UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 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**

**OR**

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

**For the transition period from to**

**Commission File Number: 001-38685**

## Grid Dynamics Holdings, Inc.

**(Exact Name of Registrant as Specified in its Charter)**

| Delaware | 83-0632724 |
|---|---|
| (State or other jurisdiction of incorporation or organization) | (I.R.S. Employer Identification No.) |

**5000 Executive Parkway, Suite 520**
**San Ramon, CA**

| | 94583 |
|---|---|
| (Address of principal executive offices) | (Zip Code) |

**Registrant's telephone number, including area code: (650) 523-5000**

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

| Title of each class | Trading Symbol(s) | Name of each exchange on which registered |
|---|---|---|
| Common Stock, par value $0.0001 per share | GDYN | 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 ☒

The aggregate market value of the common stock held by non-affiliates of the registrant as of June 30, 2022 (the last business day of the registrant's most recently completed second fiscal quarter) was approximately $814.3 million based on the closing price of the registrant's common stock on June 30, 2022 of $16.82 per share, as reported by the NASDAQ Capital Market (the "NASDAQ"). Shares of the registrant's common stock held by each executive officer and director and by each other person who may be deemed to be an affiliate of the registrant have been excluded from this computation. This calculation does not reflect a determination that certain persons are affiliates of the registrant for any other purpose.

As of February 23, 2023, there were 74,832,926 shares of the registrant's common stock outstanding.

**DOCUMENTS INCORPORATED BY REFERENCE**

Portions of the registrant's Definitive Proxy Statement relating to the Annual Meeting of Stockholders are incorporated by reference into Part III of this Annual Report on Form 10-K where indicated. Such Definitive Proxy Statement will be filed with the Securities and Exchange Commission within 120 days after the end of the registrant's fiscal year ended December 31, 2022.

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## SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains forward-looking statements within the meaning of the federal securities laws, which statements involve substantial risks and uncertainties. Forward-looking statements generally relate to future events or our future financial or operating performance. Forward-looking statements include all statements that are not historical facts and can be identified by terms such as "anticipates," "believes," "could," "seeks," "estimates," "expects," "intends," "may," "plans," "potential," "predicts," "projects," "should," "will," "would," or similar expressions and the negatives of those terms. Forward-looking statements contained in this Annual Report on Form 10-K include, but are not limited to, statements about:

- the evolution of the digital engineering and information technology services landscape facing our customers and prospects;
- our ability to educate the market regarding the advantages of our digital transformation products;
- our ability to maintain an adequate rate of revenue growth;
- our future financial and operating results;
- our business plan and our ability to effectively manage our growth and associated investments;
- beliefs and objectives for future operations;
- our ability to expand a leadership position in enterprise-level digital transformation;
- our ability to attract and retain customers;
- our ability to further penetrate our existing customer base;
- our ability to maintain our competitive technological advantages against new entrants in our industry;
- our ability to timely and effectively scale and adapt our existing technology;
- our ability to innovate new products and services and bring them to market in a timely manner;
- our ability to maintain, protect, and enhance our brand and intellectual property;
- our ability to capitalize on changing market conditions;
- our ability to develop strategic partnerships;
- benefits associated with the use of our services;
- our ability to expand internationally;
- our ability to raise financing in the future;
- operating expenses, including changes in research and development, sales and marketing, and general administrative expenses;
- the effects of seasonal trends on our results of operations;
- our ability to grow and manage growth profitably and retain our key employees;
- the expected benefits and effects of strategic acquisitions of business, products or technologies;
- our ability to maintain the listing of our shares of common stock on the NASDAQ;
- costs related to being a public company;
- changes in applicable laws or regulations;
- the possibility that we have been and may continue to be adversely affected by macroeconomic conditions, inflationary pressures, the geopolitical climate and other economic, business, and/or competitive factors, including the effects of the global COVID-19 pandemic;
- the military action launched by Russian forces in Ukraine, the actions that have been and could be taken by other countries, including new and stricter sanctions and actions taken in response to such sanctions, and the effect of these developments on our business and results of operations; and

- other risks and uncertainties indicated in this Annual Report on Form 10-K, including those set forth in Item 1A, "*Risk Factors*."

We caution you that the foregoing list may not contain all of the forward-looking statements made in this Annual Report on Form 10-K.

You should not rely upon forward-looking statements as predictions of future events. We have based the forward-looking statements contained in this Annual Report on Form 10-K primarily on our current expectations and projections about future events and trends that we believe may affect our business, financial condition, results of operations, and prospects. The outcome of the events described in these forward-looking statements is subject to risks, uncertainties, and other factors, including those described in in Item 1A, "*Risk Factors*" and elsewhere in this Annual Report on Form 10-K. Moreover, new risks and uncertainties emerge from time to time and it is not possible for us to predict all risks and uncertainties that could have an impact on any forward-looking statements contained in this Annual Report on Form 10-K. We cannot assure you that the results, events, and circumstances reflected in the forward-looking statements will be achieved or occur, and actual results, events, or circumstances could differ materially from those described in such forward-looking statements.

Neither we nor any other person assumes responsibility for the accuracy and completeness of any of these forward-looking statements. Moreover, the forward-looking statements made in this Annual Report on Form 10-K relate only to events as of the date on which the statements are made. We undertake no obligation to update any forward-looking statements made in this Annual Report on Form 10-K to reflect events or circumstances after the date of this Annual Report on Form 10-K or to reflect new information or the occurrence of unanticipated events, except as required by law. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements and you should not place undue reliance on our forward-looking statements. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, restructurings, joint ventures, partnerships, or investments we may make.

In addition, statements that "we believe" and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this Annual Report on Form 10-K, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and investors are cautioned not to unduly rely upon these statements.

# PART I

## ITEM 1. BUSINESS

### Business Combination

On March 5, 2020, a wholly-owned subsidiary (“Merger Sub 1”) of ChaSerg Technology Acquisition Corp., a Delaware corporation (“ChaSerg”), merged with and into Grid Dynamics International, Inc., a California corporation (“GDI”), with GDI surviving the merger (the “Initial Merger”). Immediately following the Initial Merger, GDI merged with and into another wholly-owned subsidiary of ChaSerg (“Merger Sub 2”) with Merger Sub 2 surviving; Merger Sub 2 was then renamed “Grid Dynamics International, LLC,” and ChaSerg was then renamed “Grid Dynamics Holdings, Inc.” (the “Business Combination”). As of the open of trading on March 6, 2020, the common stock and warrants of Grid Dynamics Holdings, Inc. (“Grid Dynamics,” “GDH,” the “Company,” “we,” “us,” or “our”), formerly those of ChaSerg, began trading on the NASDAQ as “GDYN” and “GDYNW,” respectively.

### Business Overview

Grid Dynamics is an emerging leader in enterprise-level digital transformations in Fortune 1000 companies. For enterprises that create innovative digital products and experiences, Grid Dynamics offers close collaboration to provide digital transformation initiatives that span strategy consulting, development of early prototypes and enterprise-scale delivery of new digital platforms. Since its inception in 2006 in Menlo Park, California, as a grid and cloud consultancy firm, Grid Dynamics has been on the forefront of digital transformation. Our specialty is working on big ideas like cloud migrations, DevOps, microservices, big data and artificial intelligence (“AI”). Grid Dynamics quickly established itself as a provider of choice for technology and digital enterprise companies.

As a leading global digital engineering and information technology (“IT”) services provider with its headquarters in Silicon Valley and engineering centers in the United States, Mexico, India and multiple European countries, Grid Dynamics’ core business is to deliver focused and complex technical consulting, software design, development, testing and internet service operations. Grid Dynamics also helps organizations become more agile and create innovative digital products and experiences through its deep expertise in emerging technology, such as AI, data science, cloud computing, big data and DevOps, lean software development practices and a high-performance product culture.

Grid Dynamics believes that the key to its success is a business culture that puts products over projects, client success over contract terms and real business results over pure technical innovation. By leveraging Grid Dynamics’ proprietary processes optimized for innovation, emphasis on talent development and technical expertise, Grid Dynamics has been able to achieve significant growth. During the last three years Grid Dynamics acquired Daxx Web Industries B.V. (“Daxx”), Tacit Knowledge Inc. (“Tacit”) and Mutual Mobile Inc. (“Mutual Mobile”), respectively. These acquisitions diversified our geographical presence, client base, and industry vertical presence.

### Industry Background and Market Opportunity

Digital transformation is a rapidly expanding market which is still in its early stages. Enterprises strive to compete in the digital world, facing the need to transform to survive attacks from the nimbler and more technologically advanced newcomers. Traditional approaches to managing information technology as a mix of vendor solutions and outsourced services often break down in the face of the imperative to innovate through technology.

Increasingly, business executives are looking at use of technology as a competitive advantage rather than a way to cut costs. The rise of AI signifies a shift from automation of business process to automation of decision making itself. In an effort to differentiate, corporations are directing investments towards building digital new products and experiences, instead of buying off-the-shelf software products. This drives demand for highly technical software development, creating an opportunity for pure-play software development service providers such as Grid Dynamics.

As the demand for technical software development talent continues to grow, the shortage of this talent in the United States and Europe, as well as the inability of non-technology-based companies to attract and retain such talent, encourages organizations to look to third parties, such as Grid Dynamics, to satisfy the demand.

Further, the growing acceptance of the offshore delivery model, has created significant opportunities for software development service providers delivering from Central and Eastern Europe (“CEE”) as well as Mexico. CEE-based service providers now compete against the largest global IT service providers and are capable of providing complex technology services. Grid Dynamics believes that CEE is increasingly known for the quality of its software development talent, enabled in part by

decades of focus on fundamental STEM disciplines in higher education. CEE-based teams and individuals are frequent winners of programming contests such as the ones held by the Association for Computing Machinery, or ACM, TopCoder and Kaggle.

Grid Dynamics believes that this disparity between the supply and demand for technical talent can be a significant opportunity for Grid Dynamics.

**Strategies and Strengths**

Grid Dynamics' objective is to become a global leader in enabling digital transformation at Fortune 1000 companies. Grid Dynamics' strategy to achieve such objective is based on leveraging the following core strengths.

***Proprietary Processes Optimized for Innovation***

Grid Dynamics recognizes the changing dynamics of IT outsourcing. Increasingly, corporations expect their service providers to participate and help shape innovation programs, which are not addressed well by the traditional service models used by outsourcing providers. Grid Dynamics melds technical consulting, engineering and analytics competencies into unified, cross-functional digital teams which are designed to respond and adapt to the change in the client's business. The effectiveness of such teams is further increased by a close collaboration with the client's technology leadership teams and active inquiry into client's business priorities on all levels.

***Culture-First Approach to Talent Development***

The ever-increasing role of digital transformation leads to the emergence of a new kind of business leader that combines a vision of business transformation with deep understanding of information technology. Earning the trust of these leaders is one of the pillars of Grid Dynamics' success. Grid Dynamics selects, trains and promotes its technical leadership based on the following cultural principles.

- *Global integration*. Demands of modern businesses transcend cultural, political and language boundaries. Grid Dynamics builds teams which are transparently distributed across countries, time zones and reporting lines. Decisions on hiring, staffing and promotion are all managed centrally from Grid Dynamics' U.S. offices, allowing Grid Dynamics to optimize for quality rather than convenience.

- *Partnership with client*. Grid Dynamics demands accountability and ownership of the client's success, whether or not such success is a contractual matter. Understanding Grid Dynamics clients' goals and ability to manage such goals across reporting lines is a must for any leadership role within Grid Dynamics.

- *Technological innovation*. Understanding digital transformation and successfully delivering IT programs is impossible without a strong understanding of emerging technology. Deep knowledge of how new technology, such as cloud, big data and AI, transforms the way corporations develop their businesses is a pre-requisite for leadership roles in Grid Dynamics.

- *Education*. Grid Dynamics believes that technology changes rapidly, and it is critical for Grid Dynamics' employees to adapt even more rapidly. Grid Dynamics offers many formal and informal training programs, such as Grid University, an online education platform with thousands of hours of training videos, to ensure that professionals can expand and enhance their capabilities.

***Technical Expertise and Scalable Engineering***

Grid Dynamics believes in strong infrastructure underpinning mission-critical services. From its inception, Grid Dynamics has been focusing on developing and using its expertise in the latest technologies, such as AI and conversational systems, cloud engineering solutions, data platform, data science and analytical data platforms, DevOps, MLOps, microservices, mobile, QA automation, search and user interfaces. By making such emerging technologies accessible to clients through the use of proprietary skill development programs, industry experience and solution accelerators, Grid Dynamics seeks to strengthen its position as a technical leader with its established clients and attract new clients.

**Services and Solutions**

In the rapidly evolving market of engineering and IT services, customers are increasingly looking for service providers that can be a co-innovation partner rather than a cost saving measure. Grid Dynamics addresses this need by focusing on high value, high impact services. The key service and solutions offerings are the following:

***Technical Consulting***

Grid Dynamics provides technical consulting services to help executives in charge of digital transformation define an ambitious, yet achievable roadmap, quantify business value attained through new technology, select the right technology stack, develop reference architecture and guide the transformational journey every step of the way.

***Lean Prototypes***

Grid Dynamics helps enterprises prototype and test new ideas. This includes both proof-of-concept implementations, which can be rapidly put in front of the end users to verify business assumptions, as well as sophisticated, long-running labs that cross organizational walls to establish feasibility and de-risk large transformational programs. Self-sufficient teams move quickly, use the latest technologies and aim to solve the business use case to demonstrate measurable value to the business stakeholders.

***Digital Intelligence***

Grid Dynamics helps corporations transform from automation of business processes to automation of decision making. To this end, Grid Dynamics deploys data science approaches to analyze client challenges and arrive at a strategy which produces measurable outcomes. This continuous “analyze-assess-decide-measure” cycle becomes the foundation of AI programs, leveraging the latest technologies to constantly react to real-time changes in consumer behavior.

***Scalable Engineering***

Grid Dynamics believes in strong infrastructure underpinning mission-critical services. From inception, Grid Dynamics' engineers pushed the boundaries of IT performance, developing a strong expertise in distributed systems. Grid Dynamics’ experience in cloud, NoSQL, big data, grid computing and performance engineering helps its clients go beyond the capabilities provided by off-the-shelf products.

***Development Culture***

Grid Dynamics helps clients to contain and rearchitect legacy platforms as a part of the digital transformation journey. A significant factor in the success of legacy transformation is the robustness of the process of breaking down and reassembling monolithic systems into smaller, more manageable pieces. Grid Dynamics has a deep expertise in building agile teams, which are adept at realizing incremental value through a cycle of continuous delivery enabled by automated quality and security assurance. Grid Dynamics offers its clients services that help enable continuous integration, continuous delivery and DevOps at enterprise scale.

***Experience Design***

Grid Dynamics helps clients achieve higher rates of conversion and end user satisfaction by improving the service experience across engagement channels. This includes transformation of the web user interfaces to a responsive/adaptive model, design and development of next-gen mobile applications as well as leveraging new channels of engagement such as conversational interfaces.

**Verticals**

Grid Dynamics has strong vertical-specific domain knowledge backed by extensive experience. By merging technology with business processes, Grid Dynamics delivers tailored solutions in several key industry verticals: Tech, Media and Telecom, Retail, Finance and Consumer Packaged goods (CPG)/manufacturing.

***Tech, Media and Telecom***

Grid Dynamics has a strong presence in the digital technology sector, particularly among analytics, SaaS and platform vendors which are driven by a constant need for innovation. Grid Dynamics’ long-lasting expertise in complex open-source technology and in building massively scalable distributed systems, the company-wide culture of agile co-creation as well as a deep understanding of digital commerce have enabled Grid Dynamics to build strong business relationships with the leading players in this sector. For example, Grid Dynamics has been providing software engineering, continuous delivery and deployment automation, machine learning, internal tool development and quality engineering services to one of the largest cloud services providers, becoming one of their key technological services partners.

***Retail***

By utilizing Grid Dynamics' deep expertise in the digital retail space and providing a mix of consulting and engineering services, Grid Dynamics enables its clients to win market share, shorten time to market and reduce costs of digital operations. For example, Grid Dynamics has worked closely with a large U.S. retail company over a span of many years to develop a strategic omnichannel transformation program and became a key contributor to the development of a new omnichannel platform including consumer experience, product discovery, analytics and inventory optimization.

***CPG/Manufacturing***

Grid Dynamics helps its manufacturing customers to harness digital transformation by applying novel approaches to engage the consumers directly and optimize the back-end supply chain. For example, Grid Dynamics accelerated digital transformation in a global CPG company by building direct-to-consumer capabilities, modernizing an omnichannel pricing engine, and optimizing operational efficiency with modern data analytics and AI.

***Finance***

In the early days of Grid Dynamics, the financial sector recognized it for the ability to tackle high-end technology programs, such as moving from the batch to real-time fraud detection. Today, Grid Dynamics has evolved from a niche provider to a proven partner able to enable agility and time to market in the most challenging regulatory environments. For example, a major commercial bank chose Grid Dynamics to solve the challenge of evolving its security frameworks to realize benefits from cloud and DevOps.

The following table presents our revenues by vertical and revenues as a percentage of total revenues by vertical for the periods indicated:

| | For the year ended December 31, | | | | | |
|---|---|---|---|---|---|---|
| | 2022 | | 2021 | | 2020 | |
| | (in thousands, except % of revenue) | | | | | |
| Retail | $ 99,681 | 32.1 % | $ 61,717 | 29.2 % | $ 33,975 | 30.5 % |
| Tech, Media and Telecom | 98,334 | 31.7 % | 67,689 | 32.0 % | 45,362 | 40.8 % |
| CPG/Manufacturing | 61,216 | 19.7 % | 43,461 | 20.6 % | 14,202 | 12.8 % |
| Finance | 21,893 | 7.1 % | 17,515 | 8.3 % | 13,589 | 12.2 % |
| Other | 29,358 | 9.4 % | 20,898 | 9.9 % | 4,155 | 3.7 % |
| **Total** | **$ 310,482** | **100.0 %** | **$ 211,280** | **100.0 %** | **$ 111,283** | **100.0 %** |

**Delivery Model and Operating Structure**

Our service delivery model involves using an efficient mix of on-site, off-site and offshore staffing. We believe that the combination of our delivery model optimized for co-innovation and the placement of our technology leaders at clients' premises creates a key competitive advantage that enables us to better understand and meet a client's diverse needs.

The majority of Grid Dynamics' engineering personnel is located within Grid Dynamics' engineering centers in the United States and CEE. As of December 31, 2022, Grid Dynamics had 3,798 full-time and part-time personnel and delivered services from engineering centers located in the following countries: United States, Mexico, Ukraine, Poland, Armenia, Serbia, United Kingdom, Netherlands, Moldova, India, Jamaica and Romania.

Grid Dynamics also places its IT professionals at client premises and promotes temporary assignments at client locations.

**Quality and Process Management**

Grid Dynamics enforces stringent security standards and has maintained a continuous ISO 27001:2013 certification since August 2014. All key company locations, departments and teams are within the scope of the deployed information security management system.

Grid Dynamics policies, standards and procedures are reviewed annually during both internal and external certification audits. Grid Dynamics has successfully passed seven ISO 27001:2013 audits, as well as over a dozen exhaustive audits from top financial services customers.

**Sales and Marketing**

Grid Dynamics' sales and marketing strategy focuses on increasing revenues from new and existing clients through a "land and expand" strategy. Grid Dynamics' technology leaders deployed at clients' premises play an integral role in identifying, developing and expanding potential business opportunities. This strategy has been effective both in deepening relationships with existing clients and increasing the number of Grid Dynamics' clients.

Grid Dynamics also maintains a dedicated sales force as well as a marketing team, which coordinates corporate-level branding efforts that range from sponsorship of programming competitions to participation in and hosting of industry conferences and events.

**Customers**

Grid Dynamics' client base primarily consists of Fortune 1000 corporations based in North America. With the acquisition of Daxx in December 2020, Tacit in May 2021 and Mutual Mobile in December 2022, we have gained customers in U.K., North America, as well as Continental Europe and Asia.

Grid Dynamics has a high level of revenue concentration with certain clients. In the years ended December 31, 2022, 2021 and 2020 Grid Dynamics top two customers each accounted for 10% or more of Grid Dynamics revenue.

Grid Dynamics typically enters into a master services agreement with its clients, which provides a framework for services that is then supplemented by statements of work, which specify the particulars of each individual engagement.

**Competition**

Grid Dynamics faces competition from both global IT services providers as well as those based in CEE. Grid Dynamics believes that the principal competitive factors in its business include technical expertise and industry knowledge, culture, reputation and track record for high-quality and on-time delivery of work, effective employee recruiting, training and retention, responsiveness to clients' business needs and financial stability.

Grid Dynamics faces competition primarily from:

- emerging small to mid-cap digital services companies, such as Globant S.A., Endava plc, EPAM Systems, Inc., Slalom Consulting Inc., and Thoughtworks Holding Inc.;
- large global consulting and outsourcing firms, such as Accenture plc and Capgemini SE;.
- India-based technology outsourcing IT services providers, such as Cognizant Technology Solutions Corporation, Infosys Technologies, and Wipro;
- in-house IT departments of Grid Dynamics' clients and potential clients.

Given Grid Dynamics' focus on complex digital transformation programs, technical employee base and the development and continuous improvement in new software technology, Grid Dynamics believes that it is well positioned to compete effectively in the future.

**Human Capital and Employees**

People are critical to the success of Grid Dynamics. Accordingly, attracting and retaining personnel is a key factor in Grid Dynamics' ability to grow revenues and meet its clients' needs. As of December 31, 2022, Grid Dynamics had 3,798 personnel across 13 countries (the U.S., Mexico, Jamaica, Armenia, India, the Netherlands, U.K., Poland, Romania, Serbia, Switzerland, Moldova, and Ukraine).

***Recruitment and Retention***

Grid Dynamics hires both for technical skills and cultural fit. The reality of the changing technological landscape demands that our engineering personnel are able to continuously acquire new proficiencies and skills.

Grid Dynamics' hiring program is driven by demand within current and projected clients. Projections of client demand are constantly reviewed to ensure that we maintain a proper recruiting and training pipeline. The geographical spread helps Grid Dynamics to shorten the time to identify and recruit top technical talent. Grid Dynamics targets the top of technical talent from top technical universities. Majority of Grid Dynamics' engineering personnel have bachelor or advanced degrees in computer science.

To attract, retain and motivate IT professionals, Grid Dynamics seeks to provide an environment and culture that rewards entrepreneurial initiative and performance. In addition, Grid Dynamics offers a challenging work environment, ongoing skills development initiatives and attractive career advancement and promotion opportunities.

Grid Dynamics believes that it maintains a good working relationship with its employees and has not experienced any labor disputes. Grid Dynamics' employees have not entered into any collective bargaining agreements.

***Training and Development***

Grid Dynamics dedicates significant resources to the training and development of its technical leaders. The company believes in the importance of supporting educational initiatives and sponsors employees' participation in internal and external training and certifications.

Every year Grid Dynamics delivers hundreds of courses in emerging technologies to its engineers using the Grid University online education platform. Employees can also take advantage of educational and certification programs offered by the technology leaders both in open-source as well as in proprietary spaces.

Furthermore, through Grid Dynamics, deep relationships with top local universities, forged over years of collaboration, and specialized recruiting programs, Grid Dynamics can scale the hiring and staffing of new engineering teams to support complex technical programs.

Grid Dynamics also provides ongoing English language training at all of its delivery centers to maintain and enhance the English language skills of its IT professionals.

***Management Training Programs***

Grid Dynamics offers support, training and mentoring programs to managers through the Grid Dynamics Manager Training School. Various courses in project management and leadership skills help managers build strong teams through positive work environment, group inspiration and individual motivation.

***Internships***

Grid Dynamics has a long-standing tradition of running internship programs for students and junior engineers. The company opens its doors to young, promising engineers who are ready for a life-changing career of working on complex projects in big data, machine learning, AI and other emerging technologies.

Each intern works with a mentor who helps them adapt, shares knowledge and supports them in developing the necessary skills.

**Intellectual Property**

Protection of intellectual property rights is paramount to Grid Dynamics and its clients. Grid Dynamics relies on a combination of trade secret, patent, copyright and trademark laws as well as confidentiality procedures and contractual provisions to protect its intellectual property. Grid Dynamics requires its employees, independent contractors, vendors and clients to enter into written confidentiality agreements upon the commencement of their relationships with Grid Dynamics. These agreements generally provide that any confidential or proprietary information disclosed or otherwise made available by Grid Dynamics must be kept confidential.

Grid Dynamics customarily enters into non-disclosure agreements with its clients with respect to the use of their software systems and platforms. Grid Dynamics' clients usually own the intellectual property in the software or systems Grid Dynamics develops for them.

Grid Dynamics and its clients often use open-source software to improve quality and reduce time-to-market. Grid Dynamics works with the compliance departments of its clients to comply with the client's open-source licensing policies.

**Regulations**

Due to the industry and geographic diversity of Grid Dynamics' operations and services, Grid Dynamics' operations are subject to a variety of laws and regulations in the United States and the foreign jurisdictions in which we operate. See Item 1A, "*Risk Factors—Risks Related to Government Regulations*".

**Available Information**

We are subject to the informational requirements of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and, accordingly, file Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act, with the Securities and Exchange Commission (the "SEC"). In addition, the SEC maintains a website (http://www.sec.gov) that contains material regarding issuers that file electronically, such as ourselves, with the SEC.

We maintain a website at www.griddynamics.com, to which we regularly post copies of our press releases as well as additional information about us. Our filings with the SEC will be available free of charge through the website as soon as reasonably practicable after being electronically filed with or furnished to the SEC. Information contained in our website is not a part of, nor incorporated by reference into, this Report or our other filings with the SEC, and should not be relied upon.

**ITEM 1A. RISK FACTORS**

*This Annual Report on Form 10-K contains forward-looking statements that are subject to risks and uncertainties that could cause actual results to differ materially from those projected. These risks and uncertainties include, but are not limited to, the risk factors set forth below. The risks and uncertainties described in this Annual Report on Form 10-K are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently believe are immaterial may also affect our business. See the section titled "Special Note Regarding Forward-Looking Statements" of this Annual Report on Form 10-K for a discussion of the forward-looking statements that are qualified by these risk factors. If any of these known or unknown risks or uncertainties actually occurs and have a material adverse effect on us, our business, financial condition and results of operations could be seriously harmed.*

**Summary of Risk Factors**

Our business is subject to numerous risks and uncertainties that you should consider before investing in our company, as fully described below. The principal factors and uncertainties that make investing in our company risky include, among others:

- We have a relatively short operating history and operate in a rapidly evolving industry, which makes it difficult to evaluate our future prospects and may increase the risk that we will not continue to be successful and may adversely impact our stock price.
- We may be unable to effectively manage our growth or achieve anticipated growth, particularly as we expand into new geographies, which could place significant strain on our management personnel, systems and resources.
- Our revenues have historically been highly dependent on a limited number of clients and industries that are affected by seasonal trends, and any decrease in demand for outsourced services in these industries may reduce our revenues and adversely affect our business, financial condition and results of operations.
- We have incurred significant net losses in recent years, we expect to incur losses in the future and we may not be able to generate sufficient revenue to achieve and maintain profitability.
- The impact of the military action in Ukraine has affected and may continue to affect our business.
- Macroeconomic conditions, inflationary pressures, and the geopolitical climate could adversely affect our operating results and growth prospects.
- Our revenues are highly dependent on clients primarily located in the U.S. Any economic downturn in the U.S. or in other parts of the world, including Europe, or disruptions in the credit markets may have a material adverse effect on our business, financial condition and results of operations.
- We face intense competition.
- Damage to our reputation may adversely impact our ability to generate and retain business.
- Our failure to successfully attract, hire, develop, motivate and retain highly skilled personnel could have a significant adverse effect on our business, financial condition, and results of operations.
- Our business operations may be severely disrupted if we lose the services of our senior executives and key employees.
- Failure to adapt to changing technologies, methodologies, and evolving industry standards may have a material adverse effect on our business, financial condition, and results of operations.

- Security breaches and incidents, system failures or errors, and other disruptions to our networks and systems, could result in unauthorized access to, or disclosure or other processing of, confidential information and expose us to liability, which would cause our business and reputation to suffer.
- Undetected software design defects, errors or failures may result in loss of business or in liabilities that could have a material adverse effect on our reputation, business and results of operations.
- War, terrorism, other acts of violence, or natural or manmade disasters may affect the markets in which we operate, our clients and our service delivery.
- Our global business, especially in CIS and CEE countries, exposes us to significant legal, economic, tax and political risks.
- Acquisitions, strategic investments, partnerships or alliances could be difficult to identify and integrate, divert the attention of management, disrupt our business, dilute stockholder value and adversely affect our financial condition and results of operations, we may not achieve the financial and strategic goals that were contemplated at the time of a transaction, and we may be exposed to claims, liabilities and disputes as a result of the transaction that may adversely impact our business, operating results and financial condition.

**Risks Related to Our Business, Operations and Industry**

***We have a relatively short operating history and operate in a rapidly evolving industry, which makes it difficult to evaluate future prospects and may increase the risk that we will not continue to be successful and may adversely impact our stock price.***

We were founded in 2006 and have a relatively short operating history in the technology services industry, which is competitive and continuously evolving, subject to rapidly changing demands and constant technological developments. As a result, success and performance metrics are difficult to predict and measure. Since services and technologies are rapidly evolving and each company within the industry can vary greatly in terms of the services it provides, its business model and its results of operations, it can be difficult to predict how any company's services, including ours, will be received in the market.

While many Fortune 1000 enterprises, including our clients, have been willing to devote significant resources to incorporate emerging technologies and related market trends into their business models, they may not continue to spend any significant portion of their budgets on services like those provided by us in the future. Neither our past financial performance nor the past financial performance of any other company in the technology services industry is indicative of how we will fare financially in the future. Our future profits may vary substantially from those of other companies and our past profits, making an investment in us risky and speculative. If clients' demand for our services declines as a result of economic conditions, market factors or shifts in the technology industry, our business, financial condition and results of operations would be adversely affected.

Our stock performance is highly dependent on our ability to successfully execute and grow the business. Consequently, our stock price may be adversely impacted by our inability to execute to our plan, our inability to meet or exceed forward looking financial forecasts, and our inability to achieve our stated short-term and long-term goals.

***We may be unable to effectively manage our growth or achieve anticipated growth, particularly as we expand into new geographies, which could place significant strain on our management personnel, systems and resources.***

Continued growth and expansion may increase challenges we face in recruiting, training and retaining sufficiently skilled professionals and management personnel, maintaining effective oversight of personnel and delivery centers, developing financial and management controls, coordinating effectively across geographies and business units, and preserving our culture and values. Failure to manage growth effectively could have a material adverse effect on the quality of the execution of our engagements, our ability to attract and retain IT professionals, as well as our business, financial condition and results of operations.

In addition, as we increase the size and complexity of projects that we undertake with clients, add new delivery sites, introduce new services or enter into new markets, we may face new market, technological, operational, compliance and administrative risks and challenges, including risks and challenges unfamiliar to us. We may not be able to mitigate these risks and challenges to achieve our anticipated growth or successfully execute large and complex projects, which could materially adversely affect our business, prospects, financial condition and results of operations.

All of these risks are heightened as we expand into new geographies. During 2022, we announced our expansion to a new European hub with an office in Zug, Switzerland, a new engineering office in Yerevan, Armenia, and expansion in India. As we grow, we continue to explore other geographies for expansion. This may result in higher costs affecting our profitability

levels. Furthermore, as we expand to new geographies, we may not be able to sustain the level of competitiveness, including high quality and low cost, of our workforce that has enabled us to succeed at our customers. Additionally, we do not have a long history of operating our business, including recruiting, training and retaining employees, in these new geographies, and our competitiveness may decline if we are not able to effectively manage these risks.

***Our revenues have historically been highly dependent on a limited number of clients and industries and any decrease in demand for outsourced services in these industries may reduce our revenues and adversely affect our business, financial condition and results of operations.***

Our revenues have historically been highly dependent on a limited number of clients. In 2022, we generated a significant portion of our revenues from our largest clients. For example, we generated approximately 59.7%, 60.4% and 78.4% of our revenue from our 10 largest clients during the years ended December 31, 2022, 2021 and 2020, respectively. In the years ended December 31, 2022, 2021 and 2020 our top two customers each accounted for 10% or more of Grid Dynamics' revenue, respectively. Since a substantial portion of our revenue is derived through time and materials contracts, which are mostly short-term in nature and cancellable by our customers on limited notice, a major client in one year may not provide the same level of revenues for us in any subsequent year. In addition, a significant portion of our revenues is concentrated in our top three industry verticals: technology, retail and manufacturing. Our growth largely depends on our ability to diversify the industries in which we serve, continued demand for our services from clients in these industry verticals and other industries that we may target in the future, as well as on trends in these industries to outsource the type of services we provide.

Our business is also subject to seasonal trends that impact our revenues and profitability between quarters, driven by the timing of holidays in the countries in which we operate and the U.S. retail cycle, which drives the behavior of several of our retail clients. Excluding the impact of growth in our book of business, we have historically recorded higher revenue and gross profit in the second and third quarters of each year compared to the first and fourth quarters of each year. In addition, many of our retail sector clients tend to slow their discretionary spending during the holiday sale season, which typically lasts from late November (before Thanksgiving) through late December (after Christmas). Such seasonal trends may cause reductions in our profitability and profit margins during periods affected.

A reduction in demand for our services and solutions caused by seasonal trends, downturns in any of our targeted industries, a slowdown or reversal of the trend to outsource IT services in any of these industries or the introduction of regulations that restrict or discourage companies from outsourcing may result in a decrease in the demand for our services and could have a material adverse effect on our business, financial condition and results of operations.

***We have incurred significant net losses in recent years, we expect to incur losses in the future and we may not be able to generate sufficient revenue to achieve and maintain profitability.***

We have incurred significant net losses in recent periods, including net losses of $29.2 million, $7.7 million and $12.6 million for the years ended December 31, 2022, 2021 and 2020, respectively. We may continue to incur significant losses in the future for a number of reasons, including, but not limited to, unforeseen and high-levels of operating expenses, expansion into higher-cost geographies, increased costs due to wage inflation, and costs related to the Russian invasion of Ukraine.

We anticipate that our operating expenses will increase in the foreseeable future as we invest in our business for growth. This includes, but is not limited to acquisition related integration costs, costs associated with maintaining compliance as a public company, and increased spending related to sales, marketing, and R&D. These increased expenditures may make it more difficult to achieve and maintain profitability. In addition, our efforts to grow our business may be more expensive than we expect, and we may not be able to generate sufficient revenue to offset increased operating expenses. If we are required to reduce our expenses, our growth strategy could be materially affected. We will need to generate and sustain significant revenue levels in future periods in order to become profitable, and, even if we do, we may not be able to maintain or increase our level of profitability.

