

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-K**

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

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

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

Commission file number: 001-35418



EPAM SYSTEMS, INC.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of
incorporation or organization)

22-3536104

(I.R.S. Employer
Identification No.)

**41 University Drive
Newtown**

**Suite 202
Pennsylvania**

(Address of principal executive offices)

18940

(Zip code)

267-759-9000

(Registrant's telephone number, including area code)

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

Title of Each Class
Common Stock, par value \$0.001 per share

Trading Symbol
EPAM

Name of Each Exchange on which Registered
New York Stock Exchange

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 and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

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

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

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

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

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

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

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

As of June 30, 2022 the aggregate market value of the registrant's common stock held by non-affiliates of the registrant was approximately \$16,369,932,254 based on the closing sale price as reported on the New York Stock Exchange. Solely for purposes of the foregoing calculation, "affiliates" are deemed to consist of each officer and director of the registrant, and each person known to the registrant to own 10% or more of the outstanding voting power of the registrant.

As of February 10, 2023, there were 57,677,992 shares of common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

The registrant intends to file a definitive Proxy Statement for its 2023 annual meeting of stockholders pursuant to Regulation 14A within 120 days of the end of the registrant's fiscal year ended December 31, 2022. Portions of the registrant's Proxy Statement are incorporated by reference into Part III of this Annual Report on Form 10-K. With the exception of the portions of the Proxy Statement expressly incorporated by reference, such document shall not be deemed filed with this Annual Report on Form 10-K.

EPAM SYSTEMS, INC.
FORM 10-K
FOR THE YEAR ENDED DECEMBER 31, 2022

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In this annual report, "EPAM," "EPAM Systems, Inc.," the "Company," "we," "us" and "our" refer to EPAM Systems, Inc. and its consolidated subsidiaries.

"EPAM" is a trademark of EPAM Systems, Inc. All other trademarks, trade names and servicemarks used herein are the property of their respective owners.

Unless otherwise indicated, information contained in this annual report concerning our industry and the markets in which we operate, including our general expectations and market position, market opportunity and market share, is based on information from various sources (including industry publications, surveys and forecasts and our internal research), on assumptions that we have made, which we believe are reasonable, based on such data and other similar sources and on our knowledge of the markets for our services. The projections, assumptions and estimates of our future performance and the future performance of the industry in which we operate, are subject to a high degree of uncertainty and risk due to a variety of factors, including those described under "Item 1A. Risk Factors" and elsewhere in this annual report. These and other factors could cause results to differ materially from those expressed in the estimates included in this annual report.

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FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains estimates and forward-looking statements, principally in “Item 1. Business,” “Item 1A. Risk Factors” and “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations.” Our estimates and forward-looking statements are mainly based on our current expectations and estimates of future events and trends, which affect or may affect our businesses and operations. Those future events and trends may relate to, among other things, developments relating to the war in Ukraine and escalation of the war in the surrounding region, political and civil unrest or military action in the geographies where we conduct business and operate, difficult conditions in global capital markets, foreign exchange markets and the broader economy, including those caused by COVID-19, and the effect that these events may have on our revenues, operations, access to capital, profitability and customer demand. Although we believe that these estimates and forward-looking statements are based upon reasonable assumptions, they are subject to several risks, uncertainties and assumptions as to future events that may not prove to be accurate and are made in light of information currently available to us. Important factors, in addition to the factors described in this annual report, may materially and adversely affect our results as indicated in forward-looking statements. You should read this annual report and the documents that we have filed as exhibits hereto completely and with the understanding that our actual future results may be materially different from what we expect.

The words “may,” “will,” “should,” “could,” “expect,” “plan,” “anticipate,” “believe,” “estimate,” “predict,” “intend,” “potential,” “might,” “would,” “continue” or the negative of these terms or other comparable terminology and similar words are intended to identify estimates and forward-looking statements. Estimates and forward-looking statements speak only as of the date they were made and, except to the extent required by law, we undertake no obligation to update, to revise or to review any estimate and/or forward-looking statement because of new information, future events or other factors. Estimates and forward-looking statements involve risks and uncertainties and are not guarantees of future performance. As a result of the risks and uncertainties described above, the estimates and forward-looking statements discussed in this annual report might not occur and our future results, level of activity, performance or achievements may differ materially from those expressed in these forward-looking statements due to, including, but not limited to, the factors mentioned above, and the differences may be material and adverse. Because of these uncertainties, you should not place undue reliance on these forward-looking statements.

PART I

Item 1. Business

Company Background

EPAM is a leading digital transformation services and product engineering company, providing digital platform engineering and software development services to customers located around the world, primarily in North America, Europe, and Asia. We deliver business and technology transformation from start to finish, leveraging agile methodologies, proven customer collaboration frameworks, engineering excellence tools, hybrid teams and our award-winning proprietary global delivery platform. We leverage our software engineering heritage with strategic business and innovation consulting, design thinking, and physical-digital capabilities to deliver real business value to our customers. We support our customers while enabling them to reimagine their businesses through a digital lens. We focus on building long-term partnerships with our customers in a market that is constantly challenged by the pressures of digitization through our innovative strategy and scalable software solutions, integrated advisory, business consulting and experience design, and a continually evolving mix of advanced capabilities.

Our historical core competency, software development and product engineering services, combined with our work with global leaders in enterprise software platforms and emerging technology companies, created our foundation for the evolution of our other offerings, which include advanced technology software solutions, intelligent enterprise services and digital engagement. Our strategic acquisitions have expanded our geographic reach and service capabilities to include digital strategy and design, consulting and test automation and we expect our strategic acquisitions will continue to enable us to offer a broader range of services to our customers from a wide variety of locations.

Business Strategy

Our service offerings continuously evolve to provide more customized and integrated solutions to our customers where we combine best-in-class software engineering with customer experience design, business consulting and technology innovation services. We are continually expanding our service capabilities, moving beyond our traditional services into business consulting, design and physical product development and areas such as artificial intelligence, robotics and virtual reality.

EPAM's key service offerings and solutions include the following practice areas:

Engineering

Our engineering foundation underpins how we architect, build and scale next-generation software solutions and agile delivery teams. Our engineering expertise allows us to build enterprise technologies that improve business processes, offer smarter analytics and result in greater operational excellence through requirements analysis and platform selection, deep and complex customization, cross-platform migration, implementation and integration.

We use our experience, custom tools and specialized knowledge to integrate our customers' chosen application platforms with their internal systems and processes and to create custom solutions filling the gaps in their platforms' functionality in order to address the needs of the customers' users and customers. We address our customers' increased need for tighter enterprise integration between software development, testing and maintenance with private, public and mobile infrastructures through our infrastructure management services. These solutions cover the full lifecycle of infrastructure management including application, database, network, server, storage and systems operations management, as well as monitoring, incident notification and resolution. We deliver maintenance and support services through our proprietary distributed project management processes and tools, which reduce the time and costs related to maintenance, enhancement and support activities.

We have deep expertise and the ability to offer a comprehensive set of software product development services including product research, customer experience design and prototyping, program management, component design and integration, full lifecycle software testing, product deployment and end-user customization, performance tuning, product support and maintenance, managed services, as well as porting and cross-platform migration. We focus on software products covering a wide range of business applications as well as product development for multiple mobile platforms and embedded software product services.

Operations

We turn our customers' operations into intelligent enterprise hubs with our proprietary platforms, integrated engineering practices and smart automation. Developing a digital experience or product from end-to-end requires input and expertise from a variety of professionals with a broad range of skills. Our multi-disciplinary teams and global delivery framework come together to deliver well-rounded technology solutions that bring a competitive advantage to our customers. In addition to utilizing our dedicated delivery centers, which allow us to deploy key delivery talent, we work closely with leading companies in various industries to enable our customers to better leverage technology and address the simultaneous pressures of driving value for their consumer and offering a more engaging experience.

Optimization

We turn process optimization into real transformation by using process automation and cognitive techniques to transform legacy processes and deliver streamlined operations that increase revenues and reduce costs for our customers. We rely on our teams, methodologies and tools to optimize every stage of software delivery for improved quality and better features with each release.

We maintain a dedicated group of testing and quality assurance professionals with experience across a wide range of technology platforms and industry verticals, who perform software application testing, test management, automation and consulting services focused on helping customers improve their existing software testing and quality assurance practices. We employ industry-recognized and proprietary defect tracking tools and frameworks to deliver a comprehensive range of testing services that identify threats and close loopholes to protect our customers' business systems from information loss.

Consulting

Over the years, as a complement to our core engineering skills, we have added capabilities in business consulting to give us an agile, hybrid approach to the market. Our consulting services drive deeper relationships as we help our customers with larger and more complex challenges. Our integrated consulting teams – across Business, Experience, Technology and Data – apply a systems thinking mindset to get to the core of our clients' challenges. The functional business expertise of our professionals is supplemented by a thorough understanding of technology platforms and their interactions as well as application of data science and machine learning to deliver our best insights into our customers' business.

Our technical advisory services help customers stay ahead of current technology changes and innovate, where innovation beyond technology is also delivered through collaborative workshops, challenges and new organizational models.

Design

We apply design thinking to digital and service strategy, user experience and the product lifecycle with a focus on innovative design ideas and product development. Our digital and service design practice provides strategy, design, creative and program management services for customers looking to improve the user experience.

We are continuously looking to strengthen and grow our design and consulting practices as evidenced by our strategic acquisitions, which enhanced our consulting, physical design and product development capabilities, global product and design offerings, and our ability to deliver creative solutions, personalized experiences, and next generation digital products.

Industry Expertise

Strong industry-specific knowledge, backed by extensive experience merging technology with the business processes of our customers, allows us to deliver tailored solutions to various industry verticals. Our customers operate in five main industry verticals as well as a number of other emerging verticals in which we are increasing our presence.

Financial Services. We have significant experience working with global investment banks, commercial and retail lending institutions, credit card and payment solution companies, trading platforms, exchanges and brokerages, capital markets, wealth and investment management institutions, insurers and various other providers of financial services and financial technology. We assist these customers with challenges stemming from new regulations, compliance requirements, customer-based needs and risk management. Our financial services domain experts have been recognized with industry awards for engineering and deploying unique applications and business solutions that facilitate growth, competitiveness, regulatory compliance and customer interaction while driving cost efficiency and digital transformation.

Travel and Consumer. Our capabilities span a range of platforms, applications and solutions that businesses in travel and hospitality use to enhance their customers' experience, control operating expenses and efficiently manage their business. Some of the world's leading airlines, global hotel brands and online travel agencies rely on our expertise in creating high-quality tools for becoming more adaptive and addressing market challenges. Within this vertical, we also serve global, regional and local retailers, online retail brands and marketplaces, consumer goods manufacturers, as well as distributors and supply chain organizations. We deliver a wide range of services to these customers from complex system modernization, brand strategy and space design, digital marketing, payments and loyalty programs to inventory and order management, leading edge innovations in multi-channel sales and distribution. We have transformed organizations to use technology to expand and revolutionize their business models. Our services directly impact strategy, breakthrough products and compelling brand and employee experiences that help retailers outpace competitors.

Software and Hi-Tech. We provide complex software product development services to meet software and technology companies' constant need for innovation and agility. Some of the most prominent software brands in the world partner with us to build technology consulting, core engineering and full-scale integration capabilities. Through our extensive experience with many industry leaders in Hi-Tech research and development, software engineering and integration, we have developed proprietary internal processes, methodologies and information technology infrastructure, which give us an edge when it comes to serving customers in the Hi-Tech and Software product markets. Our services span the complete software development lifecycle for software product development using our comprehensive development methodologies, testing, performance tuning, deployment, maintenance and support.

Business Information and Media. We help our business information and media customers build products and solutions for all modern platforms including web media streaming, mobile information delivery, print to digital transformations and information discovery and search. Our solutions help customers develop new revenue sources, accelerate content management, delivery and monetization and reach broader audiences. We serve varied customers in this vertical including entertainment media, news and sports broadcasting companies, financial data and legal information providers, content distributors, educational materials publishers, game developers and advertising networks.

Life Sciences and Healthcare. In the Life Sciences category, we partner with global pharmaceutical, medical and scientific technology, biotechnology companies and retail pharmacies to deliver sophisticated scientific informatics and innovative enterprise technology solutions. Our personnel in Life Sciences leverage their vast technology expertise to offer deep scientific and mathematical knowledge to broad-based initiatives. Our Life Sciences solutions enable customers to speed research and accelerate time-to-market while improving collaboration, knowledge management and operational excellence. We help our customers in the Healthcare industry respond to changing regulatory environments and improve the quality of care while managing the cost of care through integrated health solutions for patients and providers and human-centered design. Our professionals deliver an end-to-end experience that includes strategy, architecture, development and managed services to customers ranging from the traditional healthcare providers to innovative startups.

Emerging Verticals. We also serve the diverse technology needs of customers in the energy, telecommunications, real estate, automotive and various manufacturing industries, as well as government customers. For these customers we develop tools such as plant management platforms, energy saving applications, inventory management mechanisms, connected vehicle platforms and undertake various industry specific aspects of intelligent automation and operational efficiency. These customers are included in our Emerging Verticals, which are further discussed in “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations” in Part II of this Annual Report on Form 10-K.

Customers

We maintain a geographically diverse client base in multiple industries. Our focus on delivering quality service is reflected in established relationships with many of our customers, with 54.7% and 26.4% of our revenues in 2022 coming from customers that had used our services for at least five and ten years, respectively. Our sustained growth and increased capabilities are furthered by both organic growth and strategic acquisitions. We continually evaluate potential acquisition targets that can expand our vertical-specific domain expertise, geographic footprint, service portfolio, client base and management expertise.

The following table shows revenues from the top five and ten customers in the respective year as a percentage of revenues for that year:

	% of Revenues for Year Ended December 31,		
	2022	2021	2020
Top five customers	16.4 %	18.2 %	22.0%
Top ten customers	23.8 %	25.7 %	30.9%

As we remain committed to diversifying our client base and adding more customers to our client mix, we expect revenue concentration from our top customers to continue to decrease over the long-term. During 2022 and 2021, we continued to diversify our customer base and decrease our concentration from our top customers, notably as compared to 2020 when, in response to the COVID-19 pandemic, the Company capitalized on demand for our services at our larger customers.

See “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations” in Part II of this Annual Report on Form 10-K for additional information related to revenues.

See Note 17 “Segment Information” in the notes to our consolidated financial statements in this Annual Report on Form 10-K for information regarding long-lived assets and customer revenues by geographic location as well as financial information related to our reportable segments.

Global Delivery Model

Our global delivery model and centralized support functions, combined with the benefits of scale from the shared use of fixed-cost resources, have created a delivery base whereby our applications, tools, methodologies and infrastructure allow us to seamlessly deliver services and solutions from our delivery centers to global customers across all geographies. Over the years we have developed a robust global delivery model that serves as a key competitive advantage, enabling us to better meet our customers’ diverse needs and to provide a compelling value proposition. We continuously grow our delivery platform both organically and through strategic acquisitions, which allows us to expand in existing and new locations and engage personnel with diversified skills that support our strategy. As of December 31, 2022, we had approximately 52,850 delivery personnel consisting mainly of our core information technology professionals as well as designers, consultants, product experts and scientists.

We serve our customers through on-site, off-site and offshore locations across the world and use strategically located delivery centers to offer a strong, diversified and cost-effective delivery platform. In the normal course of business, we may relocate or assist in relocating our employees as business needs arise, new office geographies are added or customer engagements require teams to be available in particular locations.

Historically, our largest delivery locations, measured by the number of delivery professionals, have been Ukraine, Belarus and Russia; however, the attack on Ukraine and its people by Russian forces beginning on February 24, 2022 shifted the way we operate in those locations. Our highest priority is the safety and security of our employees and their families in Ukraine as well as in the broader region, and we have continued to support relocating our employees to lower risk locations, both inside Ukraine and to other countries where we operate. The vast majority of our Ukraine employees are in safe locations and operating at levels of productivity consistent with those achieved prior to the war, and Ukraine remains our largest delivery location with the most delivery professionals, 10,500 as of December 31, 2022. Additionally, in response to the war in Ukraine, we continue to execute our business continuity plans and have sustained our hiring efforts across multiple locations in Central and Eastern Europe, Central and Western Asia, India, and Latin America. Our global delivery centers have sufficient resources, including infrastructure and capital, to support ongoing operations.

On April 7, 2022, EPAM announced the beginning of a phased exit of our operations in Russia in close collaboration with our employees, contractors, and customers. We have discontinued services to certain customers located in Russia and on September 7, 2022, we executed an agreement to sell substantially all of our remaining holdings in Russia to a third-party. As of December 31, 2022 and through the date of issuing this Annual Report, the long stop date of the agreement has passed and we are currently renegotiating the terms of that sale agreement as well as exploring other strategic alternatives. The timing and completion of a sale is uncertain and any sale would be subject to customary closing conditions, including regulatory approval by the Russian Government. See Note 2 “Impact of the Invasion of Ukraine” in the notes to our consolidated financial statements in this Annual Report on Form 10-K for more information regarding our Ukraine and Russia locations.

We expect to continue operating in Belarus while executing on our Belarus-specific business continuity plans. As of December 31, 2022, Belarus had approximately 4,500 delivery professionals. During 2022, a significant number of our employees in Russia and Belarus have relocated, thus increasing the size of our other delivery locations. Outside of Ukraine and Belarus, our largest delivery locations are India and Poland with approximately 5,900 and 5,650 delivery professionals, respectively, as of December 31, 2022.

Human Capital

Our employees are a key factor in our ability to grow our revenues and serve our customers. We believe the quality of our employees serves as a key point of differentiation in how we deliver a superior value proposition to our customers and investors. Therefore, it is critical to our success that we are able to identify, attract, hire and retain delivery professionals who are highly skilled in information technology to execute our services, as well as individuals with appropriate skills to fill our executive, finance, legal, human resources and other key management positions. To attract, retain and motivate our employees, we offer a challenging work environment, a culture that values the individual, ongoing skills development initiatives, attractive career advancement with continuous rotation and promotion opportunities while providing an environment and culture that rewards entrepreneurial initiative and performance. As of December 31, 2022, 2021 and 2020, we had approximately 59,300, 58,800, and 41,150 employees, respectively, of which approximately 52,850, 52,600, and 36,750 were delivery professionals, respectively.

Health, Safety, and Wellness: We invest in programs designed to improve the physical, mental, and social well-being of our employees so we can offer a safe, welcoming, and productive workplace that supports and enhances the work-life balance and wellness of our employees. Our health and safety programs are designed to comply with the regulations in the multiple cities and countries where we operate, but also provide working conditions that are compatible with the necessities of our delivery and administrative operations. For those employees who continue to work remotely and for those employees who choose or need to work in EPAM’s or our customer’s offices, we have implemented COVID-19-related safety measures, policies and technologies for their safety and the safety of their colleagues.

Recruitment, Training and Utilization: As an innovation-driven business in a competitive industry, our success depends on hiring the most talented employees, training and developing that talent, and deploying them to satisfy customer demand. We have dedicated full-time employees who oversee all aspects of our human capital management process including talent acquisition teams to locate and attract qualified and experienced professionals around the world. Our employees are a critical asset, necessary for our continued success and, therefore, we are continuously exploring new geographies, markets, and sources to locate talented personnel and present them with competitive compensation programs and educational opportunities.

We actively monitor how we utilize our delivery professionals and specialists to balance the needs of our customers with the availability, location, and skill sets of our employees and their need for diverse and challenging work. We manage utilization through strategic hiring and efficient staffing of projects for our customers. For the years ended December 31, 2022, 2021 and 2020, the utilization rates of our delivery professionals were approximately 75.8%, 78.7%, and 79.8%, respectively.

EPAM invests significant resources in training and developing our employees through our learning and development programs. Our largest learning and development investment has been directed towards developing our engineering talent, including targeted training programs, innovation labs, and significant internal production projects. Our employees consumed over 2.6 million learning hours in 2022. We deliver training and development opportunities and content through our unique learning ecosystem that promotes learning in the daily workflow to improve retention and productivity, and through dedicated events, including our week-long global learning event, which delivered approximately 130 online sessions.

We deliver learning and development content through proprietary platforms that are available to all of our employees. Our digital learning platform provides our employees with a recommendation engine that suggests courses and materials based on employee role, level, location and skills. Our electronic library platform makes books and publications available to all of our employees and we celebrate learning achievements through our recognition portal, where we promote our employees' learning accomplishments and employees can recognize each other for their teamwork, initiative, and unique, valuable skills.

Diversity and Inclusion: EPAM provides our customers with the skills of our talented personnel, which includes people with varied and diverse backgrounds and characteristics, to drive innovation and thought diversity in delivering our services. We believe that innovation comes from the unique perspectives, knowledge, and experiences of our global employees, so we strive to create diversity and inclusivity by supporting employee affinity groups, offering comprehensive language learning programs, highlighting and sharing our varied cultures, and empowering women and underrepresented groups to celebrate their achievements in the workplace.

Increasing diversity in executive and key operational leadership roles is an organizational priority that starts at the top of our organization. Women currently represent approximately 29% of the independent directors on our Board and we have developed programs to identify, retain, mentor, and supply a pipeline of qualified, diverse candidates at all levels of our company. Our programs include dedicating resources and personnel in our talent acquisition team to identify, recognize, and use diverse and inclusive sources for hiring, including associating with organizations that are focused on promoting underrepresented groups in engineering, IT, and business. Our Emerging Engineers Lab is an internship program for entry-level talent sourced from a variety of diverse technology programs across the U.S., Canada and Mexico. We also supplemented our mandatory annual training and global learning week event with materials geared towards eliminating unconscious bias in our professional interactions and recognizing the value of diversity in organizational success.

We encouraged the creation of employee affinity groups to build an inclusive and supportive culture at EPAM for groups of employees with similar backgrounds, interests, and identities to grow and thrive professionally. Recognizing that improving the number of underrepresented people in the software and technology industries starts with access to science, technology, engineering, and mathematics ("STEM") education, EPAM has created post-secondary STEM education certification programs and is investing in universities that offer degree programs. We also created the EPAM E-KIDS program where our employees volunteer their time to teach elementary school age children of any gender, race, or ethnic identity STEM concepts and introductory software coding skills. As of the end of 2022, we offered the EPAM E-KIDS program in 25 countries.

Employee Engagement and Retention: As a participant in the United Nations Global Compact, we are committed to respecting our employees' fundamental human rights at work. We believe that retaining skilled talent requires substantially more than meeting basic employment and labor rights, and that employees who are fairly compensated, feel supported in their career development, and are engaged with their employer are more likely to remain with that employer. That is why we strive to provide pay and benefits that demonstrate the value of our employees to us, including a competitive salary, flexible work-life balance, paid time off, health coverage, ongoing training programs, relocation options, and recognition opportunities for open-source software contributions.

Our career development programs create detailed and progressive training plans for our employees and help them choose from internal and external training options, mentoring programs, and hands-on opportunities to experience emerging technology areas. We designed our career development programs to enable our employees to develop their engineering skills, influence our culture, develop thought leadership, and introduce them to leaders in our industry. Our career development programs also give our employees opportunities to earn accreditation and relevant expertise in various technology fields, including software and project management certifications and recognition and credentialing from the industry's primary software and cloud services providers.

We focus on retaining and engaging top talent by hiring people with the skill sets our customers need and who also share our values so we can build long-term employee satisfaction, which is supported by our voluntary attrition rate of 13.8%, 13.3%, and 10.8% in 2022, 2021 and 2020, respectively. We endeavor to recruit for careers, not for short-term projects, and actively foster feedback from our employees so we can improve the EPAM employee experience. Receiving and learning from employee feedback plays a critical role in engaging and retaining our employees because it offers us insights on how we can improve our operations and enhance the skills of our employees. In our 2022 global employee survey, 91% of the employees who responded demonstrated their satisfaction with their employee experience by agreeing or strongly agreeing that they are proud to work at EPAM, with 84% of responders noting that they plan to have a long career with EPAM. Our focus on our employees' experience is recognized inside and outside of EPAM. In 2022, the employee experience we create was recognized with awards from a number of different organizations in North America, Europe, and Asia, and we were named on Newsweek's list of Top 100 Most Loved Workplaces for the second consecutive year.

Sales and Marketing

We market and sell our services through our senior management, sales and business development teams, account managers, and professional staff. Our client service professionals and account managers, who maintain direct customer relationships, play an integral role in engaging with current customers to identify and pursue potential business opportunities. This strategy has been effective in promoting repeat business and growth from within our existing customer base and we believe that our reputation as a reliable provider of software engineering solutions drives additional business from inbound requests and referrals. In addition to effective client management, our sales model also utilizes an integrated sales and marketing approach that leverages a dedicated sales team to identify and acquire new accounts.

We maintain a marketing team, which coordinates corporate-level branding efforts such as participation in and hosting of industry conferences and events as well as sponsorship of programming competitions. We have been recognized by many top global independent research agencies, such as Forrester and Gartner and by publications such as Newsweek, Forbes and Fortune. As a recognized leader, EPAM is listed among the top 15 companies in Information Technology Services on the Fortune 1000 and ranked four times as the top IT services company on Fortune's 100 Fastest Growing Companies list. EPAM is also listed among Ad Age's top 25 World's Largest Agency Companies for three consecutive years, and Consulting Magazine named EPAM Continuum a top 20 Fastest Growing Firm.

Competition

The markets in which we compete are changing rapidly and we face competition from multiple market participants such as other global technology solutions providers, specialized consulting firms, boutique digital companies and outsourcing companies based primarily in specific geographies with lower cost labor such as Eastern Europe, India and China. We believe that the principal competitive factors in our business include technical expertise and industry knowledge, end-to-end solution offerings, a reputation for and a track record of high-quality and on-time delivery of work, effective employee recruiting, training and retention, responsiveness to customers' business needs, ability to scale, financial stability and price.

We face competition from various technology services providers such as Accenture, Atos, Capgemini, Cognizant Technology Solutions, Deloitte Digital, DXC Technology, Endava, Genpact, GlobalLogic, Globant, Grid Dynamics, HCL Technologies, Infosys, Tata Consultancy Services, and Wipro, among others. Additionally, we compete with numerous smaller local companies in the various geographic markets in which we operate.

