is less than the Reported Outstanding Share Number on the Automatic Conversion Date and the Conversion Settlement Date, the Company shall notify the Holder in writing of the number of Common Shares

then outstanding and, to the extent that such issuances would otherwise cause the Holder's beneficial ownership, as determined pursuant to this Section 3(d), to exceed the Maximum Percentage, the Holder must notify the Company of a reduced number of Common Shares to be issued pursuant to such automatic conversion. For any reason at any time, upon the written or oral request of the Holder, the Company shall within one (1) Business Day confirm orally and in writing or by electronic mail to the Holder the number of Common Shares then outstanding. In any case, the number of outstanding Common Shares shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Debenture, by the Holder and any other Attribution Party since the date as of which the Reported Outstanding Share Number was reported. In the event that the issuance of Common Shares to the Holder upon conversion of this Debenture results in the Holder and the other Attribution Parties being deemed to beneficially own, in the aggregate, more than the Maximum Percentage of the number of outstanding Common Shares (as determined under Section 13(d) of the 1934 Act), the number of shares so issued by which the Holder's and the other Attribution Parties' aggregate beneficial ownership exceeds the Maximum Percentage (the "**Excess Shares**") shall be deemed null and void and shall be cancelled ab initio, and the Holder shall not have the power to vote or to transfer the Excess Shares. Upon delivery of a written notice to the Company, the Holder may from time to time increase (with such increase not effective until the sixty-first (61st) day after delivery of such notice) or decrease the Maximum Percentage to any other percentage as specified in such notice; provided that (i) any such increase in the Maximum Percentage will not be effective until the sixty-first (61st) day after such notice is delivered to the Company and (ii) any such increase or decrease will apply only to the Holder and the other Attribution Parties and not to any other holder of Debentures that is not an Attribution Party of the Holder. For purposes of clarity, the Common Shares issuable pursuant to the terms of this Debenture in excess of the Maximum Percentage shall not be deemed to be beneficially owned by the Holder for any purpose including for purposes of Section 13(d) of, or Rule 16a-1(a)(1) under, the 1934 Act. No prior inability to convert this Debenture pursuant to this paragraph shall have any effect on the applicability of the provisions of this paragraph with respect to any subsequent determination of convertibility. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 3(d) to the extent necessary to correct this paragraph (or any portion of this paragraph) which may be defective or inconsistent with the intended beneficial ownership limitation contained in this Section 3(d) or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitation contained in this paragraph may not be waived and shall apply to a successor holder of this Debenture.

4. RIGHTS UPON TRIGGER EVENT AND EVENT OF DEFAULT.

(a) Trigger Event. Each of the following events shall constitute a "**Trigger Event**":

(i) the suspension from trading or the failure of the Common Shares to be trading or listed (as applicable) on an Eligible Market for a period of three (3) consecutive Trading Days;

(ii) the Company's notice, written or oral, to the Holder of this Debenture including, without limitation, by way of public announcement or through any of its agents, at any time, of its intention not to comply, as required, with the conversion of the Debenture into Common Shares in accordance with the provisions of this Debenture, other than pursuant to Section 3(d);

(iii) except to the extent the Company is in compliance with Section 9(b) below, at any time following the fifth (5th) consecutive day that the Company shall not have reserved for issuance upon conversion of this Debenture a number of Common Shares equal to or greater than the Required Reserve Amount;

(iv) any Material Adverse Effect (as defined in the Debenture Purchase Agreement) shall have occurred; or

(v) any provision of any Transaction Document shall at any time for any reason (other than pursuant to the express terms thereof) cease to be valid and binding on or enforceable against the Company or any of its Subsidiaries in any material respect, or the validity or enforceability thereof shall be contested by the Company or any of its Subsidiaries, or a proceeding shall be commenced by the Company or any Subsidiary or any governmental authority having jurisdiction over any of them, seeking to establish the invalidity or unenforceability thereof, or the Company or any Subsidiary shall deny in writing that it has any liability or obligation purported to be created under any Transaction Document.

(b) Events of Default. Each of the following events shall constitute an "**Event of Default**" and each of the events in clauses (iv), (v) and (vi) shall constitute a "**Bankruptcy Event of Default**":

(i) the Company's failure to pay to the Holder any amount of Principal, Interest, Late Charges or other amounts when and as due under this Debenture, and such failure remains uncured for a period of more than two (2) Trading Days;

(ii) the Company, either (A) fails to cure a Conversion Failure by delivery of the required number of Common Shares within one (1) Trading Day after each applicable Share Conversion Deadline or (B) fails to remove any restrictive legend on any certificate or any Common Shares issued to the Holder upon conversion of this Debenture as and when required by this Debenture, unless otherwise then prohibited by applicable federal securities laws, and any such failure remains uncured for at least two (2) days;

(iii) the occurrence of any default under, redemption of or acceleration prior to maturity of at least an aggregate of $100,000 of Indebtedness (as defined in the Debenture Purchase Agreement) of the Company or any of its Subsidiaries;

(iv) bankruptcy, insolvency, reorganization or liquidation proceedings or other proceedings for the relief of debtors shall be instituted by or against the Company or any Significant Subsidiary and, if instituted against the Company or any Significant Subsidiary by a third party, shall not be dismissed or stayed within sixty (60) days of their initiation;

(v) the commencement by the Company or any Significant Subsidiary of a voluntary case or proceeding under any applicable federal, state or foreign bankruptcy, insolvency, reorganization or other similar law or of any other case or proceeding to be adjudicated a bankrupt or insolvent, or the consent by the Company or any Significant Subsidiary to the entry of a decree, order, judgment or other similar document in respect of the Company or any Significant Subsidiary in an involuntary case or proceeding under any applicable federal, state or foreign bankruptcy, insolvency, reorganization or other similar law or to the commencement of any bankruptcy or insolvency case or proceeding against the Company or any Significant Subsidiary, or the filing by the Company or any Significant Subsidiary of a petition or answer or consent seeking reorganization or relief under any applicable federal, state or foreign law, or the consent by the Company or any Significant Subsidiary to the filing of such petition or to the appointment of or taking possession by a custodian, receiver, liquidator, assignee, trustee, sequestrator or other similar official of the Company or any Significant Subsidiary or of any substantial part of the Company's or any Significant Subsidiary's property, or the making by the Company or any Significant Subsidiary of an assignment for the benefit of creditors, or the execution of a composition of debts, or the occurrence of any other similar federal, state or foreign proceeding, or the admission by the Company or any Significant Subsidiary in writing of the Company's or any Significant Subsidiary's inability to pay their debts generally as they become due, or the taking of corporate action by the Company or any Significant Subsidiary in furtherance of any such action;

(vi) the entry by a court of competent jurisdiction of (i) a decree, order, judgment or other similar document in respect of the Company or any Significant Subsidiary of a voluntary or involuntary case or proceeding under any applicable federal, state or foreign bankruptcy, insolvency, reorganization or other similar law or (ii) a decree, order, judgment or other similar document adjudging the Company or any Significant Subsidiary as bankrupt or insolvent, or approving as properly filed a petition seeking liquidation, reorganization, arrangement, adjustment or composition of or in respect of the Company or any Significant Subsidiary under any applicable federal, state or foreign law or (iii) a decree, order, judgment or other similar document appointing a custodian, receiver, liquidator, assignee, trustee, sequestrator or other similar official of the Company or any Significant Subsidiary or of any substantial part of the Company's or any Significant Subsidiary's property, or ordering the winding up or liquidation of the Company's or any Significant Subsidiary's affairs, and the continuance of any such decree, order, judgment or other similar document or any such other decree, order, judgment or other similar document unstayed and in effect for a period of sixty (60) consecutive days;

(vii) a final judgment or judgments from the same or affiliated entities for the payment of money aggregating in excess of $100,000 are rendered against the Company and/or any of its Significant Subsidiaries and which judgments are not, within thirty (30) days after the entry thereof, bonded, discharged, settled or stayed pending appeal, or are not discharged within thirty (30) days after the expiration of such stay; provided, however, any judgment which is covered by insurance or an indemnity from a credit worthy party shall not be included in calculating the $100,000 amount set forth above so long as the Company provides the Holder a written statement from such insurer or indemnity

provider (which written statement shall be reasonably satisfactory to the Holder) to the effect that such judgment is covered by insurance or an indemnity and the Company or such Significant Subsidiary (as the case may be) will receive the proceeds of such insurance or indemnity;

(viii) the Company and/or any Significant Subsidiary, individually or in the aggregate, either (i) fails to pay, when due, or within any applicable grace period, any payment with respect to any Indebtedness for borrowed money in excess of $100,000 due to any third party (other than, with respect to unsecured Indebtedness only, payments contested by the Company and/or such Significant Subsidiary (as the case may be) in good faith by proper proceedings and with respect to which adequate reserves have been set aside for the payment thereof in accordance with GAAP) or is otherwise in breach or violation of any agreement for monies owed or owing in an amount in excess of $100,000, which breach or violation permits the other party thereto to declare a default or otherwise accelerate amounts due thereunder, or (ii) suffer to exist any other circumstance or event that would, with or without the passage of time or the giving of notice, result in a default or event of default under any agreement binding the Company or any Significant Subsidiary, which default or event of default would or is likely to have a Material Adverse Effect (as defined in the Debenture Purchase Agreement);

(ix) other than as specifically set forth in another clause of this Section 4(a), any representation or warranty of the Company shall be in any material respect untrue when made or when deemed made (other than the representations or warranties subject to material adverse effect or materiality limitations, which shall not have been untrue in any respect when made or when deemed made) or the Company shall have breached any covenant or other term or condition of any Transaction Document, except, in the case of a breach of a covenant or other term or condition that is curable, only if such breach remains uncured for a period of five (5) consecutive Trading Days, provided however that a breach of Section 4(c) of the Debenture Purchase Agreement shall not be deemed curable; and

(x) any breach or failure in any respect by the Company or any Subsidiary to comply with any provision of Section 12 of this Debenture.