Accordingly, we cannot assure you that we will achieve sustainable operating profits as we continue to expand our business and infrastructure, further develop our marketing efforts, and otherwise implement our growth initiatives. Any failure to increase our revenue sufficiently to keep pace with our investments and other expenses could prevent us from achieving and maintaining profitability or positive cash flow on a consistent basis. If we are unable to successfully address these risks and challenges as we encounter them, our business, results of operations and financial condition would be adversely affected. In the event that we fail to achieve or maintain profitability, this could negatively impact the value of our common stock.

***The impact of the military action in Ukraine has affected and may continue to affect our business.***

On February 24, 2022, Russian forces launched significant military action against Ukraine. The conflict has impacted our business and may continue to pose risks to our business. The impact to Ukraine as well as actions taken by other countries, including new and stricter sanctions imposed by US, European Union, United Kingdom, Canada. and other countries against officials, individuals, regions, and industries in Russia and Ukraine, and actions taken by Russia in response to such sanctions, and each country's potential response to such sanctions, tensions, and military actions could have a material adverse effect on our operations. For example, in response to increased sanctions, Russia could attempt to take control of assets in Ukraine of companies registered in the United States, such as Grid Dynamics. Any such material adverse effect from the conflict and enhanced sanctions activity may disrupt our delivery of services, impair our ability to complete financial or banking transactions, cause us to shift all or portions of our work occurring in the region to other countries, and may restrict our ability to engage in certain projects in the region or involving certain customers in the region.

We are actively monitoring the security of our personnel and the stability of our infrastructure, including communications and internet availability. We executed our business continuity plan and have adapted to developments as they occur to protect the safety of our people and handle potential impacts to our delivery infrastructure. This includes moving affected employees to safer locations in Western Ukraine and, where permissible, outside Ukraine, and reallocating work to other geographies within our global footprint. We are actively working with our personnel and with our customers to meet their needs and to ensure smooth delivery of services.

In April 2022, Grid Dynamics also announced it would cease remaining operations in the Russian Federation. We have worked towards the safe and expedient relocation of willing employees and ongoing management of projects to eliminate delivery impact to clients. In addition we announced our expansion to a new European hub with an office in Zug, Switzerland, a new engineering office in Yerevan, Armenia and workforce expansion in India. During the three months ended June 30, 2022, we relocated the majority of our Russia based employees outside of Russia. As of February 2023, we have minimal office personnel in Russia and are performing no client services from Russia.

We have no way to predict the progress or outcome of the military action in Ukraine, as the conflict and government reactions continue to develop and are beyond our control. Prolonged unrest, military activities, expansion of hostilities, or broad-based sanctions, could have a material adverse effect on our operations and business outlook. In addition, the current geopolitical situation in Serbia creates additional uncertainty in the region, and could adversely affect our business.

The information contained in this section is accurate as of the date hereof, but may become outdated due to changing circumstances beyond our present awareness or control.

***Macroeconomic conditions, inflationary pressures, and the geopolitical climate could adversely affect our operating results and growth prospects.***

We operate globally and as a result our business, revenues and profitability are impacted by global macroeconomic conditions. The success of our activities is affected by general economic and market conditions, including, among others, inflation rate fluctuations, interest rates, tax rates, economic uncertainty, fluctuations in consumer spending, political instability, changes in laws, and trade barriers and sanctions. Recently, inflation rates in the US have increased to levels not seen in several years, and there are concerns of a recession. Such economic volatility could adversely affect our clients' business, as well as our business, financial condition, results of operations and cash flows, and future market disruptions could negatively impact us. Because of our concentration on our clients' capital-intensive digital transformation programs, our clients, and therefore our business, may be particularly sensitive to rising interest rates. Geopolitical destabilization could continue to impact global currency exchange rates, commodity prices, trade and movement of resources, which may adversely affect the technology spending of our clients and potential clients.

***Our revenues are highly dependent on clients primarily located in the U.S. Any economic downturn in the U.S. or in other parts of the world, including Europe, or disruptions in the credit markets may have a material adverse effect on our business, financial condition and results of operations.***

The IT services industry is particularly sensitive to the economic environment and tends to decline during general economic downturns. We derive the majority of our revenues from clients in the U.S. In the event of an economic downturn in the U.S. or in other parts of the world, including Europe, our existing and prospective clients may reduce or postpone their technology spending significantly, which may in turn lower the demand for our services and may have a material adverse effect on our business, financial condition and results of operations. In addition, if a disruption in the credit markets were to occur, it could pose a risk to our business if clients or vendors are unable to obtain financing to meet payment or delivery obligations to us or if we are unable to obtain necessary financing.

***We face intense competition.***

The market for technology and IT services is highly competitive and subject to rapid change and evolving industry standards and we expect competition to persist and intensify. We face competition from offshore IT services providers in other outsourcing destinations with low wage costs such as India, China, CEE countries and Latin America, as well as competition from large, global consulting and outsourcing firms and in-house IT departments of large corporations. Industry clients tend to engage multiple IT services providers instead of using an exclusive IT services provider, which could reduce our revenues to the extent that our clients obtain services from competing companies. Industry clients may prefer IT services providers that have more locations or that are based in countries that are more cost-competitive, stable and/or secure than some of the emerging markets in which we operate.

Our primary competitors include global consulting and traditional IT service providers such as Accenture plc, Capgemini SE, Cognizant Technology Solutions Corporation, Infosys Technologies, Wipro, and digital transformation providers such as EPAM Systems, Inc., Globant S.A., Endava plc, Thoughtworks Holding, Inc., and Slalom Consulting Inc. Many of our present and potential competitors have substantially greater financial, marketing and technical resources, and name recognition than we do. Therefore, they may be able to compete more aggressively on pricing or devote greater resources to the development and promotion of technology and IT services and we may be unable to retain our clients while competing against such competitors. Increased competition as well as our inability to compete successfully may have a material adverse effect on our business, prospects, financial condition and results of operations.

***Damage to our reputation may adversely impact our ability to generate and retain business.***

Since our business involves providing tailored services and solutions to clients, we believe that our corporate reputation is a significant factor when an existing or prospective client is evaluating whether to engage our services as opposed to those of our competitors. In addition, we believe that our brand name and reputation also play an important role in recruiting, hiring and retaining highly skilled personnel.

However, our brand name and reputation is potentially susceptible to damage by factors beyond our control, including actions or statements made by current or former clients and employees, competitors, vendors, adversaries in legal proceedings, government regulators and the media. There is a risk that negative information about us, even if untrue, could adversely affect our business. Any damage to our reputation could be challenging to repair, could make potential or existing clients reluctant to select us for new engagements, could adversely affect our recruitment and retention efforts, and could also reduce investor confidence.

***Our failure to successfully attract, hire, develop, motivate and retain highly skilled personnel could have a significant adverse effect on our business, financial condition, and results of operations.***

Our continued growth and success and operational efficiency is dependent on our ability to attract, hire, develop, motivate and retain highly skilled personnel, including IT engineers and other technical personnel, in the geographically diverse locations in which we operate and into which we are expanding. Competition for highly skilled IT professionals is intense and as a consequence, we may witness increasing challenges around employee retention, talent shortages, and attrition rates. While our management targets a voluntary attrition rate (expressed as a percentage) no higher than in the low-twenties, the significant market demand for highly skilled IT personnel and competitors' activities may induce our qualified personnel to leave and make it more difficult for us to recruit new employees with suitable knowledge, experience and professional qualifications. High attrition rates of IT personnel would increase our operating costs, including hiring and training costs, and could have an adverse effect on our ability to complete existing contracts in a timely manner, meet client objectives and expand our business. Failure to attract, hire, develop, motivate and retain personnel with the skills necessary to serve our clients could decrease our ability to meet and develop ongoing and future business and could materially adversely affect our business, financial condition and results of operations.

***Our business operations may be severely disrupted if we lose the services of our senior executives and key employees.***

Our success depends substantially upon the continued services of our senior executives and other key employees. If we lose the services of one or more of such senior executives or key employees, our business operations can be disrupted, and we may not be able to replace them easily or at all. In addition, competition for senior executives and key personnel in our industry is intense, and we may be unable to retain such personnel or attract and retain such personnel in the future, in which case our business may be severely disrupted.

***Failure to adapt to changing technologies, methodologies, and evolving industry standards may have a material adverse effect on our business, financial condition, and results of operations.***

We operate in an industry characterized by rapidly changing technologies, methodologies and evolving industry standards. Our future success depends in part upon our ability to anticipate developments in our industry, enhance our existing services and to develop and introduce new services to keep pace with such changes and developments and to meet changing client needs.

Development and introduction of new services and products is expected to become increasingly complex and expensive, involve a significant commitment of time and resources, and subject to a number of risks and challenges, including:

- difficulty or cost in updating services, applications, tools and software and in developing new services quickly enough to meet clients' needs;
- difficulty or cost in making some features of software work effectively and securely over the internet or with new or changed operating systems;
- difficulty or cost in updating software and services to keep pace with evolving industry standards, methodologies, regulatory and other developments in the industries where our clients operate; and
- difficulty or cost in maintaining a high level of quality and reliability as we implement new technologies and methodologies.

We may not be successful in anticipating or responding to these developments in a timely manner, and even if we do so, the services, technologies or methodologies we develop or implement may not be successful in the marketplace. Furthermore, services, technologies or methodologies that are developed by competitors may render our services non-competitive or obsolete. Our failure to adapt and enhance our existing services and to develop and introduce new services to promptly address the needs of our clients may have a material adverse effect on our business, financial condition and results of operations.

***Security breaches and incidents, system failures or errors, and other disruptions to our networks and systems could result in unauthorized access to, or disclosure or other processing of, confidential information and expose us to liability, which would cause our business and reputation to suffer.***

We often have access to, or are required to collect, process, transmit, store, or otherwise process, sensitive or confidential client and customer data, including intellectual property, proprietary business information of Grid Dynamics and our clients, and personal information of our clients, customers, employees, contractors, service providers, and others. We use our data centers and networks, and certain networks and other facilities and equipment of our contractors and service providers, for these purposes. Despite our security measures, our information technology and infrastructure may be vulnerable to attacks and disruptions by hackers or other third parties, the introduction of ransomware or other malicious code, or otherwise may be breached or otherwise subject to security incidents or compromises due to human error, phishing attacks, social engineering, zero-day vulnerabilities, malfeasance or other disruptions. Because of increases in the number of our personnel and our contractors' and service providers' personnel working remotely, we face increased risks of such attacks and disruptions that may affect our systems and networks or those of our clients, contractors, and service providers. Increased risks of such attacks and disruptions, including a heightened risk of potential cyberattacks by state actors also exist because of Russia's significant military action against Ukraine. Such risks could increase as we expand geographically. Any such breach, incident or disruption could compromise our data centers, networks and other equipment and the information stored or processed there could be accessed, disclosed, altered, misappropriated, lost, stolen, rendered unavailable, or otherwise processed without authorization. In addition, any failure or security breach or incident in a client's system relating to the services we provide could also result in loss or misappropriation of, or unauthorized access, alteration, use, acquisition, disclosure, or other processing of sensitive or confidential information, and may result in a perception that we or our contractors or service providers caused such an incident, even if our and our contractors' and service providers' networks and other facilities and equipment were not compromised. Although we maintain industry standard information security controls, including supply chain security verification, anti-phishing training and testing, and vulnerability management consistent with our ISO27001 certification, no safeguard or combination of safeguards can prevent all incidents from happening.

Our contractors and service providers face similar risks with respect to their facilities and networks used by us, and they also may suffer outages, disruptions, and security incidents and breaches. We cannot guarantee that our or our third-party vendors and service providers' systems and networks have not been breached or otherwise compromised or that they do not contain any exploitable vulnerabilities, defects or bugs that could result in a breach of or disruption to our systems and networks or the systems and networks of third parties that support us and our services. Breaches and security incidents suffered by us and our contractors and service providers may remain undetected for an extended period. Any such breach, disruption or other circumstance leading to loss, alteration, misappropriation, or unauthorized use, access, acquisition, disclosure, or other

processing of sensitive or confidential client or customer data suffered by us or our contractors or service providers, or the perception that any may have occurred, could expose us to claims, litigation, and liability, regulatory investigations and proceedings, cause us to lose clients and revenue, disrupt our operations and the services provided to clients, damage our reputation, cause a loss of confidence in our products and services, require us to expend significant resources designed to protect against further breaches and incidents and to rectify problems caused by these events, and result in significant financial and other potential losses.

Our errors and omissions insurance covering certain damages and expenses may not be sufficient to compensate for all liability. Although we maintain insurance for liabilities incurred as a result of certain security-related damages, we cannot be certain that our coverage will be adequate for liabilities actually incurred, that insurance will continue to be available to us on economically reasonable terms, or at all, or that any insurer will not deny coverage as to any future claim. The successful assertion of one or more large claims against us that exceeds available insurance coverage, or the occurrence of changes in our insurance policies, including premium increases or the imposition of large deductible or co-insurance requirements, could have a material adverse effect on our business, including our financial condition, results of operations, and reputation.

***Undetected software design defects, errors or failures may result in loss of business or in liabilities that could have a material adverse effect on our reputation, business and results of operations.***

Our services involve developing software solutions for our clients and we may be required to make certain representations and warranties to our clients regarding the quality and functionality of our software. Given that our software solutions have a high degree of technological complexity, they could contain design defects or errors that are difficult to detect or correct. We cannot provide assurances that, despite testing by us, errors or defects will not be found in our software solutions. Any such errors or defects could result in litigation, other claims for damages against us, the loss of current clients and loss of, or delay in, revenues, loss of market share, a failure to attract new clients or achieve market acceptance, diversion of development resources, increased support or service costs, as well as reputational harm and thus could have a material adverse effect on our reputation, business, prospects, financial condition and results of operations.

***We do not have long-term commitments from our clients, and our clients may terminate contracts before completion or choose not to renew contracts.***

Our clients are generally not obligated for any long-term commitments to us. Although a substantial majority of our revenues are generated from repeated business, which we define as revenues from a client who also contributed to our revenues during the prior year, our engagements with our clients are typically for projects that are singular in nature. In addition, our clients can terminate many of our master services agreements and work orders with or without cause, and in most cases without any cancellation charge. Therefore, we must seek to obtain new engagements when our current engagements are successfully completed or are terminated as well as maintain relationships with existing clients and secure new clients to expand our business.

There are a number of factors relating to our clients that are outside of our control which might lead them to terminate a contract or project with us, including:

- financial difficulties for the client;
- a change in strategic priorities, resulting in elimination of the impetus for the project or a reduced level of technology spending;
- a change in outsourcing strategy resulting in moving more work to the client’s in-house technology departments or to our competitors;
- the replacement by our clients of existing software with packaged software supported by licensors;
- mergers and acquisitions or significant corporate restructurings; and
- changes in the macro-economic environment resulting in weak demand at our customers' business.

Failure to perform or observe any contractual obligations could result in cancellation or non-renewal of a contract, which could cause us to experience a higher than expected number of unassigned employees and an increase in our cost of revenues as a percentage of revenues, until we are able to reduce or reallocate our headcount. The ability of our clients to terminate agreements makes our future revenues uncertain. We may not be able to replace any client that elects to terminate or not renew its contract with us, which could materially adversely affect our revenues and thus our results of operations.

In addition, some of our agreements specify that if a change of control of our company occurs during the term of the agreement, the client has the right to terminate the agreement. If any future event triggers any change-of- control provision in our client contracts, these master services agreements may be terminated, which would result in loss of revenues.

***Failure to successfully deliver contracted services or causing disruptions to clients' businesses may have a material adverse effect on our reputation, business, financial condition, and results of operations.***

Our business is dependent on our ability to successfully deliver contracted services in a timely manner. Any partial or complete failure of our equipment or systems, or any major disruption to basic infrastructure like power and telecommunications in the locations in which we operate, could impede our ability to provide contracted services to our clients. In addition, if our professionals make errors in the course of delivering services to our clients or fail to consistently meet the service requirements of a client, these errors or failures could disrupt the client's business. Any failure to successfully deliver contracted services or causing disruptions to a client's business, including the occurrence of any failure in a client's system or breach of security relating to the services provided by us, may expose us to substantial liabilities and have a material adverse effect on our reputation, business, financial condition and results of operations.

Additionally, our clients may perform audits or require us to perform audits and provide audit reports with respect to the IT and financial controls and procedures that we use in the performance of services for our clients. Our ability to acquire new clients and retain existing clients may be adversely affected and our reputation could be harmed if we receive a qualified opinion, or if we cannot obtain an unqualified opinion in a timely manner, with respect to our controls and procedures in connection with any such audit. We could also incur liability if our controls and procedures, or the controls and procedures we manage for a client, were to result in an internal control failure or impair our client's ability to comply with its own internal control requirements. If we or our partners fail to meet our contractual obligations or otherwise breach obligations to our clients, we could be subject to legal liability, which may have a material and adverse effect on our reputation, business, financial condition, and results of operations.

***We rely on software, hardware and SaaS technologies from third parties that may be difficult to replace or that may cause errors or defects in, or failures of, our services or solutions.***

We rely on software and hardware from various third parties as well as hosted Software as a Service ("SaaS") applications from third parties to deliver our services and solutions. If any of these software, hardware or SaaS applications become unavailable due to loss of license, extended outages, interruptions, or because they are no longer available on commercially reasonable terms, there may be delays in the provisioning of our services until equivalent technology is either developed by us, or, if available, is identified, obtained and integrated, which could increase our expenses or otherwise harm our business. Furthermore, any errors or defects in or failures of third-party software, hardware or SaaS applications could result in errors or defects in or failures of our services and solutions, which could be costly to correct and have an adverse effect on our reputation, business, financial condition and results of operations.

***Existing insurance coverage and limitation of liability provisions in service contracts may be inadequate to protect us against losses.***

We maintain certain insurance coverage, including professional liability insurance, director and officer insurance, property insurance for certain of our facilities and equipment, and business interruption insurance for certain of our operations. However, we do not insure for all risks in our operations and if any claims for injury are brought against us, or if we experience any business disruption, litigation or natural disaster, we might incur substantial costs and diversion of resources.

Most of the agreements we have entered into with our clients require us to purchase and maintain specified insurance coverage during the terms of the agreements, including commercial general insurance or public liability insurance, umbrella insurance, product liability insurance, and workers' compensation insurance. Some of these types of insurance are not available on reasonable terms or at all in some countries in which we operate.

Our liability for breach of our obligations is in some cases limited under client contracts. Such limitations may be unenforceable or otherwise may not protect us from liability for damages. In addition, our existing contracts may not limit certain liabilities, such as claims of third parties for which we may be required to indemnify our clients. The successful assertion of one or more large claims against us in amounts greater than those covered by our current insurance policies could materially adversely affect our business, financial condition and results of operations. Even if such assertions against us are unsuccessful, we may incur reputational harm and substantial legal fees.

***If we are not able to maintain an effective system of internal control over financial reporting, current and potential investors could lose confidence in our financial reporting, which could harm our business and have an adverse effect on our stock price. We cannot provide assurances that material weaknesses, or significant deficiencies, will not occur in the future.***

Any failure to maintain effective internal controls over our financial reporting could materially and adversely affect us. Section 404 of the Sarbanes-Oxley Act requires us to include in our annual reports on Form 10-K an assessment by management of the

effectiveness of our internal controls over financial reporting. In addition, we are now required to have our independent public accounting firm attest to and report on management's assessment of the effectiveness of our internal control over financial reporting because we ceased to qualify as an "emerging growth company" under the Jumpstart Our Business Startups Act (the "JOBS Act") as of December 31, 2022. In the future, if we are unable to conclude that we have effective internal control over financial reporting or, if our independent auditors are unable to provide us with an attestation and an unqualified report as to the effectiveness of our internal control over financial reporting, investors could lose confidence in the reliability of our financial statements, which could result in a decrease in the value of our securities.

If material weaknesses or significant deficiencies in internal controls are discovered in the future, they may adversely affect our ability to record, process, summarize and report financial information in a timely and accurate manner and, as a result, our financial statements may contain material misstatements or omissions.

***Our global business, especially in CIS and CEE countries, exposes us to significant legal, economic, tax and political risks.***

We have significant operations in certain emerging market economies, and are expanding into other countries, which creates legal, economic, tax and political risks. Risks inherent in conducting international operations include:

- less established legal systems and legal ambiguities, inconsistencies and anomalies;
- changes in laws and regulations;
- application and imposition of protective legislation and regulations relating to import or export, including tariffs, quotas and other trade protection measures;
- difficulties in enforcing intellectual property and/or contractual rights;
- bureaucratic obstacles and corruption;
- compliance with a wide variety of foreign laws, including those relating to privacy, data protection and cybersecurity;
- restrictions on the repatriation of dividends or profits;
- expropriation or nationalization of property;
- restrictions on currency convertibility and exchange controls;
- fluctuations in currency exchange rates;
- potentially adverse tax consequences;
- competition from companies with more experience in a particular country or with international operations;
- civil strife;
- unstable political and military situations; and
- overall foreign policy and variability of foreign economic conditions, including the effects of the COVID-19 pandemic.

The legal systems of Ukraine, Poland, Serbia, India, Mexico, Moldova and other countries are often beset by legal ambiguities as well as inconsistencies and anomalies due to the relatively recent enactment of many laws that may not always coincide with market developments. Furthermore, legal and bureaucratic obstacles and corruption exist to varying degrees in each of these countries. In such environments, our competitors may receive preferential treatment from governments, potentially giving them a competitive advantage. Governments may also revise existing contract rules and regulations or adopt new ones at any time and for any reason, and government officials may apply contradictory or ambiguous laws or regulations in ways that could materially adversely affect our business and operations in such countries. Any of these changes could impair our ability to obtain new contracts or renew or enforce contracts under which we currently provide services or to which we are a party. Any new contracting methods could be costly or administratively difficult for us to implement, which could materially adversely affect our business and operations. We cannot guarantee that regulators, judicial authorities or third parties in Ukraine, Poland, Serbia, India, Mexico, Moldova or other countries will not challenge our (including our subsidiaries') compliance with applicable laws, decrees and regulations. In addition to the foregoing, selective or arbitrary government actions may include withdrawal of licenses, sudden and unexpected tax audits, criminal prosecutions and civil actions, all of which could have a material adverse effect on our business, financial condition and results of operations.

The banking and other financial systems in certain Commonwealth of Independent States ("CIS") and CEE countries where we operate remain subject to periodic instability and generally do not meet the banking standards of more developed markets. Armed conflict, or the threat of armed conflict, including the significant military action against Ukraine launched by Russia, as well as sanctions targeting banks in the region in response to such military action, could contribute to banking challenges or a banking crisis in these countries. Such events, or a financial crisis or the bankruptcy or insolvency of banks through which we

receive, or with which we hold, funds may result in the loss of our deposits or adversely affect our ability to complete banking transactions in that region, which could materially adversely affect our business and financial condition.

Furthermore, existing tensions and the emergence of new or escalated tensions in CIS and CEE countries, including the significant military action against Ukraine launched by Russia, has exacerbated and could further exacerbate tensions between such countries and the U.S. Such tensions, concerns regarding information security, and actual and potential imposition of additional sanctions by the U.S. and other countries, or responses by Russia to such additional sanctions, may discourage existing or prospective clients to engage our services, have a negative effect on our ability to develop or maintain our operations in the countries where we currently operate, and disrupt our ability to attract, hire and retain employees. The occurrence of any such event may have a material adverse effect on our business, financial condition and results of operations.

As a result of our acquisitions of Tacit in May 2021 and Mutual Mobile in December 2022, we have acquired operations in Guadalajara, Mexico and Hyderabad, India respectively. The laws and regulations in Mexico and India to which we have become subject thereby, and interpretations thereof, may change, sometimes substantially, as a result of a variety of factors beyond our control, including political, economic, regulatory or social events. In Mexico, as a result of amendments in May 2019 to the Mexican Federal Labor Law (Ley Federal del Trabajo) and other related regulations, among other things, new labor authorities and courts were created, new bargaining procedures were implemented and provisions related to employees' freedom of association and organization, collective bargaining agreements, and rules against labor discrimination were issued or amended. We cannot assure you that these changes will not lead to an increase in litigation, labor activism or increasingly contentious labor relations, which in turn may adversely affect our business, financial condition, results of operations and prospects, particularly in Mexico. These and any other policies, laws and regulations which are further adopted could result in a deterioration of investment sentiment, political and economic uncertainty, and increased costs for our business, which may in turn have a material adverse effect on our business, financial condition, liquidity and results of operations.

***Our effective tax rate could be adversely affected by several factors.***

We conduct business globally and file income tax returns in multiple jurisdictions. Our effective tax rate could be materially adversely affected by several factors, including changes in the amount of income taxed by, or allocated to, the various jurisdictions in which we operate that have differing statutory tax rates; changing tax laws, regulations and interpretations of such tax laws in multiple jurisdictions; and the resolution of issues arising from tax audits or examinations and any related interest or penalties. In particular, there have been significant changes to the taxation systems in CEE countries in recent years as the authorities have gradually replaced or introduced new legislation regulating the application of major taxes such as corporate income tax, value-added tax, corporate property tax, personal income taxes and payroll taxes. The Organization for Economic Cooperation and Development has made a number of proposals, including implementing a new global minimum effective corporate tax rate of 15% for large multinational companies and rules that would result in the reallocation of certain profits to market jurisdictions where customers and users are located. Furthermore, any significant changes to U. S. tax law could materially adversely affect our effective tax rate. The recently enacted Inflation Reduction Act includes, among other changes, a 1% excise tax on certain stock repurchases.

The determination of our provision for income taxes and other tax liabilities requires estimation, judgment and calculations where the ultimate tax determination may not be certain. Our determination of tax liability is always subject to review or examination by authorities in various jurisdictions. If a tax authority in any jurisdiction reviews any of our tax returns and proposes an adjustment, including a determination that the transfer prices and terms we have applied are not appropriate, such an adjustment could have an adverse effect on our business, financial condition and results of operations.

We are unable to predict what tax reforms may be proposed or enacted in the future or what effect such changes would have on our business, but such changes, to the extent they are brought into tax legislation, regulations, policies or practices in jurisdictions in which we operate, could increase the estimated tax liability that we have expensed to date and paid or accrued on our balance sheets, and otherwise affect our financial position, future results of operations, cash flows in a particular period and overall or effective tax rates in the future in countries where we have operations, reduce post-tax returns to our stockholders and increase the complexity, burden and cost of tax compliance.

***There may be adverse tax and employment law consequences if the independent contractor status of some of our personnel or the exempt status of our employees is successfully challenged.***

Certain of our personnel are retained as independent contractors. The criteria to determine whether an individual is considered an independent contractor or an employee are typically fact intensive and vary by jurisdiction, as can the interpretation of the applicable laws. If a government authority or court makes any adverse determination with respect to some or all of our independent contractors, we could incur significant costs, including for prior periods, in respect of tax withholding, social security taxes or payments, workers' compensation and unemployment contributions, and recordkeeping, or we may be required to modify our business model, any of which could materially adversely affect our business, financial condition and results of operations.

***Global mobility of employees may potentially create additional tax liabilities for us in different jurisdictions.***

In performing services to clients, our employees have been and may be required to travel to various locations. Depending on the length of the required travel and the nature of employees' activities the tax implications of travel arrangements vary, with generally more extensive tax consequences in cases of longer travel. Such tax consequences mainly include payroll tax liabilities related to employee compensation and, in cases envisaged by international tax legislation, taxation of profits generated by employees during their time of travel.

We have internal procedures, policies and systems, including an internal mobility program, for monitoring our tax liabilities arising in connection with the business travel. However, considering that the tax authorities worldwide are paying closer attention to global mobility issues, our operations may be adversely affected by additional tax charges related to the activity of our mobile employees. These risks may also affect us as we are relocating employees from Ukraine and Russia to other locations.

***Tax authorities may disagree with our positions and conclusions regarding certain tax positions, or may apply existing rules in an arbitrary or unforeseen manner, resulting in unanticipated costs, taxes or non-realization of expected benefits.***

A tax authority may disagree with tax positions that we have taken, which could result in increased tax liabilities. For example, a tax authority could challenge our allocation of income by tax jurisdiction and the amounts paid between our affiliated companies pursuant to our intercompany arrangements and transfer pricing policies, including methodologies for valuing developed technology and amounts paid with respect to our intellectual property development.

A tax authority may take the position that material income tax liabilities, interest and penalties are payable by us, where there has been a technical violation of contradictory laws and regulations that are relatively new and have not been subject to extensive review or interpretation, in which case we expect that we might contest such assessment. High-profile companies can be particularly vulnerable to aggressive application of unclear requirements. Many companies must negotiate their tax bills with tax inspectors who may demand higher taxes than applicable law appears to provide. Contesting such an assessment may be lengthy and costly and if we were unsuccessful in disputing the assessment, the implications could increase our anticipated effective tax rate, where applicable.

***Our business, financial condition and results of operations may be adversely affected by fluctuations in foreign currency exchange rates.***

Grid Dynamics is exposed to foreign currency exchange rate risk and its profit margins are subject to volatility between periods due to changes in foreign currency exchange rates relative to the U.S. dollar. Grid Dynamics' functional currency is the US Dollar. That said, the company's revenues and costs are exposed to a number of currencies that include EURO, British pounds, Mexican pesos, Moldovan leu and Indian rupees. As we do not hedge our foreign currency, we are exposed to foreign currency exchange transaction risk related to funding our non-U.S. operations and to foreign currency translation risk related to certain of our subsidiaries' cash balances that are denominated in currencies other than the U.S. dollar. In addition, our profit margins are subject to volatility as a result of changes in foreign exchange rates. In the years ended December 31, 2022 2021 and 2020, approximately 33.4%, 37.8% and 27.2% of our combined cost of revenue and total operating expenses were denominated in currencies other than the U.S. dollar, respectively. Any significant fluctuations in currency exchange rates may have a material impact on our business and results of operations. In some countries, we may be subject to regulatory or practical restrictions on the movement of cash and the exchange of foreign currencies, which would limit our ability to use cash across our global operations and increase our exposure to currency fluctuations. This risk could increase as we continue expanding our global operations, which may include entering emerging markets that may be more likely to impose these types of restrictions. Currency exchange volatility caused by political or economic instability or other factors, could also materially impact our results. See Item 7A, "*Quantitative and Qualitative Disclosures about Market Risk—Foreign Currency Exchange Rate Risk*" for more information about our exposure to foreign currency exchange rates.

***We may be exposed to liability for actions taken by our subsidiaries.***

In certain cases, we may be jointly and severally liable for losses of our subsidiaries. Irrespective of incurring liability for losses of our subsidiaries, we may also incur secondary liability and, in certain cases, liability to creditors for obligations of our subsidiaries in certain instances involving bankruptcy or insolvency.

Further, an effective parent is secondarily liable for an effective subsidiary's debts if the effective subsidiary becomes insolvent or bankrupt as a result of the action or inaction of the effective parent. Compensation for the effective subsidiary's losses from the effective parent that caused the effective subsidiary to take action or fail to take action, knowing that such action or failure to take action would result in losses, may be claimed, inter alia, by the other stockholders of the effective subsidiary, the administrators and creditors in an insolvency proceeding. We could be found to be the effective parent of the subsidiaries, in which case we could become liable for their debts, which could have a material adverse effect on our business, financial condition and results of operations or prospects.

***Our profitability may suffer if we are unable to maintain our resource utilization and productivity levels.***

As most of our client projects are performed and invoiced on a time and materials basis, our management tracks and projects billable hours as an indicator of business volume and corresponding resource needs for IT professionals. To maintain our gross profit margins, we must effectively utilize our IT professionals, which depends on our ability to:

- integrate and train new personnel;
- efficiently transition personnel from completed projects to new assignments;
- forecast customer demand for services; and
- deploy personnel with appropriate skills and seniority to projects.

If we experience a slowdown or stoppage of work for any client, or on any project for which we have dedicated personnel or facilities, we may be unable to reallocate these personnel or assets to other clients and projects to keep their utilization and productivity levels high. If we are unable to maintain appropriate resource utilization levels,our profitability may suffer.

***If we are unable to accurately estimate the cost of service or fail to maintain favorable pricing for our services, our contracts may be unprofitable.***

Grid Dynamics expects proportionate revenue from fixed-fee contracts to increase in future periods. In order for our contracts to be profitable, we must be able to accurately estimate our costs to provide the services required by the applicable contract and appropriately price our contracts. Such estimates and pricing structures used by us for our contracts are highly dependent on internal forecasts, assumptions and predictions about our projects, the marketplace, global economic conditions (including foreign exchange volatility) and the coordination of operations and personnel in multiple locations with different skill sets and competencies. Due to the inherent uncertainties that are beyond our control, we may underprice our projects, fail to accurately estimate the costs of performing the work or fail to accurately assess the risks associated with potential contracts. In select cases, we also offer volume discounts once a client reaches certain contractual spend thresholds, which may lower the reference price for a client or result in a loss of profits if we do not accurately estimate the amount of discounts to be provided. We may not be able to recognize revenues from fixed-fee contracts in the period in which our services are performed, which may cause our margins to fluctuate. Any increased or unexpected costs, delays or failures to achieve anticipated cost savings, or unexpected risks we encounter in connection with the performance of our contracts, including those caused by factors outside our control, could make these contracts less profitable or unprofitable.

***We face risks associated with the long selling and implementation cycle for our services that require significant resource commitments prior to realizing revenues for those services.***

We have a long selling cycle for our services, which requires us to expend substantial time and resources to educate clients on the value of our services and our ability to meet their requirements. In certain cases, we may begin work and incur costs prior to executing a contract. Our selling cycle is subject to many risks and delays over which we have little or no control, including clients' decisions to choose alternatives to our services (such as other IT services providers or in-house resources) and the timing of clients' budget cycles and approval processes. Therefore, selling cycles for new clients can be especially unpredictable and we may fail to close sales with prospective clients to whom we have devoted significant time and resources. Any significant failure to generate revenues or delays in recognizing revenues after incurring costs related to sales processes could have a material adverse effect on our business, financial condition and results of operations.

***Failure to obtain engagements for and effectively manage increasingly large and complex projects may have an adverse effect on our business, financial condition and results of operations.***

Our operating results are dependent on the scale of our projects and the prices we are able to charge for our services. In order to successfully perform larger and more complex projects, we need to establish and maintain effective, close relationships with our

clients, continue high levels of client satisfaction and develop a thorough understanding of our clients' needs. We may also face a number of challenges managing larger and more complex projects, including:

- maintaining high quality control and process execution standards;
- maintaining planned resource utilization rates on a consistent basis;
- using an efficient mix of on-site, off-site and offshore staffing;
- maintaining productivity levels;
- implementing necessary process improvements;
- recruiting and retaining sufficient numbers of highly skilled IT personnel; and
- controlling costs.

There is no guarantee that we may be able to overcome such challenges. In addition, large and complex projects may involve multiple engagements or stages, and there is a risk that a client may choose not to retain us for additional stages or may cancel or delay additional planned engagements. Our failure to successfully obtain engagements for and effectively manage large and complex projects may have an adverse effect on our business, financial condition and results of operations.