We believe that our focus on complex and innovative software product development solutions, our technical employee base, and our development and continuous improvement in process methodologies, applications and tools position us well to compete effectively in the future.

Quality Management and Information Security

We are continuously investing in systems, applications, tools and infrastructure to manage all aspects of our global delivery process in order to manage quality and information security risks, while providing control and visibility across all project lifecycle stages both internally and to our customers. We have developed sophisticated project management techniques and procedures facilitated through our proprietary project management tools, a web-based collaborative environment for software development, which we consider critical for visibility into project deliverables, resource management, team messaging and project-related documents. These tools promote collaboration and effective oversight, reduce work time and costs, and increase quality for our IT management and our customers.

We maintain, monitor, and improve processes and infrastructure to protect our, our customers' and their customers' confidential and sensitive information and allocate internal and external resources to assess and ensure information security, cybersecurity and data privacy. We have made significant investments in the appropriate people, processes and technology to establish and manage information security, confidentiality requirements, and laws and regulations governing our activities, such as the European Union data protection legal framework referred to as the General Data Protection Regulation ("GDPR"), the California Consumer Privacy Act and California Privacy Rights Act, and others.

We maintain a focus on adhering to stringent security, privacy and quality standards as well as internal controls which are compliant with ISO 27001, ISO 27701 and ISO 9001 standards. For certain services, EPAM obtains SOC1, SOC2, and/or SOC3 reports and shares them with our customers. These audits are performed by an independent auditor utilizing globally recognized attestation standards (ISAE 3402 and ISAE 3000). Our SOC reports, along with other certifications we hold, provide our customers with independent third-party assurance and validation of our information security, privacy management, quality management and general controls practices.

Corporate and Social Responsibility and Environmental, Social, and Governance Initiatives

We are committed to integrating positive social, environmental and ethical practices into our business operations, corporate governance, and strategy. This commitment is key to our continual development as a business and drives value for our employees, customers, business partners, the community and other stakeholders. We practice the principles established in our Code of Ethical Conduct by making positive contributions to the communities in which we operate and championing corporate social responsibility efforts.

Through our focused efforts in the areas of Education, Environment, and Community, we are committed to sharing the expertise and attributes of our highly skilled global workforce to effectively support the needs of, and positively add to the world at large and the communities where we work and live. By understanding our impact on local, regional and global communities, we strive to create positive change and opportunities in areas where it is needed most.

We believe responsible stewardship of the environment is critical, and we take this responsibility seriously. We continually strive to improve our environmental performance through implementation of sustainable development and environmental practices including recycling and upcycling electronics and computers, designing and releasing a carbon footprint calculator to our employees and the general public, and building new offices according to the conservation standards of the Leadership in Energy and Environmental Design rating system. EPAM was named one of Barron's 100 Most Sustainable Companies in 2022.

Intellectual Property

Protecting our intellectual property rights is important to our business. We have invested, and will continue to invest, in research and development to enhance our knowledge, create solutions for our customers, and continuously advance our information security. We rely on a combination of intellectual property laws, trade secrets, cybersecurity, and confidentiality obligations to protect our intellectual property. We require our employees, vendors and independent contractors to enter into written agreements upon the commencement of their relationships with us, which assign to us all deliverable intellectual property and work product made, developed or conceived by them in connection with their employment or provision of services and to keep any disclosed information confidential.

We also enter into confidentiality agreements with our customers and suppliers to protect information and maintain information security. Our agreements with our customers cover our use of their software systems and platforms as our customers usually own the intellectual property in the software, products, and solutions we develop for them. Furthermore, we often grant our customers a nonexclusive license to use relevant technologies in our pre-existing intellectual property portfolio, but only to the extent necessary to use the software or systems we develop for them. Our suppliers are generally bound by our supplier code of conduct, which imposes an obligation to protect our and our customers' intangible assets, including confidential information, personal information, and intellectual property, and to protect the security of those assets.

Regulations

Due to the industry and geographic diversity of our operations and services, our operations are subject to a variety of rules and regulations. Several foreign and U.S. federal and state agencies regulate various aspects of our business. See "Item 1A. Risk Factors — Risks Related to Regulation and Legislation and Risks Related to Information Security and Data Protection." We are subject to laws and regulations in the United States and other countries in which we operate, including export restrictions, economic sanctions, the Foreign Corrupt Practices Act ("FCPA") and similar anti-corruption laws and data privacy regulations. Compliance with these laws requires significant resources and non-compliance may result in civil or criminal penalties and other remedial measures.

Corporate Information

EPAM Systems, Inc. was incorporated in the State of Delaware on December 18, 2002. Our predecessor entity was founded in 1993. Our principal executive offices are located at 41 University Drive, Suite 202, Newtown, Pennsylvania 18940 and our telephone number is 267-759-9000. We maintain a website at <https://www.epam.com>. Our website and the information accessible through our website are not incorporated into this Annual Report on Form 10-K.

We make certain filings with the Securities and Exchange Commission (“SEC”), including our Annual Report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and all amendments and exhibits to those reports. These filings are available through the SEC’s website at <https://www.sec.gov> which contains reports, proxy and information statements, and other information regarding issuers that file electronically through the SEC’s EDGAR System. We also make such filings available free of charge through the Investor Relations section of our website, <https://investors.epam.com>, as soon as reasonably practicable after they are filed with the SEC.

Item 1A. Risk Factors

Our operations and financial results are subject to various risks and uncertainties, which could adversely affect our business, financial condition, results of operations, cash flows, and the trading price of our common stock. Listed below, not necessarily in order of importance or probability of occurrence, are the most significant risk factors applicable to us. Additionally, forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified. See “Forward-Looking Statements.”

Risks Related to Geopolitical Events

Instability in geographies where we have significant operations and personnel or where we derive substantial amounts of revenue could have a material adverse effect on our business, customers, service delivery, and financial results.

We have significant operations and personnel in Ukraine and Belarus, and continue to wind down our operations in Russia. Conflict in the region has had and could continue to have a material adverse effect on our business, customers, service delivery, and financial results.

Economic, civil, military, energy supply and political uncertainty exists and may increase in many of the regions where we operate and derive our revenues. In particular, as of December 31, 2022, approximately 15,000 of our global delivery, administrative and support personnel were based in Ukraine and Belarus, both of which are involved in or affected by the military action in Ukraine. We also have significant operations in countries bordering Ukraine and in countries allied with Russia in the nearby emerging market economies of Eastern Europe and Central Asia, which currently are, and in the future may be, adversely impacted by regional instability.

On February 24, 2022, Russian military forces attacked Ukraine, and sustained conflict and disruption in the region is ongoing. In addition to a significant number of personnel and operations in Ukraine, we also own an office building and lease office space in a number of cities in Ukraine, all or some of which may be damaged or destroyed as a result of the continued attacks against Ukraine. Any escalation of the conflict that includes Belarus or its military could jeopardize our personnel, facilities, and operations in Belarus. The impact to Ukraine, as well as actions taken by other countries, including arms shipments and new and stricter sanctions by Canada, the United Kingdom, the European Union and its member countries, the U.S. and other countries and organizations against officials, individuals, regions, and industries in Russia, the annexed portions of Ukraine, and Belarus, and each country’s potential response to such shipments, sanctions, tensions, and military actions has and could continue to have a material adverse effect on our operations. In order to protect against potential cyberattacks or other information security threats, some of our customers have implemented steps to block internet communications with Russia, Ukraine, and Belarus, which has had a material adverse effect on our ability to deliver our services from those locations. Our customers have and may continue to seek altered terms, conditions, and delivery locations for the performance of services, delay planned work or seek services from alternate providers, or suspend, terminate, fail to renew, or reduce existing contracts or services, all of which could have a material adverse effect on our financial condition. The material adverse effects from the conflict, enhanced sanctions activity, and counter-sanctions may continue to disrupt our delivery of services, has caused us to shift portions of our work occurring in the region to other countries, and may continue to restrict our ability to engage in certain projects or with certain customers in the region.

We discontinued services to certain customers located in Russia and we hope to complete the sale of substantially all of our holdings in Russia as soon as feasible, subject to customary closing conditions including regulatory approval. The completion of the sale of substantially all of our Russian holdings is not assured and we could incur additional significant charges in the future related to the exit or effort to exit our operations in Russia. We expect to continue operating in Belarus. A significant number of our employees in Russia and Belarus have relocated, and we expect more employees may relocate to delivery locations outside their countries in the future.

EPAM is actively monitoring and enhancing the security of our people and the stability of our infrastructure, including communications, physical assets, energy supply, and internet availability. We continue to execute our business continuity plans in response to developments as they occur and to protect the safety of our personnel and address potential impacts to our delivery infrastructure. To date we have not experienced any material interruptions in our infrastructure, utility supply or internet connectivity needed to support our customers. We have implemented additional contingency plans to relocate work and/or personnel to other geographies within our global footprint and add new locations, as appropriate. Increased operations, service delivery, and hiring in existing or new geographies, including in more developed economies, is likely to increase our expenses, especially compensation expenses for technology professionals in those markets, which could reduce the profitability of our business.

Our business continuity plans are designed to address known contingency scenarios to ensure that we have adequate processes and practices in place to protect the safety of our people and to handle potential impacts to our delivery capabilities. Our crisis management procedures, business continuity plans, and disaster recovery capabilities may not be effective at preventing or mitigating the effects of prolonged or multiple crises, such as civil unrest, military conflict, energy instability and a pandemic in a concentrated geographic area or in multiple geographies. The current events in the regions where we operate and where we derive a significant amount of our business pose security risks to our people, our facilities, our operations, and infrastructure, such as utilities and network services, and the further disruption of any or all of them could materially adversely affect our operations and financial results, cause additional volatility in the price of our stock, and reduce our profitability. We have no way to predict the progress or outcome of the military action in Ukraine or its impacts in Russia, Belarus, or the region because the conflict and government reactions are rapidly changing and beyond our control. Whether in these countries or in others in which we operate, prolonged civil unrest, political instability or uncertainty, military activities, broad-based sanctions or counter-sanctions, should they continue for the long term or escalate, could require us to further rebalance our geographic concentrations and could have a material adverse effect on our personnel, operations, financial results and business outlook.

Risks Related to COVID-19

Our results of operations have been adversely affected and could in the future be materially adversely affected by the COVID-19 pandemic.

The COVID-19 pandemic has contributed to significant volatility in the price of our common stock, created uncertainty in customer demand for, and ability to supply, our services and caused widespread economic disruption. The extent to which the coronavirus pandemic will continue to impact our business, operations and financial results will depend on numerous factors that are unknown and that we may not be able to accurately predict. Those factors include: the impact of the pandemic on economic activity, supply chains, and inflation; any interventions or government measures intended to mitigate economic and supply disruptions; our ability to sell and provide our products, services, and solutions, including as a result of travel restrictions and personnel availability; and bankruptcy or other insolvency procedures among our customers or suppliers. Broad disruptions in our customers' markets have disrupted and could continue to disrupt the demand for our products, services, and solutions and result in, among other things, termination of customer contracts, delays or interruptions in the performance of contracts, losses of revenues, reduced profitability, and an increase in bad debt expense. Remote working arrangements increase information security, cyber security and connectivity vulnerabilities and new coronavirus variants could affect our ability to deliver services to our customers because of an outbreak of illness among our employees, our customers' employees, or at a facility. To the extent the COVID-19 pandemic adversely affects our business and financial results, it may also have the effect of heightening many of the other risks described in this section of this Annual Report on Form 10-K for the year ended December 31, 2022, each of which could materially adversely affect our business, financial condition, results of operations and/or stock price.

Risks Related to Our Personnel and Growth

We may be unable to effectively manage our rapid growth or achieve anticipated growth, which could place significant strain on our management, systems, resources, and results of operations.

We have grown rapidly and significantly expanded our businesses over the past several years, both organically and through strategic acquisitions and investments. Our growth has resulted in part from managing larger and more complex projects for our customers, but consequently requires that we invest substantial amounts of cash in human capital and the infrastructure to support them, including training, administration, and facilities in existing and new geographies. Our rapid growth places significant demands on our management and our administrative, operational and financial infrastructure, and creates challenges, including:

- recruiting, training and retaining sufficiently skilled professionals and management personnel;
- planning resource utilization rates on a consistent basis and efficiently using on-site, off-site and offshore staffing;
- maintaining close and effective relationships with a larger number of customers in a greater number of industries and locations;
- controlling costs and minimizing cost overruns and project delays in delivery center and infrastructure expansion;
- effectively maintaining productivity levels and implementing process improvements across geographies and business units; and
- evolving our information security and our internal administrative, operational and financial infrastructure.

We intend to continue our expansion and pursue available opportunities for the foreseeable future. We have and will continue to invest in new lines of business, such as software development education and expanded consulting services. As we introduce new services, enter into new markets, and take on increasingly large and complex projects, our business may face new risks and challenges. If customers do not choose us for large and complex projects or we do not effectively manage those projects, our reputation may be damaged and our business and financial goals may not be realized. Direct-to-consumer offerings in the highly regulated education industry could result in increased liability and compliance costs. We need to generate business and revenues to support new investments and infrastructure projects. If the challenges associated with expansion negatively impact our anticipated growth and margins, our business, prospects, financial condition and results of operations could be materially adversely affected.

We must successfully attract, hire, train and retain qualified personnel to service our customers' projects and we must productively utilize those personnel to remain profitable.

Identifying, recruiting, hiring and retaining professionals with diverse skill sets across our broad geography of operations is critical to maintaining existing engagements and obtaining new business and has become more challenging in the present economic and labor climate. If we are unable to recruit skilled professionals and if we do not deploy those professionals and use our physical infrastructure and fixed-cost resources productively, our profitability will be significantly impacted. We must manage the utilization levels of the professionals that we hire and train by planning for future needs effectively and staffing projects appropriately while accurately predicting the general economy and our customers' need for our services. If we are unable to attract, hire, train, and retain highly skilled personnel and productively deploy them on customer projects, we will jeopardize our ability to meet our customers' expectations and develop ongoing and future business, which could adversely affect our financial condition and results of operations.

Competition for highly skilled professionals has intensified in the markets where we operate, and we may experience significant employee turnover rates due to such competition. Higher wage expectations driven by wage inflation could also create challenges for our recruiting efforts. If we are unable to retain professionals with specialized skills, our revenues, operating efficiency and profitability will decrease, as will our ability to meet emerging technological challenges. Cost reductions, such as reducing headcount, or voluntary departures that result from our failure to retain the professionals we hire, could negatively affect our reputation as an employer and our ability to hire personnel to meet our business requirements. Price increases resulting from increasing compensation to retain personnel could lead to a decline in demand for our services.

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.

In several countries, certain of our personnel and certain of the personnel of companies that we have acquired are retained as independent contractors. The criteria to determine whether an individual is considered an independent contractor or an employee are typically fact sensitive, vary by jurisdiction, and are subject to the interpretation of the applicable laws. If a government authority changes the applicable laws or a court makes any adverse determination with respect to independent contractors in general or one or more of our independent contractors specifically, we could incur significant costs, including for prior periods, for 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 and increase the difficulty in attracting and retaining personnel.

Our success depends substantially on the continuing efforts of our senior executives and other key personnel, and our business may be severely disrupted if we lose their services.

Our future success heavily depends upon the continued services of our senior executives and other key employees. If one or more of our senior executives or key employees are unable or unwilling to continue in their present positions, we may not be able to replace them easily or at all. If any of our senior executives or key personnel joins a competitor or forms a competing company, we may lose customers, suppliers, know-how and other key personnel to those competitors. If we are unable to attract new senior executives or key personnel due to the intense competition for talent in our industry, it could disrupt our business operations and growth.

If we fail to integrate or manage acquired companies efficiently and effectively, or if acquisitions do not perform to our expectations, our overall profitability and growth plans could be materially adversely affected.

Strategic acquisitions are part of our expansion strategy, but these transactions involve significant risks. Acquired companies may not advance our business strategy or achieve a satisfactory return on our investment and we may not be able to successfully integrate acquired employees and business culture, customer relationships, or operations. Acquisitions divert significant management attention and financial resources from our ongoing business. Furthermore, contracts between our acquired companies and their customers may lack terms and conditions that adequately protect us against the risks associated with the services we provide, and our acquired companies' business operations can expose us to potential liability before integration is complete. If not effectively managed, the disruption of our ongoing business, increases in our expenses, including significant one-time expenses and write-offs, and difficulty and complexity of effectively integrating acquired operations may adversely affect our overall growth and profitability.

Risks Related to Our Operations

Increases in wages, equity compensation, and other compensation expenses could prevent us from sustaining our competitive advantage, increase our costs, and result in dilution to our stockholders.

Wages for technology professionals in the emerging markets where we have significant operations and delivery centers are lower than comparable wages in more developed countries. However, wages in general, and in the technology industry in these countries in particular, have increased 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, ordinary course pay increases, or broader market forces, may also increase our cost of providing services and reduce our profitability if we are not able to pass those costs on to our customers or adjust prices when justified by market demand.

We expect to continue our practice of granting equity-based awards under our stock incentive plans and paying other stock-based compensation. The expenses associated with stock-based compensation may make issuing equity awards under our equity incentive plans less attractive to us, but if we reduce the amount or value of equity award grants, we may not be able to attract and retain key personnel. Conversely, if we grant more or higher value equity awards to attract and retain key personnel, the equity compensation expenses could materially adversely affect our results of operations. New regulations, volatility in our stock, and dilution to our stockholders could diminish our use and the value of our equity-based awards. This could put us at a competitive disadvantage or cause us to reconsider our compensation practices.

Our operations in emerging markets subject us to greater economic, financial, and banking risks than we would face in more developed markets.

Our significant operations in emerging market economies in Eastern Europe, Latin and South America, India, and certain other Asian countries are vulnerable to market and economic volatility to a greater extent than more developed markets, which presents risks to our business and operations. A majority of our revenues are generated in North America and Western Europe. However, most of our personnel and delivery centers are located in lower cost locations, including emerging markets. This exposes us to foreign exchange risks relating to revenues, compensation, purchases, capital expenditures, receivables and other balance-sheet items. As we continue to leverage and expand our global delivery model into other emerging markets, a larger portion of our revenues and incurred expenses may be in currencies other than U.S. dollars. Currency exchange volatility caused by economic instability or other factors could materially impact our results. See “Item 7A. Quantitative and Qualitative Disclosures About Market Risk.”

The economies of certain emerging market countries where we operate have experienced periods of considerable instability and have been subject to abrupt downturns. We have cash in banks in countries such as Belarus, Russia, Ukraine, Kazakhstan, Georgia, Armenia and Uzbekistan, where the banking sector generally does not meet the banking standards of more developed markets, bank deposits made by corporate entities are not insured, and the banking system remains subject to instability and changes in regulations that complicate business transactions. Russia’s invasion of Ukraine and the resulting sanctions and counter-sanctions against Russia have increased the difficulty in accessing cash held in Russian banks, severely limited our ability to move funds out of Russia, and prolonged or escalating military conflict and further sanctions or counter-sanctions could contribute to a banking crisis in these countries and in Belarus. A banking crisis, or the bankruptcy or insolvency of banks that receive or hold our funds may result in the loss of our deposits or adversely affect our liquidity and our ability to complete banking transactions in that region. In addition, some countries where we operate may impose regulatory or practical restrictions on the movement of cash and the exchange of foreign currencies within their banking systems, which would limit our ability to use cash across our global operations and increase our exposure to currency fluctuations. Emerging market vulnerability, and especially its impact on currency exchange volatility and banking systems, could have a material adverse effect on our business, financial condition and results of operations.

We face intense and increasing competition for customers and opportunities from onshore and offshore IT services and other consulting companies. If we are unable to compete successfully against competitors, pricing pressures or loss of market share could have a material adverse effect on our business.

The market for our services is highly competitive, 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 and China, as well as competition from large, global consulting and outsourcing firms and in-house IT departments of large corporations. Customers tend to engage multiple IT services providers instead of using an exclusive IT services provider, which could reduce our revenues or place significant downward pressure on pricing among competing IT services providers. Customers may prefer service providers that have more locations, more personnel, more experience in a particular country or market, or that are based in countries that are more cost-competitive or have the perception of being more stable than some of the emerging markets in which we operate.

Current or prospective customers may elect to perform certain services themselves or may be discouraged from transferring services from onshore to offshore service providers, which could harm our ability to compete effectively with competitors that provide services from within the countries in which our customers operate.

Some of our present and potential competitors may have substantially greater financial, marketing or technical resources; therefore, we may be unable to retain our customers or successfully attract new customers. Increased competition, our inability to compete successfully, pricing pressures or loss of market share could have a material adverse effect on our business.

Complying with a wide variety of legal requirements in the jurisdictions where we operate can create risks to our operations and financial condition, including liquidation of the subsidiaries that operate our major delivery centers.

Our global operations require us to comply with a wide variety of foreign laws and regulations, trade or foreign exchange restrictions or sanctions, inflation, unstable civil, political and military situations, labor issues, and legal systems that make it more difficult to enforce intellectual property, contractual, or corporate rights. Certain legal provisions in Belarus and Ukraine, where our local subsidiaries operate important delivery centers and employ a significant number of billable and support professionals, 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. Russia, where we are currently winding down our business operations, has similar legal provisions and additional restrictions on sales of assets and repatriation of cash. Belarus recently authorized government seizures of property and assets or the takeover of management of commercial organizations owned by or affiliated with specified foreign states if those states or their affiliated companies or actors commit actions deemed unfriendly to Belarus. If we fail to comply with certain requirements, including those relating to minimum net assets, governmental or local authorities can impose fines or seek the involuntary liquidation of our local subsidiaries in court, and creditors will have the right to accelerate their claims, demand early performance of legal obligations, and demand compensation for any damages. Involuntary liquidation of any of our subsidiaries could materially adversely affect our financial condition and results of operations.

The focus on environmental, social and governance topics, including commitments and disclosures we have made and may need to make, may result in additional operational costs and negative reputational impacts.

Customer, investor, employee, and regulatory interest in environmental, social, and governance (“ESG”) strategy and commitments has grown and is expected to continue to grow. As investor policy, regulations, and legislation related to ESG disclosure and climate change initiatives are adopted and implemented regionally and globally, we may be required to comply or potentially face limited access to certain markets, fines, or reputational injury. Such policies and laws may require disclosures and commitments that we are not able to meet, and regulations, treaties or initiatives in response to climate change could result in increased operational costs associated with environmental regulations and increased compliance and energy costs, each of which could harm our business and results of operations by increasing our expenses or requiring us to alter our operations. Additionally, if we are unable to meet our ESG goals and objectives, we may suffer reputational harm with investors, our customers, and current or potential employees.

Our operating results may be negatively impacted by the loss of certain tax benefits provided to companies in our industry by the governments of Belarus and other countries.

In Belarus, one local subsidiary is a member, along with other technology companies, of High-Technologies Park. Members have a full exemption from Belarus income tax and value added tax until 2049 and are taxed at reduced amounts on obligatory social contributions and a variety of other taxes. If the tax policies in Belarus or other countries where we operate are changed, terminated, not extended or comparable new tax incentives are not introduced, we expect that our operating expenses and/or our effective income tax rate could increase significantly, which could materially adversely affect our financial condition and results of operations. See “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations - Provision for Income Taxes.”

Risks Related to Regulation and Legislation

Existing policy and substantial changes to fiscal, political, regulatory and other federal policies may adversely affect our business and financial results.

Changes in general economic or political conditions in the United States, including a recession or a sovereign debt default, could adversely affect our business. U.S. policy with respect to a variety of issues, including international trade agreements, conducting business offshore, inflation mitigation, import and export regulations, tariffs and customs duties, foreign relations, immigration laws and travel restrictions, antitrust controls and enforcement, and corporate governance laws, could have a positive or negative impact on our business.

The majority of our professionals are offshore. Companies that outsource services to organizations operating in other countries remains a topic of political discussion in many countries, including the United States, which is our largest source of revenues. The United States Congress periodically proposes legislation that could impose restrictions on offshore outsourcing and on our ability to deploy employees holding U.S. work visas to customer locations, both of which could adversely impact our business. Such legislative measures could broaden restrictions on outsourcing by federal and state government agencies and contracts and impact private industry with tax disincentives, intellectual property transfer restrictions, and restrictions on the use or availability of certain work visas.

Some of our projects require our personnel to obtain 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 or other work authorizations 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.

We are subject to laws and regulations in the United States and other countries in which we operate, including export restrictions, economic sanctions, the FCPA, and similar anti-corruption laws. Compliance with these laws requires significant resources and non-compliance may result in civil or criminal penalties and other remedial measures.

We are subject to many laws and regulations that restrict our international operations, including laws that prohibit activities involving restricted countries, organizations, entities and persons that have been identified as unlawful actors or that are subject to U.S. sanctions. The U.S. Office of Foreign Assets Control, or OFAC, and other international bodies have imposed sanctions that prohibit us from engaging in trade or financial transactions with certain countries, businesses, organizations and individuals. We are also subject to the FCPA and anti-bribery and anti-corruption laws in other countries, all of which prohibit companies and their intermediaries from bribing government officials for the purpose of obtaining or keeping business or otherwise obtaining favorable treatment. We operate in many parts of the world that have experienced government corruption to some degree, and, in certain circumstances, strict compliance with anti-bribery laws may conflict with local customs and practices, although adherence to local customs and practices is generally not a defense under U.S. and other anti-bribery laws.

Our compliance program contains controls and procedures designed to ensure our compliance with the FCPA, OFAC and other sanctions, and laws and regulations. The continuing implementation and ongoing development and monitoring of our compliance program may be time consuming, expensive, and could result in the discovery of compliance issues or violations by us or our employees, independent contractors, subcontractors or agents of which we were previously unaware.