(c) Notices. Subject to the terms of the Senior Loan Agreements, the Holder shall have all the rights and remedies provided in this Debenture, including those set forth in this Section 4(c) and Section 17, the other Transaction Documents and as permitted by law or at equity. Upon the occurrence of a Trigger Event or an Event of Default with respect to this Debenture or any other Transaction Document, the Company shall promptly upon becoming aware of such Trigger Event or Event of Default deliver written notice thereof via facsimile or electronic mail and overnight courier (with next day delivery specified) (an "**Trigger Notice**") to the Holder. Notwithstanding anything to the contrary set forth in any of the Transaction Documents (including, without limitation Section 28 of this Debenture and comparable provisions contained in the other Transaction Documents), the Holder shall keep the contents of a Trigger Notice and the existence of a Trigger Event and Event of Default confidential and shall not disclose the contents of any Trigger Notice and the existence of a Trigger Event and Event of Default to any third party, regardless of whether such information constitutes material, non-public information, until the Company has made public disclosure, either through a filing made with the SEC or the issuance of a press release, regarding such matters.

(d) Notwithstanding anything to the contrary herein, if a Trigger Event or an Event of Default occurs and is continuing on the Rule 144 Eligibility Date, the outstanding and unpaid Conversion Amount as of the Rule 144 Eligibility Date shall, at Holder's option, be automatically converted into validly issued, fully paid and non-assessable Common Shares in accordance with Section 3, at the Conversion Rate using the Trigger Conversion Price, and such Rule 144 Eligibility Date shall be deemed to be an "Automatic Conversion Date" under Section 3 for purposes of this Section 4(c). In the event of automatic conversion under this Section 4(c), the parties agree that the Holder's damages would be uncertain and difficult to estimate because of the parties' inability to predict future interest rates and the uncertainty of the availability of a suitable substitute investment opportunity for the Holder. Accordingly, any conversion premium due under Section 3 and this Section 4(c) is intended by the parties to be, and shall be deemed, a reasonable estimate of the Holder's actual loss of its investment opportunity and not as a penalty. Any automatic conversion upon a Trigger Event and Event of Default shall not constitute an election of remedies by the Holder, and all other rights and remedies of the Holder shall be preserved.

(e) Mandatory Redemption upon Bankruptcy Event of Default. Notwithstanding anything to the contrary herein, and notwithstanding any conversion that is then required or in process, upon any Bankruptcy Event of Default, whether occurring prior to or following the Maturity Date, the Company shall immediately pay to the Holder an amount in cash equal to the product of (i) all outstanding Principal, accrued and unpaid Interest and accrued and unpaid Late Charges on such Principal and Interest, multiplied

by (ii) 120% (the "**Event of Default Redemption Price**"), in addition to any and all other amounts due hereunder, without the requirement for any notice or demand or other action by the Holder or any other Person or entity; provided that the Holder may, in its sole discretion, waive such right to receive payment upon a Bankruptcy Event of Default, in whole or in part, and any such waiver shall not affect any other rights of the Holder hereunder, including any other rights in respect of such Bankruptcy Event of Default, any right to conversion, and any right to payment of the Event of Default Redemption Price or Change of Control Redemption Price, as applicable.

5. RIGHTS UPON FUNDAMENTAL TRANSACTION.

(a) Assumption. The Company shall not enter into or be party to a Fundamental Transaction unless (i) the Successor Entity assumes in writing all of the obligations of the Company under this Debenture and the other Transaction Documents in accordance with the provisions of this Section 5(a) pursuant to written agreements in form and substance reasonably satisfactory to the Holder and approved by the Holder prior to such Fundamental Transaction, including agreements to deliver to the Holder of this Debenture in exchange for this Debenture a security of the Successor Entity (if other than the Company) evidenced by a written instrument substantially similar in form and substance to this Debenture, including, without limitation, having a principal amount and interest rates equal to the principal amount then outstanding and the interest rates of this Debenture, respectively, held by the Holder, having similar conversion terms as this Debenture and having similar ranking to this Debenture, and reasonably satisfactory to the Holder and (ii) the Successor Entity (including its Parent Entity) is a publicly traded corporation whose equity is quoted on or listed for trading on an Eligible Market. Upon the occurrence of any Fundamental Transaction, the Successor Entity (if other than the Company) shall succeed to, and be substituted for, the Company (so that from and after the date of such Fundamental Transaction, the provisions of this Debenture and the other Transaction Documents referring to the "Company" shall refer instead to the Successor Entity), and may exercise every right and power of the Company and shall assume all of the obligations of the Company under this Debenture and the other Transaction Documents with the same effect as if such Successor Entity had been named as the Company herein. Upon consummation of a Fundamental Transaction, the Successor Entity shall deliver to the Holder confirmation that there shall be issued upon conversion or redemption of this Debenture at any time after the consummation of such Fundamental Transaction, in lieu of the Common Shares or other securities, cash, assets or other property (except such items still issuable under Sections 6 and 13, which shall continue to be receivable thereafter) issuable upon the conversion or redemption of this Debenture prior to such Fundamental Transaction, such shares of the publicly traded equity of the Successor Entity (including, if applicable, its Parent Entity) which the Holder would have been entitled to receive upon the happening of such Fundamental Transaction had this Debenture been converted immediately prior to such Fundamental Transaction (without regard to any limitations on the conversion of this Debenture), as adjusted in accordance with the provisions of this Debenture. Notwithstanding the foregoing, the Holder may elect, at its sole option, by delivery of written notice to the Company to waive this Section 5(a) to permit the Fundamental Transaction without the assumption of this Debenture. The provisions of this Section 5(a) shall apply similarly and equally to successive Fundamental Transactions and shall be applied without regard to any limitations on the conversion of this Debenture.

(b) Notice of a Change of Control or Fundamental Transaction; Conversion Right. No sooner than twenty (20) Trading Days nor later than ten (10) Trading Days prior to the consummation of a Fundamental Transaction, but not prior to the public announcement of such Change of Control or Fundamental Transaction, the Company shall deliver written notice thereof via electronic mail and overnight courier to the Holder (a "**Change of Control Notice**"). At any time during the period beginning after the Holder's receipt of a Change of Control Notice or the Holder becoming aware of a Change of Control or Fundamental Transaction if a Change of Control Notice is not delivered to the Holder in accordance with the immediately preceding sentence (as applicable) and ending on the later of twenty (20) Trading Days after (A) consummation of such Change of Control or Fundamental Transaction or (B) the date of receipt of such Change of Control Notice, the Holder may convert all or any portion of this Debenture into Common Shares pursuant to Section 3 by delivering written notice thereof ("**Change of Control Conversion Notice**") to the Company, which Change of Control Conversion Notice shall indicate the Conversion Amount the Holder is electing to convert.

6. RIGHTS UPON ISSUANCE OF PURCHASE RIGHTS AND OTHER CORPORATE EVENTS.

(a) Purchase Rights. In addition to any adjustments pursuant to Section 7 below, if at any time the Company grants, issues or sells any Options, Convertible Securities or rights to purchase stock, warrants, securities or other property pro rata to all or substantially all of the record holders of any class of Common Shares (the "**Purchase Rights**"), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of Common Shares acquirable upon complete conversion of this Debenture (without

taking into account any limitations or restrictions on the convertibility of this Debenture and assuming for such purpose that the Debenture was converted at the Conversion Price as of the applicable record date) immediately prior to the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of Common Shares are to be determined for the grant, issue or sale of such Purchase Rights (provided, however, that to the extent that the Holder's right to participate in any such Purchase Right would result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, then the Holder shall not be entitled to participate in such Purchase Right to the extent of the Maximum Percentage (and shall not be entitled to beneficial ownership of such Common Shares as a result of such Purchase Right (and beneficial ownership) to the extent of any such excess) and such Purchase Right to such extent shall be held in abeyance (and, if such Purchase Right has an expiration date, maturity date or other similar provision, such term shall be extended by such number of days held in abeyance, if applicable) for the benefit of the Holder until such time or times, if ever, as its right thereto would not result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, at which time or times the Holder shall be granted such right (and any Purchase Right granted, issued or sold on such initial Purchase Right or on any subsequent Purchase Right held similarly in abeyance (and, if such Purchase Right has an expiration date, maturity date or other similar provision, such term shall be extended by such number of days held in abeyance, if applicable)) to the same extent as if there had been no such limitation).