***Increases in compensation expenses, including stock-based compensation expenses, could lower our profitability, and dilute our existing stockholders.***

Wages and other compensation costs in the countries in which we maintain significant operations and delivery centers are lower than comparable wage costs in more developed countries. However, wages in the technology industry in these countries may increase at a faster rate than in the past, which may make us less competitive unless we are able to increase the efficiency and productivity of our people. If we increase operations and hiring in more developed economies, our compensation expenses will increase because of the higher wages demanded by technology professionals in those markets. Wage inflation, whether driven by competition for talent or ordinary course pay increases, could increase our cost of services as well as selling, general and administrative expenses and reduce our profitability if we are not able to pass those costs on to our customers or charge premium prices when justified by market demand.

In addition, we have granted certain equity-based awards under our equity incentive plans and expect to continue doing so. For the years ended December 31, 2022, 2021, and 2020 we recorded \$61.0 million, \$33.0 million, and \$20.0 million respectively, of stock-based compensation expense related to the grant of equity based awards. If we do not grant equity awards, or if we reduce the value of equity awards we grant, we may not be able to attract, hire and retain key personnel. If we grant more equity awards to attract, hire and retain key personnel, the expenses associated with such additional equity awards could materially adversely affect our results of operations. If the anticipated value of these equity awards does not materialize because of volatility or lack of positive performance in our stock price, we may be unable to retain our key personnel or attract and retain new key employees in the future, in which case our business may be severely disrupted our ability to attract and retain personnel could be adversely affected. The issuance of equity-based compensation may also result in dilution to stockholders.

***Failure to collect receivables from, or bill for unbilled services to, clients may have a material adverse effect on our results of operations and cash flows.***

Our business depends on our ability to successfully obtain payment from our clients of the amounts they owe for work performed. We usually bill and collect such amounts on relatively short cycles and maintain allowances for doubtful accounts. However, actual losses on client balances could differ from those that we anticipate and, as a result, we might need to adjust our allowances.

There is no guarantee that we will accurately assess the creditworthiness of our clients. If clients suffer financial difficulties, it could cause them to delay payments, request modifications to their payment arrangements that could increase our receivables balance, or default on their payment obligations.

In addition, some of our clients may delay payments due to changes in internal payment procedures driven by rules and regulations to which they are subject. Timely collection of client balances also depends on our ability to complete our contractual commitments and bill and collect contracted revenues. If we are unable to meet our contractual requirements, we may experience delays in collection of or inability to collect accounts receivable. If this occurs, our financial condition, results of operations and cash flows could be materially adversely affected.

***Our debt service obligations may adversely affect our financial condition and cash flows from operations.***

On March 15, 2022, we entered into a Credit Agreement (the “2022 Credit Agreement”), by and among us, as borrower, the guarantors party thereto from time to time, the lenders party thereto from time to time, and JPMorgan Chase Bank, N.A., as administrative agent for the lenders (the “Agent”). The 2022 Credit Agreement provides for a three-year secured multicurrency revolving loan facility in an initial aggregate principal amount of up to $30.0 million, with a $10.0 million letter of credit sublimit. We may increase the size of the revolving loan facility up to $50.0 million, subject to certain conditions and additional commitments from existing and/or new lenders. The 2022 Credit Agreement contains customary affirmative and negative covenants, including covenants limiting the ability of the Company and its subsidiaries to, among other things, incur debt, grant liens, undergo certain fundamental changes, make investments and acquisitions, make certain restricted payments, dispose of assets, enter into certain transactions with affiliates, and enter into burdensome agreements, in each case, subject to limitations and exceptions set forth in the 2022 Credit Agreement. The Company is also required to maintain compliance with a consolidated total leverage ratio, determined in accordance with the terms of the 2022 Credit Agreement. Our obligations under the 2022 Credit Agreement are required to be guaranteed by certain of our domestic subsidiaries meeting materiality thresholds set forth in the 2022 Credit Agreement. Such obligations, including the guaranties, are secured by substantially all of the personal property of our and our subsidiary guarantors.

Maintenance of our indebtedness, contractual restrictions, and additional issuances of indebtedness could:

- cause us to dedicate a substantial portion of our cash flows from operations towards debt service obligations and principal repayments;
- increase our vulnerability to adverse changes in general economic, industry, and competitive conditions;
- limit our flexibility in planning for, or reacting to, changes in our business and our industry;
- impair our ability to obtain future financing for working capital, capital expenditures, acquisitions, general corporate, or other purposes; and
- due to limitations within the debt instruments, restrict our ability to take certain corporate actions, subject to customary exceptions.

We are required to comply with the covenants set forth in our credit agreement. If we breach any of the covenants and do not obtain a waiver from the lenders, then, subject to applicable cure periods, we would not be able to incur additional indebtedness under the credit agreement, and any outstanding indebtedness under the credit agreement may be declared immediately due and payable.

***We may need additional capital and failure to raise additional capital on terms favorable to us, or at all, could limit our ability to grow our business and develop or enhance our service offerings to respond to market demand or competitive challenges.***

We may require additional cash resources due to changed business conditions or other future developments. If existing resources are insufficient to satisfy cash requirements, we may seek to sell additional equity or debt securities or obtain one or more credit facilities. The sale of additional equity securities could result in dilution to stockholders. The incurrence of indebtedness would result in increased debt service obligations and could require us to agree to operating and financing covenants that would restrict our operations. Our ability to obtain additional capital on acceptable terms is subject to a variety of uncertainties, including investors’ perception of, and demand for, securities of IT services companies, conditions in the capital markets in which we may seek to raise funds, our future results of operations and financial condition, and general economic and political conditions. Financing may not be available in amounts or on terms acceptable to us, or at all, which could limit our ability to grow our business and develop or enhance our service offerings to respond to market demand or competitive challenges.

***War, terrorism, other acts of violence, or natural or man-made disasters may affect the markets in which we operate, our clients and our service delivery.***

Our business may be adversely affected by instability, disruption or destruction in a geographic region in which we operate, regardless of cause, including war, terrorism, riot, civil insurrection or social unrest, climate change, and natural or man-made disasters, including famine, flood, fire, earthquake, storm or pandemic events and spread of disease, such as the COVID-19 pandemic. For example, the significant military action against Ukraine launched by Russia has affected and will further affect our business. Such events may cause clients to delay their decisions on spending for the services provided by us and give rise to sudden significant changes in regional and global economic conditions and cycles. These events also pose significant risks to our personnel and to physical facilities and operations, which could materially adversely affect our financial results.

***Acquisitions could be difficult to identify and integrate, divert the attention of management, disrupt our business, dilute stockholder value and adversely affect our financial condition and results of operations, we may not achieve the financial and strategic goals that were contemplated at the time of a transaction, and we may be exposed to claims, liabilities and disputes as a result of the transaction that may adversely impact our business, operating results and financial condition.***

We continuously review and consider strategic acquisitions of businesses, products or technologies. For example, in December 2020 we acquired Daxx, in May 2021 we acquired Tacit, and in December 2022 we acquired Mutual Mobile. In the future we may seek to acquire or invest in other businesses, products or technologies that we believe could complement or expand our services, enhance our technical capabilities or otherwise offer growth opportunities. The pursuit of potential acquisitions may divert the attention of management and cause us to incur various expenses in identifying, investigating and pursuing suitable acquisitions, whether or not the acquisition purchases are completed. Additionally, we may not be able to find and identify desirable acquisition targets or be successful in entering into an agreement with any particular target or obtain adequate financing to complete such acquisitions. If we acquire businesses, we may not be able to successfully integrate the acquired personnel, operations, and technologies, or effectively manage the combined business following the acquisition.

Additionally, we may not be able to find and identify desirable acquisition targets or be successful in entering into an agreement with any particular target or obtain adequate financing to complete such acquisitions. Acquisitions could also result in dilutive issuances of equity securities or the incurrence of debt, which could adversely affect our financial condition, cash flows and results of operations. In addition, if an acquired business fails to meet our expectations, we may not achieve the financial and strategic goals that were contemplated at the time of a transaction, and our business, financial condition and results of operations may be adversely affected. Furthermore, we may acquire businesses that have inferior margins and profitability levels in comparison to our existing business and this may dilute our overall profitability of the company. This, in turn, may result in adverse financial results and dilution to existing stockholders.

Our operating results or financial condition may be adversely impacted by claims or liabilities that we assume from an acquired company or technology or other claims or liabilities otherwise related to an acquisition, including, among others, claims from governmental and regulatory agencies or bodies, terminated employees, current or former customers, current or former stockholders or other third parties, or arising from contingent payments related to the acquisition; pre-existing contractual relationships that we assume from an acquired company that we would not have otherwise entered into, the termination or modification of which may be costly or disruptive to our business; unfavorable revenue recognition or other accounting treatment as a result of an acquired company's practices; and intellectual property claims or disputes. We may fail to identify or assess the magnitude of certain liabilities, shortcomings or other circumstances prior to acquiring a company or technology, which could result in unexpected litigation or regulatory exposure and other adverse effects on our business, operating results and financial condition.

***We face risks associated with the transparency, quality, and reliability of financial information of a business we acquire.***

Although we perform due diligence on a targeted business that we intend to acquire, we are exposed to risks associated with the quality and reliability of the financial statements of the acquired business. This risk may be higher with smaller businesses and businesses that are operated in jurisdictions and countries with poorer regulatory and compliance requirements. In such situation where we acquire a target with unreliable financial statements, we are exposed to material risks that may impact the reliability of our overall financial statements and may adversely impact our stock price.

We also cannot assure you that the diligence we conduct when evaluating future acquisitions will reveal all material issues that may be present, that it would be possible to uncover all material issues through a customary amount of due diligence, or that factors outside of our control will not later arise. Even if our due diligence successfully identifies certain risks, unexpected risks may arise and previously known risks may materialize in a manner not consistent with our preliminary risk analysis. Further, as a result of a completed acquisition, purchase accounting, and integration of the acquired business, we may be required to take write-offs or write-downs, restructuring and impairment or other charges that could negatively affect our business, assets, liabilities, prospects, outlook, financial condition and results of operations.

Some of the additional risks associated with acquiring a business include, but not limited to the following:

- inability to integrate or benefit from acquired technologies or services;
- product synergies, cost reductions, increases in revenue and economies of scale may not materialize as expected;
- the business culture of the acquired entity may not match well with our culture;
- unforeseen delays, unanticipated costs and liabilities may arise when integrating operations, processes and systems in geographies where we have not conducted business;

- unanticipated costs or liabilities associated with the strategic transactions;

- incurrence of transaction-related costs;
- assumption of the existing obligations or unforeseen liabilities of the acquired business;
- difficulty integrating the accounting systems, security infrastructure, operations, and personnel of the acquired business;
- difficulties and additional expenses associated with supporting legacy products and hosting infrastructure of the acquired business;
- difficulty converting the current and prospective customers of the acquired business onto our platform and contract terms, including disparities in the revenue, licensing, support, or professional services model of the acquired company;
- diversion of management's attention from other business concerns;
- adverse effects to our existing business relationships with business partners and customers as a result of the strategic transactions;
- unexpected costs may arise due to unforeseen changes in tax, payroll, pension, labor, trade, environmental and safety policies in new jurisdictions where the acquired entity operates;
- difficulty in retaining, motivating and integrating key management and other employees of the acquired business;
- use of resources that are needed in other parts of our business;
- dispute over contingent payments; and
- use of substantial portions of our available cash to consummate the strategic transaction.

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

Generally accepted accounting principles in the U.S. are subject to interpretation by the Financial Accounting Standards Board ("FASB"), the SEC and various bodies formed to promulgate and interpret appropriate accounting principles. A change in accounting standards or practices can have a significant effect on our reported results and may even affect our reporting of transactions completed before the change is effective. New accounting pronouncements and varying interpretations of accounting pronouncements have occurred and may occur in the future. Changes to existing rules or the questioning of current practices may adversely affect our reported financial results or the way we conduct our business.

***Reports published by analysts, including projections in those reports that differ from our actual results, could adversely affect the price and trading volume of our common stock.***

Securities research analysts may establish and publish their own periodic projections for us. These projections may vary widely and may not accurately predict the results we actually achieve. Our share price may decline if our actual results do not match the projections of these securities research analysts. Similarly, if one or more of the analysts who write reports on us downgrades our stock or publishes inaccurate or unfavorable research about our business, our share price could decline. If one or more of these analysts ceases coverage of us or fails to publish reports on us regularly, our share price or trading volume could decline and demand for our shares could decrease.

**Risks Related to Government Regulations**

***We are exposed to various risks related to the global regulatory environment as well as legal proceedings, claims and the like.***

As a public company with global operations, we are subject to the laws of the United States and multiple foreign jurisdictions and the rules and regulations of various governing bodies, which may differ among jurisdictions, including those related to financial and other disclosures, accounting standards, corporate governance, intellectual property, tax, trade (including import, export and customs), antitrust, environment, health and safety (including those relating to climate change), employment, immigration and travel regulations, privacy, data protection and localization, anti-corruption, investment and treasury regulations. Changing, inconsistent or conflicting laws, rules and regulations, and ambiguities in their interpretation and application create uncertainty and challenges, and compliance with laws, rules and regulations may be onerous and expensive, divert management time and attention from revenue-generating activities, and otherwise adversely impact our business operations. Violations or alleged violations of law, rules and regulations, including, among others, those described above, could result in fines, criminal penalties, restrictions on our business, and damage to our reputation, and could have an adverse impact on our business operations, financial condition and results of operations.

From time to time we may be involved in legal proceedings or claims regarding a variety of legal or regulatory matters or receive governmental or third-party requests for information regarding compliance or regulatory matters. Legal proceedings, claims, and such requests for information, whether with or without merit, may be time-consuming and expensive; divert management's attention and other resources; result in adverse judgments for damages, injunctive relief, penalties and fines; and negatively affect our business. There can be no assurance regarding the outcome of any legal proceedings, claims or the like.

***Failure to comply with laws and regulations relating to privacy, data protection, and cybersecurity could lead to government enforcement actions, private litigation and adverse publicity.***

We receive, store and process personal information and other data from and about customers in addition to our employees and contractors. Our handling of data is subject to a variety of laws and regulations, including regulation by various government agencies and various state, local and foreign agencies. Our data handling also is subject to contractual obligations and may be deemed to be subject to industry standards, including certain industry standards that we undertake to comply with. The laws and regulations relating to privacy. data protection and cybersecurity are evolving, can be subject to significant change and may result in ever-increasing regulatory and public scrutiny and escalating levels of enforcement and sanctions.

For example, the European Union has implemented the General Data Protection Regulation ("GDPR"), which came into effect on May 25, 2018. The GDPR has a significant impact on how businesses can collect and process the personal data of individuals in the European Economic Area ("EEA"). The regulation includes stringent operational requirements for processors and controllers of personal data and imposes significant penalties for non-compliance of up to the greater of €20 million or 4% of global annual revenues. With regard to transfers to the U.S. of personal data from our employees and European customers and users, we rely upon standard contractual clauses approved by the European Commission (the "SCCs"). The SCCs have been subject to legal challenge and may be modified or invalidated, and we may be unsuccessful in maintaining legitimate means for the transfer and receipt of personal data from the EEA. In 2020, the Court of Justice of the European Union (the "CJEU") deemed the SCCs valid, but ruled that transfers made pursuant to the SCCs and other alternative transfer mechanisms must be analyzed on a case-by-case basis. Subsequent guidance from EU regulators has stated that in certain cases, the SCCs must be accompanied by the use of supplementary measures. Concerns remain about the potential for the SCCs and other mechanisms to face additional challenges. On June 4, 2021, the European Commission published new SCCs and required their implementation. Additionally, the United Kingdom has enacted legislation that substantially implements the GDPR, with a similar penalty structure, and has issued new standard contractual clauses to support personal data transfers out of the United Kingdom ("UK SCCs"). We may, in addition to other impacts of the Schrems II decision and other developments relating to cross-border transfer, experience additional costs associated with increased compliance burdens, and we and our customers face the potential for regulators in the EEA, Switzerland, or the United Kingdom to apply different standards to the transfer of personal data from those regions to the U.S., and to block, or require ad hoc verification of measures taken with respect to, certain data flows from those regions to the U.S. We also may be required to engage in new contract negotiations with third parties that aid in processing data on our behalf. We may experience reluctance or refusal by current or prospective customers in those regions to use our products, and may find it necessary or desirable to make further changes to our handling of personal data of residents of those regions. The regulatory environment applicable to the handling of personal data of residents of the EEA, Switzerland, and the United Kingdom, and our actions taken in response, may cause us to assume additional liabilities or incur additional costs and obligations and could result in our business, operating results and financial condition being harmed. Additionally, we and our customers may face a risk of enforcement actions by data protection authorities relating to personal data transfers. Any such enforcement actions could result in substantial costs and diversion of resources, distract management and technical personnel and negatively affect our business, operating results and financial condition.

In addition, California has enacted legislation that has been described as the first "GDPR-like" law in the U.S. The California state legislature passed the California Consumer Privacy Act ("CCPA") in 2018 and California voters approved a ballot measure subsequently establishing the California Privacy Rights Act ("CPRA") in 2020, which modifies the CCPA and increase the privacy and security obligations of entities handling certain personal information of California residents, including requiring covered companies to provide new disclosures to California consumers, and afford such consumers new abilities to opt-out of certain sales of personal information. The CCPA came into effect on January 1, 2020, and the California Attorney General may bring enforcement actions, with penalties for violations of the CCPA. The CPRA is effective as of January 1, 2023, instilling enforcement authority in a new dedicated regulatory body, the California Privacy Protection Agency. Other states have also proposed, and in certain aspects enacted, legislation similar to the CCPA including Virginia, Colorado, Utah, and Connecticut, all of which enacted such lawswith effectiveness in 2023. Aspects of the CCPA, CPRA, other state laws, and their interpretations remain uncertain. We cannot yet fully predict the impact of these laws on our business or operations, but developments regarding these and other privacy and data protection laws and regulations around the world may require us to modify our data processing practices and policies and to incur substantial additional costs and expenses in an effort to maintain compliance on an ongoing basis. Other countries and jurisdictions throughout the world are considering or enacting laws and regulations requiring the local storage of data. For example, under Russian law, all data operators collecting personal data of

Russian citizens through electronic communications, including the Internet, must comply with Russian laws regulating the local storage of such data in databases located in the territory of Russia. This law applies not only to local data controllers but also to data controllers established outside Russia to the extent they gather personal data relating to Russian nationals through websites aimed at the territory of Russia.

We have been undertaking measures in an effort to comply with the GDPR, CCPA, CPRA and other applicable privacy and data protection laws and regulations, and our efforts to comply with these laws and regulations may require us to incur substantial operational costs and to require its data handling practices. The costs of our measures designed to comply with, and other burdens imposed by, such laws, regulations and policies that are applicable to us may limit the use and adoption of our products and solutions, alter the way we conduct business and/or could otherwise have a material adverse impact on our results of operations. For example, we may find it necessary to establish systems to maintain data originated in certain jurisdictions within those jurisdictions, which may involve substantial expense and distraction from other aspects of our business. Further, the costs of compliance with, and other burdens imposed by, such laws, regulations and policies that are applicable to us, may limit the use and adoption of our products and solutions and could have a material adverse impact on our results of operations.

Any failure or perceived failure (including as a result of deficiencies in our policies, procedures or measures relating to privacy, data protection, cybersecurity, marketing or client communications) by us to comply with laws, regulations, policies, legal or contractual obligations, industry standards, or regulatory guidance relating to privacy, data protection or cybersecurity may result in governmental investigations and enforcement actions, litigation, fines and penalties or adverse publicity and could cause our clients to lose trust in us, which could have a material adverse effect on our reputation, business, financial condition and results of operations.

We expect that there will continue to be new proposed laws, regulations and industry standards relating to privacy, data protection, cybersecurity, marketing, consumer communications and information security in the U.S., the European Union, Russia and other jurisdictions, and we cannot determine the impact such future laws, regulations and standards may have on our business. Future laws, regulations, standards and other obligations or any changed interpretation or enforcement of existing laws or regulations could impair our ability to develop and market new services and maintain and grow our client base and increase revenue.

***We are subject to governmental export controls and trade and economic sanctions that could impair our ability to compete in international markets or subject us to liability if we violate these controls.***

Our operations are subject to laws and regulations restricting our operations, including activities involving restricted countries, organizations, entities and persons that have been identified as unlawful actors or that are subject to U.S. sanctions imposed by the Office of Foreign Assets Control ("OFAC") or other international economic sanctions that prohibit us from engaging in trade or financial transactions with certain countries, businesses, organizations and individuals. Additionally, the United States and various foreign governments have imposed controls, export license requirements and restrictions on the import or export of certain products, technologies and software. For example, as mentioned above, following Russia's invasion of Ukraine, the United States and other countries imposed certain economic sanctions and severe export control restrictions against Russia and Belarus as well as certain Russian nationals which required us to terminate certain business relationships. As of March 2023, we have minimal office personnel in Russia and are performing no client services from Russia. These sanctions and restrictions have continued to increase as the conflict has further escalated, and the United States and other countries could impose wider sanctions and export restrictions and take other actions in the future that could further impact our business. Obtaining the necessary export license or other authorization for a particular sale may be time-consuming and may result in the delay or loss of sales opportunities.

We have implemented controls to ensure that we are in compliance with export controls, OFAC sanctions, and similar sanctions, laws and regulations, and we periodically undergo a review of those controls. This review could result in the discovery of issues or violations with respect to the foregoing by us or our employees, independent contractors, subcontractors or agents of which we were previously unaware.

Any investigation of any potential violations of such laws by the U.S. or other jurisdictions could also have an adverse impact on our reputation, business, financial condition and results of operations.

***Failure to comply with anti-bribery and anti-corruption laws and anti-money laundering laws, and similar laws, could subject us to penalties and other adverse consequences.***

We are subject to the U.S. Foreign Corrupt Practices Act of 1977 (the "FCPA"), the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the United Kingdom Bribery Act 2010, and possibly other anti-bribery and anti-corruption laws and anti-money laundering laws in countries outside of the United States where we conduct our activities. Anti-corruption and anti-

bribery laws have been enforced aggressively in recent years and are interpreted broadly to generally prohibit companies, their employees, agents, representatives, business partners, and third-party intermediaries from authorizing, offering, or providing, directly or indirectly, improper payments or benefits to recipients in the public or private sector. We operate in many parts of the world that have experienced governmental corruption to some degree, and, in certain circumstances, strict compliance with anti-bribery laws may conflict with local customs and practices.

We sometimes leverage third parties to sell our products and conduct our business abroad. We, our employees, agents, representatives, business partners and third-party intermediaries may have direct or indirect interactions with officials and employees of government agencies or state-owned or affiliated entities and we may be held liable for the corrupt or other illegal activities of these employees, agents, representatives, business partners or third-party intermediaries even if we do not explicitly authorize such activities. We cannot assure you that all of our employees, agents, representatives, business partners or third-party intermediaries will not take actions in violation of applicable law for which we may be ultimately held responsible. As we increase our international sales and business, our risks under these laws may increase.

These laws also require that we keep accurate books and records and maintain internal controls and compliance procedures designed to prevent any such actions. While we have policies and procedures to address compliance with such laws, we cannot assure you that none of our employees, agents, representatives, business partners or third-party intermediaries will take actions in violation of our policies and applicable law, for which we may be ultimately held responsible.

Any allegations or violation of the FCPA or other applicable anti-bribery and anti-corruption laws and anti-money laundering laws could result in whistleblower complaints, sanctions, settlements, prosecution, enforcement actions, fines, damages, adverse media coverage, investigations, loss of export privileges, severe criminal or civil sanctions, or suspension or debarment from government contracts, all of which may have an adverse effect on our reputation, business, results of operations, and prospects. Responding to any investigation or action will likely result in a materially significant diversion of management's attention and resources and significant defense costs and other professional fees

***Changes to the U.S. administration's fiscal, political, regulatory and other policies may adversely affect our business, financial condition and results of operations.***

Recent events, including new policy introductions following the 2020 U.S presidential election, may result in substantial regulatory uncertainty regarding international trade and trade policy. U.S. policies have called for substantial changes to trade agreements, have increased tariffs on certain goods imported into the U.S. and have raised the possibility of imposing significant, additional tariff increases. In the past, unilateral tariffs on imported products by the U.S. have triggered retaliatory actions from certain foreign governments, including China and may trigger retaliatory actions by other foreign governments, potentially resulting in a "trade war." While we cannot predict the extent to which the U.S. or other countries will impose quotas, duties, tariffs, taxes or other similar restrictions upon the import or export of our products in the future, a "trade war" of this nature or other governmental action related to tariffs or international trade agreements could have an adverse impact on demand for our services, sales and clients and affect the economies of the U.S. and various countries, having an adverse effect on our business, financial condition and results of operations.

In addition, regulatory, judicial or other developments regarding SPACs or companies, such as us, that have merged with a SPAC, could have an adverse effect on us. There can be no assurances that such developments or other regulations and legal circumstances unique to SPACs would not have an adverse effect on our business, financial condition and results of operations.

***Negative publicity about offshore outsourcing or anti-outsourcing legislation and restriction on immigration may have an adverse effect on our business.***

The issue of companies outsourcing services to organizations operating in other countries is a topic of political discussion in many countries, including the U.S., which is our largest source of revenues. Many organizations and public figures in the U.S. and Europe have publicly expressed concern about a perceived association between offshore outsourcing IT services providers and the loss of jobs in their home countries. For example, measures aimed at limiting or restricting outsourcing by U.S. companies are periodically considered in Congress and in numerous state legislatures to address concerns over the perceived association between offshore outsourcing and the loss of jobs in the U.S. A number of U.S. states have passed legislation that restricts state government entities from outsourcing certain work to offshore IT services providers. Given the ongoing debate over this issue, the introduction and consideration of other restrictive legislation is possible. If enacted, such measures may broaden restrictions on outsourcing by federal and state government agencies and on government contracts with firms that outsource services directly or indirectly, impact private industry with measures such as tax disincentives or intellectual property transfer restrictions, and/or restrict the use of certain business visas. In addition, current or prospective clients may be discouraged from transferring services to providers that utilize offshore delivery centers such as us to avoid any negative perceptions that may be associated with using an offshore provider or for data privacy and security concerns. As a result, our ability to service our clients could be impaired and we may not be able to compete effectively with competitors that operate primarily from within the countries in which our clients operate. Any such slowdown or reversal of the existing industry trends toward offshore outsourcing may have a material adverse effect on our business, financial condition and results of operations. These risks may become more acute as we continue to expand to new geographies.

Some of our projects may involve our personnel obtaining visas to travel and work at customer sites outside of our personnel's home countries and often in the United States. Our reliance on visas to staff projects with employees who are not citizens of the country where the work is to be performed makes us vulnerable to legislative and administrative changes in the number of visas to be issued in any particular year and other work permit laws and regulations. The process to obtain the required visas and work permits can be lengthy and difficult and variations due to political forces and economic conditions in the number of permitted applications, as well as application and enforcement processes, may cause delays or rejections when trying to obtain visas. Delays in obtaining visas may result in delays in the ability of our personnel to travel to meet with and provide services to our customers or to continue to provide services on a timely basis. In addition, the availability of a sufficient number of visas without significant additional costs could limit our ability to provide services to our customers on a timely and cost-effective basis or manage our sales and delivery centers as efficiently as we otherwise could. Delays in or the unavailability of visas and work permits could have a material adverse effect on our business, results of operations, financial condition and cash flows.

***Our subsidiaries in CEE can be forced into liquidation on the basis of formal noncompliance with certain legal requirements.***

We operate in CEE primarily through locally organized subsidiaries. Certain provisions of local laws may allow a court to order liquidation of a locally organized legal entity on the basis of its formal noncompliance with certain requirements during formation, reorganization or during its operations. If a company fails to comply with certain requirements including those relating to minimum net assets, governmental or local authorities can seek the involuntary liquidation of such company in court, and the company's creditors will have the right to accelerate their claims or demand early performance of the company's obligations as well as demand compensation for any damages. If involuntary liquidation of any of our subsidiaries were to occur, such liquidation could materially adversely affect our business, financial condition and results of operations.

**Risks Associated with Intellectual Property**

***We may not be able to prevent unauthorized use of our intellectual property and our intellectual property rights may not be adequate to protect our business, financial condition and results of operations.***

Our success largely depends on methodologies, practices, tools and technical expertise and other intellectual property that we use in designing, developing, implementing and maintaining our services and solutions. We rely upon a combination of nondisclosure, confidentiality, assignment of invention and other contractual arrangements as well as trade secret, patent, copyright and trademark laws to protect our intellectual property rights. We may also rely on litigation to enforce our intellectual property rights and contractual rights.

The nondisclosure and confidentiality agreements that we enter into with our employees, independent contractors, vendors and clients in order to protect our proprietary information may not provide meaningful protection against unauthorized use, misappropriation or disclosure for trade secrets, know-how or other proprietary information and there can be no assurance that others will not independently develop the know-how and trade secrets or develop better methods than us. Policing unauthorized use of such proprietary information is difficult and expensive. We may not be able to deter current and former employees, contractors, vendors, clients and other parties from breaching confidentiality agreements and misappropriating proprietary information and it is possible that third parties may copy, reverse engineer, or otherwise obtain and use our information and proprietary technology without authorization or otherwise infringing on our intellectual property rights. If these agreements are breached, we may not have adequate remedies for such breach.

In addition, our current and former employees or contractors could challenge our exclusive rights in the intellectual property they have developed in the course of their employment. In Russia and certain other countries in which we operate, an employer is deemed to own the copyright in works created by its employees during the course, and within the scope, of their employment, provided certain requirements are complied with. The employer may be required to satisfy additional legal requirements in order to make further use and dispose of such works. While we believe that we have complied with all such requirements and have fulfilled all requirements necessary to acquire all rights in intellectual property developed by our contractors and subcontractors, these requirements are often ambiguously defined and enforced.

Implementation of intellectual property-related laws in CIS and CEE countries in which we operate has historically been lacking and there is no assurance that we will be able to enforce or defend our rights under our non-disclosure, confidentiality or assignment of invention agreements or that protection of intellectual property rights in such countries will be as effective as

that in the U.S. Any litigation relating to our intellectual property may not prove successful and might result in substantial costs and diversion of resources and management attention.

We have registered or applied to register certain patents, copyrights, and trademarks in the United States and may do so in countries outside the United States. However, there is no guarantee that these registrations will not be challenged, invalidated, or circumvented by third parties. Further, there can also be no assurance that pending or future United States or foreign trademark or patent applications will be approved in a timely manner or at all, or that such registrations will effectively protect our intellectual property or brand.

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

Due to the foregoing reasons, we cannot guarantee that we will be successful in maintaining existing or obtaining future intellectual property rights or registrations, be able to detect unauthorized use of our intellectual property and take appropriate steps to enforce and protect our rights, or that any such steps will be successful. We can also neither guarantee that we have taken all necessary steps to enforce our intellectual property rights in each jurisdiction in which we operate nor that the intellectual property laws of any jurisdiction in which we operate are adequate to protect our interest or that any favorable judgment obtained by us with respect thereto will be enforced in the courts. Unauthorized use by third parties of, or other failure to protect, our intellectual property, including the costs of enforcing intellectual property rights, could have a material adverse effect on our business, financial condition and results of operations.

***We may face intellectual property infringement claims that could be time-consuming and costly to defend and failure to defend against such claims may have a material adverse effect on our reputation, business, financial condition and results of operations.***

Our success largely depends on our ability to use and develop our technology, tools, code, methodologies and services without infringing the intellectual property rights of third parties, including patents, copyrights, trade secrets and trademarks. We may be subject to litigation involving claims of patent infringement or violation of other intellectual property rights of third parties.

Our customer contracts often require us to indemnify clients who purchase our services and solutions against potential infringement of intellectual property rights, which subjects us to the risk of indemnification claims. These claims may require us to initiate or defend protracted and costly litigation on behalf of our clients, regardless of the merits of these claims and are often not subject to liability limits or exclusion of consequential, indirect or punitive damages. If any of these claims succeed, we may be forced to pay damages on behalf of our clients, redesign or cease offering our allegedly infringing services or solutions or obtain licenses for the intellectual property such services or solutions allegedly infringe. If we cannot obtain all necessary licenses on commercially reasonable terms, our clients may be forced to stop using our services or solutions and may seek refunds of amounts they have paid us for such services or solutions.

The holders of patents and other intellectual property rights potentially relevant to our service offerings may make claims that we infringe, misappropriate, or otherwise violate their intellectual property rights. There can be no assurance that we will be successful in defending against these allegations or reaching a business resolution that is satisfactory to us. Any intellectual property claims, with or without merit, could be very time-consuming and expensive to settle or litigate, could cause us to incur significant expenses, pay substantial amounts in damages, ongoing royalty or license fees, or other payments, require us to cease making, licensing or using our offerings that incorporate or use the challenged intellectual property, require us to re-engineer all or a portion of our business or require that we comply with other unfavorable terms. The costs of litigation are considerable, and such litigation may divert management and key personnel's attention and resources, which might seriously harm our business, financial condition and results of operations. Third parties making infringement claims may make it difficult for us to enter into royalty or license agreements which may not be available on commercially acceptable terms. Also, we may be unaware of intellectual property registrations or applications relating to our services that may give rise to potential infringement claims against us. There may also be technologies licensed to and relied on by us that are subject to infringement or other corresponding allegations or claims by third parties which may damage our ability to rely on such technologies.

Parties making infringement claims may be able to obtain substantial damages for the infringement and an injunction to prevent us from delivering our services or using technology involving the allegedly infringing intellectual property. If, as a result of successful infringement claim, we are required to develop non-infringing technology or rebrand our name or cease making, licensing or using products that have infringed a third party's intellectual property rights, all of which may be time-consuming and expensive. Protracted litigation could also result in existing or prospective clients deferring or limiting their purchase or use of our software product development services or solutions until resolution of such litigation or could require us to indemnify our clients against infringement claims in certain instances. Any intellectual property claims or litigation in this area, whether or not we ultimately win or lose, could damage our reputation and materially adversely affect our business, financial condition and results of operations.

***Our use of open source software may lead to possible litigation, negatively affect sales and create liability.***

We often incorporate software licensed by third parties under so-called "open source" licenses, which may expose us to liability and have a material impact on our software development services. Use of open source software may entail greater risks than use of third-party commercial software, as open source licensors generally do not provide support, warranties, indemnification, or other contractual protections regarding infringement claims or the quality of the code. In addition, the public availability of such software may make it easier for others to compromise our services. Although we monitor our use of open source software in an effort both to comply with the terms of the applicable open source licenses and to avoid subjecting our client deliverables to conditions we do not intend, the terms of many open source licenses have not been interpreted by courts in relevant jurisdictions, and there is a risk that these licenses could be construed in a way that could impose unanticipated conditions or restrictions on our clients' ability to use the software that we develop for them and operate their businesses as they intend. Moreover, we cannot assure you that our processes for controlling our use of open source software in our products will be effective, and we may inadvertently use third-party open source software in a manner that exposes us to claims of non-compliance with the applicable terms of such license, including claims for infringement of intellectual property or for breach of contract. We may face claims challenging the ownership of open source software against companies that incorporate it into our products.