Any violations of these or other laws, regulations and procedures by our employees, independent contractors, subcontractors and agents, including third parties we associate with or companies we acquire, could expose us to administrative, civil or criminal penalties, fines or business restrictions, which could have a material adverse effect on our results of operations and financial condition and would adversely affect our reputation and the market for shares of our common stock and may require certain of our investors to disclose their investment in us under certain state laws.

Risks Related to Our Industry and Customers

We generally do not have long-term commitments from our customers, our customers may terminate contracts before completion or choose not to renew contracts, and we are not guaranteed payment for services performed under contract. A loss of business or non-payment from significant customers could materially affect our results of operations.

Our ability to maintain continuing relationships with our major customers and successfully obtain payment for our services is essential to the growth and profitability of our business. However, the volume of work performed for any specific customer is likely to vary from year to year, especially since we generally are not our customers' exclusive IT services provider and we generally do not have long-term commitments from customers to purchase our services. We may also fail to assess the creditworthiness of our customers adequately or accurately. Our customers' ability to terminate engagements with or without cause and our customers' inability or unwillingness to pay for services we performed makes our future revenues and profitability uncertain. Although a substantial majority of our revenues are generated from customers who also contributed to our revenues during the prior year, our engagements with our customers are typically for projects that are singular in nature. Therefore, we must seek to obtain new engagements when our current engagements end.

There are a number of factors relating to our customers that are outside of our control, which might lead them to terminate or not renew a contract or project with us, or be unable to pay us, including:

- financial difficulties;
- corporate restructuring, or mergers and acquisitions activity;
- our inability to complete our contractual commitments and invoice and collect our contracted revenues;
- change in strategic priorities or economic conditions, resulting in elimination of the impetus for the project or a reduced level of technology related spending;
- change in outsourcing strategy resulting in moving more work to the customer's in-house technology departments or to our competitors; and
- replacement of existing software with packaged software supported by licensors.

Termination or non-renewal of a customer contract could cause us to experience a higher-than-expected number of unassigned employees and thus compress our margins until we are able to reallocate our headcount. Customers that delay payment, request modifications to their payment arrangements, or fail to meet their payment obligations to us could increase our cash collection time, cause us to incur bad debt expense, or cause us to incur expenses in collections actions. The loss of any of our major customers, a significant decrease in the volume of work they outsource to us or price they are willing or able to pay us, if not replaced by new service engagements and revenues, could materially adversely affect our revenues and results of operations.

Our revenues are highly dependent on a limited number of industries, and any decrease in demand for outsourced services in these industries could reduce our revenues and adversely affect our results of operations.

A substantial portion of our customers are concentrated in five specific industry verticals: Financial Services; Software & Hi-Tech; Business Information & Media; Travel & Consumer; and Life Sciences & Healthcare. Our business growth largely depends on continued demand for our services from customers in these five industry verticals and other industries that we target or may target in the future, and also depends on trends in these industries to outsource the type of services we provide.

A downturn 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 could 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. Our customers in the Financial Services industry vertical that depend on the steady functioning of the global capital and credit markets may be particularly susceptible to the adverse effects of a threatened or actual U.S. sovereign debt default, which could cause those customers to reduce spending on our services. Other developments in the industries in which we operate may increase the demand for lower cost or lower quality IT services and decrease the demand for our services or increase the pressure our customers put on us to reduce pricing. We may not be able to successfully anticipate and prepare for any such changes, which could adversely affect our results of operations.

Furthermore, developments in the industries we serve could shift customer demand to new services, solutions or technology. If our customers demand new services, solutions or technologies, we may be less competitive in these new areas or may need to make significant investments to meet that demand. Additionally, as we expand into serving new industry verticals, our solutions and technology may be used by, or generally affect, a broader base of customers and end users, which may expose us to new business and operational risks.

If our pricing structures are based on inaccurate expectations and assumptions regarding the cost and complexity of performing our work, or if we are not able to maintain favorable pricing for our services, then our contracts could be unprofitable.

We face a number of risks when pricing our contracts and setting terms with our customers. Our pricing is highly dependent on our internal forecasts, assumptions and predictions about our projects, the marketplace, global economic conditions (including foreign exchange volatility and inflation) and the coordination of operations and personnel in multiple locations with different skill sets and competencies. Larger and more complex projects that involve multiple engagements or stages heighten those pricing risks because a customer may choose not to retain us for additional stages or delay forecasted engagements, which disrupts our planned project resource requirements. If our pricing for a project includes dedicated personnel or facilities and the customer were to slow or stop that project, we may not be able to reallocate resources to other customers. Our pricing and cost estimates for the work that we perform may include anticipated long-term cost savings that we expect to achieve and sustain over the life of the contract. Because of such inherent uncertainties, 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, such as defined performance goals, service levels, and completion schedules. The risk of underpricing our services or underestimating the costs of performing the work is heightened in fixed-price contracts and in contracts that require our customer to receive a productivity benefit as a result of the services performed under the contract. If we fail to accurately estimate the resources, time or quality levels required to complete such engagements, or if the cost to us of employees, facilities, or technology unexpectedly increases, we could be exposed to cost overruns. Any increased or unexpected costs, delays or failures to achieve anticipated cost savings, or unexpected risks we encounter in connection with the performance of the services, including those caused by factors outside our control, could make these contracts less profitable or unprofitable.

Our industry is sensitive to the economic environment and the industry tends to decline during general economic downturns. Given our significant revenues from North America and Europe, if those economies weaken or enter a recession, pricing for our services may be depressed and our customers may reduce or postpone their technology related spending significantly, which may in turn lower the demand for our services and negatively affect our revenues and profitability.

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

We have a long selling cycle for our services. Before potential customers commit to use our services, they require us to expend substantial time and resources educating them on the value of our services and our ability to meet their requirements. Therefore, our selling cycle is subject to many risks and delays over which we have little or no control, including our customers' decision to select another service provider or in-house resources to perform the services, the timing of our customers' budget cycles, and customer procurement and approval processes. If our sales cycle unexpectedly lengthens for one or more large projects, it could negatively affect the timing of our revenues and our revenue growth. In certain cases, we may begin work and incur costs prior to executing a contract, which may cause fluctuations in recognizing revenues between periods or jeopardize our ability to collect payment from customers.

Implementing our services also involves a significant commitment of resources over an extended period of time from both our customers and us. Our current and future customers may not be willing or able to invest the time and resources necessary to implement our services, and we may fail to close sales with potential customers despite devoting significant time and resources. Any significant failure to generate revenues or delays in recognizing revenues after incurring costs related to our sales or services processes could have a material adverse effect on our business.

If we are unable to adapt to rapidly changing technologies, methodologies and evolving industry standards, we may lose customers and our business could be materially adversely affected.

Rapidly changing technologies, methodologies and evolving industry standards are inherent in the market for our products and services. Our ability to anticipate developments in our industry, enhance our existing services, develop and introduce new services, provide enhancements and new features for our products, and keep pace with changes and developments are critical to meeting changing customer needs. Developing solutions for our customers is extremely complex and is expected to become increasingly complex and expensive in the future due to the introduction of new platforms, operating systems, technologies and methodologies. Our ability to keep pace with, anticipate or respond to changes and developments is subject to a number of risks, including that:

- we may not be able to develop new, or update existing services, applications, tools and software quickly or inexpensively enough to meet our customers' needs;
- we may find it difficult or costly to make existing software and products work effectively and securely over the internet or with new or changed operating systems;
- we may find it challenging to develop new, or update existing software, services, and products to keep pace with evolving industry standards, methodologies, technologies, and regulatory developments in the industries where our customers operate at a pace and cost that is acceptable to our customers; and
- we may find it difficult to maintain high quality levels with new technologies and methodologies.

We may not be successful in anticipating or responding to these developments in a timely manner, or if we do respond, the services, products, technologies or methodologies we develop or implement may not be successful in the marketplace. Further, services, products, technologies or methodologies that our competitors develop may render our services or products non-competitive or obsolete. Our failure to enhance our existing services and products and to develop and introduce new services and products to promptly address the needs of our customers could have a material adverse effect on our business.

If we cause disruptions to our customers' businesses, provide inadequate service, or breach contractual obligations, our customers may have claims for substantial damages against us and our reputation may be damaged. Our insurance coverage may be inadequate to protect us against such claims.

If our professionals make errors in the course of delivering services or we fail to meet contractual obligations to a customer, these errors or failures could disrupt the customer's business or expose confidential or personally identifiable information. Any of these events could result in a reduction in our revenues, damage to our reputation, and could also result in a customer terminating our engagement and making claims for substantial damages against us. Some of our customer agreements do not limit our potential liability for occurrences such as breaches of confidentiality and intellectual property infringement indemnity, and we cannot generally limit liability to third parties with which we do not have a contractual relationship. In some cases, breaches of confidentiality obligations, including obligations to protect personally identifiable information, may entitle the aggrieved party to equitable remedies, including injunctive relief.

Although we maintain professional liability insurance, product liability insurance, cyber incident insurance, commercial general and property insurance, business interruption insurance, workers' compensation coverage, and umbrella insurance for certain of our operations, our insurance coverage does not insure against all risks in our operations or all claims we may receive. Damage claims from customers or third parties brought against us or claims that we initiate due to the disruption of our business, information security systems, litigation, or natural disasters, may not be covered by our insurance, may exceed the limits of our insurance coverage, and may result in substantial costs and diversion of resources even if insured. Some types of insurance are not available on reasonable terms or at all in some countries in which we operate, and we cannot insure against damage to our reputation. The assertion of one or more large claims against us, whether or not successful and whether or not insured, could materially adversely affect our reputation, business, financial condition and results of operations.

A significant failure in our systems, telecommunications or IT infrastructure could harm our service model, which could result in a reduction of our revenues and otherwise disrupt our business.

Our service model relies on maintaining active and stable utility connections, voice and data communications, online resource management, financial and operational record management, customer service and data processing systems between our customer sites, our delivery centers and our customer management locations. Our business activities may be materially disrupted in the event of a partial or complete failure of any of these technologies or systems, which could be due to software malfunction, computer virus attacks, conversion errors due to system upgrades, damage from fire, earthquake, power loss, military action, telecommunications failure, unauthorized entry, government shutdowns, demands placed on internet infrastructure by growing numbers of users, increased bandwidth requirements or other events beyond our control. Our crisis management procedures, business continuity, and disaster recovery plans may not be effective at preventing or mitigating the effects of such disruptions, particularly in the case of multiple or catastrophic events. Loss of all or part of the infrastructure or systems for a period of time could hinder our performance or our ability to complete customer projects on time which, in turn, could lead to a reduction of our revenues or otherwise materially adversely affect our business and business reputation.

Our ability to generate and retain business could depend on our reputation in the marketplace.

Our services are marketed to customers and prospective customers based on a number of factors, including reputation. Our corporate reputation is a significant factor in our customers' evaluation of whether to engage our services. Our customers' perception of our ability to add value through our services is critical to the profitability of our engagements. We believe the EPAM brand name and our reputation are important corporate assets that help distinguish our services from those of our competitors and contribute to our efforts to recruit and retain talented employees.

Our corporate reputation is potentially susceptible to damage by actions or statements made by current or former customers and employees, competitors, vendors, adversaries in legal proceedings, government regulators, as well as members of the investment community and the media. There is a risk that negative information about us, even if untrue, could adversely affect our business, could cause damage to our reputation and be challenging to repair, could make potential or existing customers reluctant to select us for new engagements, and could adversely affect our recruitment and retention efforts. Damage to our reputation could also reduce the value and effectiveness of the EPAM brand name and could reduce investor confidence in us.

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 and competitive position.

We rely on a combination of copyright, trademark, patent, unfair competition and trade secret laws, as well as intellectual property assignment and confidentiality agreements and other methods to protect our intellectual property rights. Protection of intellectual property rights and confidentiality in some countries in which we operate may not be as effective as in other countries with more developed intellectual property protections.

We require our employees and independent contractors to assign to us all intellectual property and work product they create in connection with their employment or engagement. These assignment agreements also obligate our personnel to keep proprietary information confidential. If these agreements are not enforceable in any of the jurisdictions in which we operate, or are breached, we cannot ensure that we will solely own the intellectual property they create or that our proprietary information will not be disclosed. Our customers and certain vendors are generally obligated to keep our information confidential, but if these contractual obligations are not entered, or are breached or deemed unenforceable, our trade secrets, know-how or other proprietary information may be subject to unauthorized use, misappropriation or disclosure. Reverse engineering, unauthorized copying or other misappropriation of our and our customers' proprietary technologies, tools and applications could enable unauthorized parties to benefit from our or our customers' technologies, tools and applications without payment and may make us liable to our customers for damages and compensation, which could harm our business and competitive position.

We rely on our trademarks, trade names, service marks and brand names to distinguish our services and solutions from the services of our competitors. We have registered or applied to register many of these trademarks. Third parties may oppose our trademark applications, or otherwise challenge our use of our trademarks. In the event that our trademarks are successfully challenged, we could be forced to rebrand our services and solutions, which could result in loss of brand recognition, and could require us to devote additional resources to advertising and marketing new brands. Further, we cannot provide assurance that competitors will not infringe our trademarks, or that we will have adequate knowledge of infringement or resources to enforce our trademarks. If we do enforce our trademarks and our other intellectual property rights through litigation, we may not be successful and the litigation may result in substantial costs and diversion of resources and management attention.

We may face intellectual property infringement claims that could be time-consuming and costly to defend. If we fail to defend ourselves against such claims, we may lose significant intellectual property rights and may be unable to continue providing our existing services.

Our success largely depends on our ability to use and develop our technology, tools, code, methodologies, products, and services without infringing the intellectual property rights, including patents, copyrights, trade secrets and trademarks, of third parties. We may be unaware of intellectual property rights relating to our products or services that may give rise to potential infringement claims against us. If those intellectual property rights are potentially relevant to our service offerings, we may need to license those rights in order to continue to use the applicable technology, but the holders of those intellectual property rights may be unwilling to license those rights to us on commercially acceptable terms, if at all. There may also be technologies licensed to and relied on by us that if subject to infringement or misappropriation claims by third parties, may become unavailable to us if such third parties obtain an injunction to prevent us from delivering our services or using technology involving the allegedly infringing intellectual property.

We typically indemnify customers who purchase our products, services and solutions against potential infringement of third-party intellectual property rights, which subjects us to the risk and cost of defending the underlying infringement claims. These claims may require us to initiate or defend protracted and costly litigation on behalf of our customers, regardless of the merits of these claims, and our indemnification obligations are often not subject to liability limits or exclusion of consequential, indirect or punitive damages. Intellectual property litigation could also divert our management's attention from our business and existing or potential customers could defer or limit their purchase or use of our software product development services or solutions until we resolve such litigation. If any of these claims succeed, we may be forced to pay damages on behalf of our customers, redesign or cease offering our allegedly infringing products, services, or solutions, or obtain licenses for the intellectual property that such services or solutions allegedly infringe. If we cannot obtain all necessary licenses on commercially reasonable terms, our customers may be forced to stop using our services or solutions.

Any of these actions, regardless of the outcome of litigation or merits of the claim, could damage our reputation and materially adversely affect our business, financial condition and results of operations.

Risks Related to Information Security and Data Protection

Security breaches and other disruptions to network security could compromise our information and expose us to liability, which would cause our business and reputation to suffer.

In the ordinary course of business, we collect, store, process, transmit, and view sensitive or confidential data, including intellectual property, proprietary business information and personally identifiable information belonging to us, our customers, our respective employees, and other end users. This information is stored in our data centers and networks or in the data centers and networks of third-party providers. Physical security and the secure storage, processing, maintenance and transmission of this information is critical to our operations and business strategy. Some of our customers seek additional assurances for the protection of their sensitive information, including personally identifiable information, and will seek greater liability in the event that their sensitive information is disclosed. At times, to achieve commercial objectives, we may agree to greater liability exposure to such customers. In addition, government regulators may impose fines, penalties, and other civil or criminal consequences for security breaches and inadequate information security. Other parties, such as our customers' customers, may have a private right of action to seek damages for any information security breach on an individual or collective basis.

Individuals, including employees, contractors and other third parties in our information security supply chain, as well as groups and larger, sophisticated collections of hackers, such as state-sponsored organizations, all pose threats to our information security. These individual, group, and organized actors have a variety of methods at their disposal, including deploying malicious software, exploiting vulnerabilities in hardware, software, or infrastructure, using social engineering or deceptive techniques, and executing coordinated attacks to compromise our services, disrupt our operations or gain access to our networks and data centers.

Threats to information security evolve constantly and are increasingly sophisticated and complex, which makes detecting and successfully defending against them more difficult. Undetected vulnerabilities may persist in our network environment over long periods of time and could come from or spread to the networks and systems of our suppliers and customers. We frequently update and improve our information security environment and assess and adopt new methods, devices, and technologies, but our policies and information security controls may not keep pace with emerging threats. We have in the past been subject to cyberattacks and expect to continue to be the target of malicious attacks. Despite our multiple security measures, any breach of our facilities, network, or information security defenses compromises the information stored in those locations and allows the accessed information to be held for ransom, publicly disclosed, misappropriated, lost or stolen. Such a breach, misappropriation, or disruption could also disrupt our operations and the services we provide to customers, damage our reputation, and cause a loss of confidence in our products and services, as well as require us to expend significant resources to protect against further breaches and to rectify problems caused by these events. Any such access, disclosure or other loss of information could result in legal claims or proceedings, liability under applicable laws, and regulatory penalties and could adversely affect our business, revenues and competitive position.

Development and deployment of measures to protect our information security or that of our customers may be inadequate and could adversely affect our results of operations.

To defend against information security threats internally, at our third-party providers, and on our customers' systems, we must continuously engineer or purchase more secure products and services, enhance security and reliability features, improve deployment and compliance with software updates, assess and develop mitigation strategies and technologies to help secure information, hire information security specialists, and maintain a security infrastructure that protects our network, products, and services, and the software we build for our customers. We must also educate our employees, contractors, and customers about the need to effectively use security measures. Our customers, particularly those in the Financial Services and Life Sciences & Healthcare industry verticals, may have enhanced or particular security requirements which we must address in our engineering and development services.

The cost of information security measures, either to protect our information or the information of our customers, could reduce our profitability. Actual or perceived security vulnerabilities in our software and services, even if those vulnerabilities are the result of hardware or software developed by third parties, could harm our reputation and lead customers to use our competitors, reduce or delay future purchases of our services, or to seek compensation or damages.

Changes in privacy and data protection regulations could expose us to risks of noncompliance and costs associated with compliance.

EPAM is subject to the GDPR, the substantially similar U.K. GDPR, the privacy laws of California and other U.S. states, and the privacy laws of the countries where we operate, each of which imposes significant restrictions and requirements relating to the processing of personal data. These and other state, national and international data protection laws that are or will soon be effective are more burdensome than historical privacy standards, especially in the United States. California's privacy laws, the U.K. GDPR, and GDPR each established complex legal obligations that organizations must follow with respect to the processing of personal data, including a prohibition on the transfer of personal information to third parties or to other countries, and the imposition of additional notification, security and other control measures.

Enforcement actions taken by data protection authorities, as well as audits or investigations by one or more individuals, organizations, or foreign government agencies could result in penalties and fines for non-compliance or direct claims against us in the event of any loss or damage as a result of a breach of these regulations. The burden of compliance with additional data protection requirements may result in significant additional costs, complexity and risk in our services and customers may seek to shift the potential risks resulting from the implementation of data privacy legislation to us. We are required to establish processes and change certain operations in relation to the processing of personal data as a result of privacy laws, which may involve substantial expense and distraction from other aspects of our business.

Undetected software design defects, errors or failures may result in loss of business or in liabilities that could materially adversely affect our business.

Our software development solutions involve a high degree of technological complexity, have unique specifications and could contain design defects or software errors that are difficult to detect or correct. Errors or defects may result in the loss of current customers, revenues, market share, or customer data, a failure to attract new customers or achieve market acceptance and could divert development resources and increase support or service costs. We cannot provide assurance that, despite testing by our customers and us, errors will not be found in the software products we develop or the services we perform. Any such errors could result in claims for damages against us, litigation, and reputational harm that could materially adversely affect our business.

General Risk Factors

Our stock price is volatile.

Our common stock has at times experienced substantial price volatility as a result of variations between our actual and anticipated financial results, announcements by our competitors, third parties, or us, projections or speculation about our business or that of our competitors or industry by the media or investment analysts, geopolitical events or uncertainty about inflation or other current global economic conditions. The stock market, as a whole, also has experienced price and volume fluctuations that have affected the market price of many technology companies in ways that may have been unrelated to these companies' operating performance. Furthermore, we believe our stock price should reflect future growth and profitability expectations and, if we fail to meet these expectations, our stock price may significantly decline.

Expense related to our liability-classified restricted stock units, which are subject to mark-to-market accounting, and the calculation of the weighted average diluted shares outstanding in accordance with the treasury method are both affected by our stock price. Any fluctuations in the price of our stock will affect our future operating results.

We may need additional capital, and a 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 believe that our current cash, cash flow from operations and revolving line of credit are sufficient to meet our anticipated cash needs for at least the next twelve months. We may, however, require additional cash resources due to changed business conditions or other future developments, including any investments or acquisitions that we may decide to pursue. If these resources are insufficient to satisfy our cash requirements, we may seek to sell additional equity or debt securities or obtain another credit facility, and we cannot be certain that such additional financing would be available on terms acceptable to us or at all. The sale of additional equity securities could result in dilution to our stockholders, and additional indebtedness would result in increased debt service costs and obligations and could impose operating and financial covenants that would further restrict our operations.

Our hedging program is subject to counterparty default risk.

We enter into foreign currency forward contracts with a number of counterparties. As a result, we are subject to the risk that the counterparty to one or more of these contracts defaults on its performance under the contract. During an economic downturn, the counterparty's financial condition may deteriorate rapidly and with little notice and we may be unable to take action to protect our exposure. In the event of a counterparty default, we could incur significant losses, which may harm our business and financial condition. In the event that one or more of our counterparties becomes insolvent or files for bankruptcy, our ability to eventually recover any losses suffered as a result of that counterparty's default may be limited by the liquidity of the counterparty.

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

Our business may be negatively affected by instability, disruption or destruction in the geographic regions where we operate. War, terrorism, riot, civil insurrection or social unrest; man-made and natural disasters, the severity and frequency of which have increased due to climate change, and include famine, flood, fire, earthquake, pandemics and other regional or global health crises, storm or disease, may cause customers to delay their decisions on spending for the services we provide and give rise to sudden significant changes in regional and global economic conditions and cycles. Our crisis management procedures, business continuity, and disaster recovery plans may not be effective at preventing or mitigating the effects of such disasters, particularly in the case of simultaneous or catastrophic events. These events pose significant security risks to our people, the facilities where they work, our operations, electricity and other utilities, communications, travel, and network services, and the disruption of any or all of them could materially adversely affect our financial results. Travel restrictions resulting from natural or man-made disruptions and political or social conflict increase the difficulty of obtaining and retaining highly skilled and qualified professionals and could unexpectedly increase our labor costs and expenses, both of which could also adversely affect our ability to serve our customers.

Our effective tax rate could be materially 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 one or more jurisdictions; and the resolution of issues arising from tax audits or examinations and any related interest or penalties. 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, but not limited to, a determination that the transfer prices and terms we have applied are not appropriate, such an adjustment could have a negative impact on our results of operations, business, and profitability.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Our corporate headquarters are located in Newtown, Pennsylvania. We own and lease office buildings used as delivery centers, client management locations and space for administrative and support functions. These facilities are located in numerous cities worldwide and are strategically positioned in relation to our talent sources and key in-market locations to align with the needs of our operations. We believe that our existing properties are adequate to meet the current requirements of our business, and that suitable additional or substitute space will be available, if necessary. Our facilities are used interchangeably among our segments. See Note 17 “Segment Information” in the notes to our consolidated financial statements in this Annual Report on Form 10-K for information regarding the geographical locations and values of our long-lived assets. See Note 7 “Property and Equipment, Net” in the notes to our consolidated financial statements in this Annual Report on Form 10-K for information regarding our long-lived assets and buildings we own. See Note 9 “Leases” in the notes to our consolidated financial statements in this Annual Report on Form 10-K for information regarding our leased assets. See Note 2 “Impact of the Invasion of Ukraine” in the notes to our consolidated financial statements in this Annual Report on Form 10-K for more information regarding the assets in Ukraine and Russia.

Item 3. Legal Proceedings

From time to time, we are involved in litigation and claims arising out of our business and operations in the normal course of business. We are not currently a party to any material legal proceeding, nor are we aware of any material legal or governmental proceedings pending or contemplated to be brought against us.

Item 4. Mine Safety Disclosures

None.

PART II

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

Market Information

Our common stock is traded on the New York Stock Exchange ("NYSE") under the symbol "EPAM."

As of February 10, 2023, we had approximately 17 stockholders of record of our common stock. The number of record holders does not include holders of shares in "street name" or persons, partnerships, associations, corporations or other entities identified in security position listings maintained by depositories.

Dividend Policy

We have not declared or paid any cash dividends on our common stock and currently do not anticipate paying any cash dividends in the foreseeable future. Instead, we intend to retain all available funds and any future earnings for use in the operation and expansion of our business, and to repurchase our common stock. In addition, our revolving credit facility restricts our ability to make or pay dividends (other than certain intercompany dividends) unless no potential or actual event of default has occurred or would be triggered thereby. Any future determination relating to our dividend policy will be made at the discretion of our Board of Directors and will depend on our future earnings, capital requirements, financial condition, future prospects, applicable Delaware law, which provides that dividends are only payable out of surplus or current net profits, and other factors that our Board of Directors deems relevant.