(b) Other Corporate Events. In addition to and not in substitution for any other rights hereunder, prior to the consummation of any Fundamental Transaction pursuant to which holders of Common Shares are entitled to receive securities or other assets with respect to or in exchange for Common Shares (a "**Corporate Event**"), the Company shall make appropriate provision to ensure that the Holder will thereafter have the right to receive upon a conversion of this Debenture, at the Holder's option (i) in addition to the Common Shares receivable upon such conversion, such securities or other assets to which the Holder would have been entitled with respect to such Common Shares had such Common Shares been held by the Holder upon the consummation of such Corporate Event (without taking into account any limitations or restrictions on the convertibility of this Debenture) or (ii) in lieu of the Common Shares otherwise receivable upon such conversion, such securities or other assets received by the holders of Common Shares in connection with the consummation of such Corporate Event in such amounts as the Holder would have been entitled to receive had this Debenture initially been issued with conversion rights for the form of such consideration (as opposed to Common Shares) at a conversion rate for such consideration commensurate with the Conversion Rate. Provision made pursuant to the preceding sentence shall be in a form and substance reasonably satisfactory to the Holder. The provisions of this Section 6 shall apply similarly and equally to successive Corporate Events and shall be applied without regard to any limitations on the conversion or redemption of this Debenture.

7. RIGHTS UPON ISSUANCE OF OTHER SECURITIES.

(a) Adjustment of Fixed Conversion Price upon Issuance of Common Shares. If and whenever during the period commencing immediately following the Subscription Date the Company issues or sells, or in accordance with this Section 7(a) is deemed to have issued or sold, any Common Shares (including the issuance or sale of Common Shares owned or held by or for the account of the Company, but excluding any Excluded Securities (as defined in the Debenture Purchase Agreement) issued or sold or deemed to have been issued or sold) for cash consideration per share (the "**New Issuance Price**") less than a price equal to the Fixed Conversion Price in effect immediately prior to such issuance or sale or deemed issuance or sale (such Standard Conversion Price then in effect is referred to herein as the "**Applicable Price**") (the foregoing a "**Dilutive Issuance**"), then, immediately after such Dilutive Issuance, the Fixed Conversion Price then in effect shall be reduced to an amount equal to the New Issuance Price. For all purposes of the foregoing (including, without limitation, determining the adjusted Fixed Conversion Price and the New Issuance Price under this Section 7(a)), the following shall be applicable:

(i) Issuance of Options. Subject to 7(a)(iv) below, if the Company in any manner grants or sells any Options (other than any Excluded Securities (as defined in the Debenture Purchase Agreement)) and the lowest price per share for which one Common Share is at any time issuable upon the exercise of any such Option or upon conversion, exercise or exchange of any Convertible Securities issuable upon exercise of any such Option or otherwise pursuant to the terms thereof is less than the Applicable Price, then such Common Share shall be deemed to be outstanding and to have been issued and sold by the Company at the time of the granting or sale of such Option for such price per share. For purposes of this Section 7(a)(i), the "lowest price per share for which one Common Share is at any time issuable upon the exercise of any such Option or upon conversion, exercise or exchange of any Convertible Securities issuable upon exercise of any such Option or otherwise pursuant to the terms thereof" shall be equal to the difference of (1) the lower of (x) the sum of the lowest amounts of consideration (if any) received or receivable by the Company with respect to any one Common Share

upon the granting or sale of such Option, upon exercise of such Option and upon conversion, exercise or exchange of any Convertible Security issuable upon exercise of such Option or otherwise pursuant to the terms thereof and (y) the lowest exercise price set forth in such Option for which one Common Share is issuable (or may become issuable assuming all possible market conditions) upon the exercise of any such Options or upon conversion, exercise or exchange of any Convertible Securities issuable upon exercise of any such Option or otherwise pursuant to the terms thereof, minus (2) the sum of all amounts paid or payable to the holder of such Option (or any other Person) with respect to any one Common Share upon the granting or sale of such Option, upon exercise of such Option and upon conversion, exercise or exchange of any Convertible Security issuable upon exercise of such Option or otherwise pursuant to the terms thereof plus the value of any other consideration consisting of cash, debt forgiveness, assets or any other property received or receivable by, or benefit conferred on, the holder of such Option (or any other Person). Except as contemplated below, no further adjustment of the Fixed Conversion Price shall be made upon the actual issuance of such Common Share or of such Convertible Securities upon the exercise of such Options or otherwise pursuant to the terms thereof or upon the actual issuance of such Common Shares upon conversion, exercise or exchange of such Convertible Securities.

(ii) Issuance of Convertible Securities. Subject to 7(a)(iv) below, if the Company in any manner issues or sells any Convertible Securities (other than any Excluded Securities (as defined in the Debenture Purchase Agreement)) and the lowest price per share for which one Common Share is at any time issuable upon the conversion, exercise or exchange thereof or otherwise pursuant to the terms thereof is less than the Applicable Price, then such Common Share shall be deemed to be outstanding and to have been issued and sold by the Company at the time of the issuance or sale of such Convertible Securities for such price per share. For the purposes of this Section 7(a)(ii), the "lowest price per share for which one Common Share is at any time issuable upon the conversion, exercise or exchange thereof or otherwise pursuant to the terms thereof" shall be equal to the difference of (1) the lower of (x) the sum of the lowest amounts of consideration (if any) received or receivable by the Company with respect to one Common Share upon the issuance or sale of the Convertible Security and upon conversion, exercise or exchange of such Convertible Security or otherwise pursuant to the terms thereof and (y) the lowest conversion price set forth in such Convertible Security for which one Common Share is issuable upon conversion, exercise or exchange thereof or otherwise pursuant to the terms thereof, minus (2) the sum of all amounts paid or payable to the holder of such Convertible Security (or any other Person) with respect to any one Common Share upon the issuance or sale of such Convertible Security plus the value of any other consideration received or receivable consisting of cash, debt forgiveness, assets or other property by, or benefit conferred on, the holder of such Convertible Security (or any other Person). Except as contemplated below, no further adjustment of the Fixed Conversion Price shall be made upon the actual issuance of such Common Shares upon conversion, exercise or exchange of such Convertible Securities or otherwise pursuant to the terms thereof, and if any such issuance or sale of such Convertible Securities is made upon exercise of any Options for which adjustment of the Fixed Conversion Price has been or is to be made pursuant to other provisions of this Section 7(a), except as contemplated below, no further adjustment of the Fixed Conversion Price shall be made by reason of such issuance or sale.

(iii) Change in Option Price or Rate of Conversion. With respect to any Options (other than any Excluded Securities (as defined in the Debenture Purchase Agreement)) or Convertible Securities (other than any Excluded Securities (as defined in the Debenture Purchase Agreement)) issued during the period commencing immediately following the Subscription Date, if the purchase or exercise price provided for in any Options, the additional consideration, if any, payable upon the issue, conversion, exercise or exchange of any Convertible Securities, or the rate at which any Convertible Securities are convertible into or exercisable or exchangeable for Common Shares increases or decreases at any time after the issuance of such Options or Convertible Securities (other than proportional changes in conversion or exercise prices, as applicable, in connection with an event referred to in Section 7(b) below), the Fixed Conversion Price in effect at the time of such increase or decrease shall be adjusted to the Fixed Conversion Price which would have been in effect at such time had such Options or Convertible Securities provided for such increased or decreased purchase price, additional consideration or increased or decreased conversion rate (as the case may be) at the time initially granted, issued or sold. For purposes of this Section 7(a)(iii), if the terms of any Option or Convertible Security that was outstanding as of the Subscription Date are increased or decreased in the manner described in the immediately preceding sentence during the period commencing immediately following the Subscription Date, then such Option or Convertible Security and the Common Shares deemed issuable upon exercise, conversion or exchange thereof shall be deemed to have been issued as of the date of such increase or decrease. No adjustment pursuant to this Section 7(a) shall be made if such adjustment would result in an increase of the Fixed Conversion Price then in effect.