Additionally, some open source licenses contain requirements that we make available source code for modifications or derivative works we create based upon the type of open source software we use. If we combine certain open source software with other software in a specific manner, we could, under open source licenses, be required to release the source code of our proprietary software or software developed for a customer to the public, including authorizing further modification and redistribution, or otherwise be limited in the licensing of such software. Additionally, if a third-party software provider has incorporated open source software into software that we license from such provider, we could be required to disclose source code that incorporates or is a modification of such licensed software.

Therefore, there is a possibility that our clients could be subject to actions by third parties claiming that what we believe to be licensed open source software infringes such third parties' intellectual property rights, and we would generally be required to indemnify our clients against such claims. In addition, in the event that portions of client deliverables are determined to be subject to an open source license requiring the release of such deliverables, we or our clients could be required to publicly release the affected portions of source code or re-engineer all, or a portion of, the applicable software. Disclosing our proprietary source code could allow our clients' competitors to create similar products with lower development effort and time and ultimately could result in a loss of sales for our clients. Furthermore, if the license terms for the open source code change, we may be forced to re-engineer our software or incur additional costs. Any of these events could create liability for us to our clients and damage our reputation, which could have a material adverse effect on our business, financial condition and results of operations.

**Risks Related to Our Common Stock**

***Our bylaws provide that the Court of Chancery of the State of Delaware (or, if the Court of Chancery does not have jurisdiction, another State court in Delaware or the federal district court for the District of Delaware) shall, to the fullest extent permitted by law, be the sole and exclusive forum for substantially all disputes between us and our stockholders (other than claims arising under federal securities laws, including the Securities Act or the Exchange Act and any successors thereto), which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees.***

Our bylaws provide that the Court of Chancery of the State of Delaware (or, if the Court of Chancery does not have jurisdiction, another State court in Delaware or the federal district court for the District of Delaware) shall, to the fullest extent permitted by law, be the sole and exclusive forum for the following (except for any claim as to which such court determines that there is an indispensable party not subject to the jurisdiction of such court (and the indispensable party does not consent to the personal

jurisdiction of such court within 10 days following such determination), which is vested in the exclusive jurisdiction of a court or forum other than such court or for which such court does not have subject matter jurisdiction):

- any derivative action or proceeding brought on our behalf;
- any action asserting a claim of breach of a fiduciary duty owed by, or otherwise wrongdoing by, any of our directors, officers or other employees to us or our stockholders;
- any action arising pursuant to any provision of the Delaware General Corporation Law (the "DGCL"), our certificate of incorporation or bylaws;
- any action to interpret, apply, enforce or determine the validity of our certificate of incorporation or bylaws; and
- any other action asserting a claim that is governed by the internal affairs doctrine.

However, notwithstanding the exclusive forum provisions, our bylaws explicitly state that they would not preclude the filing of claims brought to enforce any liability or duty created under federal securities laws, including the Exchange Act or Securities Act.

Our amended and restated bylaws also provide that, unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States shall be the sole and exclusive forum for any action asserting a claim arising pursuant to the Securities Act, such a provision known as a "Federal Forum Provision." Any person or entity purchasing or otherwise acquiring any interest in our shares of capital stock shall be deemed to have notice of and consented to these provisions.

These exclusive forum provisions may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other employees, which may discourage lawsuits against us and our directors, officers and other employees. Additionally, a court could determine that the exclusive forum provision is unenforceable. If a court were to find the exclusive forum provision in our bylaws to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving the dispute in other jurisdictions, which could seriously harm our business.

***The price of our common stock may be volatile.***

The price of our common stock may fluctuate due to a variety of factors, including:

- our ability to effectively service any current and future outstanding debt obligations;
- the announcement the introduction of new products or services, or enhancements thereto, by us or our competitors;
- developments concerning intellectual property rights;
- changes in legal, regulatory and enforcement frameworks impacting our products;
- variations in our and our competitors' results of operations;
- the addition or departure of key personnel;
- announcements by us or our competitors of acquisitions, investments or strategic alliances;
- actual or perceived cybersecurity incidents or breaches;
- actual or anticipated fluctuations in our quarterly and annual results and those of other public companies in our industry;
- the failure of securities analysts to publish research about us, or shortfalls in our results of operations compared to levels forecast by securities analysts;
- any delisting of our common stock from NASDAQ due to any failure to meet listing requirements;
- the military action launched by Russian forces in Ukraine, the actions that have been and could be taken by other countries, including new and stricter sanctions and actions taken in response to such sanctions, and the effect of these developments on our business and results of operations;
- adverse developments from litigation; and
- the general state of the securities market, including valuation adjustments and lowering multiples.

These market and industry factors may materially reduce the market price of our common stock, regardless of our operating performance.

***As of December 31, 2022, approximately 25% percent of our outstanding common stock was held or beneficially owned by our executive officers and directors, or by stockholders controlled by our executive officers or directors. The concentration of ownership***

***provides such persons with substantial control over us, which could limit your ability to influence the outcome***

***of key transactions, including a change of control, and future resales of our common stock held by such persons may cause the market price of our common stock to drop significantly.***

As a result, such stockholders, acting together, have significant influence over all matters that require approval by our stockholders, including the election of directors and approval of significant corporate transactions. Corporate action might be taken even if other stockholders oppose them. This concentration of ownership might also have the effect of delaying or preventing a change of control of our company that other stockholders may view as beneficial.

To the extent that such persons purchase additional shares of ours, the percentage of shares that will be held by them will increase, decreasing the percentage of shares that are held by public stockholders.

If any significant stockholder sells large amounts of our common stock in the open market or in privately negotiated transactions, this could have the effect of increasing the volatility in the price of our common stock or putting significant downward pressure on the price of our common stock.

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

We have not paid any cash dividends on our common stock since our merger with ChaSerg. The payment of any cash dividends will be dependent upon our revenue, earnings and financial condition from time to time. The payment of any dividends will be within the discretion of our board of directors. It is presently expected that we will retain all earnings for use in our business operations and, accordingly, it is not expected that our board of directors will declare any dividends in the foreseeable future. Our ability to declare dividends may be limited by the terms of any financing and/or other agreements entered into by us or our subsidiaries from time to time and by requirements under the laws of our subsidiaries' respective jurisdictions of incorporation to set aside a portion of their net income in each year to legal reserves. Therefore, you are not likely to receive any dividends on your common stock for the foreseeable future and the success of an investment in shares of our common stock will depend upon any future appreciation in its value. Consequently, investors may need to sell all or part of their holdings of our common stock after price appreciation, which may never occur, as the only way to realize any future gains on their investment. There is no guarantee that shares of our common stock will appreciate in value or even maintain the price at which our stockholders have purchased their shares.

***Delaware law and our certificate of incorporation and bylaws contain certain provisions, including anti-takeover provisions, that limit the ability of stockholders to take certain actions and could delay or discourage takeover attempts that stockholders may consider favorable.***

Our certificate of incorporation and bylaws, and the DGCL, contain provisions that could have the effect of rendering more difficult, delaying, or preventing an acquisition deemed undesirable by our board of directors and therefore depress the trading price of our common stock. These provisions could also make it difficult for stockholders to take certain actions, including electing directors who are not nominated by the current members of our board of directors or taking other corporate actions, including effecting changes in our management. Among other things, our certificate of incorporation and bylaws include provisions regarding:

- a classified board of directors with three-year staggered terms, which could delay the ability of stockholders to change the membership of a majority of our board of directors;

- the ability of our board of directors to issue shares of preferred stock, including "blank check" preferred stock, and to determine the price and other terms of those shares, including preferences and voting rights, without stockholder approval, which could be used to significantly dilute the ownership of a hostile acquirer;

- the limitation of the liability of, and the indemnification of our directors and officers;

- the exclusive right of our board of directors to elect a director to fill a vacancy created by the expansion of the board of directors or the resignation, death or removal of a director, which prevents stockholders from being able to fill vacancies on our board of directors;

- the requirement that directors may only be removed from our board of directors for cause;

- a prohibition on stockholder action by written consent, which forces stockholder action to be taken at an annual or special meeting of stockholders and could delay the ability of stockholders to force consideration of a stockholder proposal or to take action, including the removal of directors;

- the requirement that a special meeting of stockholders may be called only by our board of directors, the chairman of our board of directors, or our chief executive officer, which could delay the ability of stockholders to force consideration of a proposal or to take action, including the removal of directors;
- controlling the procedures for the conduct and scheduling of board of directors and stockholder meetings;
- the requirement for the affirmative vote of holders of at least a majority of the voting power of all of the then outstanding shares of the voting stock, voting together as a single class, to amend, alter, change or repeal any provision of our certificate of incorporation or our bylaws, which could preclude stockholders from bringing matters before annual or special meetings of stockholders and delay changes in our board of directors and also may inhibit the ability of an acquirer to effect such amendments to facilitate an unsolicited takeover attempt;
- the ability of our board of directors to amend the bylaws, which may allow our board of directors to take additional actions to prevent an unsolicited takeover and inhibit the ability of an acquirer to amend the bylaws to facilitate an unsolicited takeover attempt; and
- advance notice procedures with which stockholders must comply to nominate candidates to our board of directors or to propose matters to be acted upon at a stockholders' meeting, which could preclude stockholders from bringing matters before annual or special meetings of stockholders and delay changes in our board of directors and also may discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of our company.

These provisions, alone or together, could delay or prevent hostile takeovers and changes in control or changes in our board of directors or management.

In addition, as a Delaware corporation, we are subject to provisions of Delaware law, including Section 203 of the DGCL, which may prohibit certain stockholders holding 15% or more of our outstanding capital stock from engaging in certain business combinations with us for a specified period of time.

Any provision of our certificate of incorporation, bylaws or Delaware law that has the effect of delaying or preventing a change in control could limit the opportunity for our stockholders to receive a premium for their shares of our capital stock and could also affect the price that some investors are willing to pay for our common stock.

## ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

## ITEM 2. PROPERTIES

### Facilities

Grid Dynamics currently provides its services through a network of 21 facilities in 12 countries. Grid Dynamics' principal executive offices are located at 5000 Executive Pkwy Suite 520, San Ramon, CA 94583. Grid Dynamics' offices are located in Plano, Texas, the U.S., as well as Guadalajara, Mexico; Yerevan in Armenia; Hyderabad in India; Krakow, Gdansk, Warsaw and Wroclaw in Poland; Belgrade in Serbia; Zug in Switzerland; various cities across Ukraine; Chisinau, Moldova; Amsterdam, the Netherlands; Kingston, Jamaica; and London, the United Kingdom. Grid Dynamics leases all of its facilities. Grid Dynamics believes that its existing facilities are adequate to support its existing operations and that it has ample opportunities to expand office space in all current locations to sustain expected growth.

## ITEM 3. LEGAL PROCEEDINGS

Although Grid Dynamics may, from time to time, be involved in litigation and claims arising out of its operations in the normal course of business, Grid Dynamics is not currently a party to any material legal proceeding. In addition, Grid Dynamics is not aware of any material legal or governmental proceedings against it or contemplated to be brought against it. Future litigation may be necessary, among other things, to defend Grid Dynamics or its customers by determining the scope, enforceability and validity of third-party proprietary rights or to establish Grid Dynamics' proprietary rights. The results of any litigation cannot be predicted with certainty and, regardless of the outcome, litigation can have an adverse impact on Grid Dynamics because of defense and settlement costs, diversion of management resources and other factors.

## ITEM 4. MINE SAFETY DISCLOSURE

Not applicable.

## PART II

## ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

### Market Information for Common Stock

Our common stock has been listed on the NASDAQ under the symbol "GDYN" since March 6, 2020. Prior to that date, there was no public trading market for our common stock.

### Holders of Record

As of February 15, 2023, there were approximately thirteen holders of record of our common stock. Because many of our shares of common stock are held by brokers or other institutions on behalf of stockholders, we are unable to estimate the total number of stockholders represented by the record holders.

### Dividend Policy

We have not paid any cash dividends on our common stock since our merger with ChaSerg Technology Acquisition Corp. The payment of cash dividends in the future will be dependent upon revenues and earnings, if any, capital requirements and general financial condition from time to time and may be limited by the terms of any financing and/or other agreements entered into by us or our subsidiaries from time to time, including our Credit Agreement dated March 15, 2022, and by requirements under the laws of our subsidiaries' respective jurisdictions of incorporation to set aside a portion of their net income in each year to legal reserves. The payment of any cash dividends will be within the discretion our board of directors and the board of directors will consider whether or not to institute a dividend policy. It is presently expected that we will retain all earnings for use in our business operations and, accordingly, it is not expected that our board of directors will declare any dividends in the foreseeable future.

### Securities Authorized for Issuance Under Equity Compensation Plans

Information about our equity compensation plans is incorporated herein by reference to Part III, Item 12 of this Report.

### Unregistered Sales of Equity Securities

None.

### Issuer Purchases of Equity Securities

None.

### Performance Graph

The following chart compares the changes in cumulative total return on our common stock with the changes in cumulative total returns of the S&P 500 and a Peer Group for the period from March 6, 2020 (the date our common stock began trading on the Nasdaq after the ChaSerg Business Combination) through December 31, 2022. The Peer Group includes Accenture Plc (NYSE: ACN), Cognizant Technology Solutions Corp. (NASDAQ: CTSH), Endava plc (NYSE: DAVA), EPAM Systems Inc. (NYSE: EPAM), Globant S.A. (NYSE: GLOB), and Infosys Ltd. (NYSE: INFY).The comparisons in this chart are required by the SEC and are not intended to forecast or be indicative of the possible future performance of our common stock. The performance graph and related information shall not be deemed "soliciting material" or to be "filed" with the SEC, nor shall information be incorporated by reference into any future filing under the Securities Act of 1933 or Securities Exchange Act of 1934, each as amended, except to the extent that we specifically incorporate it by reference into such filing.

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**ITEM 6. [RESERVED]**

Not applicable.

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

*The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and the accompanying notes thereto included elsewhere in this Annual Report on Form 10-K. This discussion contains forward-looking statements based upon current plans, expectations, and beliefs, involving risks and uncertainties. Our actual results may differ materially from those anticipated in these forward-looking statements. You should review the section titled "Special Note Regarding Forward-Looking Statements" for a discussion of forward-looking statements and in Item 1A, "Risk Factors" for a discussion of factors that could cause actual results to differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis and elsewhere in this Annual Report on Form 10-K. Our historical results are not necessarily indicative of the results that may be expected for any period in the future.*

**Overview**

Grid Dynamics Holdings, Inc. ("Grid Dynamics," "GDH," the "Company," "we," "us," or "our") is a fast-growing company focused on enterprise-level digital transformations in Fortune 1000 companies. For enterprises that create innovative digital products and experiences, Grid Dynamics offers close collaboration to provide digital transformation initiatives that span strategy consulting, development of early prototypes and enterprise-scale delivery of new digital platforms. Since its inception

in 2006 in Menlo Park, California, as a grid and cloud consultancy firm, Grid Dynamics has been on the forefront of digital transformation, working on big ideas like cloud computing, NOSQL, DevOps, microservices, big data and AI, and quickly established itself as a provider of choice for technology and digital enterprise companies.

As a leading global digital engineering and IT services provider with its headquarters in Silicon Valley and engineering centers in the United States, Mexico, India, Jamaica and multiple European countries, Grid Dynamics' core business is to deliver focused and complex technical consulting, software design, development, testing and internet service operations. Grid Dynamics also helps organizations become more agile and create innovative digital products and experiences through its deep expertise in emerging technology, such as AI, data science, cloud computing, big data and DevOps, lean software development practices and a high-performance product culture. Grid Dynamics believes that the key to its success is a business culture that puts products over projects, client success over contract terms and real business results over pure technical innovation. By leveraging Grid Dynamics' proprietary processes optimized for innovation, emphasis on talent development and technical expertise, Grid Dynamics has been able to achieve significant growth.

**Fiscal Year Highlights**

The following table sets forth a summary of Grid Dynamics' financial results for the annual periods indicated:

| | Year ended December 31, | | | | | |
|---|---|---|---|---|---|---|
| | 2022 | | 2021 | | 2020 | |
| | | % of revenue | | % of revenue | | % of revenue |
| | (in thousands, except percentages and per share data) | | | | | |
| Revenues | $ 310,482 | 100.0 % | $ 211,280 | 100.0 % | $ 111,283 | 100.0 % |
| Gross profit | 120,590 | 38.8 % | 87,728 | 41.5 % | 41,621 | 37.4 % |
| Income/(loss) from operations | (21,008) | (6.8)% | 50 | — % | (15,448) | (13.9)% |
| Net loss | (29,214) | (9.4)% | (7,700) | (3.6)% | (12,599) | (11.3)% |
| Diluted EPS | $ (0.42) | n/a | $ (0.13) | n/a | (0.28) | n/a |
| *Non-GAAP Financial Information* | | | | | | |
| Non-GAAP EBITDA(1) | 58,213 | 18.7 % | 39,077 | 18.5 % | 12,549 | 11.3 % |
| Non-GAAP Net Income(1) | 36,627 | 11.8 % | 24,160 | 11.4 % | 7,013 | 6.3 % |
| Non-GAAP Diluted EPS(1) | 0.51 | n/a | 0.36 | n/a | 0.14 | n/a |

(1) Non-GAAP EBITDA, Non-GAAP Net Income and Non-GAAP Diluted EPS are non-GAAP financial measures. See "Non-GAAP Measures" below for additional information and reconciliations to the most directly comparable GAAP financial measures.

In the twelve months ended December 31, 2022 our revenues were $310.5 million, which included $14.6 million from our recent acquisitions. Organic revenue of $295.9 million for the twelve months ended December 31, 2022 was up from $166.3 million in the same period of 2021. The key reasons for the organic year-over-year increase of 77.9% were increased demand for our services by our customers resulting in increased billable hours combined with revenue contribution from new customers.

In the twelve months ended December 31, 2022, our GAAP Net loss was $(29.2) million, or (9.4)% of revenue and Non-GAAP EBITDA was $58.2 million, or 18.7% of revenue. This was up from GAAP Net loss of $(7.7) million, or (3.6)% of revenue and and up from $39.1 million or 18.5% of revenue in Non-GAAP EBITDA in the twelve months ended December 31, 2021. The increase in GAAP Net Loss was due to a combination of increased operating expenses, stock based compensation, and geographic reorganization costs. The increase in non-GAAP EBITDA on a year-over-year basis was due to a combination of higher levels of revenue and gross profit.

Towards the second half of 2022 our business was impacted by some of our customers being impacted by the macroeconomic weakness. Inflation rates in the US have increased to levels not seen in several years, and this in turn has impacted the spending patterns of some of our customers.

**Acquisition of Mutual Mobile Inc.**

On December 23, 2022, we acquired Mutual Mobile Inc. ("Mutual Mobile"), company based out of Austin, Texas and with delivery operations in India. Mutual Mobile offers end-to-end design and development of next-generation applications, combining mobile, augmented/virtual/mixed reality, and cloud edge / IoT practices. It has developed wide-ranging, technical

solutions for prominent global brands across numerous industry verticals, with Technology, Healthcare, Automotive, and Financial Services representing the top verticals by revenue. The acquisition of Mutual Mobile enhances our skills in the area of mobile technologies and UX expertise as well as accelerates our strategic expansion to India and supports our commitment towards offering our customers a global engineering and delivery platform.

**Business Update Regarding Military Action in Ukraine**

On February 24, 2022, Russian forces launched significant military action against Ukraine, and sustained conflict and disruption in the region has resulted and is likely to continue. The impact to Ukraine as well as actions taken by other countries, including new and stricter sanctions imposed by the U.S., Canada, the United Kingdom, the European Union, and other countries and companies and organizations against officials, individuals, regions, and industries in Russia and certain regions of Ukraine, and each country's potential response to such sanctions, tensions, and military actions could have a material adverse effect on our operations. For example, in response to increased sanctions, Russia could attempt to take control of assets in Ukraine of companies registered in the United States, such as Grid Dynamics. Any such material adverse effect from the conflict and enhanced sanctions activity may disrupt our delivery of services, impair our ability to complete financial or banking transactions, cause us to continue to shift all or portions of our work occurring in the region to other countries, and may restrict our ability to engage in certain projects in the region or involving certain customers in the region.

We are actively monitoring the security of our personnel and the stability of our infrastructure, including communications and internet availability. We executed our business continuity plan and have adapted to developments as they occur to protect the safety of our people and handle potential impacts to our delivery infrastructure. This includes moving affected employees to safer locations in Western Ukraine and, where permissible, outside Ukraine, and reallocating work to other geographies within our global footprint. We are actively working with our personnel and with our customers to meet their needs and to ensure smooth delivery of services.

In April 2022, Grid Dynamics also announced it would cease remaining operations in the Russian Federation. We have worked towards the safe and expedient relocation of willing employees and ongoing management of projects to eliminate delivery impact to clients. In addition we announced our expansion to a new European hub with an office in Zug, Switzerland, a new engineering office in Yerevan, Armenia and workforce expansion in India. During the three months ended June 30, 2022, we relocated the majority of our Russia based employees outside of Russia. As of February 2023, we have minimal office personnel in Russia and are performing no client services from Russia.

We have no way to predict the progress or outcome of the military action in Ukraine, as the conflict and government reactions continue to develop and are beyond our control. Prolonged unrest, military activities, expansion of hostilities, or broad-based sanctions, could have a material adverse effect on our operations and business outlook. For example, if Russia were to invade other countries, such as Moldova, it could adversely affect our business, including preventing the relocation of our employees from Russia. In addition, the current geopolitical situation in Serbia creates additional uncertainty in the region, and could adversely affect our business.

The information contained in this section is accurate as of the date hereof, but may become outdated due to changing circumstances beyond our present awareness or control.

For additional information on the various risks posed by the military action in Ukraine and the impact in the region, as well as other macroeconomic factors affecting our business, please read "Part I. Item 1A. Risk Factors" included in this Annual Report on Form 10-K.

**Key Performance Indicators and Other Factors Affecting Performance**

Grid Dynamics uses the following key performance indicators and assesses the following other factors to analyze its business performance, to make budgets and financial forecasts and to develop strategic plans:

***Employees by Region***

Attracting and retaining the right employees is critical to the success of Grid Dynamics' business and is a key factor in Grid Dynamics' ability to meet customers' needs and grow its revenue base. Grid Dynamics' revenue prospects and long-term success depend significantly on its ability to recruit and retain qualified IT professionals. A substantial majority of Grid Dynamics' personnel is comprised of such IT professionals.

The following table shows the number of Grid Dynamics personnel (including full-time and part-time employees and contractors serving in similar capacities) by region, as of the dates indicated:

| | As of December 31, | | |
|---|---|---|---|
| | **2022** | **2021** | **2020** |
| Americas | 521 | 386 | 259 |
| CEE, U.K., and the Netherlands | 3,034 | 2,888 | 1,635 |
| Rest of the world | 243 | — | — |
| **Total** | **3,798** | **3,274** | **1,894** |

***Attrition***

There is competition for IT professionals in the regions in which Grid Dynamics operates, and any increase in such competition may adversely impact Grid Dynamics' business and gross profit margins. Employee retention is one of Grid Dynamics' main priorities and is a key driver of operational efficiency. Grid Dynamics seeks to retain top talent by providing the opportunity to work on exciting, cutting-edge projects for high profile clients, a flexible work environment and training and development programs. Grid Dynamics' management targets a voluntary attrition rate no higher than the mid-teen percentages, in line with the industry.

***Hours and Utilization***

As most of Grid Dynamics' customer projects are performed and invoiced on a time and materials basis, Grid Dynamics' management tracks and projects billable hours as an indicator of business volume and corresponding resource needs for IT professionals. To maintain its gross profit margins, Grid Dynamics must effectively utilize its IT professionals, which depends on its ability to integrate and train new personnel, to efficiently transition personnel from completed projects to new assignments, to forecast customer demand for services and to deploy personnel with appropriate skills and seniority to projects. Grid Dynamics' management generally tracks utilization with respect to subsets of employees, by location or by project, and calculates the utilization rate for each subset by dividing (x) the aggregate number of billable hours for a period by (y) the aggregate number of total available hours for the same period. Grid Dynamics' management analyzes and projects utilization to measure the efficiency of its workforce and to inform management's budget and personnel recruiting decisions.

***Customer Concentration***

Grid Dynamics' ability to retain and expand its relationships with existing customers and add new customers are key indicators of its revenue potential. In 2022 the total number of customers was 272 comparable to 273 customers in 2021. Grid Dynamics' procurement of new customers has a direct impact on its ability to diversify its sources of revenue and replace customers that may no longer require its services. Grid Dynamics has a relatively high level of revenue concentration with certain customers. Of Grid Dynamics' customers, two customers each accounted for 10% or more of our revenue in the years ended December 31, 2022, 2021 and 2020, respectively.

The following table presents revenues concentration by amount and as a percentage of our revenues for the periods indicated:

| | Year ended December 31, | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **2022** | | | **2021** | | | **2020** | | |
| | (in thousands, except percentages) | | | | | | | | |
| Top one customer | $ | 39,084 | 12.6 % | $ | 24,603 | 11.6 % | $ | 23,653 | 21.3 % |
| Top five customers | $ | 134,955 | 43.5 % | $ | 92,768 | 43.9 % | $ | 62,152 | 55.9 % |
| Top ten customers | $ | 185,253 | 59.7 % | $ | 127,564 | 60.4 % | $ | 87,203 | 78.4 % |
| Top twenty customers | $ | 225,303 | 72.6 % | $ | 153,229 | 72.5 % | $ | 103,154 | 92.7 % |
| Customers below top twenty | $ | 85,180 | 27.4 % | $ | 58,051 | 27.5 % | $ | 8,129 | 7.3 % |

The following table shows the evolution of Grid Dynamics' customer base where customers are grouped by revenues recognized for each annual period presented:

| | Year ended December 31, | | |
|---|---|---|---|
| | 2022 | 2021 | 2020 |
| >$5.0 million | 13 | 9 | 7 |
| >$2.5 - 5.0 million | 8 | 5 | 3 |
| >$1.0 - 2.5 million | 27 | 20 | 7 |
| >$0.5 - 1 million | 21 | 19 | 6 |

***Seasonality***

Grid Dynamics' business is subject to seasonal trends that impact its revenues and profitability between quarters. Some of the factors that influence the seasonal trends include the timing of holidays in the countries in which Grid Dynamics operates and the U.S. retail cycle, which drives the behavior of Grid Dynamics' retail customers. Excluding the impact of growth in its book of business, Grid Dynamics has historically recorded higher revenue and gross profit in the second and third quarters of each year compared to the first and fourth quarters of each year. In addition, many of Grid Dynamics' retail sector customers tend to slow their discretionary spending during the holiday sale season, which typically lasts from late November (before Thanksgiving) through late December (after Christmas).

**Non-GAAP Measures**

To supplement Grid Dynamics' consolidated financial data presented on a basis consistent with U.S. GAAP, this Annual Report contains certain non-GAAP financial measures, including Adjusted EBITDA, Non-GAAP Net Income and Non-GAAP Diluted Earnings Per Share, or EPS. Grid Dynamics has included these non-GAAP financial measures because they are financial measures used by Grid Dynamics' management to evaluate Grid Dynamics' core operating performance and trends, to make strategic decisions regarding the allocation of capital and new investments and are among the factors analyzed in making performance-based compensation decisions for key personnel. These measures exclude certain expenses that are required under U.S. GAAP. Grid Dynamics excludes these items because they are not part of core operations or, in the case of stock-based compensation, non-cash expenses that are determined based in part on Grid Dynamics' underlying performance.

Grid Dynamics believes these supplemental performance measurements are useful in evaluating operating performance, as they are similar to measures reported by its public industry peers and those regularly used by security analysts, investors and other interested parties in analyzing operating performance and prospects. These non-GAAP financial measures are not intended to be a substitute for any GAAP financial measures and, as calculated, may not be comparable to other similarly titled measures of performance of other companies in other industries or within the same industry.

There are significant limitations associated with the use of non-GAAP financial measures. Further, these measures may differ from the non-GAAP information, even where similarly titled, used by other companies and therefore should not be used to compare our performance to that of other companies. Grid Dynamics compensates for these limitations by providing investors and other users of its financial information a reconciliation of non-GAAP measures to the related GAAP financial measures. Grid Dynamics encourages investors and others to review its financial information in its entirety, not to rely on any single financial measure and to view its non-GAAP measures in conjunction with GAAP financial measures.

Grid Dynamics defines and calculates its non-GAAP financial measures as follows:

- ***Non-GAAP EBITDA***: Net income/(loss) before interest income/expense, provision for income taxes and depreciation and amortization, and further adjusted for the impact of stock-based compensation expense, transaction-related costs (which include, when applicable, professional fees, retention bonuses, and consulting, legal and advisory costs related to Grid Dynamics' merger and acquisition and capital-raising activities), impairment of goodwill and other income/expenses, net (which includes mainly interest income and expense, foreign currency transaction losses and gains, fair value adjustments and other miscellaneous expenses), and restructuring costs.

- ***Non-GAAP Net Income***: Net income/(loss) adjusted for the impact of stock-based compensation, impairment of goodwill, transaction-related costs, restructuring costs, other income/expenses, net, and the tax impacts of these adjustments.

- ***Non-GAAP Diluted EPS***: Non-GAAP Net Income, divided by the diluted weighted-average number of common shares outstanding for the period.

The following table presents the reconciliation of Grid Dynamics' Non-GAAP EBITDA to its consolidated net income/(loss), the most directly comparable GAAP measure, for the annual periods indicated:

| | Year ended December 31, | | |
|---|---|---|---|
| | **2022** | **2021** | **2020** |
| | **(in thousands)** | | |
| **GAAP net loss** | **$ (29,214)** | **$ (7,700)** | **$ (12,599)** |
| *Adjusted for:* | | | |
| Depreciation and amortization | 6,626 | 5,049 | 2,672 |
| Provision/(benefit) for income taxes | 8,761 | 5,248 | (2,613) |
| Stock-based compensation | 60,968 | 33,036 | 20,006 |
| Geographic reorganization[1] | 11,023 | — | — |
| Transaction and transformation-related costs[2] | 604 | 942 | 4,407 |
| Restructuring[3] | — | — | 912 |
| Other (income)/expenses, net[4] | (555) | 2,502 | (236) |
| **Non-GAAP EBITDA** | **$ 58,213** | **$ 39,077** | **$ 12,549** |

(1) Geographic reorganization includes expenses connected with military actions of Russia against Ukraine and the exit plan announced by the Company and includes travel and relocation-related expenses of employees from the aforementioned countries, severance payments, allowances as well as legal and professional fees related to geographic repositioning in various locations. These expenses are incremental to those expenses incurred prior to the crisis, clearly separable from normal operations, and not expected to recur once the crisis has subsided and operations return to normal.

(2) Transaction and transformation-related costs include, when applicable, external deal costs, transaction-related professional fees, transaction-related retention bonuses, which are allocated proportionally across cost of revenue, engineering, research and development, sales and marketing and general and administrative expenses as well as other transaction-related costs including integration expenses consisting of outside professional and consulting services.

(3) During the year ended December 31, 2020, we implemented a cost reduction plan and incurred restructuring and severance charges of $0.9 million, primarily resulting from a reduction in workforce and other charges. We did not incur any restructuring expenses during the years ended December 31, 2022 and 2021.

(4) Other (income)/expenses consist primarily of losses and gains on foreign currency transactions, fair value adjustments, and other miscellaneous non-operating expenses and other income consists primarily of interest on cash held at banks and returns on investments in money-market funds.

The following table presents a reconciliation of Grid Dynamics' Non-GAAP Diluted EPS and its Non-GAAP Net Income to its consolidated net loss for the annual periods indicated:

| | Year ended December 31, | | |
|---|---|---|---|
| | **2022** | **2021** | **2020** |
| | **(in thousands, except per share data)** | | |
| **GAAP net loss** | **$ (29,214)** | **$ (7,700)** | **$ (12,599)** |
| *Adjusted for:* | | | |
| Stock-based compensation | 60,968 | 33,036 | 20,006 |
| Geographic reorganization[1] | 11,023 | — | — |
| Transaction and transformation-related costs[2] | 604 | 942 | 4,407 |
| Restructuring[3] | — | — | 912 |
| Other (income)/expenses, net[4] | (555) | 2,502 | (236) |
| Tax impact of non-GAAP adjustments[5] | (6,199) | (4,620) | (5,477) |
| **Non-GAAP Net Income** | **$ 36,627** | **$ 24,160** | **$ 7,013** |
| Number of shares used in the GAAP Diluted EPS | 69,197 | 58,662 | 44,737 |
| **GAAP Diluted EPS** | **$ (0.42)** | **$ (0.13)** | **$ (0.28)** |
| Number of shares used in the Non-GAAP Diluted EPS[6] | 72,223 | 67,305 | 48,778 |
| **Non-GAAP Diluted EPS[6]** | **$ 0.51** | **$ 0.36** | **$ 0.14** |

(1) Geographic reorganization includes expenses connected with military actions of Russia against Ukraine and the exit plan announced by the Company and includes travel and relocation-related expenses of employees from the aforementioned countries, severance payments, allowances as well as legal and professional fees related to geographic repositioning in various locations. These expenses are incremental to those expenses incurred prior to the crisis, clearly separable from normal operations, and not expected to recur once the crisis has subsided and operations return to normal.
(2) Transaction and transformation-related costs include, when applicable, external deal costs, transaction-related professional fees, transaction-related retention bonuses, which are allocated proportionally across cost of revenue, engineering, research and development, sales and marketing and general and administrative expenses as well as other transaction-related costs including integration expenses consisting of outside professional and consulting services.
(3) During the year ended December 31, 2020, we implemented a cost reduction plan and incurred restructuring and severance charges of $0.9 million, primarily resulting from a reduction in workforce and other charges. We did not incur any restructuring expenses during the years ended December 31, 2022 and 2021.
(4) Other (income)/expenses consist primarily of losses and gains on foreign currency transactions, fair value adjustments, and other miscellaneous non-operating expenses and other income consists primarily of interest on cash held at banks and returns on investments in money-market funds.
(5) Reflects the estimated tax impact of the non-GAAP adjustments presented in the table.
(6) Non-GAAP Diluted EPS is calculated by dividing Non-GAAP Net Income/(Loss) by the diluted weighted-average shares outstanding. From the three months ended December 31, 2020 onwards, we have chosen to calculate its Non-GAAP Diluted EPS based on the diluted share count even in Net GAAP Loss situation. This methodology differs from the prior approach when we applied the basic share count in situations of a Net GAAP Loss and a positive Non-GAAP Net Income. Management believes that the new methodology provides better representation of the company's financial results as it takes into account the significance of the dilutive impact from any outstanding equity instruments in a GAAP Net Loss/Non-GAAP Net Income situation.