Equity Compensation Plan Information

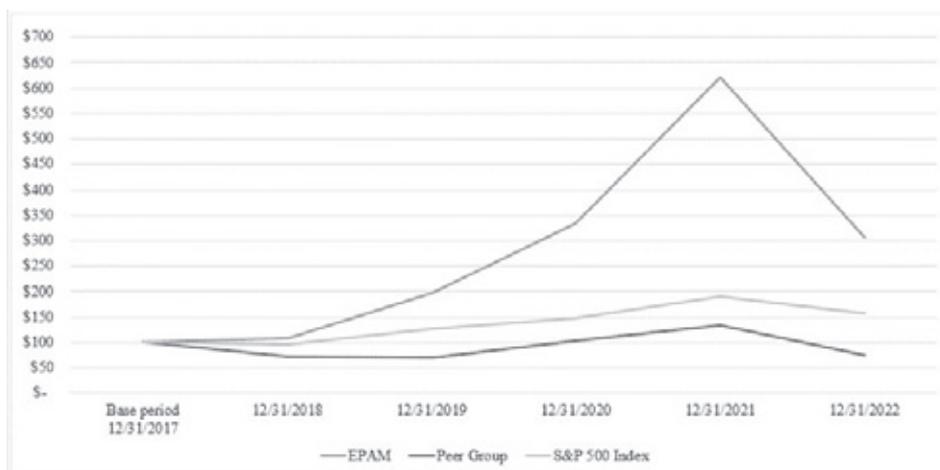
See "Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters" in Part III of this Annual Report on Form 10-K for our equity compensation plan information.

Performance Graph

The following graph compares the cumulative total stockholder return on our common stock with the cumulative total return on a Peer Group Index (capitalization weighted) and the S&P 500 Index for the period beginning December 31, 2017 and ending December 31, 2022. The stock performance shown on the graph below is not indicative of future price performance. The following 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.

COMPARISON OF CUMULATIVE TOTAL RETURN ⁽¹⁾⁽²⁾

Among EPAM, a Peer Group ⁽³⁾ and the S&P 500 Index



Company/Index	Base period 12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022
EPAM Systems, Inc.	\$ 100.00	\$ 107.99	\$ 197.49	\$ 333.57	\$ 622.22	\$ 305.07
Peer Group Index	\$ 100.00	\$ 71.71	\$ 70.23	\$ 103.74	\$ 133.18	\$ 76.06
S&P 500 Index	\$ 100.00	\$ 95.62	\$ 125.73	\$ 148.86	\$ 191.59	\$ 156.89

(1) Graph assumes \$100 invested on December 31, 2017 in our common stock, a Peer Group and the S&P 500 Index.

(2) Cumulative total return assumes reinvestment of dividends.

(3) The Peer Group includes Cognizant Technology Solutions Corp. (NASDAQ:CTSH), DXC Technology Company (NYSE:DXC), Endava plc (NYSE:DAVA), Globant S.A. (NYSE:GLOB), Infosys Ltd. (NYSE:INFY), Perficient, Inc. (NASDAQ:PRFT), and Wipro Limited (NYSE:WIT).

Unregistered Sales of Equity Securities

There were no unregistered sales of equity securities by the Company during the year ended December 31, 2022.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

Under our equity-based compensation plans, the Company withholds a number of shares of vested stock as payment to satisfy tax withholding obligations arising on the date of vesting of stock-based compensation awards. The number of shares of stock to be withheld is calculated based on the closing price of the Company's common stock on the vesting date. The following table provides information about shares withheld by the Company during the year ended December 31, 2022:

Period	Total Number of Shares Purchased	Average Price Paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Dollar Amount of Shares That May Yet Be Purchased Under the Program
January 1, 2022 to January 31, 2022	1,023	\$ 624.01	—	—
February 1, 2022 to February 28, 2022	1,267	\$ 470.95	—	—
March 1, 2022 to March 31, 2022	63,954	\$ 268.02	—	—
April 1, 2022 to April 30, 2022	5,560	\$ 276.79	—	—
May 1, 2022 to May 31, 2022	453	\$ 340.35	—	—
June 1, 2022 to June 30, 2022	477	\$ 313.19	—	—
July 1, 2022 to July 31, 2022	871	\$ 317.75	—	—
August 1, 2022 to August 31, 2022	415	\$ 396.68	—	—
September 1, 2022 to September 30, 2022	1,092	\$ 362.43	—	—
October 1, 2022 to October 31, 2022	252	\$ 348.91	—	—
November 1, 2022 to November 30, 2022	1,448	\$ 348.44	—	—
December 1, 2022 to December 31, 2022	6,134	\$ 326.37	—	—
Total	82,946	\$ 285.13	—	—

Item 6.

Reserved

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

You should read the following discussion and analysis of our financial condition and results of operations together with our audited consolidated financial statements and the related notes included elsewhere in this annual report. In addition to historical information, this discussion contains forward-looking statements that involve risks, uncertainties and assumptions that could cause actual results to differ materially from management's expectations. Factors that could cause such differences are discussed in the sections entitled "Forward-Looking Statements" and "Part I. Item 1A. Risk Factors." We assume no obligation to update any of these forward-looking statements.

Executive Summary

We are a leading global provider of digital platform engineering and software development services to many of the world's leading organizations. Our customers depend on us to solve their complex technical challenges and rely on our expertise in core engineering, advanced technology, digital design and intelligent enterprise development.

We continuously explore opportunities in new industries to expand our core industry client base in software and technology, financial services, business information and media, travel and consumer, and life sciences and healthcare. Our teams of developers, architects, consultants, strategists, engineers, designers, and product experts have the capabilities and skill sets to deliver business results. Through increased specialization in focused verticals and a continued emphasis on strategic partnerships, we are leveraging our roots in software engineering to grow as a recognized brand in software development and end-to-end digital transformation services for our customers.

Our global delivery model and centralized support functions, combined with the benefits of scale from the shared use of fixed-cost resources, enhance our productivity levels and enable us to better manage the efficiency of our global operations. As a result, we have created a delivery base whereby our applications, tools, methodologies and infrastructure allow us to seamlessly deliver services and solutions from our delivery centers to global customers across all geographies, further strengthening our relationships with them. To ensure safety and business continuity in the environment introduced by the COVID-19 global pandemic, many of our personnel have worked and continue to work productively through secure remote working arrangements so they can respond to the rapidly changing needs and demands of our customers. For further information on the various risks posed by the disruptions to our business structure, please read “Part I. Item 1A. Risk Factors” included in this Annual Report on Form 10-K.

Business Update Regarding the War in Ukraine

On February 24, 2022, Russian forces attacked Ukraine and its people and EPAM has repeatedly called for an immediate end to this unlawful and unconscionable attack. EPAM’s highest priority is the safety and security of its employees and their families in Ukraine as well as the broader region, and we have continued to support relocating our employees to lower risk locations, both in Ukraine and to other countries where we operate. The vast majority of our Ukraine employees are in safe locations and operating at levels of productivity consistent with those achieved in 2021. As of December 31, 2022, Ukraine remains our largest delivery location with the most delivery professionals. Furthermore, we have maintained our \$100 million humanitarian aid commitment to our people in Ukraine in addition to our other donations and volunteer efforts.

Prior to the attack in February 2022, Belarus and Russia were our second and third largest delivery locations by the number of delivery professionals, respectively. On April 7, 2022, the Company announced the beginning of a phased exit of our operations in Russia in close collaboration with our employees, contractors, and customers. We have discontinued services to certain customers located in Russia and on September 7, 2022, we executed an agreement to sell substantially all of our remaining holdings in Russia to a third party. As of December 31, 2022 and through the date of issuance of the financial statements, the long stop date of the agreement has passed and we are currently renegotiating the terms of that sale agreement as well as exploring other strategic alternatives. The timing and completion of a sale is uncertain and any sale would be subject to customary closing conditions, including regulatory approvals by the Russian government.

We expect to continue operating in Belarus while executing on our Belarus-specific business continuity plans. A significant number of our employees in Russia and Belarus have relocated, and we may assist in relocating employees to delivery locations in other countries in the future. Additionally, we continue to execute our business continuity plans and have sustained our hiring efforts across multiple locations in Eastern Europe, Central and Western Asia, India, and Latin America.

We own office buildings and lease office space in a number of cities in both Ukraine and in Belarus that we use for both internal functions and for delivering services to our customers. The impact of the war on our operations, personnel, and physical assets in Ukraine has had, and, along with any escalation of the war that includes Belarus’ territory or military, could continue to have, a material adverse effect on our operations. Actions taken by other countries, including new and stricter sanctions by Canada, the United Kingdom, the European Union, the U.S. and other companies and organizations against officials, individuals, regions, and industries in Russia and Belarus, and each of those country’s responses to such sanctions, including counter-sanctions and other actions, has had and could continue to have a material adverse effect on our operations. Customers have and may continue to seek altered terms, conditions, and delivery locations for the performance of services, delay planned work or seek services from alternate providers, or suspend, terminate, fail to renew, or reduce existing contracts or services, which could have a material adverse effect on our financial condition. Some of our customers have implemented steps to block internet communications with Russia, Ukraine, and Belarus to protect against potential cyberattacks or other information security threats, which has caused a material adverse effect on our ability to deliver our services to these customers from those locations. Such material adverse effects disrupt our delivery of services, cause us to shift all or portions of our work occurring in the region to other countries, restrict our ability to engage in certain projects in the region and serve certain customers in or from the region, and could negatively impact our personnel, operations, financial results and business outlook. Our Board of Directors continues its oversight of our strategic, geopolitical, and cybersecurity risks and the risks related to our geographic expansion. Our Board has received updates from management during both regular and special meetings, while also providing oversight of the risks associated with Russia’s invasion of Ukraine and other strategic areas of importance related to the war.

Moving Forward

We continue to execute our business continuity plans and adapt to developments as they occur to protect the safety of our people and address impacts on our delivery infrastructure, including reallocating work to other geographies within our global footprint. We have engaged both our personnel and our customers to meet their needs and to mitigate delivery challenges. EPAM continues to operate productively in more than 50 countries and provides consistent high-quality delivery to our customers. Our global delivery centers have sufficient resources, including infrastructure and capital, to support ongoing operations. EPAM continues to rapidly respond to the difficult conditions in Ukraine while maintaining a focus on customers and long-term growth.

Implementation and execution of our business continuity plans, relocation costs, our humanitarian commitment to our people in Ukraine, and the cost of our phased exit from Russia have resulted in materially increased expenses during 2022. We expect some of those expenses will continue to occur in subsequent quarters for some time in the future. In addition to the charges recorded during 2022 related to our exit from Russia, based on the information available through the date of issuance of the financial statements, we expect to record a loss upon the earlier of classification of the assets and liabilities to be sold as held for sale or closing of a sale, and such loss is not expected to be material. Fluctuations in foreign currency exchange rates could impact the gain or loss the Company could recognize in the future. If unable to complete a sale, the Company could recognize other charges including restructuring costs.

We have no way to predict the progress or outcome of the attack against Ukraine because the conflict and government reactions change quickly and are beyond our control. Prolonged military activities, broad-based sanctions and counter-sanctions could have a material adverse effect on our operations and financial condition and there is significant uncertainty for our business outlook for 2023. The information contained in this section is accurate as of the date hereof but may become outdated due to changing circumstances beyond our control or present awareness.

For additional information on the various risks posed by the attack against Ukraine and the impact in the region, please read “Part I. Item 1A. Risk Factors” included in this Annual Report on Form 10-K.

Overview of 2022 and Financial Highlights

The following table presents a summary of our results of operations for the years ended December 31, 2022, 2021 and 2020:

	Year Ended December 31,					
	2022		2021		2020	
	% of revenues		% of revenues		% of revenues	
	(in millions, except percentages and per share data)					
Revenues	\$ 4,824.7	100.0 %	\$ 3,758.1	100.0 %	\$ 2,659.5	100.0 %
Income from operations	\$ 573.0	11.9 %	\$ 542.3	14.4 %	\$ 379.3	14.3 %
Net income	\$ 419.4	8.7 %	\$ 481.7	12.8 %	\$ 327.2	12.3 %
Effective tax rate	17.3 %		9.7 %		13.6 %	
Diluted earnings per share	\$ 7.09		\$ 8.15		\$ 5.60	

The key highlights of our consolidated results for 2022 were as follows:

- We recorded revenues of \$4.825 billion, or a 28.4% increase from \$3.758 billion in the previous year, negatively impacted by \$151.1 million or 4.0% due to changes in certain foreign currency exchange rates as compared to the previous year.
- Income from operations grew 5.7% to \$573.0 million in 2022 from \$542.3 million in 2021. Expressed as a percentage of revenues, income from operations was 11.9% compared to 14.4%. During the year ended December 31, 2022, income from operations as a percentage of revenues was negatively impacted by incremental expenses associated with EPAM’s humanitarian efforts in Ukraine, the global repositioning of our workforce, unbilled business continuity resources, the costs associated with our phased exit from operations in Russia, and impairment of long-lived asset charges triggered by the decision to discontinue services to customers in Russia.

- Our effective tax rate was 17.3% compared to 9.7% in the previous year. The increase in the effective tax rate for 2022 as compared to the prior year is primarily attributable to the decrease in excess tax benefits recorded upon vesting or exercise of stock-based awards and tax charges in 2022 resulting from changes to certain U.S. tax regulations, partially offset by one-time tax benefits in 2022 resulting from the Company's decision to change the tax status and to classify certain of its foreign subsidiaries as disregarded entities for U.S. income tax.
- Net income decreased 12.9% to \$419.4 million compared to \$481.7 million in 2021. Expressed as a percentage of revenues, net income decreased 4.1% during 2022 compared to last year. Net income during 2022 was impacted by net foreign exchange losses, partially offset by the improvement in income from operations. Foreign exchange loss during 2022 was primarily driven by the impact of appreciation of the Russian ruble on the Company's intercompany payables denominated in Russian rubles and U.S. dollar denominated assets held by our subsidiaries in Russia and losses from our foreign exchange forward contracts associated with the Russian ruble.
- Diluted earnings per share decreased 13.0% to \$7.09 for the year ended December 31, 2022 from \$8.15 in 2021.
- Cash provided by operations decreased \$108.2 million, or 18.9%, to \$464.1 million during 2022 as compared to last year. The decrease was largely driven by an increase in days sales outstanding during 2022, higher level of variable compensation payments made in 2022 based on 2021 performance, and cash outflows related to EPAM's humanitarian support efforts in Ukraine and geographic repositioning.

The operating results in any period are not necessarily indicative of the results that may be expected for any future period.

Critical Accounting Policies

We prepare our consolidated financial statements in accordance with U.S. generally accepted accounting principles ("GAAP"), which require us to make judgments, estimates and assumptions that affect: (i) the reported amounts of assets and liabilities, (ii) the disclosure of contingent assets and liabilities at the end of each reporting period and (iii) the reported amounts of revenues and expenses during each reporting period. We evaluate these estimates and assumptions based on historical experience, knowledge and assessment of current business and other conditions, and expectations regarding the future based on available information and reasonable assumptions, which together form a basis for making judgments about matters not readily apparent from other sources. Since the use of estimates is an integral component of the financial reporting process, actual results could differ from those estimates. Some of our accounting policies require higher degrees of judgment than others in their application. When reviewing our audited consolidated financial statements, you should consider (i) our selection of critical accounting policies, (ii) the judgment and other uncertainties affecting the application of such policies and (iii) the sensitivity of reported results to changes in conditions and assumptions. We consider the policies discussed below to be critical to an understanding of our consolidated financial statements as their application places significant demands on the judgment of our management.

An accounting policy is considered critical if it requires an accounting estimate to be made based on assumptions about matters that are highly uncertain at the time the estimate is made, and if different estimates that reasonably could have been used, or changes in the accounting estimates that are reasonably likely to occur periodically, could materially impact the consolidated financial statements. We believe that the following critical accounting policies are the most sensitive and require more significant estimates and assumptions used in the preparation of our consolidated financial statements. You should read the following descriptions of critical accounting policies, judgments and estimates in conjunction with our audited consolidated financial statements and other disclosures included elsewhere in this annual report. Additional information on our policies is in Note 1 "Business and Summary of Significant Accounting Policies" in the notes to our consolidated financial statements in this Annual Report on Form 10-K.

Revenues — We recognize revenues when control of goods or services is passed to a customer in an amount that reflects the consideration we expect to be entitled to in exchange for those goods or services. Such control may be transferred over time or at a point in time depending on satisfaction of obligations stipulated by the contract. Consideration expected to be received may consist of both fixed and variable components and is allocated to each separately identifiable performance obligation based on the performance obligation's relative standalone selling price. Variable consideration usually takes the form of volume-based discounts, service level credits, price concessions or incentives. Determining the estimated amount of such variable consideration involves assumptions and judgment that can have an impact on the amount of revenues reported.

We derive revenues from a variety of service arrangements, which have been evolving to provide more customized and integrated solutions to customers by combining software engineering with customer experience design, business consulting and technology innovation services. Fees for these contracts may be in the form of time-and-materials or fixed-price arrangements. We generate the majority of our revenues 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. We apply a practical expedient and revenues related to time-and-material contracts are recognized based on the right to invoice for services performed.

Fixed-price contracts include maintenance and support arrangements, which may exceed one year in duration. Maintenance and support arrangements generally relate to the provision of ongoing services and revenues for such contracts are recognized ratably over the expected service period. Fixed-price contracts also include application development arrangements, where progress towards satisfaction of the performance obligation is measured using input or output methods and input methods are used only when there is a direct correlation between hours incurred and the end product delivered. Assumptions, risks and uncertainties inherent in the estimates used to measure progress could affect the amount of revenues, receivables and deferred revenues at each reporting period.

Revenues from licenses which have significant stand-alone functionality are recognized at a point in time when control of the license is transferred to the customer. Revenues from licenses which do not have stand-alone functionality are recognized over time. If there is an uncertainty about the receipt of payment for the services, revenue recognition is deferred until the uncertainty is sufficiently resolved. We apply a practical expedient and do not assess the existence of a significant financing component if the period between transfer of the service to a customer and when the customer pays for that service is one year or less.

We report gross reimbursable “out-of-pocket” expenses incurred as both revenues and cost of revenues in the consolidated statements of income.

Business Combinations — We account for business combinations using the acquisition method which requires us to estimate the fair value of identifiable assets acquired and liabilities assumed, including any contingent consideration, to properly allocate purchase price to the individual assets acquired and liabilities assumed. A substantial portion of the purchase price is typically allocated to goodwill and other intangible assets, which typically include customer relationships, software, trade names, non-competition agreements, and assembled workforce. The allocation of the purchase price utilizes significant estimates in determining the fair values of identifiable assets acquired and liabilities assumed, especially with respect to intangible assets. The significant estimates and assumptions used include the timing and amount of forecasted revenues and cash flows, anticipated growth rates, customer attrition rates, the discount rate reflecting the risk inherent in future cash flows, and the useful lives for finite-lived assets. There are different valuation models for each component, the selection of which requires considerable judgment. These determinations will affect the amount of amortization expense recognized in future periods. We base our fair value estimates on assumptions we believe are reasonable but recognize that the assumptions are inherently uncertain.

We determine the fair value of contingent consideration using Monte Carlo simulations (which involve a simulation of future revenues and earnings during the earn-out period using management’s best estimates) or probability-weighted expected return methods. Changes in financial projections, market risk assumptions, discount rates or probability assumptions related to achieving the various earn-out criteria would result in a change in the fair value of contingent consideration. Such changes, if any, are recorded within Interest and other income/(loss), net in the Company’s consolidated statements of income.

If the initial accounting for the business combination has not been completed by the end of the reporting period in which the business combination occurs, provisional amounts are reported to present information about facts and circumstances that existed as of the acquisition date. Once the measurement period ends, which in no case extends beyond one year from the acquisition date, revisions to the accounting for the business combination are recorded in earnings.

Recent Accounting Pronouncements

See Note 1 “Business and Summary of Significant Accounting Policies” in the notes to our consolidated financial statements in this Annual Report on Form 10-K for information regarding recent accounting pronouncements.

Results of Operations

The following table sets forth a summary of our consolidated results of operations for the periods indicated. This information should be read together with our consolidated financial statements and related notes included elsewhere in this annual report. The operating results in any period are not necessarily indicative of the results that may be expected for any future period.

	Year Ended December 31,					
	2022		2021		2020	
		% of revenues		% of revenues		% of revenues
	(in thousands, except percentages and per share data)					
Revenues	\$ 4,824,698	100.0%	\$ 3,758,144	100.0 %	\$ 2,659,478	100.0 %
Operating expenses:						
Cost of revenues (exclusive of depreciation and amortization) ⁽¹⁾	3,286,683	68.1	2,483,697	66.1	1,732,522	65.1
Selling, general and administrative expenses ⁽²⁾	872,777	18.1	648,736	17.3	484,758	18.2
Depreciation and amortization expense	92,272	1.9	83,395	2.2	62,874	2.4
Income from operations	572,966	11.9	542,316	14.4	379,324	14.3
Interest and other income/(loss), net	10,025	0.2	(1,727)	—	3,822	0.1
Foreign exchange loss	(75,733)	(1.6)	(7,197)	(0.2)	(4,667)	(0.2)
Income before provision for income taxes	507,258	10.5	533,392	14.2	378,479	14.2
Provision for income taxes	87,842	1.8	51,740	1.4	51,319	1.9
Net income	\$ 419,416	8.7%	\$ 481,652	12.8 %	\$ 327,160	12.3 %
Effective tax rate	17.3 %		9.7 %		13.6 %	
Diluted earnings per share	\$ 7.09		\$ 8.15		\$ 5.60	

(1) Includes \$47,470, \$51,580 and \$32,785 of stock-based compensation expense for the years ended December 31, 2022, 2021 and 2020, respectively.

(2) Includes \$52,439, \$60,075 and \$42,453 of stock-based compensation expense for the years ended December 31, 2022, 2021 and 2020, respectively.

Revenues

We continue to expand our presence across multiple geographies and verticals, both organically and through strategic acquisitions. During the year ended December 31, 2022, our total revenues grew 28.4% over the previous year to \$4.825 billion. This growth resulted from our ability to retain existing customers and increase the level of services we provide to them and our ability to produce revenues from new customer relationships. During the year ended December 31, 2022 we experienced a decrease in customer concentration as compared to the previous year, with revenues from our top five, top ten and top twenty customer groups decreasing as a percentage of total revenues. Revenues have been positively impacted by our acquisitions, which contributed 5.1% to our revenue growth, and negatively impacted by our decision to exit Russia and discontinue services to customers there by 3.7% and fluctuations in foreign currency exchange rates which decreased our revenue growth by 4.0% during the year ended December 31, 2022 as compared to the previous year.

We discuss below the breakdown of our revenues by vertical, customer location, service arrangement type, and customer concentration.

Revenues by Vertical

We assign our customers into one of our five main vertical markets or a group of various industries where we are increasing our presence, which we label as “Emerging Verticals.” Emerging Verticals include customers in multiple industries such as energy, utilities, manufacturing, automotive, telecommunications and several others.

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	
	(in thousands, except percentages)					
Travel & Consumer	\$ 1,092,224	22.7 %	\$ 741,128	19.7 %	\$ 458,789	17.2 %
Financial Services	1,026,686	21.3	848,370	22.6	555,235	20.9
Business Information & Media	809,952	16.8	666,941	17.7	560,680	21.1
Software & Hi-Tech	793,261	16.4	664,597	17.7	496,813	18.7
Life Sciences & Healthcare	507,367	10.5	391,309	10.4	296,313	11.1
Emerging Verticals	595,208	12.3	445,799	11.9	291,648	11.0
Revenues	\$ 4,824,698	100.0 %	\$ 3,758,144	100.0 %	\$ 2,659,478	100.0 %

Travel & Consumer became our largest vertical during 2022, growing 47.4% as compared to 2021. Except for Software & Hi-Tech, which grew at a rate of 19.4% in 2022 over the prior year, all of our verticals grew over 20% in 2022 over the prior year.

Revenues by Customer Location

Our revenues are sourced from multiple countries, which we assign into four geographic markets and identify as Americas, EMEA, APAC and CEE. We present and discuss our revenues by customer location based on the location of the specific customer site that we serve, irrespective of the location of the headquarters of the customer or the location of the delivery center where the work is performed. Revenues by customer location is different from revenues by reportable segment in our consolidated financial statements included elsewhere in this annual report. Segments are not based on the geographic location of the customers, but instead they are based on the location of the Company's management responsible for a particular customer or market.

The following table sets forth revenues by customer location by amount and as a percentage of our revenues for the periods indicated:

	Year Ended December 31,					
	2022		2021		2020	
	(in thousands, except percentages)					
Americas ⁽¹⁾	\$ 2,887,204	59.9 %	\$ 2,226,830	59.3 %	\$ 1,595,136	60.0 %
EMEA ⁽²⁾	1,737,919	36.0	1,259,717	33.4	879,842	33.1
APAC ⁽³⁾	120,370	2.5	103,559	2.8	69,798	2.6
CEE ⁽⁴⁾	79,205	1.6	168,038	4.5	114,702	4.3
Revenues	\$ 4,824,698	100.0 %	\$ 3,758,144	100.0 %	\$ 2,659,478	100.0 %

(1) Americas includes revenues from customers in North, Central and South America.

(2) EMEA includes revenues from customers in Western Europe and the Middle East.

(3) APAC, or Asia Pacific, includes revenues from customers in East Asia, Southeast Asia and Australia.

(4) CEE includes revenues from customers in Russia, Belarus, Kazakhstan, Ukraine, Uzbekistan and Georgia.

During the year ended December 31, 2022, revenues in the Americas, our largest geography, were \$2.887 billion, growing \$660.4 million, or 29.7%, from \$2.227 billion reported for the year ended December 31, 2021. Revenues from this geography accounted for 59.9% of total revenues in 2022, an increase from 59.3% in the prior year. The United States continued to be our largest customer location contributing revenues of \$2.761 billion in 2022 compared to \$2.125 billion in 2021.

Revenues in our EMEA geography were \$1.738 billion, an increase of \$478.2 million, or 38%, over \$1.260 billion in the previous year. Revenues in this geography accounted for 36.0% of consolidated revenues in 2022 as compared to 33.4% in the previous year. The top three revenue contributing customer location countries in EMEA were the United Kingdom, Switzerland and the Netherlands generating revenues of \$619.3 million, \$323.4 million and \$215.4 million in 2022, respectively, compared to \$474.9 million, \$271.2 million and \$154.8 million in 2021, respectively. Fluctuations in foreign currency exchange rates with the U.S. dollar, particularly the euro and the British pound, during 2022 compared to the same period in the prior year negatively impacted revenue growth in the EMEA geography by 10.0%. Revenues in the region benefited from acquisitions which contributed \$160.9 million to revenue growth in 2022.