(iv) Calculation of Consideration Received. If any Option and/or Convertible Security and/or Adjustment Right is issued in connection with the issuance or sale or deemed issuance or sale of Common Shares (the "**Primary Security**", and such Option and/or Convertible Security and/or Adjustment Right, the "**Secondary Securities**"), together comprising one integrated transaction (or one or more transactions if such issuances or sales or deemed issuances or sales of securities of the Company either (A) have at least one investor or purchaser in common, (B) are consummated in reasonable proximity to each other and/or (C) are consummated under the same plan of financing), the aggregate consideration per Common Share with respect to such Primary Security shall be deemed to be equal to the difference of (x) the lowest price per share for which one Common Share was issued (or was deemed to be issued pursuant to Section 7(a)(i) or 7(a)(ii) above, as applicable) in such integrated transaction solely with respect to such Primary Security, minus (y) with respect to such Secondary Securities, the sum of (I) the Black Scholes Consideration Value of each such Option, if any, (II) the fair market value (as determined by the Holder in good faith) or the Black Scholes Consideration Value, as applicable, of such Adjustment Right, if any, and (III) the fair market value (as determined by the Holder) of such Convertible Security, if any, in each case, as determined on a per share basis in accordance with this Section 7(a)(iv). If any Common Shares, Options or Convertible Securities are issued or sold or deemed to have been issued or sold for cash, the consideration received therefor (for the purpose of determining the consideration paid for such Common Shares, Option or Convertible Security, but not for the purpose of the calculation of the Black Scholes Consideration Value) will be deemed to be the gross amount of consideration received by the Company therefor. If any Common Shares, Options or Convertible Securities are issued or sold for a consideration other than cash, the amount of such consideration received by the Company (for the purpose of determining the consideration paid for such Common Shares, Option or Convertible Security, but not for the purpose of the calculation of the Black Scholes Consideration Value) will be the fair value of such consideration, except where such consideration consists of publicly traded securities, in which case the amount of consideration received by the Company for such securities will be the arithmetic average of the VWAPs of such security for each of the five (5) Trading Days immediately preceding the date of receipt. If any Common Shares, Options or Convertible Securities are issued to the owners of the non-surviving entity in connection with any merger in which the Company is the surviving entity, the amount of consideration therefor (for the purpose of determining the consideration paid for such Common Shares, Option or Convertible Security, but not for the purpose of the calculation of the Black Scholes Consideration Value) will be deemed to be the fair value of such portion of the net assets and business of the non-surviving entity as is attributable to such Common Shares, Options or Convertible Securities (as the case may be). The fair value of any consideration other than cash or publicly traded securities will be determined jointly by the Company and the Holder. If such parties are unable to reach agreement within ten (10) days after the occurrence of an event requiring valuation (the "**Valuation Event**"), the fair value of such consideration will be determined within five (5) Trading Days after the tenth (10^{th}) day following such Valuation Event by an independent, reputable appraiser jointly selected by the Company and the Holder. The determination of such appraiser shall be final and binding upon all parties absent manifest error and the fees and expenses of such appraiser shall be borne by the Company.

(v) Record Date. If the Company takes a record of the holders of Common Shares for the purpose of entitling them (A) to receive a dividend or other distribution payable in Common Shares, Options or in Convertible Securities or (B) to subscribe for or purchase Common Shares, Options or Convertible Securities, then such record date will be deemed to be the date of the issuance or sale of the Common Shares deemed to have been issued or sold upon the declaration of such dividend or the making of such other distribution or the date of the granting of such right of subscription or purchase (as the case may be).

(b) Adjustment of Fixed Conversion Price upon Subdivision or Combination of Common Shares. If the Company at any time on or after the Subscription Date subdivides (by any stock split, stock dividend, stock combination, recapitalization or other similar transaction) the outstanding Common Shares into a greater number of shares, the Fixed Conversion Price in effect immediately prior to such subdivision will be proportionately reduced. If the Company at any time on or after the Subscription Date combines (by any stock split, stock dividend, stock combination, recapitalization or other similar transaction) its outstanding Common Shares into a smaller number of shares, the Fixed Conversion Price in effect immediately prior to such combination will be proportionately increased. Any adjustment pursuant to this Section 7(b) shall become effective immediately after the effective date of such subdivision or combination. If any event requiring an adjustment under this Section 7(b) occurs during the period that a Fixed Conversion Price is calculated hereunder, then the calculation of such Fixed Conversion Price shall be adjusted appropriately to reflect such event.

(c) Other Events. Notwithstanding anything contrary herein, for so long as this Debenture or any principal amount, interest or fees or expenses due hereunder remain outstanding and unpaid, the Company shall not enter into any public or private offering of its securities (including, without limitation, any securities convertible into Common Shares) with any person (an "**Other Investor**") that has the effect of establishing rights or otherwise benefiting such Other Investor in a manner more favorable in any material respect to such Other Investor than the rights and benefits established in favor of the Holder by this Debenture unless, in any such case, the Holder has been provided with such rights and benefits pursuant to a definitive written agreement or agreements between the Company and the Holder.

(d) Calculations. All calculations under this Section 7 shall be made by rounding to the nearest 1/100th of a cent or the nearest whole share, as applicable. The number of Common Shares outstanding at any given time shall not include shares owned or held by or for the account of the Company, and the disposition of any such shares shall be considered an issue or sale of Common Shares.

(e) Voluntary Adjustment by Company. The Company may at any time during the term of this Debenture, with the prior written consent of the Holder, reduce the then current Fixed Conversion Price of this Debenture to any amount and for any period of time deemed appropriate by the board of directors of the Company.

8. NONCIRCUMVENTION. The Company hereby covenants and agrees that the Company will not, by amendment of its Certificate of Incorporation (as defined in the Debenture Purchase Agreement), its Bylaws (as defined in the Debenture Purchase Agreement) or any other organizational documents of the Company, or through any reorganization, transfer of assets, consolidation, merger, scheme of arrangement, dissolution, issue or sale of securities, or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Debenture, and will at all times in good faith carry out all of the provisions of this Debenture and take all action as may be required to protect the rights of the Holder of this Debenture. Without limiting the generality of the foregoing or any other provision of this Debenture or the other Transaction Documents, the Company (a) shall not increase the par value of any Common Shares receivable upon conversion of this Debenture above the Conversion Price then in effect, and (b) shall take all such actions as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable Common Shares upon the conversion of this Debenture. Notwithstanding anything herein to the contrary, if the Company is not permitted to automatically convert this Debenture in full for any reason (other than pursuant to restrictions set forth in Section 3(d) hereof), the Company shall use its reasonable best efforts to promptly remedy such failure, including, without limitation, obtaining such consents or approvals as necessary to permit such conversion into Common Shares.

9. RESERVATION OF AUTHORIZED SHARES.

(a) Reservation. So long as this Debenture remains outstanding, the Company shall at all times reserve at least 150% of the number of Common Shares as shall from time to time be necessary to effect the conversion of this Debenture then outstanding (without regard to any limitations on conversions and assuming this Debenture remains outstanding until the Maturity Date) (the "**Required Reserve Amount**").

(b) Insufficient Authorized Shares. If, notwithstanding Section 9(a), and not in limitation thereof, at any time while this Debenture remains outstanding, the Company does not have a sufficient number of authorized and unreserved Common Shares to satisfy its obligation to reserve for issuance upon conversion of this Debenture at least a number of Common Shares equal to the Required Reserve Amount (an "**Authorized Share Failure**"), then the Company will use commercially reasonable efforts to, as promptly as reasonably practicable, to take all corporate action necessary to authorize and reserve a sufficient number of shares, including, without limitation, calling a special meeting of stockholders to authorize additional shares to meet the Company's obligations pursuant to the Transaction Documents or to approve a reserve stock split, in the case of an insufficient number of authorized shares, obtain stockholder approval of an increase in such authorized number of shares or a reverse stock split, and causing its directors and executive officers to vote their respective shares of the Company in favor of an increase in the authorized shares of the Company or a reverse stock split to ensure that the number of authorized shares is sufficient to meet the Required Reserve Amount.

10. [RESERVED].

11. VOTING RIGHTS; NO RIGHTS AS SHAREHOLDER. The Holder shall have no voting rights as the holder of this Debenture, except as required by law. This Debenture, in and of itself, shall not confer upon the Holder any rights as a holder of Common Shares or otherwise as a shareholder of the Company.

12. COVENANTS. Until this Debenture has been converted, redeemed or otherwise satisfied in accordance with its terms:

(a) Rank. This Debenture shall constitute general unsecured obligation of the Company, ranking junior in right of payment with all of the existing and future Indebtedness of the Company and ranking senior in right of payment to any future Indebtedness of the Company that is expressly made subordinate to this Debenture by the terms of such Indebtedness.

(b) Change in Nature of Business. The Company shall not, and the Company shall cause each of its Subsidiaries to not, directly or indirectly, engage in any material line of business substantially different from those lines of business conducted by or publicly contemplated to be conducted by the Company and each of its Subsidiaries on the Subscription Date or any business substantially related or incidental thereto.

(c) Preservation of Existence, Etc. The Company shall maintain and preserve, and cause each of its Subsidiaries to maintain and preserve, its existence, and its material rights and privileges, and become or remain, and cause each of its Subsidiaries to become or remain, duly qualified and in good standing in each jurisdiction in which the character of the properties owned or leased by it or in which the transaction of its business makes such qualification necessary, except to the extent that the failure to become or remain so duly qualified and in good standing would not reasonably be expected to have a Material Adverse Effect (as defined in the Debenture Purchase Agreement).

(d) Maintenance of Properties, Etc. The Company shall reasonably maintain and preserve, and cause each of its Subsidiaries to maintain and preserve, all of its material properties which are necessary or useful in the proper conduct of its business in good working order and condition, ordinary wear and tear excepted.

(e) Maintenance of Intellectual Property. The Company will, and will cause each of its Subsidiaries to, take such action as is necessary to maintain the Intellectual Property Rights (as defined in the Debenture Purchase Agreement) of the Company and/or any of its Subsidiaries that are necessary or material to the conduct of its business in full force and effect.