**Key Components of Revenue and Expenses**

***Revenue***

Grid Dynamics generates revenue by providing focused and complex services in the area of software engineering, development, integration, testing, and operations of digital services. Grid Dynamics provides services mainly on a time and materials basis and, to a much lesser extent, on a fixed-fee basis. While fixed-fee contracts currently represent not significant portion of overall revenue for the periods presented compared to time and material engagements, Grid Dynamics expects proportionate revenue from fixed-fee contracts to increase in future periods. On a time and materials basis, Grid Dynamics earns and recognizes revenue as hours and costs are incurred. On its current and future fixed fee contracts, Grid Dynamics earns and recognizes revenue as the work is performed, the monthly calculation of which is based upon actual labor hours incurred and level of effort expended throughout the duration of the contract. For both time and materials contracts and fixed fee contracts, hourly rates are typically determined based on the location and experience of Grid Dynamics personnel selected to perform the service and are negotiated for each contract or statement of work, as the case may be. For fixed fee contracts, the fixed fee generally remains constant for the contracted project period unless the customer directs a change in scope of project work or requests additional Grid Dynamics employees in excess of those scheduled for a specific project.

In select cases, Grid Dynamics offers volume discounts or early settlement discounts, which are recorded as contra-revenue items. Volume discounts apply once the customer reaches certain contractual spend thresholds. Early settlement discounts are issued contingent upon the timing of the payment from the customer. If there is uncertainty about project completion or receipt of payment for services provided, revenue is deferred until the uncertainty is sufficiently resolved.

***Costs and Expenses***

*Cost of Revenue.* Cost of revenue consists primarily of salaries and employee benefits, including performance bonuses and stock-based compensation, and travel expenses for client-serving personnel. Cost of revenue also includes depreciation and amortization expense related to client-serving activities.

*Engineering, Research and Development.* Engineering, research and development expenses consist mainly of salaries and employee benefits including performance bonuses and stock-based compensation for personnel engaged in the design and development of solutions. Engineering, research and development expenses also include depreciation and amortization expenses related to such activities. Engineering, research and development costs are expensed as incurred.

*Sales and Marketing.* Sales and marketing expenses consist primarily of expenses associated with promoting and selling Grid Dynamics' services and consists mainly of salaries and employee benefits, including performance bonuses and stock-based compensation, marketing events, travel, as well as depreciation and amortization expenses related to such activities.

*General and Administrative.* General and administrative expenses consist primarily of administrative personnel and officers' salaries and employee benefits including performance bonuses and stock-based compensation, legal and audit expenses, insurance, operating lease expenses (mainly facilities and vehicles) and other facility costs, workforce global mobility initiatives, restructuring and employee relocations cost (not in connection with customer projects), and depreciation and amortization expenses related to such activities. General and administrative expenses include a substantial majority of Grid Dynamics' stock-based compensation costs for the financial periods discussed herein.

*Provision for Income Taxes.* Grid Dynamics follows the asset and liability method of accounting for income taxes, whereby deferred income taxes are recognized for the tax consequences of temporary differences between the financial statement carrying amounts and the tax basis of the assets and liabilities. The provision for income taxes reflects income earned and taxed in the various U.S. federal and state and non-U.S. jurisdictions. Jurisdictional tax law changes, increases or decreases in permanent differences between book and tax items, accruals or adjustments of accruals for tax contingencies or valuation allowances, and the change in the mix of earnings from these taxing jurisdictions all affect the overall effective tax rate. Grid Dynamics' effective tax rate was (42.8)%, (214.1)%, and 17.2% in the years ended December 31, 2022, 2021 and 2020, respectively. The increase in effective tax rate for the twelve months ended December 31, 2022, as compared to the same periods in 2021 was attributable mainly to Section162 (m) compensation deduction limitations.

**Results of Operations**

***Year Ended December 31, 2022 compared to Year Ended December 31, 2021***

The following table sets forth a summary of Grid Dynamics' consolidated results of operations for the periods indicated, and the changes between periods:

| | Year ended December 31, | | Change | |
|---|---|---|---|---|
| | 2022 | 2021 | Dollars | Percentage |
| | (in thousands, except percentages) | | | |
| **Revenue** | **$ 310,482** | **$ 211,280** | **$ 99,202** | **47.0 %** |
| Cost of revenue | 189,892 | 123,552 | 66,340 | 53.7 % |
| **Gross profit** | **120,590** | **87,728** | **32,862** | **37.5 %** |
| Engineering, research, and development | 15,772 | 8,459 | 7,313 | 86.5 % |
| Sales and marketing | 19,808 | 14,457 | 5,351 | 37.0 % |
| General and administrative | 106,018 | 64,762 | 41,256 | 63.7 % |
| Total operating expense | 141,598 | 87,678 | 53,920 | 61.5 % |
| **Income/(loss) from operations** | **(21,008)** | **50** | **(21,058)** | **(42,116.0)%** |
| Other income/(expenses), net | 555 | (2,502) | 3,057 | (122.2) % |
| **Loss before income taxes** | **(20,453)** | **(2,452)** | **(18,001)** | **734.1 %** |
| Provision for income taxes | 8,761 | 5,248 | 3,513 | 66.9 % |
| **Net loss** | **$ (29,214)** | **$ (7,700)** | **$ (21,514)** | **279.4 %** |

*Revenues by Vertical.* We assign our customers into one of our four main vertical markets or a group of various industries where we are increasing our presence, which we label as “Verticals”. The following table presents our revenues by vertical and revenues as a percentage of total revenues by vertical for the periods indicated:

| | Year ended December 31, | | | | | |
|---|---|---|---|---|---|---|
| | 2022 | | 2021 | | 2020 | |
| | | % of revenue | | % of revenue | | % of revenue |
| | (in thousands, except percentages) | | | | | |
| Tech, Media and Telecom | $ 98,334 | 31.7 % | $ 67,689 | 32.0 % | $ 45,362 | 40.8 % |
| Retail | 99,681 | 32.1 % | 61,717 | 29.2 % | 33,975 | 30.5 % |
| Finance | 21,893 | 7.1 % | 17,515 | 8.3 % | 13,589 | 12.2 % |
| CPG/Manufacturing | 61,216 | 19.7 % | 43,461 | 20.6 % | 14,202 | 12.8 % |
| Other | 29,358 | 9.4 % | 20,898 | 9.9 % | 4,155 | 3.7 % |
| **Total** | **$ 310,482** | **100.0 %** | **$ 211,280** | **100.0 %** | **$ 111,283** | **100.0 %** |

*Revenue.* Revenue increased by $99.2 million, or 47.0%, to $310.5 million in 2022 from $211.3 million in 2021. In 2022, we continued to witness growth across all our verticals with four out of five growing over 40.0% during the year. Our Retail vertical, which declined in 2020 due to COVID-19 continues to be our largest contributor to the overall revenue growth adding 38.3% to the annual increase in revenue in 2022. Our revenue during the year ended December 31, 2022 also continued to benefit from the acquisition of Tacit, which was acquired in the first half of 2021.

*Cost of Revenue and Gross Profit.* Cost of revenue increased by $66.3 million, or 53.7%, to $189.9 million in 2022 from $123.6 million in 2021 largely from increased costs of personnel to support higher revenue.

*Gross Profit.* Gross profit increased by $32.9 million, or 37.5%, to $120.6 million in 2022 from $87.7 million in 2021. Gross margin (gross profit as a percentage of revenue) increased to 38.8% in the year ended December 31, 2022 from 41.5% in the year ended December 31, 2021. Our gross margins for 2022 were impacted by higher costs associated with the relocation of employees due to the Russian invasion of Ukraine.

*Engineering, Research and Development.* Engineering, research and development expenses increased by $7.3 million to $15.8 million in the year ended December 31, 2022, a 86.5% increase from $8.5 million in the year ended December 31, 2021. The increase was largely attributed to staffing and greater investments in customer delivery operations.

*Sales and Marketing.* Sales and marketing expenses increased by $5.4 million, or 37.0%, to $19.8 million in the year ended December 31, 2022 from $14.5 million in the year ended December 31, 2021. Sales and marketing expenses accounted for 6.4% of Grid Dynamics’ revenue in the year ended December 31, 2022 compared to 6.8% in the year ended December 31, 2021, a decrease of (0.4) percentage points. The increase of $5.4 million was due mainly to the increase in sales initiatives, sales personnel and related costs associated with the expansion activities both on the sales and marketing fronts.

*General and Administrative.* General and administrative expenses increased by $41.3 million, or 63.7%, to $106.0 million in the year ended December 31, 2022 from $64.8 million in the year ended December 31, 2021. Increased stock-based compensation accounted for approximately $22.9 million of the increase. The remaining portion of the increase was mainly due to geographic reorganization expenses triggered by the Russian invasion of Ukraine as well as costs associated with expansion of our operations that triggered increased levels of investments in infrastructure and facilities. As a result, general and administrative expenses accounted for 34.1% of Grid Dynamics’ revenue in the year ended December 31, 2022, an increase of 3.4 percentage points from 30.7% in the year ended December 31, 2021.

*Other Income/(Expenses), Net*. Other net income/(expenses), net increased to $0.6 million for the year ended December 31, 2022 from $(2.5) million for the year ended December 31, 2021, The increase was primarily due to interest income from our money market investment.

*Provision/(benefit) for Income Tax*. Provision/(benefit) for income tax was $8.8 million in the year ended December 31, 2022 compared to $5.2 million in the year ended December 31, 2021. The effective tax rate increased by 171.3% between periods. See “—*Key Components of Revenue and Expenses—Costs and Expenses—Provision for Income Taxes*.

*Net loss*. Net loss decreased to $(29.2) million in the year ended December 31, 2022 from $(7.7) million in the year ended December 31, 2021 for the reasons discussed above.

***Year Ended December 31, 2021 Compared to Year Ended December 31, 2020***

The following table sets forth a summary of Grid Dynamics' consolidated results of operations for the years indicated, and the changes between periods:

| | Year ended December 31, | | Change | |
|---|---|---|---|---|
| | **2021** | **2020** | **Dollars** | **Percentage** |
| | (dollars in thousands, except percentages) | | | |
| **Revenue** | **$ 211,280** | **$ 111,283** | **$ 99,997** | **89.9 %** |
| Cost of revenue | 123,552 | 69,662 | 53,890 | 77.4 % |
| **Gross profit** | **87,728** | **41,621** | **46,107** | **110.8 %** |
| Engineering, research, and development | 8,459 | 9,311 | (852) | (9.2) % |
| Sales and marketing | 14,457 | 10,051 | 4,406 | 43.8 % |
| General and administrative | 64,762 | 37,707 | 27,055 | 71.8 % |
| Total operating expense | 87,678 | 57,069 | 30,609 | 53.6 % |
| **Income from operations** | **50** | **(15,448)** | **15,498** | **(100.3)%** |
| Other income/(expenses), net | (2,502) | 236 | (2,738) | (1,160.2) % |
| **Income before income taxes** | **(2,452)** | **(15,212)** | **12,760** | **(83.9)%** |
| Provision/(benefit) for income taxes | 5,248 | (2,613) | 7,861 | (300.8) % |
| **Net loss** | **$ (7,700)** | **$ (12,599)** | **$ 4,899** | **(38.9)%** |

*Revenue.* Revenue increased by $100.0 million, or 89.9%, to $211.3 million in 2021 from $111.3 million in 2020. In 2021, we witnessed growth across all our verticals in comparison to 2020. Additionally, our Retail vertical, which declined in 2020 in comparison to 2019, witnessed increase in 2021. Growth was also driven by contributions from our acquisitions of Daxx and Tacit which we acquired in December of 2020 and May of 2021, respectively. For the year ended December 31, 2021, retail revenues were $61.7 million, up from $34.0 million in the same period a year ago. The 81.7% year-over-year increase in retail revenues was driven by combination of factors that include adding new customers and increase in revenue from the existing customers. Additionally, Grid Dynamics' top ten customers contributed $127.6 million and $87.2 million to revenue for the years ended December 31, 2021 and 2020, respectively, in the aggregate accounting for $40.4 million of the increase. The remainder of the other industry verticals increase reflected growth in revenue from new customers (*i.e.*, customers for which Grid Dynamics performed services for the first time during the period) and other existing customers.

*Cost of Revenue and Gross Profit.* Cost of revenue increased by $53.9 million, or 77.4%, to $123.6 million in 2021 from $69.7 million in 2020 largely from increased costs of personnel to support higher revenue offset by lower expenses, such as travel related expenses and retention bonuses.

Gross profit increased by $46.1 million, or 110.8%, to $87.7 million in 2021 from $41.6 million in 2020. Gross margin (gross profit as a percentage of revenue) increased to 41.5% in the year ended December 31, 2021 from 37.4% in the year ended December 31, 2020. The gross margin increase was attributable to a combination of increased levels of business resulting in higher revenue, favorable mix-shift towards offshore delivery locations, and improving engineering workforce utilization.

*Engineering, Research and Development.* Engineering, research and development expenses decreased by $(0.9) million to $8.5 million in the year ended December 31, 2021, a (9.2)% decrease from $9.3 million in the year ended December 31, 2020. The decrease in R&D expenses was largely due to the wind down of R&D programs initiated during the period of the pandemic in 2020 and their replacement with the new R&D initiatives.

*Sales and Marketing.* Sales and marketing expenses increased by $4.4 million, or 43.8%, to $14.5 million in the year ended December 31, 2021 from $10.1 million in the year ended December 31, 2020. Sales and marketing expenses accounted for 6.8% of Grid Dynamics' revenue in the year ended December 31, 2021 compared to 9.0% in the year ended December 31, 2020, a decrease of (2.2) percentage points. The increase was due mainly to the increased personnel costs associated with the expansion activities both on the sales and marketing fronts. Additionally, the acquisition of Tacit partially contributed to the increase in the year ended December 31, 2021 in comparison to the year ended December 31, 2020.

*General and Administrative.* General and administrative expenses increased by $27.1 million, or 71.8%, to $64.8 million in the year ended December 31, 2021 from $37.7 million in the year ended December 31, 2020. Increased stock-based compensation accounted for approximately $12.6 million of the increase. The remaining portion of the increase was due mainly to costs associated with expanding our operations that required increased levels of hiring along with investments in infrastructure and facilities to support our increased headcount. Additionally our acquisitions of Daxx and Tacit contributed to the increase. As a result, general and administrative expenses accounted for 30.7% of Grid Dynamics' revenue in the year ended December 31, 2021, a decrease of (3.2) percentage points from 33.9% in the year ended December 31, 2020.

*Other income/(expenses), net*. Other net income/(expenses) decreased to $(2.5) million for the year ended December 31, 2021 from $0.2 million for the year ended December 31, 2020, mainly due to changes in the fair value of private warrants of $1.0 million, adjustment to the final Daxx earnout of $0.4 million in the third quarter of 2021, and fair value adjustment of Tacit earnout of $1.0 million in the fourth quarter of 2021.

*Provision/(benefit) for Income Tax*. Provision/(benefit) for income tax was $5.2 million in the year ended December 31, 2021 compared to $(2.6) million in the year ended December 31, 2020. The effective tax rate decreased by 231.21% between periods. See "*—Key Components of Revenue and Expenses—Costs and Expenses—Provision for Income Taxes*.

*Net loss*. Net loss decreased to $(7.7) million in the year ended December 31, 2021 from $(12.6) million in the year ended December 31, 2020 for the reasons discussed above.

**Liquidity and Capital Resources**

Grid Dynamics measures liquidity in terms of its ability to fund the cash requirements of its business operations, including working capital needs, capital expenditures, contractual obligations and other commitments with cash flows from operations and other sources of funding. Grid Dynamics' current liquidity needs relate mainly to compensation and benefits of Grid Dynamics' employees and contractors and capital expenditures for computer hardware and office furniture. Grid Dynamics' ability to expand and grow its business will depend on many factors including its capital expenditure needs and the evolution of its operating cash flows. Grid Dynamics may need more cash resources due to changing business conditions or other developments, including investments or acquisitions. Grid Dynamics believes that its current cash position on its balance sheet of $256.7 million is sufficient to fund its currently expected levels of operating, investing and financing expenditures for a period of twelve months from the date of this filing. However, if Grid Dynamics' resources are insufficient to satisfy its cash requirements, it may need to seek additional equity or debt financing, which may be subject to conditions outside of Grid Dynamics' control and may not be available on terms acceptable to Grid Dynamics' management or at all.

As of December 31, 2022, Grid Dynamics had cash and cash equivalents amounting to $256.7 million (compared to $144.4 million at December 31, 2021). Of this amount, $16.8 million was held in countries outside US and included among others UK, India, Switzerland, Poland, Serbia, Ukraine and other countries (compared to $8.5 million as of December 31, 2021). As many of Grid Dynamics' assets, operations and employees are located in these countries, Grid Dynamics expects that all such cash and cash equivalents will be used to fund future operating needs. In a scenario that Grid Dynamics decides to remit funds from these countries to the United States in the future, whether in the form of inter-company dividends or otherwise, the company may be subject to foreign withholding taxes. In addition, Grid Dynamics' cash in banks in Armenia, Ukraine, Moldova, and Mexico may be subject to other risks, as the banking sector in some of these countries are subject to periodic instability, may be subject to sanctions, and may be subject to capital adequacy and other banking standards that are substantially less rigorous than those of the United States. This is particularly true given the significant military action against Ukraine launched by Russia and the sanctions on certain Russian banks that have been imposed as a result, although this would not materially disrupt our liquidity as a whole.

On March 15, 2022, we entered into a new agreement establishing a revolving credit facility with JPMorgan Chase Bank, N.A., as administrative agent for the lenders. See Note 10 "Debt" to the consolidated financial statements for further details.

Grid Dynamics does not have any debt outstanding as of December 31, 2022 and did not have any debt outstanding at any balance sheet date presented.

On September 12, 2022 and July 6, 2021, Grid Dynamics closed follow-on public offerings of common stock that resulted in $109.5 million and $78.3 million net proceeds, respectively, after deducting underwriting discounts and commissions. See Note 14 to the consolidated financial statements for further details.

***Cash Flows***

The following table summarizes Grid Dynamics' cash flows for the annual periods indicated:

| | Year ended December 31, | | |
|---|---|---|---|
| | **2022** | **2021** | **2020** |
| | **(in thousands)** | | |
| Net cash provided by operating activities | $ 31,652 | $ 17,973 | $ 5,932 |
| Net cash used in investing activities | (16,323) | (35,366) | (18,339) |
| Net cash provided by financing activities | 97,758 | 49,134 | 82,967 |
| Effect of exchange rate changes on cash and cash equivalents | (722) | (122) | (4) |
| **Net increase in cash and cash equivalents** | **112,365** | **31,619** | **70,556** |
| Cash, cash equivalents (beginning) | 144,364 | 112,745 | 42,189 |
| **Cash, cash equivalents (end)** | **$ 256,729** | **$ 144,364** | **$ 112,745** |

*Operating Activities.* Net cash provided by operating activities during the year ended December 31, 2022 increased by $13.7 million, or 76.1%, to $31.7 million from $18.0 million in the same period in 2021, driven by higher levels of revenue growth of 47.0%.

Net cash provided by operating activities during the year ended December 31, 2021 increased by $12.0 million, or 203.0%, to $18.0 million from $5.9 million in the same period in 2020, driven by higher cash operating profit (before non-cash depreciation and amortization and stock-based compensation charges).

*Investing Activities.* Net cash used in investing activities during the year ended December 31, 2022 was $(16.3) million compared to $(35.4) million in cash used in the same period in 2021, due primarily to the difference of $21.4 million in cash paid for acquisition of Mutual Mobile in the year ended December 31, 2022 and Tacit in the year ended December, 31 2021.

Net cash used in investing activities during the year ended December 31, 2021 was $(35.4) million compared to $(18.3) million in cash used in the same period in 2020, due primarily to cash paid for the Tacit acquisition in the year ended December 31, 2021 as well as capital expenditures for computer hardware and related equipment in both periods.

*Financing Activities*. Net cash provided by financing activities was $97.8 million in the year ended December 31, 2022, reflecting the equity offering during the third quarter of 2022 that was slightly offset by the payment of contingent consideration related to acquisitions and the tax withholding obligations due to issuance of shares in connection with vested stock awards.

Net cash provided by financing activities was $49.1 million in the year ended December 31, 2021, reflecting the equity offering and warrant exercise proceeds offset by tax obligations resulted from net share settlement of vested stock awards.

***Off-Balance Sheet Arrangements and Commitments***

Except for its credit support for the letter of credit and balances on corporate credit cards, Grid Dynamics does not have any off-balance sheet arrangements of the kind required to be disclosed under SEC rules and does not have any off-balance sheet or contingent commitments, except as described elsewhere with respect to operating leases.

As a result of analysis related to Grid Dynamics' functional control of subcontractor GD AM, LLC (in Armenia) the subcontractors were determined to be a variable interest entity ("VIE") and are therefore consolidated in Grid Dynamics' financial statements. The assets and liabilities of these VIEs consist primarily of intercompany balances and transactions, all of which have been eliminated in consolidation.

**Critical Accounting Policies and Estimates**

Grid Dynamics management's discussion and analysis of our financial condition and results of operations is based on the consolidated financial statements, which have been prepared in accordance with U.S. GAAP. Preparation of the financial statements requires Grid Dynamics to make judgments, estimates and assumptions that impact the reported amount of revenue and expenses, assets and liabilities and the disclosure of contingent assets and liabilities. Grid Dynamics considers an accounting judgment, estimate or assumption to be critical when (1) an estimate or assumption is complex in nature or requires a high degree of judgment, and (2) the use of different judgments, estimates and assumptions could have a material impact on

Grid Dynamics' consolidated financial statements. Grid Dynamics' critical accounting policies are described in Note 2 to its consolidated financial statements.

***Revenue***

Grid Dynamics derives its revenue through time and materials and fixed fee contracts. Although the majority of revenues have been derived through time and material contracts, our fixed-fee customer contracts business is increasing, although not significant historically, will comprise a more significant portion of revenue in future periods. For all contracts, Grid Dynamics uses master agreements that govern the overall relevant terms and conditions of the business arrangement and executes statements of work pursuant to such agreements to execute specific projects. Grid Dynamics recognizes revenue for services over time as hours are incurred by Grid Dynamics' engineering personnel. For all contracts, the customer derives value from the Company providing daily consulting services, and the value derived corresponds to the labor hours expended. Therefore, the Company measures the progress and recognizes revenue using an effort-based input method.

Grid Dynamics also offers volume discounts or early settlement discounts. Volume discounts apply once the customer reaches certain contractual spend thresholds. Early settlement discounts are issued contingent upon the timing of the payment from the customer. If the consideration promised in a contract includes a variable amount, Grid Dynamics only includes estimated amounts of consideration in the transaction price to the extent it is probable that a significant reversal of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is resolved.

***Income Taxes***

The determination of the provision for income taxes requires significant judgment, the use of estimates and the interpretation and application of complex tax laws. The provision for income taxes reflects a combination of income earned and taxed in the various U.S. federal and state and non-U.S. jurisdictions. Changes in tax law, increases or decreases in permanent differences between book and tax items, accruals or adjustments of accruals for tax contingencies or valuation allowances, and the change in the mix of earnings across taxing jurisdictions all affect the overall effective tax rate.

In assessing the realizability of deferred tax assets, Grid Dynamics considers whether it is more-likely-than-not that some portion, or all, of the deferred tax assets will not be realized. Management considers all available evidence, both positive and negative, in determining whether a valuation allowance is required, including prior earnings history, the scheduled reversal of deferred tax liabilities, projected future taxable income, carryback and carryforward periods of tax attributes and tax planning strategies that could potentially enhance the likelihood of realization of a deferred tax asset in making this assessment. The weight given to the positive and negative evidence is commensurate with the extent to which the evidence may be objectively verified.

Grid Dynamics evaluates for uncertain tax positions at each balance sheet date. When it is more likely than not that a position will be sustained upon examination by a tax authority that has full knowledge of all relevant information, Grid Dynamics measures the amount of tax benefit from the position and records the largest amount of tax benefit that is greater than 50% likely of being realized after settlement with a tax authority. Grid Dynamics' policy for interest and/or penalties related to underpayments of income taxes is to include interest and penalties in provision for income tax.

***Business Combinations***

The Company accounts for business combinations under the acquisition method of accounting, in accordance with Accounting Standards Codification ("ASC") Topic 805, Business Combinations, recording any assets acquired and liabilities assumed based on their respective fair values. Any excess of the fair value of purchase consideration over the fair value of the assets acquired less liabilities assumed is recorded as goodwill. The Company uses management estimates and industry data to assist in establishing the acquisition date fair values of assets acquired, liabilities assumed, and contingent consideration granted, if any. These estimates and valuations require the Company to make significant assumptions, including projections of future events and operating performance.

The Company determines the fair value of the contingent consideration liabilities using Monte Carlo model which involves a simulation of future revenues and earnings during the earn-out period using management's best estimates and assumptions. Changes in financial projections, market risk assumptions, discount rates or probability assumptions with respect to the likelihood of achieving the various earnout criteria may result in a significant change in the fair value of contingent consideration. Such changes, if any, are recorded within Other income/(expense), net in the Company's consolidated statements of income.

### ***Stock-based Compensation***

Grid Dynamics has in the past issued, currently issues and intends to continue issuing incentive stock options and non-qualifying stock options, performance stock units and restricted stock units. While Grid Dynamics does not currently have any other form of stock-based awards outstanding, it may also issue stock appreciation rights. Stock-based compensation expense is measured based on the grant-date fair value of the share-based awards. Forfeitures are recognized as incurred. Grid Dynamics estimates grant date fair value of its stock using a number of objective and subjective factors, as described in more detail below, and the Black-Scholes option pricing model to estimate the grant date fair value of option grants. The model requires management to make a number of key assumptions, including expected volatility, expected term, risk free interest rate and expected dividends. As Grid Dynamics' shares do not have sufficient trading history, expected volatility is estimated based on the average historical volatility of similar entities with publicly traded shares. The risk free rate for the expected term of the option is based on the U.S. Treasury yield curve at the date of grant. The expected term is estimated using the simplified method, which takes into account vesting and contractual term. Grid Dynamics' options grants generally vest over a 4-year period and from time to time Grid Dynamics makes grants with a portion vesting at the time of grant. Management elected to use the simplified method instead of historical experience due to a lack of relevant historical data resulting from changes in option vesting schedules and changes in the pool of employees receiving option grants. Grid Dynamics evaluates the assumptions used to value its stock-based awards on each grant date. Grants are approved by Grid Dynamics' Board of Directors.

Grid Dynamics amortizes the grant date fair value of all stock-based compensation awards over the employee's requisite service period for the entire award on a straight-line basis, which is generally the vesting period. For an award with graded vesting that is subject only to a service condition (*e.g.*, time-based vesting), Grid Dynamics uses the straight-line attribution method under ASC 718, under which it recognizes compensation cost on a straight-line basis over the total requisite service period for the entire award. Additionally, Grid Dynamics applies the "floor" concept, so that the amount of compensation cost that is recognized as of any date is at least equal to the grant-date fair value of the vested portion of the award on that date. In other words, if the straight-line expense recognized to date is less than the grant date fair value of the award that is legally vested at that date (for example, as a result of a portion of a grant vesting at the grant date), Grid Dynamics will increase its recognized expense to at least equal the fair value of the vested amount. The fair market value of Grid Dynamics stock is determined based on the closing price on NASDAQ on the measurement date. For more detailed information about Grid Dynamics' historical and outstanding grants and its valuation of its stock-based compensation and awards, see Note 13 to the audited consolidated financial statements included elsewhere in this Annual Report.

### **Recently Adopted and Issued Accounting Pronouncements**

Recently issued and adopted accounting pronouncements are described in Note 2 to Grid Dynamics' consolidated financial statements.

## ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Grid Dynamics has in the past and may in the future be exposed to certain market and credit risks in the ordinary course of business, including exposure related to fluctuations in foreign currency rates, and on occasion and to a lesser extent, changes in interest rates and concentration of credit risk. In addition, Grid Dynamics' international operations are subject to risks related to differing economic conditions, changes in political climate, differing tax structures, and other regulations and restrictions. See Item 1A, "*Risk Factors*" for additional information.

### *Foreign Currency Exchange Rate Risk*

Grid Dynamics is exposed to foreign currency exchange transaction risk related to funding its non-US operations and to foreign currency translation risk related to certain of its subsidiaries' cash balances that are denominated in currencies other than the U.S. dollar. In addition, Grid Dynamics' profit margins are subject to volatility as a result of changes in foreign exchange rates. Grid Dynamics' functional currency apart from the U.S. dollar includes EURO, British pounds, Mexican pesos, Moldovan leu and Indian rupees. When and where possible, Grid Dynamics seeks to match expenses of each entity to currencies in which revenues are generated creating natural hedge. In future periods, Grid Dynamics may also become materially exposed to changes in the value of Serbian dinars and Moldovan leu against the U.S. dollar, due to the recent acquisitions and continuous expansion of operations.

For the year ended December 31, 2022, approximately 33.4% of Grid Dynamics' $331.5 million of combined cost of revenue and total operating expenses were denominated in currencies other than the U.S. dollar. Comparatively, approximately 37.8% of Grid Dynamics' $211.2 million of combined cost of revenue and total operating expenses were denominated in currencies other than the U.S. dollar in the year ended December 31, 2021.

In the year ended December 31, 2022:

- a 10% decrease in the value of the Polish zloty against the U.S. dollar would have resulted in a $2.1 million increase in Grid Dynamics' income from operations, while a 10% increase in the zloty's value would have resulted in a $2.6 million decrease in income from operations.

- a 10% decrease in the value of the Mexican pesos against the U.S. dollar would have resulted in a $0.9 million increase in Grid Dynamics' income from operations, while a 10% increase in the pesos' value would have resulted in a $0.8 million decrease in income from operations.

In the year ended December 31, 2021:

- a 10% decrease in the value of the Polish zloty against the U.S. dollar would have resulted in a $1.2 million increase in Grid Dynamics' income from operations, while a 10% increase in the zloty's value would have resulted in a $1.5 million decrease in income from operations.

- a 10% decrease in the value of the Mexican pesos against the U.S. dollar would have resulted in a $0.2 million increase in Grid Dynamics' income from operations, while a 10% increase in the pesos' value would have resulted in a $0.3 million decrease in income from operations.

Grid Dynamics analyzes sensitivity to the zloty and pesos separately because, in management's experience, fluctuations in the value of these currencies against the U.S. dollar are frequently driven by distinct macroeconomic and geopolitical factors and have the largest effect on our results during the year ended December 31, 2022.

Grid Dynamics does not currently hedge its foreign currency exposure, although it seeks minimize it by limiting cash transfers to amounts necessary to fund subsidiary operating expenses for a short period, typically one week. Grid Dynamics' management may evaluate new hedging strategies in future periods.

## ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

**GRID DYNAMICS HOLDINGS, INC**
**Index to Consolidated Financial Statements**

## REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Shareholders
Grid Dynamics Holdings, Inc.

**Opinion on the financial statements**

We have audited the accompanying consolidated balance sheets of Grid Dynamics Holdings, Inc. (a Delaware corporation) and subsidiaries (the "Company") as of December 31, 2022 and 2021, the related consolidated statements of loss and comprehensive loss, convertible preferred stock and stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2022, and the related notes (collectively referred to as the "financial statements"). In our opinion, the 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 each of the three years in the period ended December 31, 2022, in conformity with accounting principles generally accepted in the United States of America.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in the 2013 *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"), and our report dated February 28, 2023 expressed an unqualified opinion.

**Change in accounting principle**

As discussed in Note 2 to the consolidated financial statements, the Company has changed its method of accounting for leases in 2022 due to the adoption of Accounting Standards Update 2016-02: Leases (Topic 842).

**Basis for opinion**

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

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

**Critical audit matters**

Critical audit matters are matters arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. We determined that there are no critical audit matters.

s/ GRANT THORNTON LLP

We have served as the Company's auditor since 2017.

San Francisco, California
February 28, 2023

## REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Shareholders
Grid Dynamics Holdings, Inc.

### Opinion on internal control over financial reporting

We have audited the internal control over financial reporting of Grid Dynamics

Holdings, Inc. (a Delaware corporation) and subsidiaries (the "Company") as of December 31, 2022, based on criteria established in the 2013 *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on criteria established in the 2013 *Internal Control—Integrated Framework* issued by COSO.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the consolidated financial statements of the Company as of and for the year ended December 31, 2022, and our report dated February 28, 2023 expressed an unqualified opinion on those financial statements.

### Basis for opinion

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

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Our audit of, and opinion on, the Company's internal control over financial reporting does not include the internal control over financial reporting of Mutual Mobile, Inc. ("Mutual Mobile"), a wholly-owned subsidiary, whose financial statements reflect total assets and revenues constituting 1.3 and 0.1 percent, respectively, of the related consolidated financial statement amounts as of and for the year ended December 31, 2022. As indicated in Management's Report, Mutual Mobile was acquired during 2022. Management's assertion on the effectiveness of the Company's internal control over financial reporting excluded internal control over financial reporting of Mutual Mobile.