During 2022, revenues in our CEE geography decreased \$88.8 million, or 52.9%, from the previous year. The decrease in CEE revenues came primarily from customers in Russia, contributing a decrease of \$90.4 million in 2022 compared to the previous year. On March 4, 2022, we announced that we will discontinue our services to customers located in Russia and have been providing transition support for customers in this market while administering the transition. On September 7, 2022, we executed an agreement to sell substantially all of our remaining holdings in Russia to a third party. As of December 31, 2022 and through the date of issuance of these financial statements, the long stop date of the agreement has passed and we are currently renegotiating the terms of that sale agreement as well as exploring other strategic alternatives. The timing and completion of a sale is uncertain and any sale would be subject to customary closing conditions, including regulatory approvals by the Russian government. As a result, the revenues from this geography are expected to continue to materially decline in the future.

Revenues from customers in locations in our APAC region comprised 2.5% of total revenues in 2022, a level consistent with the prior year.

Discussion of revenues from 2021 as compared to 2020 is included in “Part II. Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations — Results of Operations” of our Annual Report on Form 10-K for the year ended December 31, 2021.

Revenues by Customer Concentration

We have long-standing relationships with many of our customers and we seek to grow revenues from our existing customers by continually expanding the scope and size of our engagements. Revenues derived from these customers may fluctuate as these accounts mature, upon beginning or completion of multi-year projects or due to external economic environment trends. We believe there is a significant potential for future growth as we expand our capabilities and offerings within existing customers. In addition, we remain committed to diversifying our client base and adding more customers to our client mix through organic growth and strategic acquisitions, and over the long-term, we expect revenue concentration from our top customers to decrease.

The following table presents revenues contributed by our customers 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 five customers	\$ 793,603	16.4 %	\$ 682,147	18.2 %	\$ 584,303	22.0 %
Top ten customers	\$ 1,149,966	23.8 %	\$ 966,486	25.7 %	\$ 822,824	30.9 %
Top twenty customers	\$ 1,698,916	35.2 %	\$ 1,394,546	37.1 %	\$ 1,124,552	42.3 %
Customers below top twenty	\$ 3,125,782	64.8 %	\$ 2,363,598	62.9 %	\$ 1,534,926	57.7 %

The following table shows the number of customers grouped by revenues recognized by the Company for each year presented:

	Year Ended December 31,		
	2022	2021	2020
Over \$20 Million	49	40	28
\$10 - \$20 Million	51	38	27
\$5 - \$10 Million	85	63	43
\$1 - \$5 Million	303	271	225
\$0.5 - \$1 Million	185	133	107

Revenues by Service Offering

Our service arrangements have been evolving to provide more customized and integrated solutions to our customers where we combine software engineering with customer experience design, business consulting and technology innovation services. We are continually expanding our service capabilities, moving beyond traditional services into business consulting, design and physical product development.

The following table shows revenues by service offering as an amount and as a percentage of our revenues for the years indicated:

	Year Ended December 31,					
	2022		2021		2020	
	(in thousands, except percentages)					
Professional services	\$ 4,800,047	99.5 %	\$ 3,739,143	99.5 %	\$ 2,643,016	99.4 %
Licensing and other revenues	24,651	0.5 %	19,001	0.5 %	16,462	0.6 %
Revenues	\$ 4,824,698	100.0 %	\$ 3,758,144	100.0 %	\$ 2,659,478	100.0 %

See Note 12 “Revenues” in the notes to our consolidated financial statements in this Annual Report on Form 10-K for more information regarding our contract types and related revenue recognition policies.

Cost of Revenues (Exclusive of Depreciation and Amortization)

The principal components of our cost of revenues (exclusive of depreciation and amortization) are salaries, bonuses, fringe benefits, stock-based compensation, project-related travel costs and fees for subcontractors who are assigned to customer projects. Salaries and other compensation expenses of our delivery professionals are reported as cost of revenues regardless of whether the employees are actually performing customer services during a given period. Our employees are a critical asset, necessary for our continued success and therefore we expect to continue hiring talented employees and providing them with competitive compensation programs.

We manage the utilization levels of our delivery professionals through strategic hiring and efficient staffing of projects. Some of these professionals are hired and trained to work for specific customers or on specific projects and some of our offshore development centers are dedicated to specific customers or projects. Our staff utilization also depends on the general economy and its effect on our customers and their business decisions regarding the use of our services.

During the year ended December 31, 2022, cost of revenues (exclusive of depreciation and amortization) was \$3,286.7 million, representing an increase of 32.3% from \$2,483.7 million reported last year. The increase was primarily due to an increase in compensation costs as a result of an 18.0% growth in the average number of production professionals and the geographic repositioning of our professionals to higher cost geographies in response to the war in Ukraine, a 4.8% unfavorable impact from changes in foreign currency exchange rates, as well as \$29.0 million of incremental costs associated with our humanitarian efforts in Ukraine and \$14.7 million of unbilled business continuity resources, partially offset by the reversal of \$21.4 million of previously accrued discretionary compensation expenses during the first quarter of 2022.

Expressed as a percentage of revenues, cost of revenues (exclusive of depreciation and amortization) was 68.1% and 66.1% during the years ended December 31, 2022 and 2021, respectively. The year-over-year increase is primarily due to higher personnel-related costs and the ongoing transition of customer work to higher cost geographies, increased costs associated with our humanitarian efforts in Ukraine, and unbilled business continuity resources, partially offset by the reversal of previously accrued discretionary compensation expenses in the first quarter of 2022.

Discussion of cost of revenues (exclusive of depreciation and amortization) from 2021 as compared to 2020 is included in “Part II. Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations — Results of Operations” of our Annual Report on Form 10-K for the year ended December 31, 2021.

Selling, General and Administrative Expenses

Selling, general and administrative expenses represent expenditures associated with promoting and selling our services and general and administrative functions of our business. These expenses include the costs of salaries, bonuses, fringe benefits, stock-based compensation, severance, bad debt, travel, legal and accounting services, insurance, facilities including operating leases, advertising, and other promotional activities. Additionally, selling, general and administrative expenses contain costs of relocating our employees and various one-time and unusual expenses such as impairment charges.

Our selling, general and administrative expenses have increased due to our continuously expanding operations, strategic business acquisitions, and the hiring of necessary personnel to support our growth. During the year ended December 31, 2022, selling, general and administrative expenses were \$872.8 million, representing an increase of 34.5% as compared to \$648.7 million reported last year. The increase in selling, general and administrative expenses in 2022 was primarily due to a \$105.4 million increase in personnel-related costs, which include stock-based compensation expense, primarily driven by an increase in headcount. Additionally, selling, general and administrative expenses for the year ended December 31, 2022 were impacted by \$38.7 million of expenses associated with our geographic repositioning of our workforce, \$15.8 million of expenses associated with our humanitarian efforts in Ukraine, \$17.1 million of charges related to employee separation costs in Russia, \$19.6 million of impairment charges related to our long-lived assets in Russia and \$5.1 million of bad debt expense attributable to customers located in Russia.

Expressed as a percentage of revenues, selling, general and administrative expenses increased 0.8% to 18.1% for the year ended December 31, 2022. The increase was primarily driven by impairment charges related to our long-lived assets in Russia, higher bad debt expenses attributable to customers located in Russia, employee separation costs in Russia, increased costs associated with geographic repositioning of our workforce as well as our humanitarian efforts in Ukraine, partially offset by reduced facilities-related expenses.

Discussion of selling, general and administrative expenses from 2021 as compared to 2020 is included in “Part II. Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations — Results of Operations” of our Annual Report on Form 10-K for the year ended December 31, 2021.

Depreciation and Amortization Expense

Depreciation and amortization expense includes depreciation of physical assets used in the operation of our business such as computer equipment, software, buildings we purchased, leasehold improvements as well as various office furniture and equipment. Depreciation and amortization expense also includes amortization of acquired finite-lived intangible assets.

During the year ended December 31, 2022, depreciation and amortization expense was \$92.3 million, representing an increase of \$8.9 million from \$83.4 million reported in the prior year. The increase in depreciation and amortization expense was primarily driven by an increased investment in computer equipment used by our employees and amortization of acquired finite-lived intangible assets, which contributed \$4.6 million to the year over year increase in depreciation and amortization expense. Expressed as a percentage of revenues, depreciation and amortization expense decreased to 1.9% during the year ended December 31, 2022 as compared to 2.2% in 2021.

Discussion of depreciation and amortization expense from 2021 as compared to 2020 is included in “Part II. Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations — Results of Operations” of our Annual Report on Form 10-K for the year ended December 31, 2021.

Interest and Other Income/(Loss), Net

Interest and other income/(loss), net includes interest earned on cash and cash equivalents, short-term investments and employee loans, gains and losses from certain financial instruments, interest expense related to our borrowings, government grant income, and changes in the fair value of contingent consideration. Interest and other income/(loss), net increased from a loss of \$1.7 million during the year ended December 31, 2021 to a gain of \$10.0 million during the year ended December 31, 2022. This change was largely driven by a \$6.5 million increase in government grant income and an increase in interest income from our cash and cash equivalents and short-term investments, partially offset by a \$2.3 million increase in loss due to the change in fair value of contingent consideration, \$0.8 million charge related to the impairment of an investment and a \$1.3 million charge related to the impairment of a financial asset in Ukraine recorded during the year ended December 31, 2022.

Discussion of Interest and other income/(loss) from 2021 as compared to 2020 is included in “Part II. Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations — Results of Operations” of our Annual Report on Form 10-K for the year ended December 31, 2021.

Provision for Income Taxes

Determining the consolidated provision for income tax expense, deferred income tax assets and liabilities and any potential related valuation allowances involves judgment. We consider factors that may contribute, favorably or unfavorably, to the overall annual effective tax rate in the current year as well as the future. These factors include statutory tax rates and tax law changes in the countries where we operate and excess tax benefits upon vesting or exercise of equity awards as well as consideration of any significant or unusual items.

As a global company, we are required to calculate and provide for income taxes in each of the jurisdictions in which we operate. During 2022, 2021 and 2020, we had \$428.7 million, \$404.9 million and \$278.1 million, respectively, in income before provision for income taxes attributed to our foreign jurisdictions. Changes in the geographic mix or level of annual pre-tax income can also affect our overall effective income tax rate.

Our provision for income taxes includes the impact of provisions established for uncertain income tax positions, as well as the related net interest and penalty expense. Tax exposures can involve complex issues and may require an extended period to resolve. Although we believe we have adequately reserved for our uncertain tax positions, we cannot provide assurance that the final tax outcome of these matters will not be different from our current estimates. We adjust these reserves after consideration of changes in facts and circumstances, such as the closing of a tax audit, statute of limitation lapse or the refinement of an estimate. To the extent that the final tax outcome of these matters differs from the amounts recorded, such differences will impact the provision for income taxes in the period in which such determination is made.

The provision for income taxes was \$87.8 million in 2022 and \$51.7 million in 2021. The increase was primarily driven by a significant decrease in excess tax benefits recorded upon vesting or exercise of stock-based awards which were \$35.1 million in 2022 compared to \$71.6 million in 2021. The effective tax rate increased from 9.7% in 2021 to 17.3% in 2022 primarily due to the decrease in excess tax benefits recorded upon vesting or exercise of stock-based awards and tax charges in 2022 resulting from changes to certain U.S. tax regulations, partially offset by one-time tax benefits in 2022 resulting from the Company's decision to change the tax status and to classify certain of its foreign subsidiaries as disregarded entities for U.S. income tax purposes.

Discussion of the provision for income taxes from 2021 as compared to 2020 is included in "Part II. Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations — Results of Operations" of our Annual Report on Form 10-K for the year ended December 31, 2021.

Foreign Exchange Loss

For discussion of the impact of foreign exchange fluctuations see "Item 7A. Quantitative and Qualitative Disclosures About Market Risk — Foreign Exchange Risk."

Results by Business Segment

Our operations consist of three reportable segments: North America, Europe, and Russia. The segments represent components of EPAM for which separate financial information is available and used on a regular basis by our chief executive officer, who is also our chief operating decision maker ("CODM"), to determine how to allocate resources and evaluate performance. Our CODM makes business decisions based on segment revenues and segment operating profits. Segment operating profit is defined as income from operations before unallocated costs. Expenses included in segment operating profit consist principally of direct selling and delivery costs as well as an allocation of certain shared services expenses. Certain corporate expenses are not allocated to specific segments as these expenses are not controllable at the segment level. Such expenses include certain types of professional fees, certain taxes included in operating expenses, compensation to non-employee directors and certain other general and administrative expenses, including compensation of specific groups of non-production employees. In addition, the Company does not allocate stock-based compensation, amortization of intangible assets acquired through business combinations, goodwill and other asset impairment charges, acquisition-related costs and certain other one-time charges and benefits. These unallocated amounts are combined with total segment operating profit to arrive at consolidated income from operations.

We manage our business primarily based on the managerial responsibility for the client base and market. As managerial responsibility for a particular customer relationship generally correlates with the customer's geographic location, there is a high degree of similarity between customer locations and the geographic boundaries of our reportable segments. In some cases, managerial responsibility for a particular customer is assigned to a management team in another region and is usually based on the strength of the relationship between customer executives and particular members of EPAM's senior management team. In such cases, the customer's activity would be reported through the respective management team member's reportable segment. Our Europe segment includes our business in the APAC region, which is managed by the same management team.

Segment revenues from external customers and segment operating profit, before unallocated expenses, for the North America, Europe and Russia segments for the years ended December 31, 2022, 2021 and 2020 were as follows:

	Year Ended December 31,		
	2022	2021	2020
	(in thousands)		
Segment revenues:			
North America	\$ 2,898,554	\$ 2,242,248	\$ 1,601,820
Europe	1,853,056	1,350,484	947,305
Russia	73,088	165,412	110,353
Total segment revenues	\$ 4,824,698	\$ 3,758,144	\$ 2,659,478
Segment operating profit/(loss):			
North America	\$ 589,412	\$ 462,798	\$ 345,196
Europe	223,276	233,727	152,902
Russia	(13,460)	32,547	5,811
Total segment operating profit	\$ 799,228	\$ 729,072	\$ 503,909

North America Segment

During 2022, North America segment revenues increased \$656.3 million, or 29.3%, over the previous year. Revenues from our North America segment represented 60.1% of total segment revenues, an increase from 59.7% reported in the corresponding period of 2021. During 2022 as compared to 2021, North America segment operating profits increased \$126.6 million, or 27.4%, to \$589.4 million. Expressed as a percentage of revenue, North America segment operating profit decreased to 20.3% in 2022 as compared to 20.6% in 2021. This decrease is primarily attributable to increased personnel-related costs in part attributable to supplementing delivery resources on certain projects with standby resources able to support projects if delivery resources impacted by the invasion of Ukraine become unable to work and lower utilization, partially offset by a decrease in variable compensation expense as a percentage of segment revenues during 2022 compared to 2021.

The following table presents North America segment revenues by industry vertical for the periods indicated:

Industry Vertical	Year Ended December 31,		Change	
	2022	2021	Dollars	Percentage
	(in thousands, except percentages)			
Software & Hi-Tech	\$ 655,122	\$ 559,707	\$ 95,415	17.0 %
Financial Services	522,970	361,611	161,359	44.6 %
Travel & Consumer	505,227	359,306	145,921	40.6 %
Business Information & Media	467,664	389,613	78,051	20.0 %
Life Sciences & Healthcare	454,102	340,706	113,396	33.3 %
Emerging Verticals	293,469	231,305	62,164	26.9 %
Revenues	\$ 2,898,554	\$ 2,242,248	\$ 656,306	29.3 %

Software & Hi-Tech remained the largest industry vertical in the North America segment during the year ended December 31, 2022, growing 17.0% as compared to the prior year, which was a result of the continued focus on engaging with our technology customers. Financial services grew 44.6% in 2022 compared to the prior year primarily due to growth in a group of wealth management customers and growth from insurance customers added in the last 18 months. Travel and Consumer grew 40.6% during 2022 compared to the prior year primarily due to growth from retail customers. During the year ended December 31, 2022, revenues from the Business Information & Media vertical experienced growth of 20.0% and largely benefited from growth from existing customers in our top 20 customers. Life Sciences & Healthcare grew 33.3% during 2022 compared to the prior year primarily due to growth from an existing customer in our top 20 customers and growth from customers added in the last 24 months. Emerging Verticals experienced 26.9% growth during 2022 compared to the prior year largely due to an increase in services provided to several customers in various industries in the group.

Europe Segment

During 2022, Europe segment revenues were \$1,853.1 million, reflecting an increase of \$502.6 million, or 37.2%, from last year. Acquisitions contributed \$166.3 million to Europe segment revenues during 2022. Revenues were negatively impacted by changes in foreign currency exchange rates during 2022. Had our Europe segment revenues been expressed in constant currency terms using the exchange rates in effect during 2021, we would have reported revenue growth of 47.3%. Revenues from our Europe segment represent 38.4% and 35.9% of total segment revenues during 2022 and 2021, respectively. During 2022, this segment's operating profits decreased \$10.5 million, or 4.5% as compared to last year, to \$223.3 million. Europe's operating profit represented 12.0% of Europe segment revenues as compared to 17.3% in 2021. Europe's segment operating profit was negatively impacted by changes in foreign currency exchange rates, increased personnel-related costs partially attributable to supplementing delivery resources on certain projects with standby resources able to support projects if delivery resources impacted by the invasion of Ukraine become unable to work, lower utilization during 2022 compared to 2021, and lower profit margins from businesses acquired in the prior year, partially offset by a decrease in variable compensation expense as a percentage of segment revenues during 2022 compared to 2021.

The following table presents Europe segment revenues by industry vertical for the periods indicated:

Industry Vertical	Year Ended December 31,		Change	
	2022	2021	Dollars	Percentage
	(in thousands, except percentages)			
Travel & Consumer	\$ 571,437	\$ 354,041	\$ 217,396	61.4 %
Financial Services	460,858	372,394	88,464	23.8 %
Business Information & Media	341,344	275,502	65,842	23.9 %
Software & Hi-Tech	136,273	102,270	34,003	33.2 %
Life Sciences & Healthcare	52,465	49,900	2,565	5.1 %
Emerging Verticals	290,679	196,377	94,302	48.0 %
Revenues	\$ 1,853,056	\$ 1,350,484	\$ 502,572	37.2 %

Travel & Consumer became the largest industry vertical in the Europe segment during the year ended December 31, 2022. The Europe segment benefited from 61.4% growth in Travel & Consumer during the year ended December 31, 2022 as compared to 2021 primarily due to increased demand from customers in the retail and distribution industries and revenues from acquisitions which contributed \$89.4 million to revenue growth during 2022. During the year ended December 31, 2022, revenues in Financial Services experienced 23.8% growth primarily driven by increased revenues from commercial and investment banking customers and revenues from recent acquisitions which contributed \$18.3 million to revenue growth during 2022. For the year ended December 31, 2022 as compared to 2021, Business Information & Media vertical growth was largely attributable to the expansion of services provided to one of our top 5 customers compared to the prior year. Revenue growth in Software & Hi-Tech during the year ended December 31, 2022 as compared to 2021 was attributable to the expansion of services provided to one of our top 20 customers as well as growth in customers outside of our top 100 customers. Revenues in Emerging Verticals experienced higher growth primarily attributable to growth in existing customers in the energy and automotive industries, a new customer that we added in 2022 as well as revenues from recent acquisitions which contributed \$32.3 million to revenue growth during 2022.

Russia Segment

During 2022, revenues from our Russia segment decreased \$92.3 million relative to 2021 and represent 1.5% of total segment revenues during 2022 compared with 4.4% in 2021. The decrease in revenues was primarily attributable to decreased operations in Russia as we proceed with the phased exit from Russia while discontinuing services to customers there. Operating loss of our Russia segment was \$13.5 million in 2022 compared to operating profit of \$32.5 million in 2021. This decrease was largely driven by discontinuance of services to certain customers in Russia which led to reduced revenues, increased bad debt expense, and expenses incurred for services provided to those customers for which revenue was not recognized as collectability was not considered probable after announcing the discontinuance of services to customers in Russia.

The following table presents Russia segment revenues by industry vertical for the periods indicated:

<u>Industry Vertical</u>	<u>Year Ended December 31,</u>		<u>Change</u>	
	<u>2022</u>	<u>2021</u>	<u>Dollars</u>	<u>Percentage</u>
	<i>(in thousands, except percentages)</i>			
Financial Services	\$ 42,858	\$ 114,365	\$ (71,507)	(62.5) %
Travel & Consumer	15,560	27,781	(12,221)	(44.0) %
Software & Hi-Tech	1,866	2,620	(754)	(28.8) %
Business Information & Media	944	1,826	(882)	(48.3) %
Life Sciences & Healthcare	800	703	97	13.8 %
Emerging Verticals	11,060	18,117	(7,057)	(39.0) %
Revenues	\$ 73,088	\$ 165,412	\$ (92,324)	(55.8) %

Revenues in the Russia segment are generally subject to fluctuations and are impacted by the timing of revenue recognition associated with the execution of contracts and the fluctuations in the foreign currency exchange rate of the Russian ruble to the U.S. dollar. On March 4, 2022, EPAM announced that it will discontinue services to customers located in Russia and will provide transition support for the customers in this market. On April 7, 2022, the Company announced that it would begin the process of a phased exit of its operations in Russia and on September 7, 2022, the Company executed an agreement to sell substantially all of its remaining holdings in Russia to a third party. As of December 31, 2022 and through the date of issuing this Annual Report, the long stop date of the agreement has passed and the Company is currently renegotiating the terms of that sale agreement as well as exploring other strategic alternatives. The timing and completion of a sale is uncertain and any sale would be subject to customary closing conditions, including regulatory approvals by the Russian government. As a result, the revenues from this segment are expected to dissipate in the future. See Note 2 “Impact of the Invasion of Ukraine” for more information regarding the Company’s decisions to exit its operations in Russia.

Discussion of segment results from 2021 as compared to 2020 is included in “Part II. Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations — Results of Operations” of our Annual Report on Form 10-K for the year ended December 31, 2021.

Effects of Inflation

Economies in many countries where we operate have periodically experienced high rates of inflation, including during 2022. Periods of higher inflation may affect various economic sectors in those countries and increase our cost of doing business there. We do not believe that inflation has had a material impact on our business, results of operations or financial condition to date. We continue to track the impact of inflation, particularly on wages, while attempting to minimize its effects through pricing and cost management strategies. A higher-than-normal rate of inflation in the future could adversely affect our operations and financial condition.

Liquidity and Capital Resources

Capital Resources

Our cash generated from operations has been our primary source of liquidity to fund operations and investments to support the growth of our business. As of December 31, 2022, our principal sources of liquidity were cash and cash equivalents totaling \$1.681 billion, short-term investments totaling \$60.3 million as well as \$675.0 million of available borrowings under our revolving credit facility. See Note 10 “Debt” in the notes to our consolidated financial statements in this Annual Report on Form 10-K for information regarding the terms of our revolving credit facility and information about debt.

Cash Flows

The following table summarizes our cash flows for the periods indicated:

	For the Years Ended December 31,		
	2022	2021	2020
	(in thousands)		
Consolidated Statements of Cash Flow Data:			
Net cash provided by operating activities	\$ 464,104	\$ 572,327	\$ 544,407
Net cash used in investing activities	(182,927)	(368,924)	(167,154)
Net cash used in financing activities	(2,021)	(59,557)	(765)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(44,867)	(18,032)	9,357
Net increase in cash, cash equivalents and restricted cash	\$ 234,289	\$ 125,814	\$ 385,845
Cash, cash equivalents and restricted cash, beginning of period	1,449,347	1,323,533	937,688
Cash, cash equivalents and restricted cash, end of period	\$ 1,683,636	\$ 1,449,347	\$ 1,323,533

Operating Activities

Net cash provided by operating activities during the year ended December 31, 2022 decreased \$108.2 million, or 18.9%, to \$464.1 million, as compared to 2021. This decrease was largely driven by an increase in days sales outstanding during 2022, higher level of variable compensation payments made in 2022 based on 2021 performance, and cash outflows related to EPAM's humanitarian support efforts in Ukraine and geographic repositioning.

Investing Activities

Net cash used in investing activities during the year ended December 31, 2022 was \$182.9 million compared to \$368.9 million used in the same period in 2021. The cash used in investing activities was primarily attributable to \$81.6 million used for capital expenditures and an investment of \$60.0 million in time deposits in 2022 compared to cash used for capital expenditures of \$111.5 million partially offset by the maturity of \$60.0 million of time deposits during 2021. Additionally, during 2022 the cash used for the acquisitions of businesses, net of cash acquired was \$10.6 million compared to \$315.0 million used for the acquisitions of businesses, net of cash acquired, during 2021.

Financing Activities

During the year ended December 31, 2022, net cash used in financing activities was \$2.0 million, compared to \$59.6 million net cash used in financing activities in 2021. During 2022, we received cash from the exercises of stock options issued under our long-term incentive plans and proceeds from the purchases of shares under our ESPP of \$50.7 million, compared to \$26.3 million received in the corresponding period of 2021. These cash inflows were offset by cash used for the payments of withholding taxes related to net share settlements of restricted stock units of \$26.6 million in 2022, compared to \$41.6 million paid in 2021, and net cash repayments of debt of \$13.8 million in 2022, compared to net borrowings of \$0.1 million in 2021. Additionally, the year ended December 31, 2022 included payments of \$6.6 million attributable to the acquisition-date fair value of contingent consideration compared to payments of \$40.2 million attributable to acquisition-date fair value of contingent consideration during the year ended December 31, 2021.

Discussion of the comparison of the cash flows between 2021 and 2020 is included in "Part II. Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations — Liquidity and Capital Resources" of our Annual Report on Form 10-K for the year ended December 31, 2021.