(f) [Intentionally omitted]

(g) Restricted Issuances. The Company shall not, directly or indirectly, without the prior written consent of the Holder (i) issue any Debentures (other than as contemplated by the Debenture Purchase Agreement and the Debentures (as defined in the Debenture Purchase Agreement)) or (ii) issue any other securities that would cause a breach or default under this Debenture or any of the other Transaction Documents.

(h) Compliance with Holding Foreign Companies Accountable Act. As soon as practicable following the Issuance Date (or, with respect to any Successor Foreign Law (as defined below), as soon as practicable following the effective date thereof), but, in either case, in no event later than the earlier to occur of (x) 120 calendar days after the effective date of any Successor Foreign Law and (y) such date that the Common Shares would be delisted from the Principal Market with respect thereto, the Company shall take all actions necessary to cause the Company to be in compliance with the Holding Foreign Companies Accountable Act (Senate Bill S.945) in the form approved by the Senate prior to Subscription Date, assuming, for such purposes, that such bill is made into a federal law of the United States without any further changes prior to such time of determination (unless such bill or any applicable successor bill is made into a federal law of the United States on or prior to such time of determination, in which case, this clause shall apply to such successor federal law of the United States (as applicable, the "**Successor Foreign Law**"), *mutatis mutandis)*.

13. DISTRIBUTION OF ASSETS. In addition to any adjustments pursuant to Section 7, if the Company shall declare or make any dividend or other distributions of its assets (or rights to acquire its assets) to any or all holders of Common Shares, by way of return of capital or otherwise (including without limitation, any distribution of cash, stock or other securities, property or options by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (the "**Distributions**"), then the Holder will be entitled to such Distributions as if the Holder had held the number of Common Shares acquirable upon complete conversion of this Debenture (without taking into account any limitations or restrictions on the convertibility of this Debenture and assuming for such purpose that the Debenture was converted at the Conversion Price as of the applicable record date) immediately prior to the date on which a record is taken for such Distribution or, if no such record is taken, the date as of which the record holders of Common Shares are to be determined for such Distributions (provided, however, that to the extent that the Holder's right to participate in any such Distribution would result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, then the Holder shall not be entitled to participate in such Distribution to the extent of the Maximum Percentage (and shall not be entitled to beneficial ownership of such Common Shares as a result of such Distribution (and beneficial ownership)

to the extent of any such excess) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time or times, if ever, as its right thereto would not result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, at which time or times the Holder shall be granted such Distribution (and any Distributions declared or made on such initial Distribution or on any subsequent Distribution held similarly in abeyance) to the same extent as if there had been no such limitation).

14. AMENDING THE TERMS OF THIS DEBENTURE. The prior written consent of each of the Company and the Holder shall be required for any change, waiver or amendment to this Debenture (other than Section 3(d) which may not be amended, modified or waived hereunder). Any change, waiver or amendment so approved shall be binding upon the Holder and all and future holders of this Debenture.

15. TRANSFER. This Debenture and any Common Shares issued upon conversion of this Debenture may be offered, sold, assigned or transferred by the Holder without the consent of the Company only to an Affiliate of the Holder, subject only to the provisions of Section 2(g) of the Debenture Purchase Agreement.

16. REISSUANCE OF THIS DEBENTURE.

(a) Transfer. If this Debenture is to be transferred, the Holder shall surrender this Debenture to the Company, whereupon the Company will forthwith issue and deliver upon the order of the Holder a new Debenture (in accordance with Section 16(d)), registered as the Holder may request, representing the outstanding Principal being transferred by the Holder and, if less than the entire outstanding Principal is being transferred, a new Debenture (in accordance with Section 16(d)) to the Holder representing the outstanding Principal not being transferred. The Holder and any assignee, by acceptance of this Debenture, acknowledge and agree that, by reason of the provisions of Section 3(c)(iii) following conversion or redemption of any portion of this Debenture, the outstanding Principal represented by this Debenture may be less than the Principal stated on the face of this Debenture.

(b) Lost, Stolen or Mutilated Debenture. Upon receipt by the Company of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Debenture (as to which a written certification and the indemnification contemplated below shall suffice as such evidence), and, in the case of loss, theft or destruction, of any indemnification undertaking by the Holder to the Company in customary and reasonable form and, in the case of mutilation, upon surrender and cancellation of this Debenture, the Company shall execute and deliver to the Holder a new Debenture (in accordance with Section 16(d)) representing the outstanding Principal.

(c) Debenture Exchangeable for Different Denominations. This Debenture is exchangeable, upon the surrender hereof by the Holder at the principal office of the Company, for a new Debenture or Debentures (in accordance with Section 16(d) and in principal amounts of at least $1,000) representing in the aggregate the outstanding Principal of this Debenture, and each such new Debenture will represent such portion of such outstanding Principal as is designated by the Holder at the time of such surrender.

(d) Issuance of New Debentures. Whenever the Company is required to issue a new Debenture pursuant to the terms of this Debenture, such new Debenture (i) shall be of like tenor with this Debenture, (ii) shall represent, as indicated on the face of such new Debenture, the Principal remaining outstanding (or in the case of a new Debenture being issued pursuant to Section 16(a) or Section 16(c), the Principal designated by the Holder which, when added to the principal represented by the other new Debentures issued in connection with such issuance, does not exceed the Principal remaining outstanding under this Debenture immediately prior to such issuance of new Debentures), (iii) shall have an issuance date, as indicated on the face of such new Debenture, which is the same as the Issuance Date of this Debenture, (iv) shall have the same rights and conditions as this Debenture, and (v) shall represent accrued and unpaid Interest and Late Charges on the Principal and Interest of this Debenture, from the Issuance Date.

17. REMEDIES, CHARACTERIZATIONS, OTHER OBLIGATIONS, BREACHES AND INJUNCTIVE RELIEF. The remedies provided in this Debenture shall be cumulative and in addition to all other remedies available under this Debenture and any of the other Transaction Documents at law or in equity (including a decree of specific performance and/or other injunctive relief), and nothing herein shall limit the Holder's right to pursue actual and consequential damages for any failure by the Company to comply with the terms of this Debenture. No failure on the part of the Holder to exercise, and no delay in exercising, any right, power or remedy hereunder shall operate as a waiver thereof; nor shall any single or partial exercise by the Holder of any right, power or remedy preclude any other or further exercise thereof or the exercise of any other right, power or remedy. In addition, the exercise of any right or remedy of the Holder at law or equity or under this Debenture or any of the other Transaction Documents shall not be deemed to be an election of Holder's rights or remedies under this Debenture or at law or in equity. The Company covenants to the Holder that there shall be no characterization concerning this instrument other than as expressly provided herein. Amounts set forth or provided for herein with respect to payments, conversion and the

like (and the computation thereof) shall be the amounts to be received by the Holder and shall not, except as expressly provided herein, be subject to any other obligation of the Company (or the performance thereof). The Company acknowledges that a breach by it of its obligations hereunder will cause irreparable harm to the Holder and that the remedy at law for any such breach may be inadequate. The Company therefore agrees that, in the event of any such breach or threatened breach, the Holder shall be entitled, in addition to all other available remedies, to specific performance and/or temporary, preliminary and permanent injunctive or other equitable relief from any court of competent jurisdiction in any such case without the necessity of proving actual damages and without posting a bond or other security. The Company shall provide all information and documentation to the Holder that is reasonably requested by the Holder to enable the Holder to confirm the Company's compliance with the terms and conditions of this Debenture (including, without limitation, compliance with Section 7).

18. PAYMENT OF COLLECTION, ENFORCEMENT AND OTHER COSTS. If (a) this Debenture is placed in the hands of an attorney for collection or enforcement or is collected or enforced through any legal proceeding or the Holder otherwise takes action to collect amounts due under this Debenture or to enforce the provisions of this Debenture or (b) there occurs any bankruptcy, reorganization, receivership of the Company or other proceedings affecting Company creditors' rights and involving a claim under this Debenture, then, to the extent the Holder prevails in any proceeding in connection with this Debenture, the Company shall pay the reasonable costs incurred by the Holder for such collection, enforcement or action or in connection with such bankruptcy, reorganization, receivership or other proceeding, including, without limitation, reasonable attorneys' fees and disbursements. The Company expressly acknowledges and agrees that no amounts due under this Debenture shall be affected, or limited, by the fact that the purchase price paid for this Debenture was less than the original Principal amount hereof.

19. CONSTRUCTION; HEADINGS. This Debenture shall be deemed to be jointly drafted by the Company and the initial Holder and shall not be construed against any such Person as the drafter hereof. The headings of this Debenture are for convenience of reference and shall not form part of, or affect the interpretation of, this Debenture. Unless the context clearly indicates otherwise, each pronoun herein shall be deemed to include the masculine, feminine, neuter, singular and plural forms thereof. The terms "including," "includes," "include" and words of like import shall be construed broadly as if followed by the words "without limitation." The terms "herein," "hereunder," "hereof" and words of like import refer to this entire Debenture instead of just the provision in which they are found. Unless expressly indicated otherwise, all section references are to sections of this Debenture. Terms used in this Debenture and not otherwise defined herein, but defined in the other Transaction Documents, shall have the meanings ascribed to such terms on the Initial Closing Date in such other Transaction Documents unless otherwise consented to in writing by the Holder.