### Definition and limitations of internal control over financial reporting

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

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

s/ GRANT THORNTON LLP

San Francisco, California
February 28, 2023

**GRID DYNAMICS HOLDINGS, INC.**
**CONSOLIDATED BALANCE SHEETS**
**(In thousands, except share and per share data)**

| | As of December 31, | |
|---|---|---|
| | **2022** | **2021** |
| **Assets** | | |
| Current assets | | |
| Cash and cash equivalents | $ 256,729 | $ 144,364 |
| Accounts receivable, net of allowance of $443, and $315 as of December 31, 2022 and December 31, 2021 | 48,358 | 38,838 |
| Unbilled receivables | 5,591 | 4,475 |
| Prepaid income taxes | 4,294 | 584 |
| Prepaid expenses and other current assets | 8,154 | 4,503 |
| Total current assets | 323,126 | 192,764 |
| Property and equipment, net | 8,215 | 6,169 |
| Operating lease right-of-use assets, net | 7,694 | — |
| Intangible assets, net | 20,375 | 19,097 |
| Goodwill | 45,514 | 35,958 |
| Deferred tax assets | 4,998 | 2,731 |
| Other noncurrent assets | 1,224 | — |
| **Total assets** | **411,146** | **256,719** |
| | | |
| **Liabilities and equity** | | |
| Current liabilities | | |
| Accounts payable | $ 3,897 | $ 2,053 |
| Accrued compensation and benefits | 13,065 | 10,562 |
| Accrued income taxes | 10,718 | 1,980 |
| Operating lease liabilities, current | 2,505 | — |
| Accrued expenses and other current liabilities | 8,525 | 10,749 |
| Total current liabilities | 38,710 | 25,344 |
| Deferred tax liabilities | 3,756 | 4,324 |
| Operating lease liabilities, noncurrent | 5,636 | — |
| **Total liabilities** | **48,102** | **29,668** |
| | | |
| **Commitments and contingencies (Note 17)** | | |
| **Stockholders' equity (Note 12)** | | |
| Common stock, $0.0001 par value; 110,000,000 shares authorized; 74,156,458 and 66,850,941 issued and outstanding as of December 31, 2022 and December 31, 2021, respectively | $ 7 | $ 7 |
| Additional paid-in capital | 378,006 | 212,077 |
| Retained earnings/(accumulated deficit) | (14,121) | 15,093 |
| Accumulated other comprehensive loss | (848) | (126) |
| Total stockholders' equity | **363,044** | **227,051** |
| **Total liabilities and stockholders' equity** | **$ 411,146** | **$ 256,719** |

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

**GRID DYNAMICS HOLDINGS, INC.**
**CONSOLIDATED STATEMENTS OF LOSS AND COMPREHENSIVE LOSS**
**(In thousands, except per share data)**

| | For the years ended December 31, | | |
|---|---|---|---|
| | **2022** | **2021** | **2020** |
| Revenue | $ 310,482 | $ 211,280 | $ 111,283 |
| Cost of revenue | 189,892 | 123,552 | 69,662 |
| **Gross profit** | 120,590 | 87,728 | 41,621 |
| | | | |
| **Operating expenses** | | | |
| Engineering, research, and development | 15,772 | 8,459 | 9,311 |
| Sales and marketing | 19,808 | 14,457 | 10,051 |
| General and administrative | 106,018 | 64,762 | 37,707 |
| **Total operating expenses** | **141,598** | **87,678** | **57,069** |
| | | | |
| **Income/(loss) from operations** | **(21,008)** | **50** | **(15,448)** |
| Other income/(expenses), net | 555 | (2,502) | 236 |
| **Loss before income taxes** | **(20,453)** | **(2,452)** | **(15,212)** |
| Provision/(benefit) for income taxes | 8,761 | 5,248 | (2,613) |
| **Net loss** | **$ (29,214)** | **$ (7,700)** | **$ (12,599)** |
| | | | |
| Foreign currency translation adjustments, net of tax | (722) | (122) | (4) |
| **Comprehensive loss** | **$ (29,936)** | **$ (7,822)** | **$ (12,603)** |
| | | | |
| **Loss per share** | | | |
| Basic | $ (0.42) | $ (0.13) | $ (0.28) |
| Diluted | $ (0.42) | $ (0.13) | $ (0.28) |
| | | | |
| **Weighted average shares outstanding** | | | |
| Basic | 69,197 | 58,662 | 44,737 |
| Diluted | 69,197 | 58,662 | 44,737 |

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

## GRID DYNAMICS HOLDINGS, INC.
## CONSOLIDATED STATEMENTS OF CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' EQUITY
## (In thousands)

| | Convertible Preferred Stock | | Common Stock | | Additional Paid-in Capital | Retained Earnings | Accumulated Other Comprehensive Loss | Total Stockholders' Equity |
|---|---|---|---|---|---|---|---|---|
| | Shares | Amount | Shares | Amount | | | | |
| **Balance at January 1, 2020** | **1,048** | **$ 9,187** | **21,644** | **$ 2** | **$ 18,650** | **$ 35,392** | **$ —** | **$ 54,044** |
| Net loss | — | — | — | — | — | (12,599) | — | (12,599) |
| Stock-based compensation | — | — | — | — | 20,006 | — | — | 20,006 |
| Conversion of preferred stock | (1,048) | (9,187) | 1,048 | 1 | 9,187 | — | — | 9,188 |
| Conversion of promissory note to common stock | — | — | 53 | — | 530 | — | — | 530 |
| Consideration paid to Grid shareholders | — | — | — | — | (123,865) | — | — | (123,865) |
| ChaSerg shares recapitalized, net of transaction costs of $4,142 | — | — | 28,088 | 2 | 204,323 | — | — | 204,325 |
| Exercise of stock options | — | — | 18 | — | 99 | — | — | 99 |
| Issuance of shares in connection with vested RSUs | — | — | 28 | — | — | — | — | — |
| Foreign currency translation adjustment, net of tax | — | — | — | — | — | — | (4) | (4) |
| **Balance at December 31, 2020** | **—** | **$ —** | **50,879** | **$ 5** | **$ 128,930** | **$ 22,793** | **$ (4)** | **$ 151,724** |
| Net loss | — | — | — | — | — | (7,700) | — | (7,700) |
| Stock-based compensation | — | — | — | — | 33,036 | — | — | 33,036 |
| Exchange of warrants into common stock | — | — | 6,680 | 1 | 49,123 | — | — | 49,124 |
| Exercise of stock options | — | — | 1,631 | — | (27,528) | — | — | (27,528) |
| Issuance of common stock in 2021 offering, net of transaction costs of $498 | — | — | 5,470 | 1 | 77,812 | — | — | 77,813 |
| Issuance of shares and payments of tax obligations resulted from net share settlement of vested stock awards | — | — | 2,060 | — | (49,296) | — | — | (49,296) |
| Issuance of escrow common stock due to Closing of Business Combination | — | — | 131 | — | — | — | — | — |
| Foreign currency translation adjustment, net of tax | — | — | — | — | — | — | (122) | (122) |
| **Balance at December 31, 2021** | **—** | **$ —** | **66,851** | **$ 7** | **$ 212,077** | **$ 15,093** | **$ (126)** | **$ 227,051** |

| | Convertible Preferred Stock | | Common Stock | | Additional paid-in capital | Retained earnings | Accumulated Other Comprehensive Loss | Total stockholders' equity |
|---|---|---|---|---|---|---|---|---|
| | Shares | Amount | Shares | Amount | | | | |
| **Balance at January 1, 2022** | **—** | **$ —** | **66,851** | **$ 7** | **$ 212,077** | **$ 15,093** | **$ (126)** | **$ 227,051** |
| Net loss | — | — | — | — | — | (29,214) | — | (29,214) |
| Stock-based compensation | — | — | — | — | 60,968 | — | — | 60,968 |
| Exercise of stock options | — | — | 341 | — | 1,432 | — | — | 1,432 |
| Issuance of common stock in 2022 Offering, net of transaction costs of $253 | — | — | 6,571 | — | 109,284 | — | — | 109,284 |
| Issuance of shares and payments of tax obligations resulted from net share settlement of vested stock awards | — | — | 393 | — | (5,755) | — | — | (5,755) |
| Foreign currency translation adjustment, net of tax | — | — | — | — | — | — | (722) | (722) |
| **Balance at December 31, 2022** | **—** | **$ —** | **74,156** | **$ 7** | **$ 378,006** | **$ (14,121)** | **$ (848)** | **$ 363,044** |

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

**GRID DYNAMICS HOLDINGS, INC.**
**CONSOLIDATED STATEMENTS OF CASH FLOWS**
**(In thousands)**

| | For the years ended December 31, | | |
|---|---|---|---|
| | **2022** | **2021** | **2020** |
| **Cash flows from operating activities** | | | |
| Net loss | $ (29,214) | $ (7,700) | $ (12,599) |
| Adjustments to reconcile net loss to net cash provided by operating activities: | | | |
| Depreciation and amortization | 6,626 | 5,049 | 2,672 |
| Operating lease right-of-use assets amortization expense | 3,021 | — | — |
| Bad debt expense | 132 | 45 | 398 |
| Deferred income taxes | (3,633) | 2,611 | (4,135) |
| Debt issuance cost amortization | 71 | — | — |
| Stock-based compensation | 60,968 | 33,036 | 20,006 |
| Change in fair value of warrants | — | 979 | — |
| Changes in assets and liabilities: | | | |
| Accounts receivable | (8,738) | (18,676) | (1,418) |
| Unbilled receivables | (1,116) | (849) | 3,237 |
| Prepaid income taxes | (3,450) | 237 | (410) |
| Prepaid expenses and other assets | (3,371) | (1,176) | 373 |
| Accounts payable | 1,729 | 957 | (49) |
| Accrued compensation and benefits | 1,694 | 873 | (255) |
| Operating lease liabilities | (2,574) | — | — |
| Accrued income taxes | 8,525 | 532 | (166) |
| Accrued expenses and other current liabilities | 982 | 2,055 | (1,722) |
| **Net cash provided by operating activities** | **31,652** | **17,973** | **5,932** |
| **Cash flows from investing activities** | | | |
| Purchase of property and equipment | (6,069) | (4,716) | (2,252) |
| Purchase of investments | (1,000) | — | — |
| Acquisition of business, net of cash acquired | (9,254) | (30,650) | (16,087) |
| **Net cash used in investing activities** | **(16,323)** | **(35,366)** | **(18,339)** |
| **Cash flows from financing activities** | | | |
| Proceeds from issuance of Common Stock from 2022 and 2021 Offerings | 109,537 | 78,311 | — |
| Proceeds from debt | 5,000 | — | — |
| Proceeds from exercise of warrants | — | 48,145 | — |
| Cash received from ChaSerg | — | — | 208,997 |
| Payments of tax obligations resulted from net share settlement of vested stock awards | (5,755) | (49,296) | — |
| Proceeds from exercises of stock options, net of shares withheld for taxes | 1,432 | (27,528) | 99 |
| Payment of contingent consideration related to previously acquired businesses | (6,933) | — | — |
| Repayment of debt | (5,000) | — | — |
| Debt issuance cost | (270) | — | — |
| Equity issuance costs | (253) | (498) | (2,264) |
| GDI shares redeemed for cash | — | — | (123,865) |
| **Net cash provided by financing activities** | **97,758** | **49,134** | **82,967** |
| Effect of exchange rate changes on cash and cash equivalents | (722) | (122) | (4) |
| Net increase in cash and cash equivalents | 112,365 | 31,619 | 70,556 |
| Cash and cash equivalents, beginning of period | 144,364 | 112,745 | 42,189 |
| **Cash and cash equivalents, end of period** | **$ 256,729** | **$ 144,364** | **$ 112,745** |

**GRID DYNAMICS HOLDINGS, INC.**
**CONSOLIDATED STATEMENTS OF CASH FLOWS**

**(In thousands)**
**(Continued)**

| | For the years ended December 31, | | |
|---|---|---|---|
| | 2022 | 2021 | 2020 |
| **Supplemental disclosure of cash flow information:** | | | |
| Cash paid for income taxes | $ 7,474 | $ 2,448 | $ 2,128 |
| **Supplemental disclosure of non-cash activities** | | | |
| Acquisition fair value of contingent consideration issued for acquisition of business | $ 3,288 | $ 4,986 | $ 1,947 |
| Conversion of preferred stock to common stock | $ — | $ — | $ 9,187 |

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

**GRID DYNAMICS HOLDINGS, INC.**
**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**
**(In thousands, except share and per share data)**

## Note 1 — Background and nature of operations

Grid Dynamics Holdings, Inc. (the "Company" or "GDH") provides enterprise-level digital transformation in the areas of search, analytics, and release automation to Fortune 1000 companies. The Company's headquarters and principal place of business is in San Ramon, California.

The Company was originally incorporated in Delaware on May 21, 2018 as a special purpose acquisition company under the name ChaSerg Technology Acquisition Corp. ("ChaSerg") for the purpose of effecting a merger, capital stock exchange, asset acquisition, stock purchase, reorganization or similar business combination involving ChaSerg and one or more businesses. On March 5, 2020 (the "Closing"), the Company consummated its business combination with Grid Dynamics International, Inc. ("GDI") pursuant to the Agreement and Plan of Merger (the "Merger Agreement"), dated November 13, 2019 (the "Business Combination"). In connection with the Closing, the Company changed its name from ChaSerg Technology Acquisition Corp. to Grid Dynamics Holdings, Inc. The Company's common stock is now listed on the NASDAQ under the symbol "GDYN".

Unless the context otherwise requires, the "Company" refers to the combined company and its subsidiaries following the Business Combination, "ChaSerg" refers to the Company prior to the Closing, and "GDI" refers to GDI prior to the Closing. Refer to Note 3 for further discussion of the Business Combination.

## Note 2 — Basis of presentation and summary of significant accounting policies

The following is a summary of the significant accounting policies consistently applied in the preparation of the accompanying consolidated financial statements.

### Basis of presentation

The Business Combination was accounted for as a reverse recapitalization in accordance with U.S. GAAP. Although ChaSerg was the legal acquirer, for accounting purposes, GDI was deemed to be the accounting acquirer. GDI was determined to be the accounting acquirer based on evaluation of the following facts and circumstances:

- GDI holds executive management roles for the Company and those individuals are responsible for the day-to-day operations;
- GDI's former owners have the largest minority voting rights in the Company;
- From a revenue and business operation standpoint, GDI was the larger entity in terms of relative size;
- GDI's San Ramon, CA headquarters are the headquarters of the Company; and
- The intended strategy of the Company will continue GDI's strategy of driving enterprise-level digital transformation in the Fortune 1000 companies.

Refer to Note 3 for further discussion of the Business Combination.

### Principles of consolidation

The accompanying consolidated financial statements include the accounts of the Company and all of its subsidiaries that are directly or indirectly owned or controlled. Intercompany transactions and balances have been eliminated upon consolidation.

The Company provides services to its customers utilizing its own personnel as well as personnel from subcontractors. The most significant subcontractor as of December 31, 2022 is GD AM, LLC ("Affiliate"), third-party contractor located in Armenia. During the years ended December 31, 2021 and 2020 the Company had a similar subcontractor that ceased its operations in the beginning of 2022. The Affiliates exclusively support and perform services on behalf of the Company and its customers. The Company has no ownership in the Affiliates. The Company is required to apply accounting standards which address how a business enterprise should evaluate whether it has a controlling financial interest in a variable interest entity ("VIE") through means other than voting rights and accordingly should determine whether or not to consolidate the entity. The Company has determined that it is required to consolidate the Affiliates because the Company has the power to direct the VIEs' most significant activities and is the primary beneficiary of the Affiliates. The assets and liabilities of the Affiliates primarily consist of inter-company balances and transactions all of which have been eliminated in consolidation. The net income of the Affiliates was $0.7 million, $0.6 million and $0.1 million for the years ended December 31, 2022, 2021 and 2020, respectively.

**Use of estimates**

The preparation of the consolidated financial statements in accordance with U.S. GAAP requires the Company to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. Actual results could differ from these estimates and such differences could be material. Significant estimates include determination of fair value, useful lives and recoverability of intangible assets and goodwill, stock-based compensation, contingent consideration payable, determination of provision for income taxes, deferred tax assets and liabilities and uncertain tax positions.

**Cash and cash equivalents**

Cash equivalents are short-term highly liquid investments and deposits with original maturities of three months or less. Cash equivalents are stated at cost, which approximates fair value due to their short-term nature.

**Accounts receivable and allowance for credit losses**

Accounts receivable, less allowance for credit losses, reflect the net realizable value of receivables and approximate fair value. The Company maintains an allowance against accounts receivable for the estimated probable losses on uncollectible accounts. The allowance is based upon historical loss experience, as adjusted for the current market conditions and forecasts about future economic conditions. Accounts receivable are charged off against the reserve when, in management's estimation, further collection efforts would not result in a reasonable likelihood of receipt.

**Unbilled receivables**

Generally, the Company will not bill customers until the services have been completed. From time-to-time, a service period may overlap with a period-end and the unbilled receivables represent amounts for services performed through period-end, but not yet billed. The unbilled receivable represents the amount expected to be billed and collected for services performed through period-end in accordance with contract terms.

**Contract assets**

The Company classifies its right to consideration in exchange for deliverables as either a receivable or a contract asset. A trade receivable is a right to consideration that is unconditional (i.e., only the passage of time is required before payment is due). A contract asset is a right to consideration that is conditional upon factors other than the passage of time. Contract assets are recorded when services have been provided but the Company does not have an unconditional right to receive consideration. Contract assets primarily relate to fixed-fee contracts.

**Property and equipment**

Property and equipment are stated at cost, less accumulated depreciation and amortization. Depreciation and amortization are computed using the straight-line method over the estimated useful lives of the respective assets, generally two to 12 years. Leasehold improvements and property under capital leases are amortized over the shorter of estimated useful lives of the assets or the lease term. Expenditures for repairs and maintenance are expensed as incurred.

**Software development costs**

The Company capitalizes costs incurred during the application development and implementation stages for computer software developed or obtained for internal use that are specifically identifiable, have determinable lives and relate to probable future economic benefits. Capitalized computer software costs are included in Property and equipment, net in the consolidated balance sheets. Average useful life of such costs is two to three years. Amortization of internally developed software is recorded within Engineering, research, and development and Sales and marketing expenses in the consolidated statements of loss and comprehensive loss as the software is developed for purposes of supporting internal R&D, engineering, and marketing activities. Costs associated with minor enhancements and maintenance or costs incurred during the preliminary project stage, and costs for training, data conversion, and maintenance are expensed as incurred. Management evaluates the useful lives of these assets on an annual basis and tests for impairment whenever events or changes in circumstances occur that could impact the recoverability of these assets. Internally developed software did not have any impairment in the years ended December 31, 2022, 2021 and 2020.

**Business combinations**

The Company accounts for business combinations under the acquisition method of accounting, in accordance with Accounting Standards Codification ("ASC") Topic 805, Business Combinations, recording any assets acquired and liabilities assumed based on their respective fair values. Any excess of the fair value of purchase consideration over the fair value of the assets acquired less liabilities assumed is recorded as goodwill. The Company uses management estimates and industry data to assist in establishing the acquisition date fair values of assets acquired, liabilities assumed, and contingent consideration granted, if any. These estimates and valuations require the Company to make significant assumptions, including projections of future events and operating performance.

**Goodwill**

Goodwill represents the excess of purchase price over the fair value of the net assets of businesses acquired. On an annual basis, the Company makes a qualitative assessment to determine if it is more likely than not that the fair value of the reporting unit is less than its carrying amount, including goodwill. If the Company determines that the fair value of the reporting unit is less than its carrying amount, it will perform a quantitative analysis; otherwise, no further evaluation is necessary. For the quantitative impairment assessment, the Company compares the fair value of the reporting unit to its carrying value, including goodwill. The Company uses the discounted cash flow method of the income approach and market approach to determine the fair value of the reporting unit. If the fair value of the reporting unit exceeds the carrying value of the net assets assigned to that unit, goodwill is not impaired and no further testing is performed. If the carrying value of the net assets assigned to the reporting unit exceeds the fair value of the reporting unit, then the Company will recognize a loss equal to the excess, limited to the total amount of goodwill allocated to that reporting unit. Impairments, if any, are charged directly to earnings. As of December 31, 2022 and 2021, the Company had a single reporting unit and determined there were no indicators of impairment.

**Intangible assets**

Finite-lived intangible assets are stated at cost less accumulated amortization. Amortization is computed either on the straight-line basis over the asset's useful lives or declining balance method ranging between two and 12 years. Intangible assets are evaluated for impairment whenever events or changes in circumstances indicate that the carrying value of the assets may not be fully recoverable. If facts and circumstances indicate that the carrying value might not be recoverable, projected undiscounted net cash flows associated with the related asset or group of assets over their estimated remaining useful lives is compared against their respective carrying amounts. If an asset is found to be impaired, the impairment charge will be measured as the amount by which the carrying amount of an entity exceeds its fair value. As of December 31, 2022 and 2021, the Company determined there were no indicators of impairment.

**Fair value**

Financial instruments are required to be categorized within a valuation hierarchy based upon the lowest level of input that is significant to the fair value measurement. Assets and liabilities recorded at fair value are measured and classified in accordance with a three-tier fair value hierarchy based on the observability of the inputs available in the market used to measure fair value:

- *Level 1* — Observable inputs that reflect quoted prices (unadjusted) for identical assets or liabilities in active markets.
- *Level 2* — Inputs that are based upon quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active, and model-based valuation techniques for which all significant inputs are observable in the market or can be derived from observable market data.
- *Level 3* – Unobservable inputs that are supported by little or no market activities. Where applicable, these models project future cash flows and discount the future amounts to a present value using market-based observable inputs including interest rate curves, foreign exchange rates, and credit ratings.

**Leases**

The Company determines if an arrangement is a lease or contains a lease at lease inception. Assessment and classification of lease as either an operating or a financing is performed at the lease commencement date. Operating lease liabilities and their corresponding right-of-use assets ("RoU Assets") are initially measured based on the present value of future lease payments over the expected remaining lease term. RoU Asset value is additionally adjusted by initial direct costs and incentives received. Present value is calculated based in either interest rate implicit in lease agreement or, if not available, based on our incremental

borrowing rate. Incremental borrowing rate reflects the fixed rate at which the Company could borrow on a collateralized basis the amount of the lease payments in the same currency, for a similar term, in a similar economic environment.

The Company typically only includes an initial lease term in its assessment of a lease arrangement. Options to renew or terminate a lease are not included in the Company's assessment unless there is reasonable certainty that the Company will exercise the renewal option. RoU Assets are subject to periodic impairment tests. Lease expense for operating leases is recognized on a straight-line basis over the lease term.

In accordance with ASC Topic 842, components of a lease should be split into three categories: lease components, non-lease components, and non-components. The fixed and in-substance fixed contract consideration (including any consideration related to non-components) must be allocated based on the respective relative fair values to the lease components and non-lease components. The Company elected a practical expedient to account for lease and non-lease components together as a single lease component. The Company also elected the short-term lease recognition exemption for all classes of lease assets with an original term of twelve months or less. For transition, practical expedients were accepted to carry forward historical accounting for any expired or existing contracts that are or contain lease contracts and not to re-assess initial direct costs for any expired or existing leases.

**Revenue recognition**

The Company accounts for a contract with a customer when 1) the parties to the contract have approved the contract and are committed to performing their respective obligations, 2) the contract identifies each party's rights regarding the goods or services to be transferred, 3) the contract identifies the payment terms for the goods or services to be transferred, 4) the contract has commercial substance, and 5) collection of substantially all consideration pursuant to the contract is probable.

The Company derives its revenue from offering a suite of digital engineering and information technology ("IT") consulting services, including digital transformation strategy, emerging technology, lean labs and legacy system replatforming. For most contracts, the Company uses master agreements to govern the overall relevant terms and conditions of the business arrangement between the Company and its customers. When the Company and a customer enter into a Master Services Agreement ("MSA"), purchases are generally made by the customer via a statement of work ("SOW") which explicitly references the MSA and specifies the services to be delivered. Fees for these contracts may be in the form of time-and-material or fixed-fee arrangements. The majority of the Company's revenues are generated under time-and-material contracts which are billed using hourly, daily or monthly rates to determine the amounts to be charged directly to the customer. Fees are billed and collected as stipulated in the contract, and revenue is recognized as services are performed. If there is an uncertainty about the receipt of payment for the services, revenue is recognized to the extent that a significant reversal of revenue would not be probable.

Consulting services revenue is a single performance obligation earned through a series of distinct daily services and may include services such as those described above. The Company recognizes revenue for services over time as the customer simultaneously receives and consumes the benefits as the Company performs IT consulting services. For revenue contracts, the customer derives value from the Company providing daily consulting services, and the value derived corresponds to the labor hours expended. Therefore, the Company measures the progress and recognizes revenue using an effort-based input method. For fixed fee contracts, the Company recognizes revenue as the work is performed, the monthly calculation of which is based upon actual labor hours incurred and level of effort expended throughout the duration of the contract.

For time-and-material contracts, the Company applies the variable consideration allocation guidance. Therefore, instead of allocating the variable consideration to the entire performance obligation, the Company determined the variable consideration should be allocated to each distinct service to which the variable consideration relates, which is providing the customer daily consulting services. The Company also offers volume discounts or early settlement discounts. Volume discounts apply once the customer reaches certain contractual spend thresholds. Early settlement discounts are issued contingent upon the timing of the payment from the customer. If the consideration promised in a contract includes a variable amount, the Company only includes estimated amounts of consideration in the transaction price to the extent it is probable that a significant reversal of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is resolved. These estimates may require management to make subjective judgments and to make estimates about the effects of matters inherently uncertain. The determination of whether to constrain consideration in the transaction price are based on information (historical, current and forecasted) that is reasonably available to the Company, taking into consideration the type of customer, the type of transaction and the specific facts and circumstances of each arrangement. Although the Company believes that its approach in developing estimates and its reliance on certain judgments and underlying inputs is reasonable, actual results may differ from management's estimates, judgments and assumptions. These estimates have historically not been material to the consolidated financial statements.

### Cost of revenue

Cost of revenue primarily consists of compensation for professional staff generating revenues for the Company. Compensation includes salary, benefits, performance bonuses, retention bonuses, stock compensation expense, technology and travel expenses. The Company allocates a portion of depreciation and amortization to cost of revenue.

### Engineering, research and development

Engineering, research, and development expenses primarily include compensation for professional staff performing research and development related activities that are not directly attributable to generating revenues for the Company. Research and development activities relate to building and scaling the next generation e-commerce platform solutions for customers. Research and development costs are expensed as incurred. Engineering, research, and development expenses also include depreciation and amortization costs, stock-based compensation expenses and performance and retention bonuses.

### Sales and marketing

Sales and marketing expenses are those expenses associated with promoting and selling the Company's services and include such items as sales and marketing personnel salaries, benefits, stock compensation expenses, travel, advertising, depreciation and amortization, performance and retention bonuses, and other promotional activities.

### General and administrative

General and administrative expenses include other operating items such as officers' and administrative personnel salaries, benefits, stock compensation expenses, legal, tax and audit expenses, public company related expenses, insurance, technology costs, facility costs, performance and retention bonuses, depreciation and amortization, including amortization of purchased intangibles, and operating lease expenses.

### Stock-based compensation expense

Stock-based compensation expense is measured based on the grant-date fair value of the share-based awards. Forfeitures are recognized as incurred. The Company estimates stock options grant-date fair value using the Black-Scholes-Merton option pricing model. The model requires management to make a number of key assumptions including expected volatility, expected term, risk-free interest rate, and expected dividends. The Company evaluates the assumptions used to value its share-based awards on each grant date. The fair market value of Grid Dynamics stock is determined based on the closing price on NASDAQ on the measurement date. The Company amortizes the grant-date fair value of all share-based compensation awards over the employee's requisite service period for the entire award on a straight-line basis, which is generally the vesting period. For an award with graded vesting that is subject only to a service condition (e.g., time-based vesting), the Company uses the straight-line attribution method under ASC Topic 718 under which they recognize compensation cost on a straight-line basis over the total requisite service period for the entire award (i.e., over the requisite service period of the last separately-vesting tranche of the award). For awards with performance conditions the compensation cost recognized is based on the actual or expected achievement of the performance condition. Additionally, the Company applies the "floor" concept so that the amount of compensation cost that is recognized as of any date is at least equal to the grant-date fair value of the vested portion of the award on that date. That is, if the straight-line expense recognized to date is less than the grant date fair value of the award that is legally vested at that date, the company will increase its recognized expense to at least equal the fair value of the vested amount. The Company made an accounting policy election to account for accounts for forfeitures when they occur. Refer to Note 15 — Stock-based compensation for additional information.

### Benefit plans

The Company maintains a 401(k) defined contribution savings and retirement plan for substantially all of its U.S. employees. Subject to ERISA regulations, an employee may elect to contribute an amount up to 90% of compensation during each plan year not to exceed the annual maximum defined by the IRS. The Company is not required to make contributions to the plan but can make discretionary contributions. The Company has not made any contributions to the 401(k) plan for the years ended December 31, 2022, 2021, and 2020.

### Income taxes

The Company follows the asset and liability method of accounting for income taxes. Under this method, deferred income taxes are recognized for the tax consequences of temporary differences between the financial statement carrying amounts and the tax basis of the assets and liabilities. The determination of the provision for income taxes requires significant judgment, the use of estimates and the interpretation and application of complex tax laws. The provision for income taxes reflects a combination of income earned and taxed in the various U.S. federal and state, international and other jurisdictions. Jurisdictional tax law changes, increases or decreases in permanent differences between book and tax items, accruals or adjustments of accruals for tax contingencies or valuation allowances, and the change in the mix of earnings from these taxing jurisdictions all affect the overall effective tax rate.

In assessing the realizability of deferred tax assets, management considers whether it is more likely than not that some portion, or all, of the deferred tax assets will not be realized. Management considers all available evidence, both positive and negative, in determining whether a valuation allowance is required. Such evidence includes prior earnings history, the scheduled reversal of deferred tax liabilities, projected future taxable income, carryback and carryforward periods of tax attributes, and tax planning strategies that could potentially enhance the likelihood of realization of a deferred tax asset in making this assessment. The weight given to the positive and negative evidence is commensurate with the extent to which the evidence may be objectively verified.

The Company evaluates for uncertain tax positions at each balance sheet date. When it is more likely than not that a position will be sustained upon examination by a tax authority that has full knowledge of all relevant information, the Company measures the amount of tax benefit from the position and records the largest amount of tax benefit that is greater than 50% likely of being realized after settlement with a tax authority. The Company's policy for interest and/or penalties related to underpayments of income taxes is to include interest and penalties in income tax expense.

**Restructuring**

The Company initiated a restructuring plan focused on optimizing utilization during 2020. For the year ended December 31, 2020, the Company incurred and paid total restructuring expenses of $0.9 million, which mostly included employee termination costs. This amount is included as a component of General and administrative expenses in the consolidated financial statements. The Company did not incur any restructuring expenses during the years ended December 31, 2022 and 2021, respectively.

**Earnings per share**

The Company accounts for earnings per share in accordance with ASC Topic 260, Earnings per Share. Basic earnings per share is computed by dividing net income by the weighted-average number of common shares outstanding during the period. Diluted earnings per share is computed using the weighted-average number of common and potential dilutive common shares outstanding during the period. Under U.S. GAAP, companies are required to include certain option grants granted to employees and convertible preferred stock in the diluted earnings per share calculation, except in cases where the effect of the inclusion of options and convertible preferred stock would be antidilutive.

**Certain significant risks and uncertainties**

The Company is subject to risks, including but not limited to customer concentration, concentrations of credit and foreign currency risks.

*Concentrations of credit risk and significant customers*

Financial instruments that potentially subject the Company to concentrations of credit risk consist primarily of cash and trade receivable.

The Company's cash is held with high-quality financial institutions. Deposits held with banks may, at times, exceed the amount of insurance provided on such deposits. As of December 31, 2022 and 2021 cash balances held in Ukraine and Russia combined equaled $0.8 million and $1.1 million, respectively. Cash in these countries is used for the operational needs of the local entities and cash balances change with the expected operating needs of these entities. Additionally the Company holds cash deposits in countries where the banking sector remains periodically unstable, banking and other financial systems generally do not meet the banking standards of more developed markets, and bank deposits made by corporate entities are not insured. Such countries apart from Ukraine include Armenia, Moldova, and Mexico. The Company places its cash with financial institutions considered stable in the region and conducts ongoing evaluations of the credit worthiness of the financial institutions with which it operates. However, a banking crisis, bankruptcy or insolvency of banks that process or hold the Company's funds, may result in the loss of the Company's deposits or adversely affect the Company's ability to complete banking transactions, which could adversely affect the Company's business and financial condition.

The Company records its trade receivable including billed and unbilled amounts at their face amounts less allowances. Billed and unbilled receivables are generally dispersed across the Company's customers in proportion to their revenue. The following table shows number of customers exceeding 10% of the Company's billed and unbilled receivable balances at December 31, 2022 and 2021:

| | As of December 31, | |
|---|---|---|
| | 2022 | 2021 |
| Billed receivable | 2 | 1 |
| Unbilled receivable | 2 | 1 |

The Company has not experienced any losses on its cash and cash equivalents and minimal losses on its trade receivable. The Company performs ongoing evaluations of its customers' financial condition.

The following table shows the amount of revenue derived from each customer exceeding 10% of the Company's revenue during the years ended December 31, 2022, 2021 and 2020:

| | For the years ended December 31, | | |
|---|---|---|---|
| | 2022 | 2021 | 2020 |
| Customer 1 | 12.6 % | 11.6 % | 21.3 % |
| Customer 2 | 10.6 % | 11.0 % | 11.8 % |

**Foreign currency risks**

Grid Dynamics' functional currency apart from the U.S. dollar includes EURO, British pounds, Mexican pesos, Moldovan leu and Indian rupees. Grid Dynamics contracts with customers for payment in and generates predominantly all of its revenue in U.S. dollars, except for Daxx and Tacit that generate revenue predominantly in EURO and British pounds. The international subsidiaries convert the U.S. dollars to their respective local currencies to fund operations such as labor and materials required for the entity to operate. The Company's international subsidiaries' accounting records are denominated in their respective local currencies. The Company is exposed to foreign currency exchange rate changes that could impact remeasurement of foreign denominated monetary assets and liabilities into U.S. dollars with the remeasurement impact recorded to income. The Company is also exposed to fluctuations in foreign currency exchange rates related to cash outflows for expenditures in foreign currencies. The net income/(loss) on foreign currency transactions was $(1.5) million, $(0.7) million, and $0.3 million for the years ended December 31, 2022, 2021, and 2020, respectively. The Company has not entered into any foreign exchange forward contracts, derivatives, or similar financial instruments to hedge against the risk of foreign exchange rate fluctuations.

**Recently adopted accounting pronouncements**

Changes to U.S. GAAP are established by the Financial Accounting Standards Board (the "FASB"), in the form of Accounting Standards Updates ("ASUs"), to the FASB's ASC. The Company will adopt according these changes according to the various timetables the FASB specifies.

In February 2016, the FASB issued ASU 2016-02*, Leases (Topic 842).* The standard supersedes previously existing lease guidance ("Topic 840") and requires entities to recognize all leases, with the exception of leases with a term of twelve months or less, on the balance sheet as right-of-use assets ("RoU Assets") and lease liabilities. Disclosures should provide the information in the financial statements summarizing the amount, timing and cash flows arising from leasing. The Company adopted Topic 842, effective January 1, 2022 using current period adjustment method. Prior period amounts were not adjusted. The adoption of Topic 842 on January 1, 2022 resulted in the recognition of RoU Assets for operating leases of $5.9 million and operating lease liabilities of $5.7 million. The adoption of Topic 842 did not have an impact on the consolidated statement of loss and comprehensive loss, consolidated statement of changes in stockholders' equity or the consolidated statement of cash flows.

**Recently issued accounting pronouncements**

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments-Credit Losses (Topic 326) — Measurement of Credit Losses on Financial Instruments*. Topic 326 was subsequently amended by ASU 2019-04, *Codification Improvements to Topic 326, Financial Instruments — Credit Losses,* ASU 2019-05, *Financial Instruments — Credit Losses (Topic 326): Targeted Transition Relief,* and clarified the guidance with the release of ASU 2020-02 *Financial Instruments—Credit Losses (Topic 326)* and *Leases (Topic 842).* These ASUs replace the current incurred loss impairment methodology with a methodology that reflects expected credit losses measured at amortized cost and certain other instruments, including loans, held-to-maturity debt securities, net investments in leases, and off-balance sheet credit exposures. The update is effective for fiscal years beginning after December 15, 2022, and interim periods with fiscal years after December 15, 2022. The Company has determined that the adoption of this guidance will not have a material effect on the on the consolidated financial statements.