Future Capital Requirements

We believe that our existing cash, cash equivalents and short-term investments, combined with our expected cash flow from operations will be sufficient to meet our projected operating and capital expenditure requirements for at least the next twelve months and that we possess the financial flexibility to execute our strategic objectives, including the ability to make acquisitions and strategic investments in the foreseeable future. However, the invasion of Ukraine, COVID-19 and the consequences and related measures to contain their impact have caused material disruptions in both national and global financial markets and economies. The future impact of the invasion of Ukraine and COVID-19 and responsive measures cannot be predicted with certainty and may increase our borrowing costs and other costs of capital and otherwise adversely affect our business, results of operations, financial condition and liquidity.

Our ability to expand and grow our business in accordance with current plans and to meet our long-term capital requirements will depend on many factors, including the rate at which our cash flows increase or decrease and the availability of public and private debt and equity financing. We may require additional cash resources due to changed business conditions or other future developments, including any investments or acquisitions we may decide to pursue. Our ability to generate cash is subject to our performance, general economic conditions, industry trends and other factors including the impact of the invasion of Ukraine and COVID-19 pandemic, each as described elsewhere in this Management's Discussion and Analysis of Financial Condition and Results of Operations. To the extent that existing cash, cash equivalents, short-term investments, and operating cash flows are insufficient to fund our future activities and requirements, we may need to raise additional funds through public or private equity or debt financing. If we issue equity securities in order to raise additional funds, substantial dilution to existing stockholders may occur. If we raise cash through the issuance of additional indebtedness, we may be subject to additional contractual restrictions on our business. There is no assurance that we would be able to raise additional funds on favorable terms or at all.

See Note 9 "Leases", Note 10 "Debt", Note 16 "Commitments and Contingencies" in the notes to our consolidated financial statements in this Annual Report on Form 10-K for information regarding our various contractual obligations and capital expenditure requirements.

Off-Balance Sheet Commitments and Arrangements

We do not have any material obligations under guarantee contracts or other contractual arrangements other than as disclosed in Note 16 "Commitments and Contingencies" in the notes to our consolidated financial statements in this Annual Report on Form 10-K. We have not entered into any transactions with unconsolidated entities where we have financial guarantees, subordinated retained interests, derivative instruments, or other contingent arrangements that expose us to material continuing risks, contingent liabilities, or any other obligation under a variable interest in an unconsolidated entity that provides financing, liquidity, market risk, or credit risk support to us, or engages in leasing, hedging, or research and development services with us.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

We are exposed to certain market risks in the ordinary course of our business. These risks primarily result from changes in concentration of credit risks, interest rates and foreign currency exchange rates. In addition, our global operations are subject to risks related to differing economic conditions, civil unrest, political instability or uncertainty, military activities, broad-based sanctions, differing tax structures, and other regulations and restrictions.

Concentration of Credit and Other Credit Risks

Financial instruments that potentially subject us to significant concentrations of credit risk consist primarily of cash, cash equivalents, short-term investments and trade receivables.

We maintain our cash, cash equivalents and short-term investments with financial institutions. We believe that our credit policies reflect normal industry terms and business risk. We do not anticipate non-performance by the counterparties.

We have cash in several countries, including Ukraine, Russia and Belarus, which could be impacted by the invasion of Ukraine and where the banking sector remains subject to periodic instability, banking and other financial systems in these countries generally do not meet the banking standards of more developed markets, and bank deposits made by corporate entities are not insured. As of December 31, 2022, we had \$47.1 million of cash and cash equivalents in banks in Ukraine, \$29.0 million of cash and cash equivalents in banks in Russia, and \$28.0 million of cash and cash equivalents in banks in Belarus. Cash in Ukraine and Belarus is used for the operational needs of the local entities and cash balances change with the expected operating needs of these entities. We regularly monitor cash held in these countries and, to the extent the cash held exceeds amounts required to support our operations in these countries, the Company distributes the excess funds into markets with more developed banking sectors to the extent it is possible to do so. Due to restrictions imposed by the Russian government, our ability to distribute excess funds from Russia to other countries is limited. On September 7, 2022, we executed an agreement to sell substantially all of our remaining holdings in Russia, including cash and cash equivalents, to a third party. As of December 31, 2022 and through the date of issuance of these financial statements, the long stop date of the agreement has passed and we are currently renegotiating the terms of that sale agreement as well as exploring other strategic alternatives. The timing and completion of a sale is uncertain and any sale would be subject to customary closing conditions, including regulatory approvals by the Russian government. We place our cash and cash equivalents with financial institutions considered stable in the region, limit the amount of credit exposure with any one financial institution and conduct ongoing evaluations of the credit worthiness of the financial institutions with which we do business. However, a banking crisis, bankruptcy or insolvency of banks that process or hold the Company's funds, or sanctions may result in the loss of our deposits or adversely affect the Company's ability to complete banking transactions, which could adversely affect our business and financial condition.

Trade receivables are generally dispersed across many customers operating in different industries; therefore, concentration of credit risk is limited and we do not believe significant credit risks existed at December 31, 2022. Though our results of operations depend on our ability to successfully collect payment from our customers for work performed, historically, credit losses and write-offs of trade receivables have not been material to our consolidated financial statements. If any of our customers enter bankruptcy protection or otherwise take steps to alleviate their financial distress, our credit losses and write-offs of trade receivables could increase, which would negatively impact our results of operations. Reflecting the deterioration of credit-worthiness of its customers in Russia after Russia's invasion of Ukraine, the Company evaluated its trade receivables and contract assets for estimated future credit losses from customers located in Russia and recorded net bad debt expense of \$5.1 million during the year 2022, which is included in Selling, general and administrative expenses. The Company is actively monitoring its trade receivables from its customers in Russia for any further deterioration of creditworthiness.

Interest Rate Risk

We are exposed to market risk from changes in interest rates. Exposure to interest rate risk results primarily from variable rates related to the cash and cash equivalent deposits, short-term investments, and our borrowings, mainly under our 2021 Credit Agreement, which is subject to a variety of rates depending on the currency and timing of funds borrowed. We do not believe we are exposed to material direct risks associated with changes in interest rates related to these deposits, investments and borrowings.

Foreign Exchange Risk

Our global operations are conducted predominantly in U.S. dollars. Other than U.S. dollars, the Company generates revenues in various currencies, principally, euros, British pounds, Swiss francs, Canadian dollars, and Russian rubles and incurs expenditures principally in euros, Polish zlotys, Russian rubles, Indian rupees, British pounds, Swiss francs, Hungarian forints, Mexican pesos, Colombian pesos, Canadian dollars, and Chinese yuan renminbi. As a result, currency fluctuations, specifically the depreciation of the euro, British pound, and Canadian dollar and the appreciation of the Russian ruble, Hungarian forint, Polish zloty, Indian rupee and Chinese yuan renminbi relative to the U.S. dollar, could negatively impact our results of operations. During the year ended December 31, 2022, approximately 33.4% of consolidated revenues and 53.7% of operating expenses were denominated in currencies other than the U.S. dollar.

During the year ended December 31, 2022, our foreign exchange loss was \$75.7 million compared to a \$7.2 million loss reported last year. Foreign exchange loss was primarily driven by the impact of appreciation of the Russian ruble on the Company's intercompany payables denominated in Russian rubles and U.S. dollar denominated assets held by our subsidiaries in Russia, and losses from our foreign exchange forward contracts associated with the Russian ruble during the first quarter of 2022.

To manage the risk of fluctuations in foreign currency exchange rates and hedge a portion of our forecasted foreign currency denominated operating expenses in the normal course of business, we implemented a hedging program through which we enter into a series of foreign exchange forward contracts with durations of twelve months or less that are designated as cash flow hedges of forecasted Polish zloty, Hungarian forint, and Indian rupee transactions. As of December 31, 2022, all of our foreign exchange forward contracts, except the Russian ruble foreign exchange forward contracts, were designated as hedges and there is no financial collateral (including cash collateral) required to be posted related to the foreign exchange forward contracts. As of December 31, 2022, the net unrealized gain from these hedges was \$2.8 million.

During the first quarter of 2022, in response to the invasion of Ukraine, we de-designated our Russian ruble foreign exchange forward contracts as hedges and entered into offsetting foreign exchange forward contracts with the same counterparty. We determined it was probable the underlying forecasted foreign currency transactions which were hedged would not occur and reclassified the accumulated loss of \$43.9 million on the underlying hedge into income which is classified as foreign exchange loss in the consolidated statement of income.

Management supplements results reported in accordance with United States generally accepted accounting principles, referred to as GAAP, with non-GAAP financial measures. Management believes these measures help illustrate underlying trends in our business and uses the measures to establish budgets and operational goals, communicated internally and externally, for managing our business and evaluating its performance. When important to management's analysis, operating results are compared on the basis of "constant currency," which is a non-GAAP financial measure. This measure excludes the effect of foreign currency exchange rate fluctuations by translating the current period revenues and expenses into U.S. dollars at the weighted average exchange rates of the prior period of comparison.

During the year ended December 31, 2022, we reported revenue growth of 28.4% over the prior year. Had our consolidated revenues been expressed in constant currency terms using the exchange rates in effect during 2021, we would have reported revenue growth of 32.4%. During 2022, our revenues were negatively impacted mainly by the depreciation of the euro and British pound relative to the U.S. dollar. During the year ended December 31, 2022, we reported a decrease in net income of 12.9% as compared to the previous year. Had our consolidated results been expressed in constant currency terms using the exchange rates in effect during 2021, we would have reported a decrease in net income of 17.1%. Net income was most positively impacted by the depreciation of the Polish zloty and the Hungarian forint, partially offset by the depreciation of the euro and British pound relative to the U.S. dollar.

Item 8. Financial Statements and Supplementary Data

The information required is included in this Annual Report on Form 10-K beginning on page F-1.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Conclusion Regarding the Effectiveness of Disclosure Controls and Procedures

Based on management's evaluation, with the participation of our Chief Executive Officer and Chief Financial Officer, as of the end of the period covered by this report, these officers have concluded that our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), are effective to provide reasonable assurance that information required to be disclosed by us in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in SEC rules and forms, and is accumulated and communicated to management, including our principal executive officer and principal financial officer, as appropriate, to allow timely decisions regarding required disclosure.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting during the quarter ended December 31, 2022 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting, except as described below.

During the year ended December 31, 2022, the Company made certain business acquisitions, as described more fully in Note 3 "Acquisitions" in the notes to our consolidated financial statements in this Annual Report on Form 10-K. As permitted by the Securities and Exchange Commission, management has elected to exclude these acquired entities from its assessment of the effectiveness of its internal controls over financial reporting as of December 31, 2022. The Company began to integrate these acquired companies into its internal control over financial reporting structure subsequent to their respective acquisition dates and expects to complete these integrations in 2023.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S. generally accepted accounting principles.

Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the criteria established in Internal Control — Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

Based on this assessment, management concluded that our internal control over financial reporting was effective as of December 31, 2022 to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S. generally accepted accounting principles.

The effectiveness of our internal control over financial reporting as of December 31, 2022 has been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report, which appears in "Part IV. Item 15 Exhibits, Financial Statement Schedule" of this Annual Report on Form 10-K.

Inherent Limitations on Effectiveness of Controls

Our management, including the CEO and CFO, does not expect that our disclosure controls or our internal control over financial reporting will prevent or detect all errors and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. 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. Further, because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud, if any, have been detected. The design of any system of controls is based in part on 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. Projections of any evaluation of the effectiveness of controls to future periods are subject to risks. Over time, controls may become inadequate because of changes in conditions or deterioration in the degree of compliance with policies or procedures.

Item 9B. Other Information

None.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

We incorporate by reference the information required by this Item from the information set forth under the captions "Board of Directors", "Corporate Governance", and "Our Executive Officers" in our definitive proxy statement for our 2023 annual meeting of stockholders, to be filed within 120 days after the end of the year covered by this Annual Report on Form 10-K, pursuant to Regulation 14A under the Exchange Act (our "2023 Proxy Statement").

Item 11. Executive Compensation

We incorporate by reference the information required by this Item from the information set forth under the captions "Executive Compensation" and "Compensation Committee Interlocks and Insider Participation" in our 2023 Proxy Statement.

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

We incorporate by reference the information required by this Item from the information set forth under the caption "Security Ownership of Certain Beneficial Owners and Management" in our 2023 Proxy Statement.

Equity Compensation Plan Information

The following table provides information about the Company's common stock that may be issued upon exercise of options and rights under the 2015 Long-Term Incentive Plan (the "2015 Plan"), the 2012 Long-Term Incentive Plan (the "2012 Plan"), the 2022 Non-Employee Directors Compensation Plan (the "2022 Directors Plan"), the 2012 Non-Employee Directors Compensation Plan (the "2012 Directors Plan") and the 2021 Employee Stock Purchase Plan ("ESPP") as of December 31, 2022:

<u>Plan Category</u>	Number of securities to be issued upon exercise of outstanding options, warrants and rights	Weighted average exercise price of outstanding options, warrants and rights	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in the first column)
	(in thousands, except dollar amounts)		
Equity compensation plans approved by security holders	2,854 ⁽¹⁾	\$ 98.92 ⁽²⁾	4,861 ⁽³⁾
Equity compensation plans not approved by security holders	—	\$ —	—
Total	<u>2,854</u>	<u>\$ 98.92</u>	<u>4,861</u>

(1) Includes the number of shares of common stock to be issued under the 2015 Plan, the 2012 Plan, the 2022 Directors Plan and the 2012 Directors Plan. See Note 13 "Stock Based Compensation" for more information regarding our plans and awards.

(2) Represents the weighted average exercise price of stock options only.

(3) Represents the number of shares available for future issuances under the 2015 Plan, the 2022 Directors Plan and ESPP.

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

We incorporate by reference the information required by this Item from the information set forth under the caption "Certain Relationships and Related Transactions and Director Independence" in our 2023 Proxy Statement.

Item 14. Principal Accountant Fees and Services

We incorporate by reference the information required by this Item from the information set forth under the caption "Independent Registered Public Accounting Firm" in our 2023 Proxy Statement.

PART IV

Item 15. Exhibits, Financial Statement Schedules

(a) We have filed the following documents as part of this annual report:

1. Audited Consolidated Financial Statements

Reference is made to the Index to Consolidated Financial Statements on Page F-1

2. Financial Statement Schedules

Reference is made to the Index to Consolidated Financial Statements on Page F-1

Schedule II Valuation and Qualifying Accounts is filed as part of this Annual Report on Form 10-K and should be read in conjunction with our audited consolidated financial statements and the related notes.

3. Exhibits

A list of exhibits required to be filed as part of this Annual Report on Form 10-K is set forth below:

Exhibit Number	Description
3.1	Certificate of Incorporation (incorporated herein by reference to Exhibit 3.1 to the Company's Form 10-K for the fiscal year ended December 31, 2011, SEC File No. 001-35418, filed March 30, 2012)
3.2	Amended and Restated Bylaws (incorporated by reference to Exhibit 3.2 to the Company's Current Report on Form 8-K filed February 11, 2022, SEC file No. 001-35418)
4.1	Form of Common Stock Certificate (incorporated herein by reference to Exhibit 4.1 to Amendment No. 6 to Form S-1, SEC File No. 333-174827, filed January 23, 2012 ("Amendment No. 6"))
4.4*	Description of the Registrant's Securities Registered Under Section 12 of the Securities Exchange Act of 1934
10.1†	EPAM Systems, Inc. 2012 Long-Term Incentive Plan (incorporated herein by reference to Exhibit 10.12 to Amendment No. 6)
10.2†	Form of Senior Management Non-Qualified Stock Option Award Agreement (under the EPAM Systems, Inc. 2012 Long-Term Incentive Plan) (incorporated herein by reference to Exhibit 10.13 to Amendment No. 6)
10.3†	Restricted Stock Award Agreement by and between Karl Robb and EPAM Systems, Inc. dated January 16, 2012 (incorporated herein by reference to Exhibit 10.14 to Amendment No. 6)
10.4†	Form of Chief Executive Officer Restricted Stock Unit Award Agreement (under the EPAM Systems, Inc. 2012 Long-Term Incentive Plan) (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2014, SEC File No. 001-35418, filed May 7, 2014 (the "Q1 2014 Form 10-Q"))
10.5†	Form of Senior Management Restricted Stock Unit Award Agreement (under the EPAM Systems, Inc. 2012 Long-Term Incentive Plan) (incorporated by reference to Exhibit 10.2 to the Q1 2014 Form 10-Q)
10.6†	Form of Chief Executive Officer Non-Qualified Stock Option Award Agreement (under the EPAM Systems, Inc. 2012 Long-Term Incentive Plan) (incorporated by reference to Exhibit 10.3 to the Q1 2014 Form 10-Q)
10.7†	Form of Chief Executive Officer Restricted Stock Unit Award Agreement (under the EPAM Systems, Inc. 2012 Long-Term Incentive Plan) (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2015, SEC File No. 001-35418, filed May 7, 2015 (the "Q1 2015 Form 10-Q"))
10.8†	Form of Senior Management Restricted Stock Unit Award Agreement (under the EPAM Systems, Inc. 2012 Long-Term Incentive Plan) (incorporated by reference to Exhibit 10.2 to the Q1 2015 Form 10-Q)
10.9†	EPAM Systems, Inc. 2015 Long-Term Incentive Plan (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2021 SEC File No. 001-35418, filed May 6, 2021 (the "Q1 2021 10-Q"))
10.10†	Form of Chief Executive Officer Non-Qualified Stock Option Award Agreement (incorporated by reference to Exhibit 10.2 to the Q1 2021 10-Q)
10.11†	Form of Chief Executive Officer Restricted Stock Unit Award Agreement (incorporated by reference to Exhibit 10.4 to the Q1 2021 10-Q)
10.12†	Form of Global Non-Qualified Stock Option Award Agreement for Senior Managers (incorporated by reference to Exhibit 10.3 to the Q1 2021 10-Q)
10.13†	Form of Global Restricted Stock Unit Award Agreement for Senior Managers (incorporated by reference to Exhibit 10.5 to the Q1 2021 10-Q)
10.14†	2022 Amended and Restated EPAM Systems, Inc. Non-Employee Directors Compensation Plan (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed on June 3, 2022, SEC File No. 001-35418)
10.15†	Form of Non-Employee Director Restricted Stock Award Agreement (under the EPAM Systems, Inc. 2012 Non-Employee Directors Compensation Plan) (incorporated herein by reference to Exhibit 10.16 to Amendment No. 6)
10.16†	Form of Director Offer Letter (incorporated herein by reference to Exhibit 10.18 to Amendment No. 6)
10.17†	Executive Employment Agreement by and between Arkadiy Dobkin and EPAM Systems, Inc. dated January 20, 2006 (expired except with respect to Section 8) (incorporated herein by reference to Exhibit 10.19 to Amendment No. 6)
10.18†	Employment Contract by and between Balazs Fejes and EPAM Systems (Switzerland) GmbH. dated June 15, 2009 (incorporated herein by reference to Exhibit 10.21 to Amendment No. 6)
10.19†	Consultancy Agreement by and between Landmark Business Development Limited, Balazs Fejes and EPAM Systems, Inc. dated January 20, 2006 (expired except with respect to Section 8) (incorporated herein by reference to Exhibit 10.22 to Amendment No. 6)

10.20†	Form of nondisclosure, noncompete and nonsolicitation agreement (incorporated herein by reference to Exhibit 10.24 to Amendment No. 6)
10.21†	Form of Indemnification Agreement (incorporated herein by reference to Exhibit 10.25 to Amendment No. 6)
10.22†	Offer Letter by and between Boris Shnyder and EPAM Systems, Inc. dated June 20, 2015 (incorporated by reference to Exhibit 10.28 to the Company's Form 10-K for the year ended December 31, 2016 (the "2016 10-K"))
10.23†	Offer Letter by and between Jason Peterson and EPAM Systems, Inc. dated March 16, 2017 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed March 29, 2017, SEC file No. 001-35418)
10.24†	EPAM Systems, Inc. Amended Non-Employee Directors Compensation Policy (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report for the quarter ended March 31, 2017, SEC File No., 001-35418, filed May 8, 2017 (the "Q1 2017 Form 10-Q"))
10.25†	Amended Non-Employee Director Compensation Policy (effective January 1, 2021) (incorporated by reference to Exhibit 10.6 to the Q1 2021 10-Q)
10.26†	EPAM Systems, Inc. 2017 Non-Employee Directors Deferral Plan (incorporated by reference to Exhibit 10.2 to the Q1 2017 Form 10-Q)
10.27†	Form of Non-Employee Director Restricted Stock Unit Award Agreement (incorporated by reference to Exhibit 10.3 to the Q1 2017 Form 10-Q)
10.28†	Form of Director Deferral Election Form (incorporated by reference to Exhibit 10.4 to the Q1 2017 Form 10-Q)
10.29†	EPAM Systems, Inc. 2021 Employee Stock Purchase Plan (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on June 10, 2021, SEC File No., 001-35418)
10.30	Amended and Restated Credit Agreement dated as of October 21, 2021 by and among EPAM Systems, Inc. (as borrower), the lenders and guarantors party thereto, and PNC Bank, National Association, as Administrative Agent, Swingline Loan Lender and Issuing Lender (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on October 25, 2021, SEC File No. 001-35418)
21.1*	Subsidiaries of the Registrant
23.1*	Consent of Independent Registered Public Accounting Firm
31.1*	Certification of the Chief Executive Officer pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934
31.2*	Certification of the Chief Financial Officer pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934
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
99.1*	EPAM Insider Trading Policy
101.INS	XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document
101.SCH	Inline XBRL Taxonomy Extension Schema Document
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File - (formatted as Inline XBRL and contained in Exhibit 101)
†	Indicates management contracts or compensatory plans or arrangements
*	Exhibits filed herewith

Item 16. Form 10-K Summary

None.

SIGNATURES

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

Date: February 23, 2023

EPAM SYSTEMS, INC.

By: /s/ Arkadiy Dobkin
Name: Arkadiy Dobkin
Title: Chairman, Chief Executive Officer and President
(principal executive officer)

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

Signature	Title	Date
<u>/s/ Arkadiy Dobkin</u> Arkadiy Dobkin	Chairman, Chief Executive Officer and President (principal executive officer)	February 23, 2023
<u>/s/ Jason Peterson</u> Jason Peterson	Senior Vice President, Chief Financial Officer and Treasurer (principal financial officer)	February 23, 2023
<u>/s/ Gary Abrahams</u> Gary Abrahams	Vice President, Corporate Controller, Chief Accounting Officer (principal accounting officer)	February 23, 2023
<u>/s/ Eugene Roman</u> Eugene Roman	Director	February 23, 2023
<u>/s/ Helen Shan</u> Helen Shan	Director	February 23, 2023
<u>/s/ Jill B. Smart</u> Jill B. Smart	Director	February 23, 2023
<u>/s/ Karl Robb</u> Karl Robb	Director	February 23, 2023
<u>/s/ Richard Michael Mayoras</u> Richard Michael Mayoras	Director	February 23, 2023
<u>/s/ Robert E. Segert</u> Robert E. Segert	Director	February 23, 2023
<u>/s/ Ronald P. Vargo</u> Ronald P. Vargo	Director	February 23, 2023

EPAM SYSTEMS, INC.
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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Directors of EPAM Systems, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of EPAM Systems, Inc. and subsidiaries (the "Company") as of December 31, 2022 and 2021, the related consolidated statements of income, comprehensive income, changes in stockholders' equity, and cash flows, for each of the three years in the period ended December 31, 2022, and the related notes and the schedule listed in the Index at Item 15 (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 have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control — Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated February 23, 2023, expressed an unqualified opinion on the Company's internal control over financial reporting.

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

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

Revenues — Refer to Notes 1 and 12 to the financial statements

Critical Audit Matter Description

The Company recognizes revenue when control of goods or services is passed to a customer in an amount that reflects the consideration the Company expects to be entitled to in exchange for those goods or services. Such control may be transferred over time or at a point in time depending on satisfaction of obligations stipulated by the contract. Total revenues were \$4.825 billion for the year ended December 31, 2022.

In 2022, the Company recognized revenue related to contracts with customers, with no single customer accounting for more than 10% of revenues. Although some of these revenues are recognized under long-term agreements of more than one year, others are negotiated on an annual basis or shorter. Given the number of customers and the nature of the different customer agreements, auditing revenue was challenging due to the extent of audit effort required to evaluate whether revenue was recorded in accordance with the terms of the contracts with the Company's customers.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to whether revenue was recorded in accordance with the terms of the contracts with the Company's customers included the following, among others:

- We tested the effectiveness of controls over revenue, including management's controls over (1) the determination of whether an arrangement with a customer meets the criteria to be considered a contract under ASC 606 and (2) the inputs used in and the mathematical accuracy of the contract revenue calculations and the terms of the related customer contracts.
- We selected a sample of recorded revenue transactions and (1) recalculated the amount using the terms of the customer contract and (2) tested whether the underlying arrangement with the customer met the criteria to be considered a contract under ASC 606 as of the date the revenue was recorded.
- We selected a sample of hours charged by the Company's employees in the Company's internal time tracking system, obtained support for whether such hours represented services provided to a customer, and tested whether the hours had been properly evaluated for inclusion in the Company's revenue calculations.

Impact of the Invasion of Ukraine — Refer to Notes 2 and 6 to the financial statements

Critical Audit Matter Description

In February 2022, Russian military forces attacked Ukraine resulting in sustained conflict and disruption in the affected region. The Company has significant operations and personnel in Ukraine and Belarus and is in the process of a phased exit of its operations in Russia. Auditing the impact of this matter was challenging due to the extent of audit effort required.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the impact of the invasion of Ukraine included the following, among others:

- We tested the effectiveness of controls over the evaluation of the accounting and disclosure associated with the impact of this matter.
- We increased the use of more experienced professionals, including the involvement of professionals with specialized skills and knowledge, to assist in the design and execution of audit procedures.
- We assessed the reasonableness of management's determination that the Russia reporting unit goodwill and long-lived assets were impaired.
- We evaluated the timing, measurement, and recording of the Russia employee separation costs including (1) inspection of management's plan and related communications; (2) reading of minutes of the Board of Directors; and (3) testing the mathematical accuracy of the calculations.
- We considered whether the planned sale of the Russia reporting unit met the criteria of being accounted for as held for sale including (1) review of the executed sale agreement; (2) reading of minutes of the Board of Directors; (3) inquiries of internal legal counsel and members of the Board of Directors; and (4) evaluating the status of regulatory approvals.
- We evaluated the de-designation of the Russian ruble foreign exchange forward contracts as hedges including (1) inspection of management's plan and related communications; (2) reading of minutes of the Board of Directors; and (3) testing the mathematical accuracy of the calculations.