20. FAILURE OR INDULGENCE NOT WAIVER. No failure or delay on the part of the Holder in the exercise of any power, right or privilege hereunder shall operate as a waiver thereof, nor shall any single or partial exercise of any such power, right or privilege preclude other or further exercise thereof or of any other right, power or privilege. No waiver shall be effective unless it is in writing and signed by an authorized representative of the waiving party. Notwithstanding the foregoing, nothing contained in this Section 20 shall permit any waiver of any provision of Section 3(d).

21. Governing Law; Jurisdiction; Jury Trial. All questions concerning the construction, validity, enforcement and interpretation of this Agreement shall be governed by the internal laws of the State of Delaware, without giving effect to any choice of law or conflict of law provision or rule (whether of the State of Delaware or any other jurisdictions) that would cause the application of the laws of any jurisdictions other than the State of Delaware. The Company hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in Delaware, for the adjudication of any dispute hereunder or in connection herewith or under any of the other Transaction Documents or with any transaction contemplated hereby or thereby, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or proceeding is brought in an inconvenient forum or that the venue of such suit, action or proceeding is improper. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof to such party at the address for such notices to it under this Agreement and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law. Nothing contained herein shall be deemed or operate to preclude Buyer from bringing suit or taking other legal action against the Company in any other jurisdiction to collect on the Company's obligations to Buyer or to enforce a judgment or other court ruling in favor of Buyer. EACH PARTY HEREBY IRREVOCABLY WAIVES ANY RIGHT IT MAY HAVE TO, AND AGREES NOT TO REQUEST, A JURY TRIAL FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR UNDER ANY OTHER TRANSACTION DOCUMENT OR IN CONNECTION WITH OR ARISING OUT OF THIS AGREEMENT, ANY OTHER TRANSACTION DOCUMENT OR ANY TRANSACTION CONTEMPLATED HEREBY OR THEREBY.

22. NOTICES; CURRENCY; PAYMENTS.

(a) Notices. Whenever notice is required to be given under this Debenture, unless otherwise provided herein, such notice shall be given in accordance with Section 9(f) of the Debenture Purchase Agreement. The Company shall provide the Holder with prompt written notice of all actions taken pursuant to this Debenture, including in reasonable detail a description of such action and the reason therefor. Without limiting the generality of the foregoing, the Company will give written notice to the Holder (i) within 24 hours after any adjustment of the Conversion Price, setting forth in reasonable detail, and certifying, the calculation of such adjustment and (ii) at least ten (10) days prior to the date on which the Company closes its books or takes a record (A) with respect to any dividend or distribution upon the Common Shares, (B) with respect to any grant, issuances, or sales of any Options, Convertible Securities or rights to purchase stock, warrants, securities or other property to holders of Common Shares or (C) for determining rights to vote with respect to any Fundamental Transaction, dissolution or liquidation, provided in each case that such information shall be made known to the public prior to or in conjunction with such notice being provided to the Holder.

(b) Currency. All dollar amounts referred to in this Debenture are in United States Dollars ("**U.S. Dollars**"), and all amounts owing under this Debenture shall be paid in U.S. Dollars. All amounts denominated in other currencies (if any) shall be converted into the U.S. Dollar equivalent amount in accordance with the Exchange Rate on the date of calculation. "**Exchange Rate**" means, in relation to any amount of currency to be converted into U.S. Dollars pursuant to this Debenture, the U.S. Dollar exchange rate as published in the Wall Street Journal on the relevant date of calculation (it being understood and agreed that where an amount is calculated with reference to, or over, a period of time, the date of calculation shall be the final date of such period of time).

(c) Payments. Whenever any payment of cash is to be made by the Company to the Holder pursuant to this Debenture, unless otherwise expressly set forth herein, such payment shall be made in U.S. Dollars by a certified check drawn on the account of the Company and sent via overnight courier service to the Holder at such address as previously provided to the Company in writing (which address, in the case of the initial Holder, shall initially be as set forth in Section 9(f) of the Debenture Purchase Agreement), provided that the Holder may elect to receive a payment of cash via wire transfer of immediately available funds by providing the Company with prior written notice setting out such request and the Holder's wire transfer instructions. Whenever any amount expressed to be due by the terms of this Debenture is due on any day which is not a Business Day, the same shall instead be due on the next succeeding day which is a Business Day. Any amount of Principal or other amounts due under this Debenture which is not paid when due (except for Interest accruing following the Trigger Date and to the extent any other such amount due under this Debenture is simultaneously accruing interest at the Trigger Rate hereunder) shall result in a late charge being incurred and payable by the Company in an amount equal to interest on such amount at the rate of fifteen percent (15%) per annum from the date such amount was due until the same is paid in full ("**Late Charge**").

23. CANCELLATION. After all Principal, accrued Interest, Late Charges and other amounts at any time owed on this Debenture have been paid in full, this Debenture shall automatically be deemed canceled and discharged, shall be surrendered to the Company for cancellation and shall not be reissued.

24. WAIVER OF NOTICE. To the extent permitted by law, the Company hereby irrevocably waives demand, notice, presentment, protest and all other demands and notices in connection with the delivery, acceptance, performance, default or enforcement of this Debenture and the Debenture Purchase Agreement.

25. SEVERABILITY. If any provision of this Debenture is prohibited by law or otherwise determined to be invalid or unenforceable by a court of competent jurisdiction, the provision that would otherwise be prohibited, invalid or unenforceable shall be deemed amended to apply to the broadest extent that it would be valid and enforceable, and the invalidity or unenforceability of such provision shall not affect the validity of the remaining provisions of this Debenture so long as this Debenture as so modified continues to express, without material change, the original intentions of the parties as to the subject matter hereof and the prohibited nature, invalidity or unenforceability of the provision(s) in question does not substantially impair the respective expectations or reciprocal obligations of the parties or the practical realization of the benefits that would otherwise be conferred upon the parties. The parties will endeavor in good faith negotiations to replace the prohibited, invalid or unenforceable provision(s) with a valid provision(s), the effect of which comes as close as possible to that of the prohibited, invalid or unenforceable provision(s).

26. MAXIMUM PAYMENTS. Without limiting Section 9(d) of the Debenture Purchase Agreement, nothing contained herein shall be deemed to establish or require the payment of a rate of interest or other charges in excess of the maximum permitted by applicable law. In the event that the rate of interest required to be paid or other

charges hereunder exceed the maximum permitted by such law, any payments in excess of such maximum shall be credited against amounts owed by the Company to the Holder and thus refunded to the Company.

27. CERTAIN DEFINITIONS. For purposes of this Debenture, the following terms shall have the following meanings:

(a) "**1933 Act**" means the United States Securities Act of 1933, as amended, and the rules and regulations thereunder.

(b) "**1934 Act**" means the United States Securities Exchange Act of 1934, as amended, and the rules and regulations thereunder.

(c) "**Adjustment Right**" means any right granted with respect to any securities issued in connection with, or with respect to, any issuance or sale (or deemed issuance or sale in accordance with Section 7) of Common Shares (other than rights of the type described in Section 6(a) hereof) that could result in a decrease in the net consideration received by the Company in connection with, or with respect to, such securities (including, without limitation, any cash settlement rights, cash adjustment or other similar rights).

(d) "**Affiliate**" means, with respect to any Person, any other Person that directly or indirectly controls, is controlled by, or is under common control with, such Person, it being understood for purposes of this definition that "control" of a Person means the power directly or indirectly to direct or cause the direction of the management and policies of such Person whether by contract or otherwise.

(e) "**Attribution Parties**" means, collectively, the following Persons and entities: (i) any investment vehicle, including, any funds, feeder funds or managed accounts, currently, or from time to time after the Issuance Date, directly or indirectly managed or advised by the Holder's investment manager or any of its Affiliates or principals, (ii) any direct or indirect Affiliates of the Holder or any of the foregoing, (iii) any Person acting or who could be deemed to be acting as a Group together with the Holder or any of the foregoing and (iv) any other Persons whose beneficial ownership of Common Shares would or could be aggregated with the Holder's and the Persons described in foregoing clauses (i), (ii) and (iii) for purposes of Section 13(d) of the 1934 Act. For clarity, the purpose of the foregoing is to subject collectively the Holder and all other Attribution Parties to the Maximum Percentage.

(f) "**Black Scholes Consideration Value**" means the value of the applicable Option, Convertible Security or Adjustment Right (as the case may be) as of the date of issuance thereof calculated using the Black Scholes Option Pricing Model obtained from the "OV" function on Bloomberg utilizing (i) an underlying price per share equal to the Closing Sale Price of the Common Shares on the Trading Day immediately preceding the public announcement of the execution of definitive documents with respect to the issuance of such Option, Convertible Security or Adjustment Right (as the case may be), (ii) a risk-free interest rate corresponding to the U.S. Treasury rate for a period equal to the remaining term of such Option, Convertible Security or Adjustment Right (as the case may be) as of the date of issuance of such Option, Convertible Security or Adjustment Right (as the case may be), (iii) a zero cost of borrow and (iv) an expected volatility equal to the greater of 100% and the 100 day volatility obtained from the "HVT" function on Bloomberg (determined utilizing a 365 day annualization factor) as of the Trading Day immediately following the date of issuance of such Option, Convertible Security or Adjustment Right (as the case may be).