In March 2020, FASB issued ASU No. 2020-03, *Codification to Financial Instruments.* This ASU improves and clarifies various financial instruments topics, including the current expected credit losses standard issued in 2016. The ASU includes seven different issues that describe the areas of improvement and the related amendments to U.S. GAAP, intended to make the standards easier to understand and apply by eliminating inconsistencies and providing clarifications. The amendments related to Issue 1, Issue 2, Issue 3, Issue 4, and Issue 5 were effective upon issuance of this update. The new guidance did not have a material impact on the consolidated financial statements. The amendments related to Issue 6 and Issue 7 are effective for the Company the earlier of January 1, 2023 or when the Company adopts ASU 2016-13, if early adopted. The Company has determined that the adoption of this guidance will not have a material effect on the consolidated financial statements.

**Note 3 – Business combination**

On March 5, 2020, ChaSerg consummated its business combination with GDI pursuant to the Merger Agreement. Immediately following the Business Combination, there were 50.8 million shares of common stock with a par value of $0.0001, and 11.3 million warrants outstanding.

GDI began operations in September 2006 to provide next-generation ecommerce platform solutions in the areas of search, analytics, and release automation to Fortune 1000 companies. Under ASC 805, *Business Combinations,* GDI was deemed the accounting acquirer, and the Business Combination was accounted for as a reverse recapitalization, with no goodwill or other intangible assets recorded in accordance with U.S. GAAP. ChaSerg was treated as the "acquired" company for financial reporting purposes. Accordingly, for accounting purposes, the Business Combination was treated as the equivalent of GDI issuing stock for the net assets of ChaSerg, accompanied by a recapitalization. The net assets of ChaSerg were stated at historical cost, with no goodwill or other intangible assets recorded. Reported shares and earnings per share available to holders of the Company's common stock, prior to the Business Combination, have been retroactively restated as shares reflecting the exchange ratio established in the Business Combination (approximately 1.685 GDH shares to 1.0 GDI share).

The following represents the aggregate consideration for the Business Combination:

| **(in thousands, except for per share amounts)** | | |
|---|---|---|
| Shares transferred at Closing | | 27,006 |
| Less: Post-Closing share adjustment | | (857) |
| Total shares transferred at Closing | | 26,149 |
| Value per share | $ | 10.19 |
| Total share consideration | $ | 266,459 |
| Plus: Cash transferred to GDI stockholders | | 130,000 |
| Closing merger consideration | $ | 396,459 |

The shares transferred at Closing included 4.3 million options to purchase the Company's shares that were vested, outstanding and unexercised, which were determined using 1.7 million vested options at Closing converted at an exchange ratio of approximately 2.48. Additionally, 0.4 million options to purchase the Company's common stock that were unvested, outstanding and unexercised were assumed by the Company, which were determined using 0.1 million unvested options at Closing converted at an exchange ratio of approximately 2.48.

In connection with the Closing, 0.1 million shares of common stock were redeemed at a price per share of approximately $10.21. See Note 14 for details of the Company's common stock prior to and subsequent to the Business Combination.

In connection with the Business Combination, the Company incurred direct and incremental costs of approximately $4.7 million, consisting of legal and professional fees, of which $4.1 million were related to equity issuance costs and recorded to Additional paid-in capital as a reduction of proceeds and $0.6 million were recorded to General and administrative expenses.

In connection with the Business Combination, all outstanding retention bonus obligations from a 2017 acquisition totaling $3.4 million were accelerated and paid in full to Grid Dynamics' personnel immediately prior to the Closing and were recorded in Cost of revenue and Operating expenses in the consolidated financial statements.

**Note 4 — Acquisitions**

**Mutual Mobile** — On December 23, 2022, the Company acquired 100% of the equity interest of the software company Mutual Mobile Inc. ("Mutual Mobile"). Founded in 2009, Mutual Mobile is based in the United States and India, offers end-to-end design and development of next-generation applications, combining mobile, augmented/virtual/mixed reality, and cloud edge / IoT practices. The acquisition of Mutual Mobile added approximately 180 employees to the Company's headcount. The acquisition will accelerate Company's strategic expansion into the India engineering market and further solidifies Grid Dynamics' commitment to global growth. The total purchase consideration is $16.1 million and consists of cash consideration of $12.8 million paid at closing, and fair value of the contingent consideration at the date of the acquisition of $3.3 million. The maximum amount of potential contingent cash consideration is $5.0 million. The contingent consideration is payable based on revenue and gross profit metrics to be achieved by Mutual Mobile within 12 months. The Company recorded a liability for the contingent consideration amount based on the Company's best estimate of the fair value of the expected payout. See Note 5 for further details on contingent consideration.

**Tacit —** On May 29, 2021, the Company acquired 100% of the equity interest of the global consultancy company Tacit Knowledge Inc. ("Tacit"). Founded in 2002, Tacit is a global provider of digital commerce solutions, serving customers across the UK, North America, Continental Europe, and Asia. The acquisition of Tacit added approximately 180 employees to the Company's headcount. The acquisition will augment the Company's service offerings and will strengthen its competitive position within the market. Additionally, the acquisition will also enable the Company to leverage near-shore capabilities with Tacit's presence in Mexico. The total purchase consideration is $37.6 million and consists of cash consideration of $33.6 million paid at closing, and fair value of the contingent consideration at the date of the acquisition of $4.0 million. The maximum amount of potential contingent cash consideration is $5.0 million. See Note 5 for further details on contingent consideration.

**Daxx —** On December 14, 2020, the Company completed its acquisition of Daxx Web Industries B.V. ("Daxx"), a Netherlands-based software development and technology consulting company. In addition to high-end software development, Daxx provides consulting services spanning agile process reengineering, lean development, and DevOps. The Company expects to gain market share and realize synergies through the acquisition of Daxx. The total purchase consideration is up to $23.3 million and included cash consideration of approximately $18.4 million and contingent consideration payable of up to $4.9 million. The contingent consideration is payable based on revenue and EBITDA metrics achieved by Daxx for 270 days following the date of the acquisition. The Company recorded a liability for the contingent consideration amount based the Company's best estimate of the fair value of the expected payout. See Note 5 for further details on contingent consideration.

The following table summarizes the estimated fair values of the assets acquired and liabilities assumed as updated for any changes as of December 31, 2022 for Daxx, Tacit and Mutual Mobile:

| | Daxx | Tacit | Mutual Mobile |
|---|---|---|---|
| Current assets | $ 4,527 | $ 9,145 | $ 4,982 |
| Property, plant and equipment | 352 | 466 | 132 |
| Intangible assets | 8,174 | 12,913 | 3,749 |
| Goodwill | 14,690 | 21,268 | 9,556 |
| Other noncurrent assets | — | — | 102 |
| **Total assets acquired** | **$ 27,743** | **$ 43,792** | **$ 18,521** |
| | | | |
| Accounts payable and accrued expenses | (4,718) | (3,675) | (1,576) |
| Deferred taxes | (2,639) | (2,500) | (875) |
| **Total liabilities assumed** | **$ (7,357)** | **$ (6,175)** | **$ (2,451)** |
| **Purchase price allocation** | **$ 20,386** | **$ 37,617** | **$ 16,070** |

Current assets acquired include cash and cash equivalents in the amount of $2.3 million, $3.0 million and $3.5 million for Daxx, Tacit and Mutual Mobile acquisitions, respectively.

The purchase price was assigned to assets acquired and liabilities assumed based on their estimated fair values as of the date of acquisition, and any excess was allocated to goodwill, as shown in the table above. Goodwill represents the value the Company expects to achieve through the implementation of operational synergies and growth opportunities as the Company expands its global reach. The goodwill for all acquisitions is not deductible for income tax purposes.

During the first quarter of 2021, the Company finalized the fair value of the assets acquired and liabilities assumed in the acquisition of Daxx with no additional adjustments recorded.

During the second half of 2021 the Company updated fair value of the contingent consideration for Tacit at acquisition date that resulted in the increase of goodwill for $0.7 million. During the fourth quarter of 2021, the Company finalized the fair value of the assets acquired and liabilities assumed in the acquisition of Tacit.

For the acquisition of Mutual Mobile, the estimated fair values of the assets acquired and liabilities assumed are provisional and based on the information that was available as of the acquisition date. The Company expects to complete the purchase price allocations as soon as practicable but no later than one year from the acquisition date.

The estimated fair value, useful lives and amortization methods of identifiable intangible assets as of the date of acquisition updated for any changes during the year ended December 31, 2022 are as follows:

| | Daxx | | Tacit | | Mutual Mobile | |
|---|---|---|---|---|---|---|
| | **Fair Value** | **Useful Life** | **Fair Value** | **Useful Life** | **Fair Value** | **Useful Life** |
| Customer relationships | $ 4,234 | 8 years | $ 11,737 | 12 years | $ 3,453 | 8 years |
| Trade name | 3,500 | 10 years | 1,176 | 4 years | 152 | 4 years |
| Non-compete agreements | 440 | 2 years | — | — | 144 | 2 years |
| **Total identified intangible assets** | **$ 8,174** | | **$ 12,913** | | **$ 3,749** | |

The Company used acquisition method of accounting for all acquisitions, and consequently, the results of operations for all acquisitions are reported in the consolidated financial statements from the dates of acquisition.

Revenues generated by acquired companies during the period of one year starting from acquisition date and included in the Company's consolidated statement of loss totaled $14.6 million, $44.9 million and $1.0 million during the years ended December 31, 2022, 2021 and 2020.

The following unaudited pro forma information presents the combined results of operations as if the acquisitions of Daxx, Tacit and Mutual Mobile had occurred at the beginning of the year preceding acquisition date. Pre-acquisition results of businesses acquired have been added to the Company's historical results. The pro forma results contained in the table below include adjustments for amortization of acquired intangibles, depreciation expense, related to the financing and related income taxes. Any potential cost savings or other operational efficiencies that could result from the acquisition are not included in these pro forma results.

These pro forma results have been prepared for comparative purposes only and are not necessarily indicative of the results of operations as they would have been had the acquisitions occurred on the assumed dates, nor are they necessarily an indication of future operating results.

| **(Unaudited)** | **2022** | **2021** | **2020** |
|---|---|---|---|
| Revenue | $ 321,969 | $ 219,312 | $ 149,219 |
| Net loss | $ (27,811) | $ (5,910) | $ (10,792) |
| Diluted loss per share | $ (0.40) | $ (0.10) | $ (0.24) |

**Note 5 — Fair value**

**Financial Assets and Liabilities Measured at Fair Value on a Recurring Basis**

The Company measures contingent consideration payable at fair value on a recurring basis using significant inputs that are not observable in the market. Fair value of the contingent consideration liability is based on the Monte-Carlo model which is primarily based on forecasts and discounted cash flow analysis. The Company believes its estimates and assumptions are reasonable, however, there is significant judgment involved. Changes in the fair value of contingent consideration payable primarily result from changes in the timing and amount of specific milestone estimates and changes in probability assumptions

with respect to the likelihood of achieving the various earnout criteria. These changes could cause a material impact to, and volatility in the Company's operating results.

During the years ended December 31, 2022, 2021 and 2020 the Company completed three acquisitions under which the Company committed to make a cash earnout payment subject to attainment of specific performance targets. The weighted average discount rates used to determine fair values of Daxx, Tacit and Mutual Mobile contingent considerations were 4.8%, 13.5% and 10.1%, respectively.

The Company records contingent consideration payable in Other current liabilities in its consolidated balance sheets. A reconciliation of the beginning and ending balances of Level 3 acquisition-related contingent consideration payable using significant unobservable inputs for the years ended December 31, 2022, 2021 and 2020 are as follows:

| | Amount |
|---|---|
| **Contingent consideration payable as of January 1, 2020** | **$ —** |
| Acquisition date fair value of contingent consideration payable - Daxx | 1,947 |
| **Contingent consideration payable as of December 31, 2020** | **$ 1,947** |
| Acquisition date fair value of contingent consideration payable - Tacit | 4,000 |
| Change in fair value of contingent consideration payable included in Other income/(expense) - Daxx | (14) |
| Change in fair value of contingent consideration payable included in Other income/(expense) - Tacit | 1,000 |
| **Contingent consideration payable as of December 31, 2021** | **$ 6,933** |
| Acquisition date fair value of contingent consideration payable - Mutual Mobile | 3,288 |
| Payment of contingent consideration - Daxx | (1,933) |
| Payment of contingent consideration - Tacit | (5,000) |
| **Contingent consideration payable as of December 31, 2022** | **$ 3,288** |

**Financial Assets and Liabilities Not Measured at Fair Value on a Recurring Basis**

Estimates of fair value of financial instruments not carried at fair value on a recurring basis are generally subjective in nature, and are determined as of a specific point in time based on the characteristics of the financial instruments and relevant market information. The Company's financial assets and liabilities, are generally short-term in nature; therefore, the carrying value of these items approximates their fair value. The following tables present the estimated fair values of the Company's financial assets and liabilities not measured at fair value on a nonrecurring basis as of the dates indicated:

| | | | Fair Value Hierarchy | | |
|---|---|---|---|---|---|
| | Balance | Estimated Fair Value | Level 1 | Level 2 | Level 3 |
| **December 31, 2022** | | | | | |
| **Financial Assets:** | | | | | |
| Cash equivalents: | | | | | |
| Money market funds | $ 205,787 | $ 205,787 | $ 205,787 | $ — | $ — |
| | | | | | |
| **December 31, 2021** | | | | | |
| **Financial Assets:** | | | | | |
| Cash equivalents: | | | | | |
| Money market funds | $ 13,050 | $ 13,050 | $ 13,050 | $ — | $ — |

**Non-Marketable Securities Without Readily Determinable Fair Values**

The Company holds investment in equity securities of a related party that do not have readily determinable fair values. This investment is recorded at cost and is remeasured to fair value based on certain observable price changes or impairment events as they occur. The carrying amount of the investment was $1.0 million as of December 31, 2022 and was classified as Other noncurrent assets in the Company's consolidated balance sheets. The Company did not hold investments in equity securities recorded at cost as of December 31, 2021.

**Note 6 — Prepaid expenses and other current assets**

The prepaid expenses and other current assets were as follows (in thousands):

| | As of December 31, | |
|---|---|---|
| | 2022 | 2021 |
| Prepaid expenses | $ 3,323 | $ 2,188 |
| Guarantee deposits placed | 2,295 | 345 |
| Value added tax receivable | 1,384 | 931 |
| Prepaid insurance | 925 | 921 |
| Other assets | 227 | 118 |
| **Total prepaid expenses and other current assets** | **$ 8,154** | **$ 4,503** |

**Note 7 — Property and equipment, net**

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

| | Estimated Useful Life (In Years) | As of December 31, | |
|---|---|---|---|
| | | 2022 | 2021 |
| Computers and equipment | 2 - 5 | $ 11,679 | $ 10,784 |
| Furniture and fixtures | 3 - 7 | 1,614 | 1,174 |
| Software | 3 - 5 | 1,053 | 513 |
| Leasehold improvements | 7 - 12 | 646 | 486 |
| Machinery and automobiles | 5 | 349 | 246 |
| | | $ 15,341 | $ 13,203 |
| Less: Accumulated depreciation and amortization | | (8,614) | (8,240) |
| | | **$ 6,727** | **$ 4,963** |
| | | | |
| Capitalized software development costs | 2 - 3 | $ 6,210 | $ 4,656 |
| Less: Accumulated amortization | | (4,722) | (3,450) |
| | | $ 1,488 | $ 1,206 |
| **Property and equipment, net** | | **$ 8,215** | **$ 6,169** |

During the years ended December 31, 2022 and 2021, the Company capitalized $1.6 million and $1.1 million of internally developed software costs, respectively.

Property and equipment depreciation and amortization expense for the years ended December 31, 2022, 2021, and 2020 was $4.2 million, $3.1 million, and $2.6 million, respectively.

**Note 8 — Goodwill and intangible assets, net**

Goodwill rollforward for the years ended December 31, 2022 and 2021 was as follows (in thousands):

| | | Amount |
|---|---|---|
| **Goodwill as of January 1, 2021** | **$** | **14,690** |
| Acquisition of Tacit | | 21,268 |
| **Goodwill as of December 31, 2021** | **$** | **35,958** |
| Acquisition of Mutual Mobile | | 9,556 |
| **Goodwill as of December 31, 2022** | **$** | **45,514** |

There were no impairment losses of goodwill recognized as of December 31, 2022 and 2021.

Intangible assets consist of the following (in thousands):

| | Estimated Useful Life (In Years) | As of December 31, | | | |
|---|---|---|---|---|---|
| | | 2022 | | 2021 | |
| Customer relationships | 8 - 12 | $ | 19,424 | $ | 15,971 |
| Tradenames | 4 - 10 | | 4,828 | | 4,676 |
| Non-compete agreements | 2 | | 584 | | 440 |
| | | $ | 24,836 | $ | 21,087 |
| Less: Accumulated amortization | | | (4,461) | | (1,990) |
| **Intangible assets, net** | | **$** | **20,375** | **$** | **19,097** |

Intangible assets amortization expense for the years ended December 31, 2022, 2021, and 2020 was $2.5 million, $2.0 million, $0.1 million, respectively.

Based on the carrying value of the Company's existing intangible assets as of December 31, 2022, the estimated amortization expense for the future years is as follows:

| Years ending December 31, (in thousands) | | Amount |
|---|---|---|
| 2023 | | 2,693 |
| 2024 | | 2,562 |
| 2025 | | 2,379 |
| 2026 | | 2,327 |
| 2027 | | 2,289 |
| Thereafter | | 8,125 |
| **Total** | **$** | **20,375** |

**Note 9 — Accrued expense and other current liabilities**

The components of accrued expense and other current liabilities were as follows (in thousands):

| | As of December 31, | |
|---|---|---|
| | 2022 | 2021 |
| Contingent consideration payable | $ 3,288 | $ 6,933 |
| Value added tax payable | 1,345 | 1,274 |
| Accrued expenses | 1,302 | 741 |
| Deferred revenue | 1,124 | 409 |
| Customer deposits | 754 | 798 |
| Other liabilities | 712 | 594 |
| **Total accrued expense and other current liabilities** | **$ 8,525** | **$ 10,749** |

As of December 31, 2022 and December 31, 2021 the Company had payable to its related party in the amount of $0.6 million in each of the respective years that was classified as Accrued expense and other current liabilities in unaudited condensed consolidated balance sheet.

**Note 10 — Debt**

**Revolving Credit Facility** — On March 15, 2022, the Company entered into a Credit Agreement (the "2022 Credit Agreement") by and among the Company, as borrower, the guarantors party thereto from time to time, the lenders party thereto from time to time, and JPMorgan Chase Bank, N.A., as administrative agent for the lenders (the "Agent"). The 2022 Credit Agreement provided for a secured multicurrency revolving loan facility with an initial aggregate principal amount of up to $30.0 million, with a $10.0 million letter of credit sublimit. The Company could increase the size of the revolving loan facility up to $50.0 million, subject to certain conditions and additional commitments from existing and/or new lenders. The 2022 Credit Agreement matures March 15, 2025.

At the Company's option, borrowings under the 2022 Credit Agreement accrued interest at a per annum rate based on either (i) the base rate plus a margin ranging from 1.0% to 1.5%, (ii) an adjusted term Secured Overnight Financing Rate ("SOFR") or adjusted the Euro Interbank Offer Rate ("EURIBOR") (based on one, three or six-month interest periods) plus a margin ranging from 2.0% to 2.5%, or (iii) an adjusted daily simple SOFR rate (or SONIA rate in the case of loans denominated in pounds sterling, or SARON rate in the case of loans denominated in Swiss francs), plus a margin ranging from 2.0% to 2.5%, in each case, with the applicable margin determined based on the Company's consolidated total leverage ratio. The Company was also obligated to pay other closing fees, administration fees, commitment fees and letter of credit fees customary for a credit facility of this size and type.

The Company's obligations under the 2022 Credit Agreement were required to be guaranteed by certain of its domestic subsidiaries meeting materiality thresholds set forth in the 2022 Credit Agreement. Such obligations, including the guaranties, are secured by substantially all of the personal property of the Company and the Company's subsidiary guarantors.

The 2022 Credit Agreement contains customary affirmative and negative covenants, including covenants limiting the ability of the Company and its subsidiaries to, among other things, incur debt, grant liens, undergo certain fundamental changes, make investments and acquisitions, make certain restricted payments, dispose of assets, enter into certain transactions with affiliates, and enter into burdensome agreements, in each case, subject to limitations and exceptions set forth in the 2022 Credit Agreement. The Company is also required to maintain compliance with a consolidated total leverage ratio, determined in accordance with the terms of the 2022 Credit Agreement. As of December 31, 2022, the Company was in compliance with all covenants contained in the 2022 Credit Agreement.

**Line of Credit** — In October, 2017, the Company entered into a loan agreement for a revolving line of credit facility (the "Line of Credit") with a borrowing capacity of $0.5 million. The Line of Credit was secured by substantially all of the Company's assets and was secured in order to provide credit support for a letter of credit facility and balances under the Company's credit cards. Borrowings under the Line of Credit were subject to a variable interest rate, based on changes in the Prime Rate, as calculated published by the Wall Street Journal. The Company closed the Line of Credit in March of 2022.

As of December 31, 2022 and December 31, 2021, respectively, the Company did not have any outstanding debt under the 2022 Credit Agreement and Line of Credit.

**Note 11 — Leases**

A major part of the Company's lease obligations is for office real estate. The Company may also lease corporate apartments, cars and office equipment. Payments on some of our leases may depend on index or rate, including Consumer Price Index. Such payments are included in the calculation of lease liability and assets at the commencement dates, all future changes are accounted as variable payments similar to other variable payments, such as common area maintenance, property and other taxes, utilities and insurance that are based on the lessor's cost.

The Company's leases have remaining lease terms ranging from 0.9 to 5.3 years. Certain lease agreements may include the option to extend or terminate before the end of the contractual term and are often non-cancelable or cancellable only by the payment of penalties. The Company includes these options in the lease term when it is reasonably certain that they will be exercised.

As of December 31, 2022, the Company had no finance leases. Operating lease expense is recorded on a straight-line basis over the lease term and lease costs were as follows (in thousands):

| | For the year ended December 31, 2022 |
|---|---|
| Operating lease cost | $ 3,268 |
| Variable lease cost | 43 |
| Short-term lease cost | 513 |
| **Total lease cost** | **$ 3,824** |

Lease expense under operating lease agreements for the year ended December 31, 2021 and December 31, 2020 was $4.2 million in both periods.

Supplemental information related to operating lease transactions is as follows (in thousands):

| | For the year ended December 31, 2022 |
|---|---|
| Lease liability payments | $ 2,888 |
| Lease right-of-use assets obtained in exchange for liabilities | $ 4,468 |
| Non-cash net decrease in lease assets due to lease modifications | $ (1,015) |
| Non-cash net decrease in lease liability due to lease modifications | $ 1,015 |

Weighted average remaining lease term and discount rate as of December 31, 2022 is as follows:

| | As of December 31, 2022 |
|---|---|
| Weighted average remaining lease term, in years | 3.77 |
| Weighted average discount rate | 5.0 % |

As of December 31, 2022, operating lease liabilities will mature as follows (in thousands):

| Years ending (in thousands) | Lease Payments |
|---|---|
| 2023 | 2,506 |
| 2024 | 2,606 |
| 2025 | 1,700 |
| 2026 | 1,180 |
| 2027 | 977 |
| Thereafter | 86 |
| **Total lease payments** | **9,055** |
| Less: imputed interest | (915) |
| **Total** | **$ 8,140** |

There were no material lease agreements signed with related parties as of December 31, 2022.

As of December 31, 2022, the Company had committed to payments of $0.3 million related to operating lease agreement that had not yet commenced as of December 31, 2022. These operating lease will commence in 2023 with lease term of two years. The Company does not have any material finance lease agreements that had not yet commenced.

**Note 12 — Revenue**

**Disaggregation of revenues**

The tables below present disaggregated revenues from contracts with customers by customer location, industries and contract-types. The Company believes this disaggregation best depicts how the nature, amount, timing and uncertainty of our revenues and cash flows are affected by industry, market and other economic factors. The Company has a single reportable segment for the years ended December 31, 2022, 2021 and 2020.

The following table shows the disaggregation of the Company's revenues by major customer location. Revenues are attributed to geographic regions based upon billed client location. Substantially all of the revenue in our North America region relates to operations in the United States.

| | For the years ended December 31, | | |
|---|---|---|---|
| | 2022 | 2021 | 2020 |
| Customer Location | (in thousands) | | |
| North America | $ 255,480 | $ 168,524 | $ 110,288 |
| Europe | 54,708 | 42,479 | 995 |
| Other | 294 | 277 | — |
| **Total Revenues** | **$ 310,482** | **$ 211,280** | **$ 111,283** |

The following table shows the disaggregation of the Company's revenues by main vertical markets for the years ended December 31, 2022, 2021 and 2020:

| | For the years ended December 31, | | |
|---|---|---|---|
| | 2022 | 2021 | 2020 |
| Vertical | (in thousands) | | |
| Retail | $ 99,681 | $ 61,717 | $ 33,975 |
| Tech, Media and Telecom | 98,334 | 67,689 | 45,362 |
| CPG/Manufacturing | 61,216 | 43,461 | 14,202 |
| Finance | 21,893 | 17,515 | 13,589 |
| Other | 29,358 | 20,898 | 4,155 |
| **Total Revenues** | **$ 310,482** | **$ 211,280** | **$ 111,283** |

The following table shows the disaggregation of the Company's revenues by contract types for the years ended December 31, 2022, 2021 and 2020:

| Contract Type | For the years ended December 31, 2022 | 2021 | 2020 |
|---|---|---|---|
| | (in thousands) | | |
| Time-and-material | $ 285,916 | $ 194,926 | $ 105,578 |
| Fixed-fee | 24,566 | 16,354 | 5,705 |
| **Total Revenues** | **$ 310,482** | **$ 211,280** | **$ 111,283** |

**Contract balances**

A contract asset is a right to consideration that is conditional upon factors other than the passage of time. A contract liability, or deferred revenue, consist of advance payments and billings in excess of revenues recognized. As of December 31, 2022 and 2021 the Company did not have material contract assets. Contract liabilities were $1.1 million and $0.4 million as of December 31, 2022 and 2021, respectively.

**Remaining performance obligation**

ASC Topic 606 requires that the Company disclose the aggregate amount of transaction price that is allocated to performance obligations that have not yet been satisfied as of December 31, 2022. This disclosure is not required for:

1) contracts with an original duration of one year or less, including contracts that can be terminated for convenience without a substantive penalty,

2) contracts for which the Company recognizes revenues based on the right to invoice for services performed,

3) variable consideration allocated entirely to a wholly unsatisfied performance obligation or to a wholly unsatisfied promise to transfer a distinct good or service that forms part of a single performance obligation in accordance with ASC 606-10-25-14(b), for which the criteria in ASC 606-10-32-40 have been met, or

4) variable consideration in the form of a sales-based or usage-based royalty promised in exchange for a license of intellectual property.

All of the Company's contracts met one or more of these exemptions as of December 31, 2022.

For the years ended December 31, 2022, 2021, and 2020 the Company recorded revenue from its related parties of $6.8 million, $4.3 million and $0.1 million respectfully. As of December 31, 2022 and 2021 accounts receivable from related parties were $0.9 million and $0.6 million, respectively.

**Note 13 — Income taxes**

Income before provision for income taxes consisted of the following:

| | For the years ended December 31, 2022 | 2021 | 2020 |
|---|---|---|---|
| | (in thousands) | | |
| United States | $ (23,490) | $ (11,530) | $ (18,084) |
| International | 3,037 | 9,078 | 2,872 |
| **Total income/(loss) before provision for income taxes** | **$ (20,453)** | **$ (2,452)** | **$ (15,212)** |

The federal and state income tax provision/(benefit) is summarized as follows:

| | For the years ended December 31, | | |
|---|---|---|---|
| | 2022 | 2021 | 2020 |
| | (in thousands) | | |
| **Current** | | | |
| Federal | $ 6,951 | $ 71 | $ 167 |
| State | 1,774 | 80 | 97 |
| International | 3,681 | 2,164 | 1,199 |
| Total current tax expense | $ 12,406 | $ 2,315 | $ 1,463 |
| **Deferred** | | | |
| Federal | $ (2,740) | $ 2,752 | $ (3,042) |
| State | (315) | (59) | (811) |
| International | (590) | 240 | (222) |
| Total deferred tax expense/(benefit) | $ (3,645) | $ 2,933 | $ (4,075) |
| **Total tax expense/(benefit)** | **$ 8,761** | **$ 5,248** | **$ (2,613)** |

Deferred income taxes reflect the net tax effects of (a) temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes, and (b) operating losses and tax credit carryforwards.

The tax effects of significant items comprising the Company's deferred taxes as of December 31, 2022 and 2021 are as follows:

| | As of December 31, | |
|---|---|---|
| | 2022 | 2021 |
| | (in thousands) | |
| **Deferred tax assets** | | |
| Stock-based compensation | $ 4,004 | $ 1,328 |
| Capitalized R&D | 1,056 | — |
| Accrued compensation | 931 | 818 |
| Lease liability | 465 | — |
| Net operating loss | 401 | 755 |
| State tax accrual | 243 | 13 |
| Allowance for bad debt | 105 | 74 |
| Credits | — | 195 |
| Total deferred tax assets | $ 7,205 | $ 3,183 |
| **Deferred tax liabilities** | | |
| Intangible assets | $ (5,207) | $ (4,599) |
| Lease right-of-use assets | (465) | — |
| Fixed asset basis | (291) | (153) |
| Other foreign DTLs | — | (24) |
| Total deferred tax liabilities | (5,963) | (4,776) |
| **Net deferred taxes** | **$ 1,242** | **$ (1,593)** |

The Company assessed its ability to realize the benefits of its domestic deferred tax assets ("DTA") by evaluating all available positive and negative evidence, objective and subjective in nature, including (1) cumulative results of operations in recent years, (2) sources of recent pre-tax income, (3) estimates of future taxable income, and (4) the length of net operating loss ("NOL") carryforward periods. The Company determined it is in a three-year cumulative taxable income position as of December 31, 2022 and expects to continue to be in a taxable income position in the long-term foreseeable future.

After an evaluation of all available qualitative and quantitative evidence, both positive and negative in nature, the Company concluded it is more likely than not that sufficient future taxable income will be generated to realize the benefits of its DTAs prior to expiration. As a result, the Company determined that no valuation allowance was needed as of December 31, 2022.

Net operating losses and tax credit carryforwards as of December 31, 2022 are as follows:

| | Amount (in thousands) | Expiration years |
|---|---|---|
| Net operating losses, federal | $ 1,466 | N/A |
| Net operating losses, state | $ 1,487 | 2034 |

The effective tax rate of the Company differs from the federal statutory rate as follows:

| | For the years ended December 31, | | |
|---|---|---|---|
| | 2022 | 2021 | 2020 |
| Statutory rate | 21.0 % | 21.0 % | 21.0 % |
| State tax | (7.5) | (0.4) | 3.8 |
| Permanent and other items | (1.0) | (10.8) | (2.8) |
| Stock-based compensation | 4.4 | 114.4 | 16.8 |
| Tax credits | 13.9 | 3.8 | 0.1 |
| Foreign rate differential | (11.9) | (4.9) | (2.6) |
| Foreign inclusion adjustments | (10.8) | (75.7) | (4.8) |
| Foreign intangible amortization | (2.3) | (15.7) | — |
| 162M limitation | (48.6) | (245.8) | (14.3) |
| **Total** | **(42.8)%** | **(214.1)%** | **17.2 %** |

As of December 31, 2022, the Company has approximately $1.2 million of unrecognized tax benefits. Approximately all of the unrecognized tax benefits, if recognized, would affect the effective tax rate. A reconciliation of beginning to ending amounts of unrecognized tax benefits is as follows:

| | For the years ended December 31, | | |
|---|---|---|---|
| | 2022 | 2021 | 2020 |
| | (in thousands) | | |
| Unrecognized tax benefit as of January 1 | $ 780 | $ 654 | $ 357 |
| Changes related to prior year tax positions | 168 | (50) | 1 |
| Changes related to current year tax positions | 203 | 176 | 296 |
| **Unrecognized tax benefit as of December 31** | **$ 1,151** | **$ 780** | **$ 654** |

Unrecognized tax benefits may change during the next twelve months for items that arise in the ordinary course of business. The Company does not anticipate a material change to its unrecognized tax benefits over the next twelve months.

The Company’s policy is to recognize interest expense and penalties related to income tax matters as tax expense. There was no interest or penalties accrued as of December 31, 2022 and 2021.

The Company is subject to income taxes in U.S. federal and various state, local and foreign jurisdictions. For federal and states, tax years subsequent to 2018 remain open to examination due to the carryover of unused net operating losses or tax credits. With respect to foreign jurisdictions, tax years 2015 and after remain open.

The Company's provision for income taxes does not include provisions for foreign withholding taxes associated with the repatriation of undistributed earnings of certain foreign subsidiaries that we intend to reinvest indefinitely in our foreign subsidiaries.

As part of the 2017 Tax Cuts and Jobs Act, Section 174 was amended to require that specified research and experimental (SR&E) expenditures be capitalized and amortized but delayed the effective date of this amendment to tax years beginning

January 1st, 2022 or later. The amortization period is 5 years for domestic research expenditures and 15 years for foreign research expenditures using a mid-year convention. The Company evaluated its R&D expenses both in the US and foreign jurisdictions and determined there were approximately $4.4 million of expenses worldwide subject to capitalization and treated as a temporary adjustment.

The President signed the CHIPS and Science Act and Inflation Reduction Act (“IRA”) into law on August 9 and 16, 2022, respectively. The IRA provides funding for climate and energy provisions. The new law includes a corporate alternative minimum tax, a stock buyback tax, and increased IRS enforcement funding. The CHIPS Act includes funding for the semiconductor industry in the US. Both the Inflation Reduction Act and the CHIPS and Science Act were enacted in 2022. Both CHIPS Act and IRA were not materially impactful on the Company’s tax positions.

California Assembly Bill 85 (AB 85) was signed into law by Governor Gavin Newsom on June 29, 2020. The legislation suspended the California Net Operating Loss deductions for 2020, 2021, and 2022 for certain taxpayers and imposes a limitation of California Tax Credits utilization for 2020, 2021, and 2022. The legislation disallowed the use of California Net Operating Loss deductions if the taxpayer recognizes business income and its income subject to tax is greater than $1.0 million. Additionally, business credits will only offset a maximum of $5.0 million of California tax liability. On February 9, 2022, Governor Gavin Newsom signed Senate Bill 113 (SB 113) into law, bringing an early end to California’s 2020-2022 NOLs deduction suspension, thus, allowing taxpayers to deduct NOLs on 2022 tax return. SB 113 also removed the $5.0 million business tax credit cap and updated the elective pass-through entity tax credit. As such, the Company utilized the California net operating loss generated in prior periods to offset California taxable income in 2022.

**Note 14 — Stockholders’ equity**

The following description summarizes the material terms and provisions of the securities that the Company has authorized.

*Common stock*

The Company is authorized to issue 110.0 million shares of common stock. At Closing, March 5, 2020, the Company had issued 50.8 million shares of common stock.