/s/ DELOITTE & TOUCHE LLP

Philadelphia, Pennsylvania
February 23, 2023

We have served as the Company's auditor since 2006.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and Board of Directors of EPAM Systems, Inc.

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of EPAM Systems, Inc. and subsidiaries (the “Company”) as of December 31, 2022, based on criteria established in *Internal Control — Integrated Framework (2013)* 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 *Internal Control — Integrated Framework (2013)* issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended December 31, 2022, of the Company and our report dated February 23, 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.

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/ DELOITTE & TOUCHE LLP

Philadelphia, Pennsylvania
February 23, 2023

EPAM SYSTEMS, INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(In thousands, except par value)

	As of December 31, 2022	As of December 31, 2021
Assets		
Current assets		
Cash and cash equivalents	\$ 1,681,344	\$ 1,446,625
Trade receivables and contract assets, net of allowance of \$15,310 and \$5,521, respectively	932,626	768,928
Short-term investments	60,336	—
Prepaid and other current assets	85,319	53,927
Total current assets	2,759,625	2,269,480
Property and equipment, net	273,348	236,214
Operating lease right-of-use assets, net	148,780	184,841
Intangible assets, net	77,652	101,143
Goodwill	529,072	530,723
Deferred tax assets	172,797	143,928
Other noncurrent assets	47,877	56,898
Total assets	\$ 4,009,151	\$ 3,523,227
Liabilities		
Current liabilities		
Accounts payable	\$ 30,852	\$ 24,847
Accrued compensation and benefits expenses	475,871	502,997
Accrued expenses and other current liabilities	151,478	142,014
Short-term debt	2,861	16,018
Income taxes payable, current	46,069	27,440
Operating lease liabilities, current	40,352	50,104
Total current liabilities	747,483	763,420
Long-term debt	27,693	30,234
Operating lease liabilities, noncurrent	122,317	142,802
Other noncurrent liabilities	108,648	90,934
Total liabilities	1,006,141	1,027,390
Commitments and contingencies (Note 16)		
Stockholders' equity		
Common stock, \$0.001 par value; 160,000 authorized; 57,668 and 56,868 shares issued, 57,655 and 56,849 shares outstanding at December 31, 2022 and December 31, 2021, respectively	58	57
Additional paid-in capital	847,965	711,912
Retained earnings	2,248,948	1,829,532
Treasury stock	(118)	(177)
Accumulated other comprehensive loss	(95,321)	(54,207)
Total EPAM Systems Inc. stockholders' equity	3,001,532	2,487,117
Noncontrolling interest in consolidated subsidiaries	1,478	8,720
Total equity	\$ 3,003,010	\$ 2,495,837
Total liabilities and stockholders' equity	\$ 4,009,151	\$ 3,523,227

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

EPAM SYSTEMS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF INCOME
(In thousands, except per share data)

	For the Years Ended December 31,		
	2022	2021	2020
Revenues	\$ 4,824,698	\$ 3,758,144	\$ 2,659,478
Operating expenses:			
Cost of revenues (exclusive of depreciation and amortization)	3,286,683	2,483,697	1,732,522
Selling, general and administrative expenses	872,777	648,736	484,758
Depreciation and amortization expense	92,272	83,395	62,874
Income from operations	572,966	542,316	379,324
Interest and other income/(loss), net	10,025	(1,727)	3,822
Foreign exchange loss	(75,733)	(7,197)	(4,667)
Income before provision for income taxes	507,258	533,392	378,479
Provision for income taxes	87,842	51,740	51,319
Net income	\$ 419,416	\$ 481,652	\$ 327,160
Net income per share:			
Basic	\$ 7.32	\$ 8.52	\$ 5.87
Diluted	\$ 7.09	\$ 8.15	\$ 5.60
Shares used in calculation of net income per share:			
Basic	57,291	56,511	55,727
Diluted	59,169	59,064	58,446

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

EPAM SYSTEMS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In thousands)

	For the Years Ended December 31,		
	2022	2021	2020
Net income	\$ 419,416	\$ 481,652	\$ 327,160
Other comprehensive (loss)/income:			
Change in foreign currency translation adjustments, net of tax	(49,033)	(24,579)	4,498
Change in unrealized gain/(loss) on hedging instruments, net of tax	11,723	(7,059)	2,350
Defined benefit pension plans - actuarial (loss)/gain, net of tax	(3,804)	2,943	(986)
Other comprehensive (loss)/income	(41,114)	(28,695)	5,862
Comprehensive income	\$ 378,302	\$ 452,957	\$ 333,022

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

EPAM SYSTEMS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CHANGES IN
STOCKHOLDERS' EQUITY (In thousands)

	Common Stock		Additional Paid-in Capital	Retained Earnings	Treasury Stock		Accumulated Other Comprehensive Income/(Loss)	Non- controlling interest	Total Stockholders' Equity
	Shares	Amount			Shares	Amount			
Balance, January 1, 2020	55,188	\$ 55	\$ 607,051	\$ 1,020,590	20	\$ (177)	\$ (31,374)	\$ —	\$ 1,596,145
Cumulative effect of the adoption of ASU 2016-13	—	—	—	130	—	—	—	—	130
Adjusted Balance, January 1, 2020	55,188	\$ 55	\$ 607,051	\$ 1,020,720	20	\$ (177)	\$ (31,374)	\$ —	\$ 1,596,275
Restricted stock units vested	327	—	—	—	—	—	—	—	—
Equity withheld for employee taxes	(106)	—	(20,190)	—	—	—	—	—	(20,190)
Stock-based compensation expense	—	—	47,462	—	—	—	—	—	47,462
Exercise of stock options	699	1	26,448	—	—	—	—	—	26,449
Other comprehensive income	—	—	—	—	—	—	5,862	—	5,862
Net income	—	—	—	327,160	—	—	—	—	327,160
Balance, December 31, 2020	56,108	\$ 56	\$ 660,771	\$ 1,347,880	20	\$ (177)	\$ (25,512)	\$ —	\$ 1,983,018
Restricted stock units vested	311	—	—	—	—	—	—	—	—
Equity withheld for employee taxes	(106)	—	(45,070)	—	—	—	—	—	(45,070)
Stock-based compensation expense	—	—	69,899	—	—	—	—	—	69,899
Exercise of stock options	536	1	26,312	—	—	—	—	—	26,313
Other comprehensive loss	—	—	—	—	—	—	(28,695)	—	(28,695)
Noncontrolling interests acquired in business combination	—	—	—	—	—	—	—	10,469	10,469
Purchase of subsidiary shares from noncontrolling interest	—	—	—	—	—	—	—	(1,749)	(1,749)
Net income	—	—	—	481,652	—	—	—	—	481,652
Balance, December 31, 2021	56,849	57	711,912	1,829,532	20	(177)	(54,207)	8,720	2,495,837
Restricted stock units vested	252	—	—	—	—	—	—	—	—
Equity withheld for employee taxes	(83)	—	(23,650)	—	—	—	—	—	(23,650)
Stock issued in connection with Other 2021 acquisitions (Note 3)	6	—	1,941	—	(6)	59	—	—	2,000
Stock-based compensation expense	—	—	107,513	—	—	—	—	—	107,513
Exercise of stock options	511	1	21,850	—	—	—	—	—	21,851
Issuance of common stock from employee stock purchase plan	120	—	28,350	—	—	—	—	—	28,350
Other comprehensive loss	—	—	—	—	—	—	(41,114)	—	(41,114)
Purchase of subsidiary shares from noncontrolling interest	—	—	49	—	—	—	—	(7,315)	(7,266)
Contributions from noncontrolling interest	—	—	—	—	—	—	—	73	73
Net income	—	—	—	419,416	—	—	—	—	419,416
Balance, December 31, 2022	57,655	\$ 58	\$ 847,965	\$ 2,248,948	14	\$ (118)	\$ (95,321)	\$ 1,478	\$ 3,003,010

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

EPAM SYSTEMS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	For the Years Ended December 31,		
	2022	2021	2020
Cash flows from operating activities:			
Net income	\$ 419,416	\$ 481,652	\$ 327,160
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization expense	92,272	83,401	62,874
Operating lease right-of-use assets amortization expense	47,777	61,750	66,369
Bad debt expense	12,394	2,488	2,253
Deferred taxes	(42,164)	(46,900)	(19,994)
Stock-based compensation expense	99,909	111,655	75,238
Unrealized loss on Derivative	7,904	—	—
Impairment charges	23,619	144	—
Other	32,806	12,993	6,796
Changes in assets and liabilities:			
Trade receivables and contract assets	(192,712)	(211,684)	4,235
Prepaid and other assets	(12,140)	(16,182)	6,983
Accounts payable	(2,934)	(2,403)	2,428
Accrued expenses and other liabilities	26,025	155,657	60,133
Operating lease liabilities	(51,668)	(63,812)	(64,453)
Income taxes payable	3,600	3,568	14,385
Net cash provided by operating activities	464,104	572,327	544,407
Cash flows from investing activities:			
Purchases of property and equipment	(81,629)	(111,501)	(68,793)
Purchases of short-term investments	(60,000)	—	(120,000)
Proceeds from short-term investments	—	60,000	60,009
Acquisition of businesses, net of cash acquired (Note 3)	(10,644)	(314,958)	(18,888)
Purchases of non-marketable securities	(1,625)	(2,544)	(20,500)
Other investing activities, net	(29,029)	79	1,018
Net cash used in investing activities	(182,927)	(368,924)	(167,154)
Cash flows from financing activities:			
Proceeds from issuance of stock under the employee incentive programs	50,660	26,286	26,410
Payments of withholding taxes related to net share settlements of restricted stock units	(26,556)	(41,598)	(20,132)
Proceeds from debt	1,763	31,109	—
Repayment of debt	(15,542)	(31,054)	(18)
Payment of contingent consideration for previously acquired businesses	(6,626)	(40,227)	(7,004)
Purchase of noncontrolling interest	(2,254)	(1,749)	—
Other financing activities, net	(3,466)	(2,324)	(21)
Net cash used in financing activities	(2,021)	(59,557)	(765)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(44,867)	(18,032)	9,357
Net increase in cash, cash equivalents and restricted cash	234,289	125,814	385,845
Cash, cash equivalents and restricted cash, beginning of period	1,449,347	1,323,533	937,688
Cash, cash equivalents and restricted cash, end of period	\$ 1,683,636	\$ 1,449,347	\$ 1,323,533

EPAM SYSTEMS, INC. AND SUBSIDIARIES
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 during the year for:			
Income taxes, net of refunds	\$ 113,188	\$ 87,317	\$ 54,520
Interest	\$ 1,659	\$ 413	\$ 425
Supplemental disclosure of non-cash investing and financing activities			
Acquisition-date fair value of contingent consideration issued for acquisition of businesses	\$ 2,645	\$ 57,249	\$ 7,119
Capital expenditures incurred but not yet paid	\$ 57,114	\$ 7,738	\$ 1,582

The following table provides a reconciliation of cash, cash equivalents and restricted cash reported within the consolidated balance sheets:

	As of December 31, 2022	As of December 31, 2021	As of December 31, 2020
Balance sheet classification			
Cash and cash equivalents	\$ 1,681,344	\$ 1,446,625	\$ 1,322,143
Restricted cash in Prepaid and other current assets	430	495	106
Restricted cash in Other noncurrent assets	1,862	2,227	1,284
Total restricted cash	2,292	2,722	1,390
Total cash, cash equivalents and restricted cash	\$ 1,683,636	\$ 1,449,347	\$ 1,323,533

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

EPAM SYSTEMS, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(In thousands, except per share data and as otherwise disclosed)

1. BUSINESS AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

EPAM Systems, Inc. (the “Company” or “EPAM”) is a leading digital transformation services and product engineering company, providing digital platform engineering and software development services to customers located around the world, primarily in North America, Europe, and Asia. The Company’s industry expertise includes financial services, travel and consumer, software and hi-tech, business information and media, life sciences and healthcare, as well as several other industries. The Company is incorporated in Delaware with headquarters in Newtown, Pennsylvania.

Principles of Consolidation — The consolidated financial statements include the financial statements of EPAM and its subsidiaries. All intercompany balances and transactions have been eliminated.

Use of Estimates — The preparation of financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions. These estimates and assumptions affect reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as revenues and expenses during the reporting period. The Company bases its estimates and judgments on historical experience, knowledge of current conditions and its beliefs of what could occur in the future, given available information. Actual results could differ from those estimates, and such differences may be material to the financial statements.

Cash and Cash Equivalents — Cash equivalents are short-term, highly liquid investments and deposits that are readily convertible into cash, with maturities of three months or less at the date acquired. Highly liquid investments with maturities greater than three months at the date acquired are reported separately from cash equivalents.

Trade Receivables and Contract Assets — The Company classifies its right to consideration in exchange for deliverables as either a trade 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) regardless of whether the amounts have been billed. Trade receivables are stated net of allowance for doubtful accounts. Outstanding trade receivables are reviewed periodically and allowances are provided for the estimated amount of receivables that may not be collected. The allowance for doubtful accounts is determined based on historical experience and management’s evaluation of trade receivables. A contract asset is a right to consideration that is conditional upon factors other than the passage of time. Contract assets primarily relate to unbilled amounts on fixed-price contracts. Contract assets are recorded when services have been provided but the Company does not have an unconditional right to receive consideration. The Company recognizes an impairment loss when the contract carrying amount is greater than the remaining consideration receivable, less directly related costs to be incurred.

Property and Equipment — Property and equipment acquired in the ordinary course of the Company’s operations are stated at cost, net of accumulated depreciation. Depreciation is calculated on a straight-line basis over the estimated useful lives of the assets generally ranging from two to fifty years. Leasehold improvements are amortized on a straight-line basis over the shorter of the term of the lease or the estimated useful life of the improvement. Maintenance and repairs are expensed as incurred.

Business Combinations — The Company accounts for business combinations using the acquisition method which requires it to estimate the fair value of identifiable assets acquired and liabilities assumed, including any contingent consideration, to properly allocate the purchase price to the individual assets acquired and liabilities assumed in accordance with the Financial Accounting Standards Board (“FASB”) Accounting Standards Codification (“ASC”) Topic 805, *Business Combinations*. The allocation of the purchase price utilizes significant estimates in determining the fair values of identifiable assets acquired and liabilities assumed, especially with respect to intangible assets. The significant estimates and assumptions used include the timing and amount of forecasted revenues and cash flows, anticipated growth rates, customer attrition rates, the discount rate reflecting the risk inherent in future cash flows and the useful lives for finite-lived assets. There are different valuation models for each component, the selection of which requires considerable judgment. These determinations will affect the amount of amortization expense recognized in future periods. The Company bases its fair value estimates on assumptions it believes are reasonable but recognizes that the assumptions are inherently uncertain. The acquired assets typically include customer relationships, software, trade names, non-competition agreements, and assembled workforce and as a result, a substantial portion of the purchase price is allocated to goodwill and other intangible assets.

If the initial accounting for the business combination has not been completed by the end of the reporting period in which the business combination occurs, provisional amounts are reported to present information about facts and circumstances that existed as of the acquisition date. Once the measurement period ends, which in no case extends beyond one year from the acquisition date, revisions to the accounting for the business combination are recorded in earnings.

In some business combinations, the Company agrees to contingent consideration arrangements and the Company determines the fair value of contingent consideration using Monte Carlo simulations (which involve a simulation of future revenues and earnings during the earn-out period using management's best estimates) or probability-weighted expected return methods. Changes in financial projections, market risk assumptions, discount rates or probability assumptions related to achieving the various earn-out criteria would result in a change in the fair value of contingent consideration. Such changes, if any, are recorded within Interest and other income/(loss), net in the Company's consolidated statements of income.

All acquisition-related costs, other than the costs to issue debt or equity securities, are accounted for as expenses in the period in which they are incurred. Changes in the fair value of contingent consideration arrangements that are not measurement period adjustments are recognized in earnings.

Long-Lived Assets — Long-lived assets, such as property and equipment and finite-lived intangible assets, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. When the carrying value of an asset is more than the sum of the undiscounted expected future cash flows, an impairment is recognized. An impairment loss is measured as the excess of the asset's carrying amount over its fair value. Intangible assets that have finite useful lives are amortized over their estimated useful lives on a straight-line basis.

Goodwill and Other Indefinite-Lived Intangible Assets — Goodwill and other intangible assets that have indefinite useful lives are accounted for in accordance with FASB ASC 350, *Intangibles — Goodwill and Other*. The Company conducts its evaluation of goodwill impairment at the reporting unit level on an annual basis as of October 31st, and more frequently if events or circumstances indicate that the carrying value of a reporting unit exceeds its fair value. A reporting unit is an operating segment or one level below. The Company does not have intangible assets other than goodwill that have indefinite useful lives.

Derivative Financial Instruments — The Company enters into derivative financial instruments to manage exposure to fluctuations in certain foreign currencies. The Company measures these foreign currency derivative contracts at fair value on a recurring basis utilizing Level 2 inputs and recognizes them as either assets or liabilities in its consolidated balance sheets. The Company records changes in the fair value of these hedges in accumulated other comprehensive loss until the forecasted transaction occurs. When the forecasted transaction occurs, the Company reclassifies the related gain or loss on the cash flow hedge to cost of revenues (exclusive of depreciation and amortization). In the event the underlying forecasted transaction does not occur, or it becomes probable that it will not occur, the Company reclassifies the gain or loss on the underlying hedge into income. If the Company does not elect hedge accounting, or the contract does not qualify for hedge accounting treatment, the changes in fair value from period to period are recorded in income. The cash flow impact of derivatives identified as hedging instruments is reflected as cash flows from operating activities. The cash flow impact of derivatives not identified as hedging instruments is reflected as cash flows from investing activities.

Fair Value of Financial Instruments — The Company makes assumptions about fair values of its financial assets and liabilities in accordance with FASB ASC Topic 820, *Fair Value Measurement*, and utilizes the following fair value hierarchy in determining inputs used for valuation:

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

Level 2 — Inputs other than quoted prices within Level 1 that are observable either directly or indirectly, including quoted prices in markets that are not active, quoted prices in active markets for similar assets or liabilities, and observable inputs other than quoted prices such as interest rates or yield curves.

Level 3 — Unobservable inputs reflecting management's view about the assumptions that market participants would use in pricing the asset or liability.

Where the fair values of financial assets and liabilities recorded in the consolidated balance sheets cannot be derived from an active market, they are determined using a variety of valuation techniques. These valuation techniques include a net present value technique, comparison to similar instruments with market observable inputs, option pricing models and other relevant valuation models. To the extent possible, observable market data is used as inputs into these models but when it is not feasible, a degree of judgment is required to establish fair values.

Changes in the fair value of liabilities could cause a material impact to, and volatility in the Company's operating results. See Note 5 "Fair Value Measurements."

Accumulated Other Comprehensive Loss — Accumulated other comprehensive loss consists of changes in the cumulative foreign currency translation adjustments and actuarial gains and losses on defined benefit pension plans. In addition, the Company enters into foreign currency exchange contracts, which are designated as cash flow hedges in accordance with FASB ASC Topic 815, *Derivatives and Hedging*. Changes in the fair values of these foreign currency exchange contracts are recognized in Accumulated other comprehensive loss on the Company's consolidated balance sheets until the settlement of those contracts.

Revenue Recognition — The Company recognizes revenue in accordance with ASC 606 which requires entities to recognize revenue to depict the transfer of promised goods or services in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services as well as requires additional disclosure about the nature, amount, timing and uncertainty of revenues and cash flows arising from customer contracts, including significant judgments and changes in judgments.

The Company recognizes revenues when control of goods or services is passed to a customer in an amount that reflects the consideration the Company expects to be entitled to in exchange for those goods or services. Such control may be transferred over time or at a point in time depending on satisfaction of obligations stipulated by the contract. Consideration expected to be received may consist of both fixed and variable components and is allocated to each separately identifiable performance obligation based on the performance obligation's relative standalone selling price. Variable consideration usually takes the form of volume-based discounts, service level credits, price concessions or incentives. Determining the estimated amount of such variable consideration involves assumptions and judgment that can have an impact on the amount of revenues reported.

The Company derives revenues from a variety of service arrangements, which have been evolving to provide more customized and integrated solutions to customers by combining software engineering with customer experience design, business consulting and technology innovation services. Fees for these contracts may be in the form of time-and-materials or fixed-price arrangements. The Company generates the majority of its revenues 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. The Company applies a practical expedient and revenues related to time-and-material contracts are recognized based on the right to invoice for services performed.

Fixed-price contracts include maintenance and support arrangements which may exceed one year in duration. Maintenance and support arrangements generally relate to the provision of ongoing services and revenues for such contracts are recognized ratably over the expected service period. Fixed-price contracts also include application development arrangements, where progress towards satisfaction of the performance obligation is measured using input or output methods and input methods are used only when there is a direct correlation between hours incurred and the end product delivered. Assumptions, risks and uncertainties inherent in the estimates used to measure progress could affect the amount of revenues, receivables and deferred revenues at each reporting period.

Revenues from licenses which have significant stand-alone functionality are recognized at a point in time when control of the license is transferred to the customer. Revenues from licenses which do not have stand-alone functionality are recognized over time.

If there is an uncertainty about the receipt of payment for the services, revenue recognition is deferred until the uncertainty is sufficiently resolved. The Company applies a practical expedient and does not assess the existence of a significant financing component if the period between transfer of the service to a customer and when the customer pays for that service is one year or less.

The Company reports gross reimbursable "out-of-pocket" expenses incurred as both revenues and cost of revenues in the consolidated statements of income and comprehensive income.

Revenues are sourced from four geographic markets: Americas, EMEA, APAC and CEE. Americas includes revenues from customers in North, Central and South America; EMEA includes revenues from customers in Western Europe and the Middle East; APAC includes revenues from customers in East Asia, Southeast Asia and Australia; and CEE includes revenues from customers in Eastern Europe and Central Asia.

Cost of Revenues (Exclusive of Depreciation and Amortization) — Consists principally of salaries, bonuses, fringe benefits, stock-based compensation, project related travel costs and fees for subcontractors that are assigned to customer projects. Salaries and other compensation expenses of the Company's delivery professionals are reported as cost of revenues regardless of whether the employees are actually performing customer services during a given period.

Selling, General and Administrative Expenses — Consists of expenses associated with promoting and selling the Company's services and general and administrative functions of the business. These expenses include the costs of salaries, bonuses, fringe benefits, stock-based compensation, severance, bad debt, travel, legal and accounting services, insurance, facilities including operating leases, advertising and other promotional activities, and certain non-income taxes.

Stock-Based Compensation — The Company recognizes the cost of its equity settled stock-based incentive awards based on the fair value of the award at the date of grant, net of estimated forfeitures. The fair value of these awards at the date of grant is generally based on the grant-date price of the company's shares. The grant date fair value for stock options and stock purchase rights under the Employee Stock Purchase Plan ("ESPP") is estimated using the Black-Scholes option-pricing valuation model. The cost is generally expensed evenly over the service period, unless otherwise specified by the award agreement. The service period is the period over which the employee performs the related services, which is normally the same as the vesting period. Equity-based awards that do not require future service are expensed immediately. For awards with performance conditions, the amount of compensation cost we recognize over the requisite service period is based on the actual or expected achievement of the performance condition. Quarterly, the forfeiture assumption is adjusted to reflect actual forfeitures and such adjustment may affect the timing of recognition of the total amount of expense recognized over the vesting period. Stock-based awards that do not meet the criteria for equity classification are recorded as liabilities and adjusted to fair value at the end of each reporting period.

Income Taxes — The provision for income taxes includes federal, state, local and foreign taxes. Deferred tax assets and liabilities are recognized for the estimated future tax consequences of temporary differences between the financial statement carrying amounts and their respective tax bases. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the year in which the temporary differences are expected to be reversed. Changes to enacted tax rates would result in either increases or decreases in the provision for income taxes in the period of changes.

The realizability of deferred tax assets is primarily dependent on future earnings. The Company evaluates the realizability of deferred tax assets and recognizes a valuation allowance when it is more likely than not that all, or a portion of, deferred tax assets will not be realized. A reduction in estimated forecasted results may require that we record valuation allowances against deferred tax assets. Once a valuation allowance has been established, it will be maintained until there is sufficient positive evidence to conclude that it is more likely than not that the deferred tax assets will be realized. A pattern of sustained profitability will generally be considered as sufficient positive evidence to reverse a valuation allowance. If the allowance is reversed in a future period, the income tax provision will be correspondingly reduced. Accordingly, the increase and decrease of valuation allowances could have a significant negative or positive impact on future earnings.

The United States subjects corporations to taxes on Global Intangible Low-Taxed Income ("GILTI") earned by certain foreign subsidiaries. The Company elected to provide for the tax expense related to GILTI in the year the tax is incurred.

Earnings per Share ("EPS") — Basic EPS is computed by dividing income available to common shareholders by the weighted average number of shares of common stock outstanding during the period. Diluted earnings per share is computed by dividing income available to common shareholders by the weighted average number of shares of common stock outstanding during the period, increased by 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, unvested restricted stock, unvested restricted stock units ("RSUs") and the stock to be issued under the ESPP. The dilutive effect of potentially dilutive securities is reflected in diluted earnings per share by application of the treasury stock method.