(g) "**Bloomberg**" means Bloomberg, L.P.

(h) "**Business Day**" means any day other than Saturday, Sunday or other day on which commercial banks in The City of New York are authorized or required by law to remain closed; provided, however, for clarification, commercial banks shall not be deemed to be authorized or required by law to remain closed due to "stay at home", "shelter-in-place", "non-essential employee" or any other similar orders or restrictions or the closure of any physical branch locations at the direction of any governmental authority so long as the electronic funds transfer systems (including for wire transfers) of commercial banks in The City of New York generally are open for use by customers on such day.

(i) "**Change of Control**" means any Fundamental Transaction other than (i) any merger of the Company or any of its, direct or indirect, wholly owned Subsidiaries with or into any of the foregoing Persons, (ii) any reorganization, recapitalization or reclassification of the Common Shares in which holders of the Company's voting power immediately prior to such reorganization, recapitalization or reclassification continue after such reorganization, recapitalization or reclassification to hold publicly traded securities and, directly or indirectly, are, in all material respects, the holders of the voting power of

the surviving entity (or entities with the authority or voting power to elect the members of the board of directors (or their equivalent if other than a corporation) of such entity or entities) after such reorganization, recapitalization or reclassification, or (iii) pursuant to a migratory merger effected solely for the purpose of changing the jurisdiction of incorporation of the Company or any of its Subsidiaries.

(j) "**Closing Bid Price**" and "**Closing Sale Price**" means, for any security as of any date, the last closing bid price and last closing trade price, respectively, for such security on the Principal Market, as reported by Bloomberg, or, if the Principal Market begins to operate on an extended hours basis and does not designate the closing bid price or the closing trade price (as the case may be) then the last bid price or last trade price, respectively, of such security immediately prior to 4:00:00 p.m., New York time, as reported by Bloomberg, or, if the Principal Market is not the principal securities exchange or trading market for such security, the last closing bid price or last trade price, respectively, of such security on the principal securities exchange or trading market where such security is listed or traded as reported by Bloomberg, or if the foregoing do not apply, the last closing bid price or last trade price, respectively, of such security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg, or, if no closing bid price or last trade price, respectively, is reported for such security by Bloomberg, the average of the bid prices, or the ask prices, respectively, of any market makers for such security as reported in the "pink sheets" by OTC Markets Group Inc. (formerly Pink Sheets LLC). If the Closing Bid Price or the Closing Sale Price cannot be calculated for a security on a particular date on any of the foregoing bases, the Closing Bid Price or the Closing Sale Price (as the case may be) of such security on such date shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then such dispute shall be resolved in accordance with the procedures in Section 21. All such determinations shall be appropriately adjusted for any stock splits, stock dividends, stock combinations, recapitalizations or other similar transactions applicable during such period.

(k) "**Common Shares**" means (i) the Company's shares of common stock, $0.001 par value per share, and (ii) any share capital into which such Common Shares shall have been changed or any share capital resulting from a reclassification of such Common Shares.

(l) "**Convertible Securities**" means any stock or other security (other than Options) that is at any time and under any circumstances, directly or indirectly, convertible into, exercisable or exchangeable for, or which otherwise entitles the holder thereof to acquire, any Common Shares.

(m) "**Eligible Market**" means The New York Stock Exchange, the NYSE American, The Nasdaq Global Select Market, The Nasdaq Global Market or the Principal Market.

(n) "**Fundamental Transaction**" means (A) that the Company shall, directly or indirectly, including through subsidiaries, Affiliates or otherwise, in one or more related transactions, (i) consolidate or merge with or into (whether or not the Company is the surviving corporation) another Subject Entity, other than (x) any merger of the Company or any of its, direct or indirect, wholly owned Subsidiaries with or into any of the foregoing Persons, (y) any reorganization, recapitalization or reclassification of the Common Shares in which holders of the Company's voting power immediately prior to such reorganization, recapitalization or reclassification continue after such reorganization, recapitalization or reclassification to hold publicly traded securities and, directly or indirectly, are, in all material respects, the holders of the voting power of the surviving entity (or entities with the authority or voting power to elect the members of the board of directors (or their equivalent if other than a corporation) of such entity or entities) after such reorganization, recapitalization or reclassification, or (z) pursuant to a migratory merger effected solely for the purpose of changing the jurisdiction of incorporation of the Company or any of its Subsidiaries, or (ii) sell, assign, transfer, convey or otherwise dispose of all or substantially all of the properties or assets of the Company and its Subsidiaries, taken as a whole, to one or more Subject Entities, or (iii) make, or allow one or more Subject Entities to make, or allow the Company to be subject to or have its Common Shares be subject to or party to one or more Subject Entities making, a purchase, tender or exchange offer that is accepted by the holders of at least either (x) 50% of the outstanding Common Shares, (y) 50% of the outstanding Common Shares calculated as if any Common Shares held by all Subject Entities making or party to, or Affiliated with any Subject Entities making or party to, such purchase, tender or exchange offer were not outstanding; or (z) such number of Common Shares such that all Subject Entities making or party to, or Affiliated with any Subject Entity making or party to, such purchase, tender or exchange offer, become collectively the beneficial owners (as defined in Rule 13d-3 under the 1934 Act) of at least 50% of the outstanding Common Shares, or (iv) consummate a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with one or more Subject Entities whereby all such Subject Entities, individually or in the aggregate, acquire, either (x) at least 50% of the outstanding Common Shares, (y) at least 50% of the outstanding Common Shares calculated as if any Common Shares held by all the Subject

Entities making or party to, or Affiliated with any Subject Entity making or party to, such stock purchase agreement or other business combination were not outstanding; or (z) such number of Common Shares such that the Subject Entities become collectively the beneficial owners (as defined in Rule 13d-3 under the 1934 Act) of at least 50% of the outstanding Common Shares, or (B) that the Company shall, directly or indirectly, including through subsidiaries, Affiliates or otherwise, in one or more related transactions, allow any Subject Entity individually or the Subject Entities in the aggregate to be or become the "beneficial owner" (as defined in Rule 13d-3 under the 1934 Act), directly or indirectly, whether through acquisition, purchase, assignment, conveyance, tender, tender offer, exchange, reduction in outstanding Common Shares, merger, consolidation, business combination, reorganization, recapitalization, spin-off, scheme of arrangement, reorganization, recapitalization or reclassification or otherwise in any manner whatsoever, of either (x) at least 50% of the aggregate ordinary voting power represented by issued and outstanding Common Shares, (y) at least 50% of the aggregate ordinary voting power represented by issued and outstanding Common Shares not held by all such Subject Entities as of the date of this Debenture calculated as if any Common Shares held by all such Subject Entities were not outstanding, or (z) a percentage of the aggregate ordinary voting power represented by issued and outstanding Common Shares or other equity securities of the Company sufficient to allow such Subject Entities to effect a statutory short form merger or other transaction requiring other shareholders of the Company to surrender their Common Shares without approval of the shareholders of the Company.

(o) "**GAAP**" means United States generally accepted accounting principles, consistently applied.

(p) "**Group**" means a "group" as that term is used in Section 13(d) of the 1934 Act and as defined in Rule 13d-5 thereunder.

(q) "**Indebtedness**" shall have the meaning ascribed to such term in the Debenture Purchase Agreement.

(r) "**Maturity Date**" shall mean June 6, 2023; provided, however, the Maturity Date may be extended at the option of the Holder (i) in the event that, and for so long as, an Event of Default shall have occurred and be continuing or (ii) through the date that is twenty (20) Business Days after the consummation of a Fundamental Transaction in the event that a Fundamental Transaction is publicly announced or a Change of Control Notice is delivered prior to the Maturity Date, provided further that if this Debenture shall automatically convert in accordance with the terms herein and the Conversion Amount would be limited pursuant to Section 3(d) hereunder, the Maturity Date shall automatically be extended until such time as such provision shall not limit the conversion of this Debenture.

(s) "**Options**" means any rights, warrants or options to subscribe for or purchase Common Shares or Convertible Securities.

(t) "**Parent Entity**" of a Person means an entity that, directly or indirectly, controls the applicable Person and whose equity security is quoted or listed on an Eligible Market, or, if there is more than one such Person or Parent Entity, the Person or Parent Entity with the largest public market capitalization as of the date of consummation of the Fundamental Transaction.

(u) "**Person**" means an individual, a limited liability company, a partnership, a joint venture, a corporation, a trust, an unincorporated organization, any other entity or a government or any department or agency thereof.

(v) "**Principal Market**" means the Nasdaq Capital Market.

(w) "**Resale Eligibility Date**" means the earlier of (i) the date the initial Registration Statement (as defined in the RRA) filed pursuant to the RRA is declared effective by the SEC (and each prospectus contained therein is available for use on such date), and (ii) the Rule 144 Eligibility Date.

(x) "**RRA**" means that certain registration rights agreement, dated as of the Subscription Date, by and between the Company and the Investor made a party thereto, as may be amended from time to time.