On September 12, 2022, the Company concluded a follow-on public offering of 6.6 million shares of its common stock. These amounts included shares sold upon exercise in full of the underwriters' option to purchase additional shares at a price of $17.5 per share. J.P. Morgan Securities, LLC and William Blair & Company, LLC acted as joint book-running managers for the offering. Needham & Company, LLC and Cantor Fitzgerald & Co. acted as co-managers for the offering. The net proceeds from this offering for the company, after deducting underwriting discounts and commissions were $109.5 million.

On July 6, 2021, the Company concluded a follow-on public offering of 11.6 million shares of its common stock, which included 5.5 million shares offered by Grid Dynamics and 6.1 million shares offered by certain selling stockholders, at a price to the public of $15.03 per share. These amounts included shares sold upon exercise in full of the underwriters' option to purchase additional shares. J.P. Morgan Securities, LLC, William Blair & Company, L.L.C. and Cowen and Company, LLC acted as joint book-running managers for the offering. Needham & Company, LLC and Cantor Fitzgerald & Co. acted as co-managers for the offering. The net proceeds from this offering for the company, after deducting underwriting discounts and commissions and estimated offering expenses, were $78.3 million. The Company did not receive any proceeds from the sale of the shares by the selling stockholders.

As of December 31, 2022 the Company had 74.2 million shares of common stock that were outstanding. Additionally, there were 2.6 million outstanding vested options to purchase the Company’s common stock.

*Preferred Stock*

As of December 31, 2019 GDI had 1.0 million shares of no par value shares of preferred stock outstanding convertible on a 1:1 basis with GDI’s common stock. At the Closing, the preferred stock outstanding was converted into common stock of the Company, par value $0.0001 per share. Therefore, as of December 31, 2020, 2021 and 2022 there was no preferred stock outstanding, respectively.

*Founders and underwriter shares subject to earnout provisions*

At the Closing, the Company had 1.2 million shares of common stock issued and outstanding subject to earnout provisions (the “Earnout Shares”). The Earnout Shares are subject to transfer restrictions and the owners of the Earnout Shares cannot sell, transfer or otherwise dispose of their respective shares until the respective earnout provisions have been achieved as described further below. The Earnout Shares have full ownership rights including the right to vote and receive dividends and other

distributions thereon. Dividends and other distributions are not subject to forfeiture in accordance with the Amended and Restated Sponsor Share Letter filed with the SEC on January 26, 2020. The Earnout Shares vesting conditions are as follows:

399,999; 400,000; and 400,001 Earnout Shares vest if the closing price of the Company's common stock on the principal exchange on which the securities are listed or quoted have been at or about $12.00; $13.50; and $15.00 per share, respectively, for 20 trading days (which need not be consecutive) over a thirty trading day period at any time.

The Earnout Shares automatically vest upon and immediately prior to any of the following events:

1) The Company engages in a "going private" transaction pursuant to Rule 13e-3 under the Exchange Act of 1934, as amended (the "Exchange Act"), or otherwise cease to be subject to reporting obligations under Sections 13 or 15(d) of the Exchange Act;

2) The Company's common stock ceases to be listed on a national securities exchange;

3) The Company is amalgamated, merged, consolidated or reorganized with or into another company or person (an "Acquiror") and as a result of such amalgamation, merger, consolidation or reorganization, fewer than 50.1% (whether by voting or economic rights) of the outstanding equity securities or other capital interests of the Acquiror or surviving or resulting entity is owned in the aggregate by the shareholders of the Company, directly or indirectly, immediately prior to such amalgamation, merger, consolidation or reorganization, excluding from such computation the interests of the Acquiror or any affiliate of the Acquiror;

4) The Company and/or its subsidiaries sell, assign, transfer or otherwise dispose of (including by bulk reinsurance outside of the ordinary course of business consistent with past practice), in one or a series of related transactions, all or substantially all of the assets of the Company and its subsidiaries, taken as a whole, to an Acquiror, fewer than 50.1% (whether by voting or economic rights) of the outstanding equity securities or other capital interests of which, immediately following such sale, assignment or transfer, are owned in the aggregate by the pre-transaction Company stockholders; or

5) If a Schedule 13D or Schedule 13G report (or any successor schedules, form or report), each as promulgated pursuant to the Exchange Act, is filed with the SEC disclosing that any person or group (as the terms "person" and "group" are used in Section 13(d) or Section 14(d) of the Exchange Act and the rules and regulations promulgated thereunder) has become the beneficial owner (as the term "beneficial owner" is defined in Rule 13d-3 or any successor rule or regulation promulgated under the Exchange Act) of a percentage of shares of the outstanding Company common shares as shall be greater than the percentage of such shares that, at the date of such filing, is held by any other person or group that held more than 50% of the voting or economic power of Company immediately after the Closing.

The Earnout Shares released for any event as noted above shall be subject to an equitable adjustment for share splits, share dividends, reorganizations, combinations, recapitalizations and similar transactions affecting the common stock after the Closing. Additionally, each such price threshold shall be reduced by the amount of the aggregate cash or the fair market value of any securities or other assets paid or payable by the Company to the holders of common stock, on a per share basis, as an extraordinary dividend or distribution following the Closing; provided that the declaration and payment of any such extraordinary dividend or distribution shall be subject to all applicable Laws. An "extraordinary dividend or distribution" means any dividend or distribution other than a regularly-scheduled dividend or distribution.

All of the Earnout Shares vested and are no longer subject to transfer restrictions during the years ended December 31, 2022 and 2021.

*Warrants*

On April 12, 2021, the Staff of the SEC issued the "Staff Statement on Accounting and Reporting Considerations for Warrants Issued by Special Purpose Acquisition Companies ("SPACs")" (the "Staff Statement"). The Staff Statement provided new guidance for all SPAC-related companies regarding the accounting and reporting for their warrants that could result in the warrants issued by SPACs being classified as a liability measured at fair value, with non-cash fair value adjustments reported in earnings at each reporting period. The Company reviewed the accounting for both its public warrants and private warrants following the Staff Statement. The Company determined that the accounting for its public warrants as equity was consistent with the Staff Statement. The Company determined that its private warrants should be accounted for as liabilities but that the related accounting errors during the year ended December 31, 2020 were not material to the required financial statements and disclosures included in its annual report on Form 10-K filed on March 5, 2021. The Company began accounting for the private warrants correctly in the beginning of 2021, as disclosed in its quarterly report on Form 10-Q filed on May 6, 2021.

As part of its initial public offering ("IPO"), ChaSerg issued 22.0 million units including one share of common stock and one-half of one redeemable warrant. Simultaneously with its IPO, ChaSerg issued 0.6 million private placement units to its sponsor underwriter, each consisting of one common share and one-half of one redeemable warrant. ChaSerg issued 0.1 million units as a result of the conversion of a working capital sponsor loan consisting of one common share and one-half of one redeemable warrant.

Each whole warrant entitled the holder to purchase one share of common stock at a price of $11.50. Each warrant was currently exercisable and was set to expire on March 5, 2025 (five years after the completion of the Business Combination), or earlier upon redemption or liquidation.

The Company was set to call the warrants for redemption at a price of $0.01 per warrant upon a minimum 30 days' prior written notice of redemption, if and only if, the reported last sale price of the Company's common stock had equaled or exceeded $18.00 per share for any 20 trading days within a 30-trading day period ending three business days before the Company sends the notice of redemption to the warrant holders; and if and only if, there was a current registration statement in effect with respect to the shares of common stock underlying such warrants.

From July 23, 2021 to July 26, 2021, 1.4 million public warrants were exercised with cash proceeds of $16.4 million. On July 28, 2021, the Company announced the redemption of its 2.8 million then outstanding public warrants. Any public warrants not exercised prior to 5:00 p.m., New York City time, on August 30, 2021 were redeemed at that time for $0.01 per warrant. The public warrants were exercisable at a price of $11.50 per share. Of the total of 2.8 million warrants outstanding on July 28, 2021, 2.8 million were exercised and cash proceeds generated from these exercised warrants were approximately $31.7 million. Pursuant to the terms of the agreements governing the rights of the holders of the public warrants, the Company redeemed the remaining unexercised and outstanding 0.02 million public warrants on August 30, 2021 for a redemption price of $0.01 per public warrant.

As of December 31, 2022 and 2021, there were no outstanding private or public warrants.

**Note 15 — Stock-based compensation**

*Stock-Based Compensation Expense*

Employee stock-based compensation cost recognized in the consolidated statements of loss and comprehensive loss was as follows:

| | Twelve months ended December 31, | | |
|---|---|---|---|
| | 2022 | 2021 | 2020 |
| | | (in thousands) | |
| Cost of revenue | $ 1,334 | $ 664 | $ 840 |
| Engineering, research, and development | 6,530 | 2,980 | 2,419 |
| Sales and marketing | 4,463 | 3,606 | 3,532 |
| General and administrative | 48,641 | 25,786 | 13,215 |
| **Total stock-based compensation** | **$ 60,968** | **$ 33,036** | **$ 20,006** |

Stock-based compensation costs recognized for the year ended December 31, 2020 included $2.5 million of compensation expense related to the acceleration of vesting of awards under the 2018 Stock Plan. Additional $3.4 million of stock-based compensation cost was recognized for the year ended December 31, 2021, in connection to partial vesting and early release of 2021 PSU that would otherwise have been recognized in the first quarter of 2022.

*Equity Plans*

**2018 Stock Plan -** Effective November 12, 2018, GDI adopted 2018 Stock Option Plan. Under the terms of the 2018 Stock Plan, certain options are subject to accelerated vesting in full or by an additional 12 months as a result of business combinations. The Company is no longer issuing any awards under the 2018 Plan. All of the awards issued pursuant to the 2018 Plan expire 10 years from the date of grant.

**2020 Equity Incentive Plan -** Effective March 5, 2020, our Board of Directors approved an equity incentive plan (the "2020 Plan"). The 2020 Plan permits the Company to grant a maximum aggregate amount of 16.3 million Incentive Stock Options, Non-Statutory Stock Options ("NSOs"), Restricted Stock, Restricted Stock Units ("RSUs"), Stock Appreciation Rights,

Performance Units ("PSUs"), and Performance Shares ("PSAs") (collectively, the "Awards") to employees, directors, and consultants of the Company. Our Board of Directors or any committee appointed by The Board has the authority to grant Awards. NSOs and RSUs issued under the 2020 Plan have the following vesting conditions: one-fourth of the NSOs will vest on one year after the grant date; and thereafter one-sixteenth of the NSOs will vest each subsequent three-month anniversary.

The Company made an accounting policy election to account for accounts for forfeitures when they occur.

RSUs granted to the Board in lieu of the quarterly payments vest immediately. PSUs are normally capped at 300% maximum payout and have the following performance goals:

1) Year-over-year growth in specified revenue for the Performance Period, expressed as a percentage increase over the previous fiscal year revenue ("Revenue Growth"), and

2) Contribution Margin for the Performance Period as a percentage of specified revenue for the Performance Period.

Fifty percent (50%) of the target number of performance shares granted will vest (if at all) based on the extent of achievement of Revenue Growth for the Performance Period and the remaining fifty percent (50%) of the target number of performance shares granted will vest (if at all) based on the extent of achievement of the Contribution Margin.

As of December 31, 2022, 7.1 million shares of stock remained available for grant under 2020 Plan. All of the awards issued pursuant to the 2020 Plan expire 10 years from the date of grant.

*Stock Options*

The grant date fair value of each NSO issued under both plans was estimated on the date of grant using the Black-Scholes-Merton option pricing model. The key assumptions for the years ended December 31, 2022 and 2021 are provided in the following table.

| | **For the years ended December 31,** | | |
|---|---|---|---|
| | **2022** | **2021** | **2020** |
| Dividend yield | —% | —% | —% |
| Expected volatility | 45% | 40% | 40% |
| Risk-free interest rate | 1.76%-4.25% | 0.81%-1.33% | 0.31%-0.80% |
| Expected term in years | 6.11 | 6.11 | 6.11 |
| Grant date fair value of common stock. | $12.15-$18.88 | $14.40-$29.07 | $6.86-$11.89 |

The Company used a zero percent dividend yield assumption for all Black-Scholes-Merton stock option-pricing calculations. Since the Company's shares were not publicly traded prior to the Closing and its shares were rarely traded privately, expected volatility is estimated based on the average historical volatility of peer group entities with publicly traded shares. The risk-free rate for the expected term of the options is based on the U.S. Treasury yield at the date of grant. Expected term is estimated using the simplified method, which takes into account vesting and contractual term. The simplified method is being used to calculate expected term instead of actual data due to a lack of relevant historical data.

*2018 Plan*

On March 5, 2020 the Company accelerated vesting of certain options due to completion of the Business Combination. It resulted in recognition of additional expenses of $2.5 million. Additionally part of options was modified and settled in cash pursuant to the terms of the Merger Agreement. The remaining portion of outstanding vested and unvested options were automatically assumed and converted into options to purchase the Company's common stock as of the Closing. Refer to Note 3 for details.

The following table presents details on conversion of the vested and unvested options:

| | Number of Options |
|---|---|
| **Options outstanding as of December 31, 2019** | **2,734,327** |
| Options converted to cash at Closing | (828,590) |
| Options forfeited | (18,940) |
| **Options outstanding as of March 5, 2020** | **1,886,797** |
| **Options outstanding converted as of March 5, 2020** | **4,678,011** |

The following table sets forth the activity for the 2018 Stock Plan for the years ended December 31, 2022 and 2021 after conversion:

| | Number of Options | Weighted Average Exercise Price | Aggregate Intrinsic Value, thousands | Weighted Average Contractual Term (in years) |
|---|---|---|---|---|
| **Options outstanding converted as of March 5, 2020** | **4,678,011** | **$ 3.54** | | |
| Options exercised | (28,057) | $ 3.54 | | |
| Options forfeited | (50,164) | $ 3.54 | | |
| **Options outstanding as of December 31, 2020** | **4,599,790** | **$ 3.54** | **$ 41,674** | |
| Options exercised | (2,668,191) | $ 3.54 | | |
| Options forfeited | (15,498) | $ 3.54 | | |
| **Options outstanding as of December 31, 2021** | **1,916,101** | **$ 3.54** | **$ 65,971** | |
| Options exercised | (286,842) | $ 3.54 | | |
| Options forfeited | (30,448) | $ 3.54 | | |
| **Options outstanding as of December 31, 2022** | **1,598,811** | **$ 3.54** | **$ 12,279** | **6.04** |
| **Options vested and exercisable as of December 31, 2022** | **1,551,925** | **$ 3.54** | **$ 11,919** | **6.02** |

The total unrecognized compensation expenses related to 2018 Plan options as of December 31, 2022 was $0.04 million, net of forfeitures, to be expensed on a straight-line basis over 0.69 years.

*2020 Plan*

The following table summarizes option activity for for the years ended December 31, 2022, 2021 and 2020 under the 2020 Plan:

| | Number of Options | Weighted Average Exercise Price | Aggregate Intrinsic Value, thousands | Weighted Average Contractual Term (in years) |
|---|---|---|---|---|
| **Options outstanding as of January 1, 2020** | **—** | **$ —** | **—** | |
| Options granted | 2,087,000 | $ 8.37 | | |
| Options forfeited | (144,600) | $ 8.13 | | |
| **Options outstanding as of December 31, 2020** | **1,942,400** | **$ 8.38** | **$ 8,200** | |
| Options granted | 766,250 | $ 21.61 | | |
| Options exercised | (112,087) | $ 8.20 | | |
| Options forfeited | (371,876) | $ 8.88 | | |
| **Options outstanding as of December 31, 2021** | **2,224,687** | **$ 12.86** | **$ 55,856** | |
| Options granted | 1,228,700 | $ 14.67 | | |
| Options exercised | (67,593) | $ 9.69 | | |
| Options forfeited | (382,183) | $ 16.40 | | |
| **Options outstanding as of December 31, 2022** | **3,003,611** | **$ 13.22** | **$ 3,883** | **8.26** |
| **Options vested and exercisable as of December 31, 2022** | **1,067,029** | **$ 10.47** | **$ 2,579** | **7.39** |

The total unrecognized compensation expenses related to 2020 Stock Plan options as of December 31, 2022 was $11.4 million, net of forfeitures, to be expensed on a straight-line basis over the remaining 2.8 years.

*Restricted Stock Units*

RSUs granted do not participate in earnings, dividends, and do not have voting rights until vested.

The following table summarizes activity of the Company's RSUs for the years ended December 31, 2022, 2021 and 2020:

| | Number of Shares | Weighted Average Grant Date Fair Value |
|---|---|---|
| **Unvested awards as of January 1, 2020** | **—** | **$ —** |
| Awards granted | 3,053,969 | $ 8.22 |
| Awards vested and released | (28,300) | $ 7.07 |
| Awards forfeited | (30,000) | $ 8.26 |
| **Unvested awards as of December 31, 2020** | **2,995,669** | **$ 8.38** |
| Awards granted | 61,539 | $ 24.35 |
| Awards vested and released | (1,272,136) | $ 8.32 |
| Awards forfeited | (291,157) | $ 8.14 |
| **Unvested awards as of December 31, 2021** | **1,493,915** | **$ 8.82** |
| Awards granted | 1,414,925 | $ 14.05 |
| Awards vested and released | (662,872) | $ 9.26 |
| **Unvested awards as of December 31, 2022** | **2,245,968** | **$ 11.99** |

The total unrecognized compensation expenses related to 2020 Stock Plan RSUs as of December 31, 2022 was $20.1 million to be expensed on a straight-line basis over 1.31 years.

*Performance Stock Units*

The following table summarizes activity of the Company's PSUs for the years ended December 31, 2022, 2021 and 2020:

| | Number of Shares | Weighted Average Grant Date Fair Value |
|---|---|---|
| **Unvested awards as of January 1, 2020** | **—** | **$ —** |
| Awards granted | 1,452,696 | $ 7.92 |
| **Unvested awards as of December 31, 2020** | **1,452,696** | **$ 7.92** |
| Awards granted | 1,478,765 | $ 15.68 |
| Awards vested | (2,787,001) | $ 11.64 |
| Awards forfeited | (32,375) | $ 15.61 |
| **Unvested awards as of December 31, 2021** | **112,085** | **$ 15.69** |
| Awards granted | 518,938 | $ 39.41 |
| Awards vested | (112,085) | $ 15.69 |
| **Unvested awards as of December 31, 2022** | **518,938** | **$ 39.41** |

The vesting of the PSUs with the performance factors based on 2020 results was certified by the Board of Directors for release on February 12, 2021. Approximately 0.7 million shares were issued upon vesting of the PSUs and 0.8 million shares were withheld to cover $10.8 million in tax obligations. The vesting of the PSUs granted for 2021 performance was partially certified by the Board of Directors with 250% performance factor for release on December 10, 2021. Approximately 0.7 million shares were issued upon vesting of the PSUs and 0.7 million shares were withheld to cover $25.4 million in tax obligations. The Board certified the achievement of 2021 PSUs with 271% performance factor and the remaining shares were released on February 25, 2022. Approximately 0.06 million shares were issued and 0.05 million shares were withheld to cover $0.8 million in tax obligations.

As of December 31, 2022 achievement of 2022 PSUs goals was estimated probable with 256% performance factor. Refer to Note 19 for details. The Company recognized $45.0 million compensation expense related to 2022 PSUs was recognized during the year ended December 31, 2022. The total unrecognized compensation expenses related to 2022 PSUs as of December 31, 2022 was $7.4 million to be expensed on over 0.16 years.

The fair value of vested RSUs and PSUs issued under the 2020 Plan (measured at the vesting date) for the years ended December 31, 2022, 2021 and 2020 was as follows:

| | For the years ended December 31, | | |
|---|---|---|---|
| | **2022** | **2021** | **2020** |
| | **(in thousands)** | | |
| RSUs | $ 9,982 | $ 25,702 | $ 207 |
| PSUs | $ 1,650 | $ 72,615 | $ — |

**Note 16 — Earnings per share**

The Company computed earnings per share (“EPS”) in conformity with the two-class method required for participating securities. Undistributed earnings allocated to participating securities are subtracted from net income in determining net income attributable to common stockholders. The Company allocated income between its common and preferred shareholders only for the periods the preferred stock was outstanding, which was January 1, 2020 to March 4, 2020 and May 6, 2019 to December 31, 2019. There was no preferred stock outstanding March 5, 2020 to December 31, 2020 and January 1, 2019 to May 6, 2019. As the Company was in a net loss position for the year ended December 31, 2020, the net loss was allocated entirely to common shareholders.

All participating securities are excluded from basic weighted-average number of common shares outstanding. Diluted EPS is computed by dividing net income available to common shareholders by the weighted-average number of shares of common stock outstanding during the period increased to include the number of additional shares of common stock that would have been outstanding if the potentially dilutive securities had been issued. Potentially dilutive securities include outstanding stock

options, restricted stock units, performance stock units, and convertible preferred securities. The dilutive effect of potentially dilutive securities is reflected in diluted EPS in order of dilution and by application of the treasury stock method and the if-converted method for stock-based compensation and convertible preferred securities, respectively.

The following table sets forth the computation of basic and diluted EPS of common stock as follows:

| | For the years ended December 31, | | |
|---|---|---|---|
| | 2022 | 2021 | 2020 |
| | (in thousands, except per share data) | | |
| **Numerator for basic and diluted loss per share** | | | |
| Net loss | $ (29,214) | $ (7,700) | $ (12,599) |
| **Denominator for basic and diluted loss per share** | | | |
| Weighted-average shares outstanding – basic and diluted | 69,197 | 58,662 | 44,737 |
| **Net loss per share** | | | |
| Basic | $ (0.42) | $ (0.13) | $ (0.28) |
| Diluted | $ (0.42) | $ (0.13) | $ (0.28) |

The denominator used in the calculation of basic and diluted EPS has been retrospectively adjusted for the recapitalization of the Company's shares as a result of the Business Combination as further described in Note 3.

The following potential dilutive common shares, presented based on weighted average potential shares outstanding during each period and adjusted for the stock split as a result of the transaction, were excluded from the calculation of diluted net loss per share attributable to common stockholders for the periods indicated because including them would have had an anti-dilutive effect:

| | For the years ended December 31, | | |
|---|---|---|---|
| | 2022 | 2021 | 2020 |
| | (in thousands) | | |
| Convertible preferred stock | — | — | 184 |
| Stock options to purchase common stock | 4,396 | 5,826 | 4,649 |
| Restricted stock units | 2,112 | 2,110 | 2,261 |
| Performance stock units | 1,338 | 1,301 | 961 |
| Warrants to purchase common stock | — | 3,657 | 9,326 |
| **Total** | **7,846** | **12,894** | **17,381** |

**Note 17 — Segment and geographic information**

In accordance with ASC Topic 280, *Segment Reporting*, the Company has determined it has one operating segment and one reportable segment. The chief operating decision maker assesses the Company's performance and allocates resources based on the Company's consolidated financial information. The Company's business activities have similar economic characteristics and are similar in all of the following areas: the nature of services, the type or class of customer for which they provide their services, and the methods used to provide their services.

***Geographic Information***

Significant portion of the Company’s revenues is generated within North America. Refer to Note 12 (“Revenue”) for details.

Long-lived assets include property and equipment, net of accumulated depreciation and amortization. Physical locations and values of the Company’s long-lived assets are summarized below:

| | As of December 31, | |
|---|---|---|
| | 2022 | 2021 |
| | (in thousands) | |
| Ukraine | $ 2,468 | $ 2,267 |
| United States | 1,317 | 715 |
| Serbia | 1,235 | 433 |
| Poland | 989 | 313 |
| Moldova | 605 | 305 |
| Armenia | 445 | — |
| India | 423 | — |
| Other | 733 | 2,136 |
| **Total** | **$ 8,215** | **$ 6,169** |

### Note 18 — Commitments and contingencies

#### Software subscription services agreement

The Company entered into a software subscription services agreement (the “SSA”) effective as of June 1, 2019. The SSA is non-cancelable for a term of 5 years from the effective date and renewable at the election of the Company. Payments under the terms of the SSA are due quarterly in advance. Total future minimum payments under the non-cancelable SSA are as follows:

| Years ending December 31, (in thousands) | Subscription Payments |
|---|---|
| 2023 | $ 324 |
| 2024 | 81 |
| **Total** | **$ 405** |

#### Litigation

The Company is subject to legal proceedings and claims that arise in the ordinary course of its business. Management evaluates each claim and provides for potential loss when the claim is probable to be paid and reasonably estimable. While adverse decisions in certain of these litigation matters, claims and administrative proceedings could have a material effect on a particular period’s results of operations, subject to the uncertainties inherent in estimating future costs for contingent liabilities, management believes that any future accruals with respect to these currently known contingencies would not have a material effect on the financial condition, liquidity or cash flows of the Company. There are no amounts required to be reflected in these consolidated financial statements related to contingencies.

### Note 19 — Subsequent events

The vesting of PSUs with the performance factors based on 2022 results was certified by the Board of Directors for release on February 21, 2023. Approximately 0.7 million shares were issued upon vesting of 2022 PSUs and 0.7 million shares were withheld to cover $8.0 million in tax obligations.

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

None.

## ITEM 9A. CONTROLS AND PROCEDURES

### Management's 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 Exchange Act Rule 13a-15(f). Our internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles.

An evaluation was conducted under the supervision and with the participation of management, including our Chief Executive Officer ("CEO") and Chief Financial Officer ("CFO"), of the effectiveness of our internal control over financial reporting based on the Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework). In accordance with guidance issued by the Securities and Exchange Commission, companies are permitted to exclude acquisitions from their final assessment of internal control over financial reporting for the first fiscal year in which the acquisition occurred. We have excluded Mutual Mobile Inc. ("Mutual Mobile") from our evaluation of the internal control over financial reporting. Mutual Mobile constituted 1.3% of total assets as of December 31, 2022 and 0.1% of total revenues for the year ended December 31, 2022.

Based on the results of this evaluation, our management concluded that our internal control over financial reporting was effective at the end of fiscal 2022. The effectiveness of our internal control over financial reporting as of December 31, 2022 has been audited by Grant Thornton LLP, an independent registered public accounting firm, as stated in their report included herein.

### Evaluation of Disclosure Controls and Procedures

An evaluation was conducted under the supervision and with the participation of management, including our CEO and CFO, of the effectiveness of our disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and Exchange Act Rules 15d-15(e)) as of December 31, 2022. Based on that evaluation, the CEO and CFO concluded that our disclosure controls and procedures were effective as of such date.

### Internal Control Over Financial Reporting

Our management, including the CEO and CFO, confirmed there were no changes in our internal control over financial reporting during the three months ended December 31, 2022 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

### Inherent Limitations on Effectiveness of Controls

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

## 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

The information called for by this item will be set forth in our Proxy Statement for the Annual Meeting of Stockholders to be filed with the SEC within 120 days of the fiscal year ended December 31, 2022 and is incorporated herein by reference.

Our board of directors has adopted a code of business conduct and ethics that applies to all of our employees, officers and directors, including our Chief Executive Officer, Chief Financial Officer and other executive and senior financial officers. The full text of our code conduct is posted on the investor relations page on our website which is located at https://ir.griddynamics.com. We will post any amendments to our code of conduct, or waivers of its requirements, on our website.

### ITEM 11. EXECUTIVE COMPENSATION

The information called for by this item will be set forth in our Proxy Statement and is incorporated herein by reference.

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

The information required by this item will be set forth in our Proxy Statement and is incorporated herein by reference.

### ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information, if any, required by this item will be set forth in our Proxy Statement and is incorporated herein by reference.

### ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required by this item will be set forth in our Proxy Statement and is incorporated herein by reference.

## PART IV.

## ITEM 15. EXHIBIT AND FINANCIAL STATEMENT SCHEDULES

(a) The following documents are filed as part of, or incorporated by reference into, this Annual Report on Form 10-K:

1. Financial Statements: See Item 8 of this Annual Report on Form 10-K.

2. Financial Statement Schedules: All schedules are omitted because they are not required, are not applicable or the information is included in the consolidated financial statements or notes thereto.

(b) The following exhibits are filed as part of, or incorporated by reference into, this Annual Report on Form 10-K:

| | | Incorporated by Reference | | | |
|---|---|---|---|---|---|
| **Exhibit Number** | **Description** | **Form** | **File No.** | **Exhibit** | **Filing Date** |
| 3.1 | Amended and Restated Certificate of Incorporation of the Registrant. | 8-K | 001-38685 | 3.1 | March 9, 2020 |
| 3.2 | Amended and Restated Bylaws of the Registrant. | 8-K | 001-38685 | 3.1 | May 6, 2020 |
| 4.1 | Specimen Common Stock Certificate of the Registrant. | 8-K | 001-38685 | 4.1 | March 9, 2020 |
| 4.2 | Description of Securities. | 10-K | 001-38685 | 4.2 | March 3, 2022 |
| 10.1+ | Grid Dynamics International, Inc. 2018 Stock Plan and Forms of Agreement. | 10-Q | 001-38685 | 10.16 | May 11, 2020 |
| 10.2+ | Grid Dynamics Holdings, Inc. 2020 Equity Incentive Plan. | 10-Q | 001-38685 | 10.1 | May 11, 2020 |
| 10.3+ | Grid Dynamics Holdings, Inc. 2020 Equity Incentive Plan - Form of Stock Option Agreement. | 8-K | 001-38685 | 10.2 | March 9, 2020 |
| 10.4+ | Grid Dynamics Holdings, Inc. 2020 Equity Incentive Plan - Form of Restricted Stock Unit Agreement. | 8-K | 001-38685 | 10.3 | March 9, 2020 |
| 10.5+ | Grid Dynamics Holdings, Inc. 2020 Equity Incentive Plan - Form of Restricted Stock Agreement. | 8-K | 001-38685 | 10.4 | March 9, 2020 |
| 10.6+ | Grid Dynamics Holdings, Inc. 2020 Equity Incentive Plan - Form of Performance Share Award Agreement. | 8-K | 001-38685 | 10.5 | March 9, 2020 |
| 10.7+ | Form of Director and Officer Indemnification Agreement. | 8-K | 001-38685 | 10.6 | March 9, 2020 |
| 10.8+ | Outside Director Compensation Policy. | 8-K | 001-38685 | 10.7 | March 9, 2020 |
| 10.9.1+ | Employment Agreement between the Registrant and Leonard Livschitz. | 8-K | 001-38685 | 10.8 | March 9, 2020 |
| 10.9.2+ | Amendments to Employment Agreement between the Registrant and Leonard Livschitz. | 10-Q | 001-38685 | 10.1 | August 4, 2022 |
| 10.10+ | Employment Agreement between the Registrant and Anil Doradla. | 8-K | 001-38685 | 10.9 | March 9, 2020 |

| | | | | | |
|---|---|---|---|---|---|
| 10.11+ | Executive Employment Agreement between the Registrant and Yury Gryzlov. | 10-Q | 001-38685 | 10.2 | August 4, 2022 |
| 10.12+ | Employment Agreement between the Registrant and Stan Klimoff. | 8-K | 001-38685 | 10.14 | March 9, 2020 |
| 10.13 | Form of Tax Indemnification Agreement of the Registrant. | 8-K | 001-38685 | 10.15 | March 9, 2020 |
| 10.14 | Amended and Restated Registration Rights Agreement, dated as of March 5, 2020, by and among the Company and certain security holders. | 10-Q | 001-38685 | 10.17 | May 11, 2020 |
| 10.15 | Waiver of Amended and Restated Registration Rights Agreement, dated as of April 17, 2020, by and among the Company and certain security holders. | S-1 | 333-238202 | 10.21 | May 12, 2020 |
| 10.16 | Stockholders' Agreement, dated as of November 13, 2019, by and among the Company and certain security holders. | 10-Q | 001-38685 | 10.18 | May 11, 2020 |
| 10.17 | Credit Agreement, dated as of March 15, 2022, by and among Grid Dynamics Holdings, Inc., as borrower, the guarantors party thereto from time to time, the lenders party thereto from time to time, and JPMorgan Chase Bank, N.A., as administrative agent for such lenders. | 8-K | 001-38685 | 10.1 | March 17, 2022 |
| 21.1* | List of subsidiaries of the Registrant. | | | | |
| 23.1* | Consent of Independent Registered Public Accounting Firm (Grant Thornton LLP). | | | | |
| 31.1* | Certification of the Chief Executive Officer pursuant to Exchange Act Rule 13a-14 as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. | | | | |
| 31.2* | Certification of the Chief Financial Officer pursuant to Exchange Act Rule 13a-14 as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. | | | | |
| 32.1† | Certification of the Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. | | | | |
| 32.2† | Certification of the Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. | | | | |
| 101.INS | XBRL Instance Document. | | | | |
| 101.SCH | XBRL Taxonomy Extension Schema Document. | | | | |
| 101.CAL | XBRL Taxonomy Extension Calculation Linkbase Document. | | | | |

| | |
|---|---|
| 101.DEF | XBRL Taxonomy Extension Definition Linkbase Document. |
| 101.LAB | XBRL Taxonomy Extension Label Linkbase Document. |
| 101.PRE | XBRL Taxonomy Extension Presentation Linkbase Document. |
| 104 | Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101) |

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* Filed Herewith

\+ Indicates a management contract or compensatory plan or arrangement

† The certifications attached as Exhibit 32.1 that accompany this Annual Report on Form 10-K are not deemed filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of the Registrant under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date of this Annual Report on Form 10-K, irrespective of any general incorporation language contained in such filing.

**ITEM 16. FORM 10-K SUMMARY**

None.

## SIGNATURES

Pursuant to the requirements 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.

**GRID DYNAMICS HOLDINGS, INC.**

Date: February 28, 2023

By: /s/ Leonard Livschitz
Leonard Livschitz
Chief Executive Officer
(*Principal Executive Officer*)

## POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Leonard Livschitz and Anil Doradla, and each one of them, as their true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for them and in their name, place and stead, in any and all capacities, to sign 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, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as they might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or any of them, or their substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

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

| Signature | Title | Date |
|---|---|---|
| /s/ Leonard Livschitz<br>Leonard Livschitz | Chief Executive Officer and Director<br>(*Principal Executive Officer*) | February 28, 2023 |
| /s/ Anil Doradla<br>Anil Doradla | Chief Financial Officer<br>(*Principal Financial and Accounting Officer*) | February 28, 2023 |
| /s/ Lloyd Carney<br>Lloyd Carney | Chairman of the Board and Director | February 28, 2023 |
| /s/ Eric Benhamou<br>Eric Benhamou | Director | February 28, 2023 |
| /s/ Marina Levinson<br>Marina Levinson | Director | February 28, 2023 |
| /s/ Michael Southworth<br>Michael Southworth | Director | February 28, 2023 |
| /s/ Weihang Wang<br>Weihang Wang | Director | February 28, 2023 |
| /s/ Yueou Wang<br>Yueou Wang | Director | February 28, 2023 |
| /s/ Shuo Zhang<br>Shuo Zhang | Director | February 28, 2023 |
| /s/ Patrick Nicolet<br>Patrick Nicolet | Director | February 28, 2023 |