(y) "**Rule 144 Eligibility Date**" means the initial date any of the Conversion Shares are eligible to be resold pursuant to Rule 144.

(z) "**SEC**" means the United States Securities and Exchange Commission or the successor thereto.

(aa) "**Senior Loan Agreements**" means those certain Senior Secured Loan Agreements dated as of December 3, 2021, by and among the Company, certain of the Company's subsidiaries as guarantors, and certain institutional lenders affiliated with Mudrick Capital Management, LP.

(bb) "**Significant Subsidiary**" means any Subsidiary that is a "significant subsidiary" (within the meaning of Rule 1-02 of Regulation S-X, promulgated under the 1933 Act as such rule is in effect at the time of determination).

(cc) "**Subsidiaries**" shall have the meaning set forth in the Debenture Purchase Agreement.

(dd) **"Subject Entity**" means any Person, Persons or Group or any Affiliate or associate of any such Person, Persons or Group, in each case that is not an Affiliate of the Company.

(ee) "**Successor Entity**" means the Person (or, if so elected by the Holder, the Parent Entity) formed by, resulting from or surviving any Fundamental Transaction or the Person (or, if so elected by the Holder, the Parent Entity) with which such Fundamental Transaction shall have been entered into.

(ff) "**Trading Day**" means, as applicable, (x) with respect to all price or trading volume determinations relating to the Common Shares, any day on which the Common Shares are traded on the Principal Market, or, if the Principal Market is not the principal trading market for the Common Shares, then on the principal securities exchange or securities market on which the Common Shares are then traded, provided that "Trading Day" shall not include any day on which the Common Shares are scheduled to trade on such exchange or market for less than 4.5 hours or any day that the Common Shares are suspended from trading during the final hour of trading on such exchange or market (or if such exchange or market does not designate in advance the closing time of trading on such exchange or market, then during the hour ending at 4:00:00 p.m., New York time) unless such day is otherwise designated as a Trading Day in writing by the Holder or (y) with respect to all determinations other than price determinations relating to the Common Shares, any day on which Nasdaq (or any successor thereto) is open for trading of securities.

(gg) "**Transaction Documents**" shall have the meaning set forth in the Debenture Purchase Agreement.

(hh) "**Trigger Date**" shall mean February 6, 2023.

(ii) "**VWAP**" means, for any security as of any date, the dollar volume-weighted average price for such security on the Principal Market (or, if the Principal Market is not the principal trading market for such security, then on the principal securities exchange or securities market on which such security is then traded) during the period beginning at 9:30:01 a.m., New York time, and ending at 4:00:00 p.m., New York time, as reported by Bloomberg through its "HP" function (set to weighted average) or, if the foregoing does not apply, the dollar volume-weighted average price of such security in the over-the-counter market on the electronic bulletin board for such security during the period beginning at 9:30:01 a.m., New York time, and ending at 4:00:00 p.m., New York time, as reported by Bloomberg, or, if no dollar volume-weighted average price is reported for such security by Bloomberg for such hours, the average of the highest closing bid price and the lowest closing ask price of any of the market makers for such security as reported in the "pink sheets" by OTC Markets Group Inc. (formerly Pink Sheets LLC). If the VWAP cannot be calculated for such security on such date on any of the foregoing bases, the VWAP of such security on such date shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then such dispute shall be resolved in accordance with the procedures in Section 21. All such determinations shall be appropriately adjusted for any stock dividend, stock split, stock combination, recapitalization or other similar transaction applicable during such period.

28. DISCLOSURE. Upon receipt or delivery by the Company of any notice in accordance with the terms of this Debenture, unless the Company has in good faith determined that the matters relating to such notice do not constitute material, non-public information relating to the Company or any of its Subsidiaries, the Company shall within one (1) Business Day of such receipt or prior to (or simultaneous with) such delivery, as applicable, publicly disclose such material, non-public information on a Current Report on Form 8-K or otherwise. In the event that the Company believes that a notice contains material, non-public information relating to the Company or any of its Subsidiaries, the Company shall so indicate to the Holder contemporaneously with delivery (or promptly following receipt by the Company) of such notice, and in the absence of any such indication, the Holder shall be allowed to presume that all matters relating to such notice do not constitute material, non-public information relating to the Company or any of its Subsidiaries. If the Company or any of its Subsidiaries provides material non-public information to the Holder that is not simultaneously filed on a Current Report on Form 8-K or otherwise and the Holder has not agreed to receive such material non-public information, the Company hereby covenants and agrees

that the Holder shall not have any duty of confidentiality to the Company, any of its Subsidiaries or any of their respective officers, directors, employees, affiliates or agents with respect to, or a duty to any of the foregoing not to trade on the basis of, such material non-public information. Nothing contained in this Section 30 shall limit any obligations of the Company, or any rights of the Holder, under Section 4(i) of the Debenture Purchase Agreement.

[*signature page follows*]

IN WITNESS WHEREOF, the Company has caused this Amended and Restated Debenture to be duly executed as of the date first set out above.

REMARK HOLDINGS, INC.

By: */s/ Kai-Shing Tao*

Name: Kai-Shing Tao

Title: Chief Executive Officer

Exhibit I

ACKNOWLEDGMENT

The Company hereby (a) acknowledges, confirms and represents that_____2022 is the [Automatic Conversion Date][Rule 144 Eligibility Date][Conversion Settlement Date], (b) certifies that _____Common Shares issuable pursuant to such automatic conversion in accordance with the Debenture are eligible to be resold by the Holder either (i) pursuant to Rule 144 (subject to the Holder's execution and delivery to the Company of a customary 144 representation letter) or (ii) an effective and available registration statement and (c) hereby directs Computershare to issue the above indicated number of Common Shares in accordance with the Transfer Agent Instructions dated October ___, 2022 from the Company and acknowledged and agreed to by Computershare LLC.

REMARK HOLDINGS, INC.

By: _____

Name:

Title:

EXHIBIT 21.1

SUBSIDIARIES OF REMARK HOLDINGS, INC.

- Remark AI, LLC, a Delaware Limited Liability Company
- Remark Holdings SPV, Inc., a Delaware corporation
- RAAD Productions, LLC, a California limited liability company
- KanKan Holdings, Ltd. (Cayman Islands), a Cayman Islands company
    - KanKan Limited (Hong Kong), a Hong Kong corporation
        * KanKan Technology (Shanghai) Co., Ltd., a Chinese limited liability company
            † Remark Data Technology Co., Ltd., a Chinese limited liability company (a consolidated variable interest entity)
                - Chengdu Remark Technology Co. Ltd., a Chinese limited liability company (a consolidated variable interest entity)
                - Hangzhou Shufeng Technology Co., Ltd., a Chinese limited liability company (a consolidated variable interest entity)
- HSW (HK), Inc. Limited, a Hong Kong corporation
    - Remark Entertainment (Shanghai) Co. Ltd., a Chinese limited liability company
- Bikini.com LLC, a Nevada limited liability company
- Remark AI UK, Ltd., an English private limited company

EXHIBIT 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Forms S-8 (Nos. 333-226207, 333-218187, 333-147149, 333-168800, 333-200375, and 333-202027), Forms S-3 (Nos. 333-225448, 333-180290, 333-202024, 333-207896 and 333-260615) and Forms S-1 (Nos. 333-147339, 333-149112, 333-197312, 333-259612, 333-268224 and 333-269286) of our report dated April 17, 2023 included in this Annual Report on Form 10-K of Remark Holdings, Inc. (the "Company") relating to the consolidated balance sheets of the Company as of December 31, 2022 and 2021, and the related consolidated statements of operations and comprehensive loss, stockholders' equity (deficit), and cash flows for the years then ended, and the related notes (which report expresses an unqualified opinion and contains an explanatory paragraph regarding substantial doubt about the Company's ability to continue as a going concern), for the Company as of December 31, 2022 and 2021.

/s/ Weinberg & Company

Weinberg & Company, P.A.
Los Angeles, CA
April 17, 2023

EXHIBIT 31.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Kai-Shing Tao (the registrant's principal executive officer), certify that:

1. I have reviewed this Annual Report on Form 10-K of Remark 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 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 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: April 17, 2023

By: */s/ Kai-Shing Tao*

Kai-Shing Tao

Chief Executive Officer and Chairman

EXHIBIT 31.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Kai-Shing Tao (the registrant's principal financial officer and principal accounting officer), certify that:

1. I have reviewed this Annual Report on Form 10-K of Remark 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 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 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: April 17, 2023

By *<u>/s/ Kai-Shing Tao</u>*
Kai-Shing Tao
Chief Executive Officer and Chairman

EXHIBIT 32

CERTIFICATIONS OF PRINCIPAL EXECUTIVE OFFICER AND PRINCIPAL FINANCIAL OFFICER PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, Kai-Shing Tao, the registrant's principal executive, financial and accounting officer, certify that, to my knowledge:

1. the accompanying Annual Report on Form 10-K for the year ended December 31, 2022 (the "Report"), fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; and

2. the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of Remark Holdings, Inc. at the dates and for the periods indicated.

Date: April 17, 2023

/s/ Kai-Shing Tao

Kai-Shing Tao

Chief Executive Officer and Chairman