Foreign Currency Translation and Remeasurement — Assets and liabilities of consolidated foreign subsidiaries whose functional currency is not the U.S. dollar are translated into U.S. dollars at period-end exchange rates and revenues and expenses are translated into U.S. dollars at daily exchange rates. The adjustment resulting from translating the financial statements of such foreign subsidiaries into U.S. dollars is reflected as a cumulative translation adjustment and reported as a component of Accumulated other comprehensive loss.

For consolidated foreign subsidiaries whose functional currency is not the local currency, transactions and balances denominated in the local currency are foreign currency transactions. Foreign currency transactions and balances related to non-monetary assets and liabilities are remeasured to the functional currency of the subsidiary at historical exchange rates while monetary assets and liabilities are remeasured to the functional currency of the subsidiary at period-end exchange rates. Foreign currency exchange gains or losses from remeasurement are included in income in the period in which they occur.

Risks and Uncertainties — As a result of its global operations, the Company may be subject to certain inherent risks.

Concentration of Credit — Financial instruments that potentially subject the Company to concentration of credit risk consist primarily of cash, cash equivalents, short-term investments and trade receivables. The Company maintains cash, cash equivalents and short-term investments with financial institutions. The Company believes its credit policies reflect normal industry terms and business risk and there is no expectation of non-performance by the counterparties.

The Company has cash in countries, including Ukraine, Russia and Belarus, which have been impacted by the invasion of Ukraine (see Note 2 “Impact of the Invasion of Ukraine”) and where the banking sector remains subject to periodic instability, 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. As of December 31, 2022, the Company had \$47.1 million of cash and cash equivalents in banks in Ukraine, \$29.0 million of cash and cash equivalents in banks in Russia, and \$28.0 million of cash and cash equivalents in banks in Belarus. Cash in Ukraine and Belarus is used for the operational needs of the local entities and cash balances change with the expected operating needs of these entities. The Company regularly monitors cash held in these countries and, to the extent the cash held exceeds amounts required to support its operations in these countries, the Company distributes the excess funds into markets with more developed banking sectors to the extent it is possible to do so. Due to restrictions imposed by the Russian government, our ability to distribute excess funds from Russia to other countries is limited. On September 7, 2022, we executed an agreement to sell substantially all of our remaining holdings in Russia, including cash and cash equivalents, to a third party. As of December 31, 2022 and through the date of issuance of these financial statements, the long stop date of the agreement has passed and we are currently renegotiating the terms of that sale agreement as well as exploring other strategic alternatives. The timing and completion of a sale is uncertain and any sale would be subject to customary closing conditions, including regulatory approvals by the Russian government. The Company places its cash and cash equivalents with financial institutions considered stable in the region, limits the amount of credit exposure with any one financial institution and conducts ongoing evaluations of the credit worthiness of the financial institutions with which it does business. However, a banking crisis, bankruptcy or insolvency of banks that process or hold the Company’s funds, or sanctions may result in the loss of deposits or adversely affect the Company’s ability to complete banking transactions, which could adversely affect the Company’s business and financial condition.

Trade receivables are generally dispersed across many customers operating in different industries; therefore, concentration of credit risk is limited. Historically, credit losses and write-offs of trade receivables have not been material to the consolidated financial statements. If any of the Company’s customers enter bankruptcy protection or otherwise take steps to alleviate their financial distress, the Company’s credit losses and write-offs of trade receivables could increase, which would negatively impact its results of operations. See Note 2 “Impact of the Invasion of Ukraine” for further discussion regarding trade receivables and contract assets from customers located in Russia.

Foreign currency risk — The Company’s global operations are conducted predominantly in U.S. dollars. Other than U.S. dollars, the Company generates revenues in various currencies, principally, euros, British pounds, Swiss francs, Canadian dollars and Russian rubles and incurs expenditures principally in euros, Polish zlotys, Russian rubles, Indian rupees, British pounds, Swiss francs, Hungarian forints, Mexican pesos, Colombian pesos, Canadian dollars and Chinese yuan renminbi. The Company’s international operations expose it to risk of adverse fluctuations in foreign currency exchange rates through the remeasurement of foreign currency denominated assets and liabilities (both third-party and intercompany) and translation of earnings and cash flows into U.S. dollars. The Company has a hedging program whereby it enters into a series of foreign exchange forward contracts with durations of twelve months or less that are designated as cash flow hedges of forecasted Polish zloty, Indian rupee and Hungarian forint transactions. See Note 6 “Derivative Financial Instruments” for further discussion regarding the Company’s termination of the hedging program for the Russian ruble.

Interest rate risk — The Company is exposed to market risk from changes in interest rates. Exposure to interest rate risk results primarily from variable rates related to cash and cash equivalent deposits, short-term investments, and the Company’s borrowings, mainly under the 2021 Credit Agreement, which is subject to a variety of rates depending on the type and timing of funds borrowed (See Note 10 “Debt”). The Company does not believe it is exposed to material direct risks associated with changes in interest rates related to these deposits, investments and borrowings.

Adoption of New Accounting Standards

Unless otherwise discussed below, the adoption of new accounting standards did not have a material impact on the Company's consolidated financial position, results of operations, and cash flows.

Government Assistance - In November 2021, the FASB issued Accounting Standards Update ("ASU") 2021-10, *Government Assistance (Topic 832) – Disclosures by Business Entities about Government Assistance*, which requires annual disclosures for entities receiving government assistance to provide more transparency by requiring disclosures of the following: (1) the nature of transactions, (2) the accounting for those transactions, and (3) the effect of those transactions on an entity's financial statements. This ASU is effective for fiscal years beginning after December 15, 2021. The ASU only impacts annual financial statement note disclosures.

The Company benefits from government grants in certain countries where it operates. The grants are generally subject to achieving certain employment and investment targets. The Company recognized \$10.2 million, \$3.7 million and \$1.6 million related to government grants during the years ended December 31, 2022, 2021 and 2020, respectively, which are included in Interest and other income/(loss), net in the consolidated statements of income.

Pending Accounting Standards

From time to time, new accounting pronouncements are issued by the FASB or other standards-setting bodies that the Company will adopt according to the various timetables the FASB specifies. The Company believes the impact of recently issued standards that are not yet effective will not have a material impact on its consolidated financial position, results of operations and cash flows upon adoption.

2. IMPACT OF THE INVASION OF UKRAINE

On February 24, 2022, Russian forces attacked Ukraine and its people and EPAM has repeatedly called for an immediate end to this unlawful and unconscionable attack. As of December 31, 2022, the Company had \$70.2 million of Property and equipment, net in Ukraine consisting of a building classified as construction-in-progress located in Kyiv with a net book value of \$51.4 million, laptops with a net book value of \$11.5 million, most of which are in the possession of employees, various office furniture, equipment and supplies with a net book value of \$6.3 million, and leasehold improvements located throughout Ukraine with a net book value of \$1.0 million. Additionally, as of December 31, 2022, the Company had Operating lease right-of-use assets located throughout Ukraine with a net book value of \$12.3 million. Through the issuance date of these financial statements, the Company is not aware of any damage to its long-lived assets in Ukraine and the Company expects to continue to use these assets as part of its global delivery model.

On March 4, 2022, the Company announced a \$100 million humanitarian commitment to support its employees and their families in and displaced from Ukraine. This humanitarian commitment is in addition to donations from EPAM's customers and employees and the work of EPAM volunteers on the ground. During the year ended December 31, 2022, the Company expensed \$44.8 million related to this commitment which included special cash payments to support impacted employees, financial and medical support for impacted families, travel, meals and lodging expenses, and donations to third-party humanitarian organizations. Of the expensed amount for the year ended December 31, 2022, \$29.0 million is classified in Cost of revenues (exclusive of depreciation and amortization) and \$15.8 million is classified in Selling, general and administrative expense on the consolidated financial statements.

The Company executed its business continuity plans following the invasion to assist relocating employees residing in Ukraine, Belarus and Russia to other countries and to assign delivery personnel in locations outside of the region to serve in unbilled standby or backup capacities to ensure the continuity of delivery for its customers who have substantial delivery exposure to Ukraine or other delivery concerns resulting from the invasion and ongoing war. In addition to costs incurred as part of EPAM's humanitarian commitment to Ukraine, during the year ended December 31, 2022, the Company incurred expenses of \$38.7 million related to its geographic repositioning efforts, classified as Selling, general and administrative expenses and \$14.7 million related to these standby resources, classified as Cost of revenues (exclusive of depreciation and amortization). During the year ended December 31, 2022, the Company also recorded an impairment charge of \$1.3 million, classified as Interest and other income/(loss), net related to a financial asset in Ukraine which the Company believed to be unrealizable due to the events in Ukraine.

In response to the attacks on Ukraine, EPAM announced on March 4, 2022, it would discontinue services to customers located in Russia. Based on this change in facts and circumstances, the long-term cash flow forecast for the Company's operations in Russia and its Russia reporting unit were significantly reduced. The reduction in the long-term cash flow forecasts indicated that the carrying amounts of goodwill and long-lived assets associated with the Company's Russia reporting unit and operations in Russia may not be recoverable, and the carrying value of these assets was tested for impairment. The Company relied on the income approach to estimate the fair values of the Russia reporting unit and long-lived assets and considered multiple scenarios including the continuing operation and exit of operations in Russia. Reflecting the negative long-term cash flow forecasts that each of these scenarios produced for these assets, during the three months ended March 31, 2022, the Company recorded impairments of Property and equipment, net of \$15.1 million, Operating lease right-of-use assets, net of \$3.8 million, and Goodwill of \$0.7 million. These asset impairment charges are included in Selling, general and administrative expenses in the consolidated financial statements for the year ended December 31, 2022. Additionally, the Company evaluated trade receivables and contract assets for estimated future credit losses from customers located in Russia and recorded net bad debt expense of \$5.1 million during the year ended December 31, 2022, reflecting the deterioration of creditworthiness of its customers in Russia. Bad debt expense is included in Selling, general and administrative expenses in the consolidated statements of income.

On April 7, 2022, the Company announced that it would begin the process of a phased exit of its operations in Russia, to be completed in the months following the announcement and in close collaboration with the Company's employees, contractors, and customers. In connection with the ongoing phased exit of its operations in Russia, the Company incurred employee separation costs of \$17.1 million during the year ended December 31, 2022.

On September 7, 2022, the Company executed an agreement to sell substantially all of its remaining holdings in Russia to a third party. As of December 31, 2022 and through the date of issuance of these financial statements, the long stop date of the agreement has passed and the Company is currently renegotiating the terms of that sale agreement as well as exploring other strategic alternatives. The timing and completion of a sale is uncertain and any sale would be subject to customary closing conditions, including regulatory approvals by the Russian government. Due to the significant uncertainty of obtaining the necessary regulatory approvals, the Company does not believe a sale was probable to be completed as of December 31, 2022 and has not reported the assets and liabilities to be sold as held for sale in its consolidated balance sheet.

As of December 31, 2022, the Company had the following assets and liabilities in Russia:

Cash and cash equivalents	\$	29,023
Trade receivables and contract assets, net of allowance of \$5,313		5,842
Prepaid and other current assets		425
Total assets in Russia	\$	35,290
Accounts payable	\$	82
Accrued compensation and benefits expenses		4,786
Accrued expenses and other current liabilities		2,464
Operating lease liabilities		546
Other noncurrent liabilities		62
Total liabilities in Russia	\$	7,940

As of December 31, 2022, based on the Company's expected net proceeds from sale and recognition of the accumulated currency translation loss currently included in Accumulated other comprehensive loss, the Company expects to record a loss upon the earlier of classification of the assets and liabilities to be sold as held for sale or closing of a sale. Such loss is not expected to be material based on the information available through the date of issuance of these financial statements. Fluctuations in foreign currency exchange rates could impact the gain or loss the Company could recognize in the future. If unable to complete a sale, the Company could recognize other charges including restructuring costs.

3. ACQUISITIONS

PolSource — On April 2, 2021, the Company acquired 100% of PolSource S.A. and its subsidiaries ("PolSource"), a Salesforce Platinum Consulting Partner with more than 350 experienced Salesforce specialists for a purchase price of \$148.2 million including contingent consideration with an acquisition-date fair value of \$35.4 million. At the time of the acquisition, the Company committed to paying up to \$45.0 million in contingent consideration, subject to attainment of certain revenue, earnings and operational targets.

CORE — On July 23, 2021, the Company acquired 100% of CORE SE and its subsidiaries (“CORE”), a professional service provider specializing in IT strategy and technology-driven transformations with office locations in Europe and the Middle East for a purchase price of \$50.2 million including contingent consideration with an acquisition-date fair value of \$4.0 million and deferred consideration of \$7.8 million. The Company could pay up to \$8.1 million in contingent consideration and the actual future payout is subject to attainment of certain revenue, earnings and operational targets.

Emakina — On November 3, 2021, the Company completed the acquisition of 98.69% of Emakina Group SA and its subsidiaries (“Emakina”), a group of independent digital agencies, for a purchase price of \$143.4 million in cash. On November 30, 2021, the Company completed the acquisition of the remaining 1.31% of Emakina Group SA’s outstanding shares for a purchase price of \$1.7 million in cash.

The following table summarizes the estimated fair values of the assets acquired and liabilities assumed as of the date of each respective acquisition and updated for any changes as of December 31, 2022:

	PolSource	CORE	Emakina
Cash and cash equivalents	\$ 2,565	\$ 11,283	\$ 5,142
Trade receivables and contract assets	12,734	10,266	34,389
Prepaid and other current assets	814	5,430	3,109
Goodwill	125,265	24,194	139,417
Intangible assets	15,790	8,368	30,488
Property and equipment and other noncurrent assets	461	4,585	16,802
Total assets acquired	\$ 157,629	\$ 64,126	\$ 229,347
Accounts payable, accrued expenses and other current liabilities	\$ 5,337	\$ 9,336	\$ 37,469
Short-term debt	—	—	13,657
Long-term debt	—	—	8,874
Operating lease liabilities, noncurrent	157	2,056	5,541
Other noncurrent liabilities	3,963	2,525	9,319
Total liabilities assumed	\$ 9,457	\$ 13,917	\$ 74,860
Noncontrolling interest in consolidated subsidiaries	—	—	10,469
Net assets acquired	\$ 148,172	\$ 50,209	\$ 144,018

During the year ended December 31, 2022, the Company completed the purchase price allocation for the acquisitions of PolSource, CORE, and Emakina and the estimated fair values of the assets acquired and liabilities assumed have been finalized. The effect of adjustments recorded during the year ended December 31, 2022 that would have been recognized in a prior period if the adjustment to the preliminary amounts had been recognized as of the acquisition date of each respective acquisition was not material.

The following table presents the estimated fair values and useful lives of intangible assets acquired from PolSource, CORE and Emakina as of the date of each respective acquisition and updated for any changes as of December 31, 2022:

	PolSource		CORE		Emakina	
	Weighted Average Useful Life (in years)	Amount	Weighted Average Useful Life (in years)	Amount	Weighted Average Useful Life (in years)	Amount
Customer relationships	6	\$ 14,790	6	\$ 7,779	7	\$ 27,822
Trade names	3	1,000	5	589	3	2,666
Total		\$ 15,790		\$ 8,368		\$ 30,488

The goodwill recognized as a result of the PolSource acquisition is attributable to synergies expected to be achieved by combining the businesses of EPAM and PolSource, expected future contracts, the assembled workforce acquired and other factors. The goodwill recognized as a result of the CORE acquisition is attributable to synergies expected to be achieved by expanding the Company’s ability to support customers as a strategic consultant in Europe and the Middle East, expected future contracts, the assembled workforce acquired and other factors. The goodwill recognized as a result of the Emakina acquisition is attributable to synergies expected to be achieved by enhancing EPAM’s digital experience practice as well as augmenting offerings in digital design and engineering capabilities, expected future contracts, the assembled workforce and other factors.

The goodwill acquired as a result of the PolSource, CORE and Emakina acquisitions is not expected to be deductible for income tax purposes.

During the year ended December 31, 2021, the Company recognized acquisition-related costs associated with the PolSource, CORE and Emakina acquisitions totaling \$1.4 million, \$1.2 million and \$1.0 million, respectively. Acquisition-related costs incurred during the years ended December 31, 2022 and 2020 were not material. These costs are included in Selling, general and administrative expenses in the accompanying consolidated statements of income.

Revenues generated by PolSource, CORE and Emakina included in the Company's consolidated statement of income totaled \$55.0 million, \$14.1 million and \$24.7 million during the year ended December 31, 2021, respectively. Pro forma results of operations have not been presented because the effect of these acquisitions on the Company's consolidated financial statements was not material individually or in the aggregate.

2020 Acquisitions — During the year ended December 31, 2020, the Company completed two acquisitions with an aggregate purchase price of \$22.5 million including contingent consideration with an aggregate acquisition-date fair value of \$5.3 million. The Company committed to making contingent consideration payments with a maximum aggregate amount payable of \$18.6 million subject to attainment of specified performance targets in the first and second calendar years after the respective acquisition dates. These acquisitions increased EPAM's software and service capabilities and expanded EPAM's offerings in financial services as well as added \$7.3 million of intangible assets, consisting mainly of customer relationships. Revenues generated by these acquisitions totaled \$6.0 million for the year ended December 31, 2020. Pro forma results of operations have not been presented because the effect of these acquisitions on the Company's consolidated financial statements was not material individually or in the aggregate.

Other 2021 Acquisitions — During the year ended December 31, 2021, the Company completed four additional acquisitions with an aggregate purchase price of \$65.2 million including contingent consideration with an acquisition-date fair value of \$17.6 million. The Company could pay up to \$30.2 million in contingent consideration and the actual future payouts are subject to attainment of specified performance targets during the periods ranging from 12 months to 48 months after the respective acquisition dates. These acquisitions increased EPAM's e-platform offerings and expanded the Company's geographical reach as well as added \$14.1 million in intangible assets, consisting mainly of customer relationships. Revenues generated by these Other 2021 Acquisitions totaled \$19.5 million during the year ended December 31, 2021. Pro forma results of operations have not been presented because the effect of these acquisitions on the Company's consolidated financial statements was not material individually or in the aggregate.

2022 Acquisitions — During the year ended December 31, 2022, the Company completed two acquisitions with a total purchase price of \$13.6 million including contingent consideration with total acquisition-date fair value of \$2.6 million. These acquisitions expanded EPAM's capabilities to deliver end-to-end solutions for designing and building sophisticated commerce platforms, provided opportunities for geographic expansion as well as added \$3.4 million of intangible assets, consisting of customer relationships. Revenues generated by these 2022 Acquisitions totaled \$8.7 million during the year ended December 31, 2022. Pro forma results of operations have not been presented because the effect of these acquisitions on the Company's consolidated financial statements was not material individually or in the aggregate.

4. GOODWILL AND INTANGIBLE ASSETS, NET

Goodwill by reportable segment was as follows:

	North America	Europe	Russia	Total
Balance as of January 1, 2021	\$ 121,132	\$ 90,106	\$ 718	\$ 211,956
Emakina acquisition	—	136,614	—	136,614
PolSource acquisition	75,203	50,136	—	125,339
CORE acquisition	—	23,234	—	23,234
Other 2021 Acquisitions	21,875	18,830	—	40,705
2020 Acquisitions purchase accounting adjustments	—	(24)	—	(24)
Effect of net foreign currency exchange rate changes	(616)	(6,483)	(2)	(7,101)
Balance as of December 31, 2021	\$ 217,594	\$ 312,413	\$ 716	\$ 530,723
Emakina acquisition purchase accounting adjustments	—	2,602	—	2,602
PolSource acquisition purchase accounting adjustments	(44)	(30)	—	(74)
CORE acquisition purchase accounting adjustments	—	959	—	959
Other 2021 Acquisitions purchase accounting adjustments	(20)	937	—	917
2022 Acquisitions	—	10,124	—	10,124
Goodwill impairment	—	—	(686)	(686)
Effect of net foreign currency exchange rate changes	(570)	(14,893)	(30)	(15,493)
Balance as of December 31, 2022	\$ 216,960	\$ 312,112	\$ —	\$ 529,072

See Note 2 “Impact of the Invasion of Ukraine” for more information regarding the goodwill impairment recorded in the Russia segment during the year ended December 31, 2022.

The Russia segment had accumulated goodwill impairment losses of \$2.9 million as of December 31, 2022 and \$2.2 million as of December 31, 2021 and 2020. There were no accumulated goodwill impairment losses in the North America or Europe reportable segments as of December 31, 2022, 2021 or 2020.

Intangible assets other than goodwill as of December 31, 2022 and 2021 were as follows:

	Weighted average life at acquisition (in years)	As of December 31, 2022		
		Gross carrying amount	Accumulated amortization	Net carrying amount
Customer relationships	8	\$ 154,407	\$ (82,505)	\$ 71,902
Trade names	4	10,520	(7,900)	2,620
Software	6	6,022	(3,644)	2,378
Contract royalties	8	1,900	(1,148)	752
Total		\$ 172,849	\$ (95,197)	\$ 77,652

	Weighted average life at acquisition (in years)	As of December 31, 2021		
		Gross carrying amount	Accumulated amortization	Net carrying amount
Customer relationships	10	\$ 156,118	\$ (64,441)	\$ 91,677
Trade names	6	10,933	(6,086)	4,847
Software	6	6,223	(2,639)	3,584
Contract royalties	8	1,900	(910)	990
Assembled workforce	3	161	(116)	45
Total		\$ 175,335	\$ (74,192)	\$ 101,143

All of the intangible assets other than goodwill have finite lives and as such are subject to amortization. Amortization of the other intangible assets is recognized in Depreciation and amortization expense in the consolidated statements of income.

The following table presents amortization expense recognized for the periods indicated:

	For the Years Ended December 31,		
	2022	2021	2020
Customer relationships	\$ 18,946	\$ 15,399	\$ 10,478
Trade names	1,909	842	495
Software	1,086	1,114	1,068
Contract royalties	238	238	238
Assembled workforce	44	53	61
Total	\$ 22,223	\$ 17,646	\$ 12,340

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:

Year ending December 31,	Amount
2023	\$ 21,727
2024	18,870
2025	15,120
2026	10,973
2027	6,918
Thereafter	4,044
Total	\$ 77,652

5. FAIR VALUE MEASUREMENTS

The Company carries certain assets and liabilities at fair value on a recurring basis on its consolidated balance sheets. The following table shows the fair values of the Company's financial assets and liabilities measured at fair value on a recurring basis as of December 31, 2022:

	As of December 31, 2022			
	Balance	Level 1	Level 2	Level 3
Foreign exchange derivative assets	\$ 12,191	\$ —	\$ 12,191	\$ —
Rights to acquire noncontrolling interest in consolidated subsidiaries	334	—	—	334
Total assets measured at fair value on a recurring basis	\$ 12,525	\$ —	\$ 12,191	\$ 334
Foreign exchange derivative liabilities	\$ 9,350	\$ —	\$ 9,350	\$ —
Contingent consideration	24,308	—	—	24,308
Total liabilities measured at fair value on a recurring basis	\$ 33,658	\$ —	\$ 9,350	\$ 24,308

The following table shows the fair values of the Company's financial assets and liabilities measured at fair value on a recurring basis as of December 31, 2021.

	As of December 31, 2021			
	Balance	Level 1	Level 2	Level 3
Foreign exchange derivative assets	\$ 1,429	\$ —	\$ 1,429	\$ —
Rights to acquire noncontrolling interest in consolidated subsidiaries	6,093	—	—	6,093
Total assets measured at fair value on a recurring basis	\$ 7,522	\$ —	\$ 1,429	\$ 6,093
Foreign exchange derivative liabilities	\$ 5,849	\$ —	\$ 5,849	\$ —
Contingent consideration	23,114	—	—	23,114
Total liabilities measured at fair value on a recurring basis	\$ 28,963	\$ —	\$ 5,849	\$ 23,114

The foreign exchange derivatives are valued using pricing models and discounted cash flow methodologies based on observable foreign exchange data at the measurement date. See Note 6 "Derivative Financial Instruments" for additional information regarding derivative financial instruments.

As part of the acquisition of Emakina, the Company acquired rights to purchase certain noncontrolling interests in consolidated subsidiaries of Emakina in exchange for future cash payments determined by the future profitability of certain subsidiaries. The Company determines the fair value of these rights by (i) estimating the fair value of the noncontrolling interests in consolidated subsidiaries by applying an EBITDA multiple adjusted for a lack of control and marketability, less (ii) the fair value of expected future payments to settle the related contractual obligations. The Company purchased the majority of the noncontrolling interest in consolidated subsidiaries during the year ended December 31, 2022.

The Company determines the fair value of the contingent consideration using Monte Carlo simulations or probability-weighted expected return methods. The fair value of the contingent consideration for the PolSource acquisition attributable to future revenues and earnings was measured utilizing a Monte Carlo simulation, based on future revenue and earnings projections of the business, revenue volatility and asset volatility of comparable companies, and a discount rate. The discount rate used to determine the fair value of this contingent consideration was 0.4% as of the acquisition date. The fair value of the contingent consideration for the PolSource acquisition attributable to future operating metrics was measured using a probability-weighted expected return method, based on the expected future payments using the earnout formula and performance targets specified in the purchase agreement and adjusting those estimates to reflect the probability of their achievement. The weighted average estimated future payments were then discounted to present value using a rate based on EPAM's cost of debt. The discount rate used to determine the fair value of this contingent consideration was 0.4% as of the acquisition date.

The fair value of the contingent consideration liabilities for all other acquisitions was determined using a probability-weighted expected return method and is based on the expected future payments to be made to the sellers of the acquired businesses in accordance with the provisions outlined in the respective purchase agreements. Although there is significant judgment involved, the Company believes its estimates and assumptions are reasonable. In determining fair value, the Company considered a variety of factors, including future performance of the acquired businesses using financial projections developed by the Company and market risk assumptions that were derived for revenue growth and earnings before interest and taxes. The Company estimated future payments using the earnout formula and performance targets specified in the purchase agreements and adjusted those estimates to reflect the probability of their achievement. Those weighted average estimated future payments were then discounted to present value using a rate based on the weighted average cost of capital of guideline companies. The discount rate used to determine the fair value of contingent consideration for the 2022 Acquisitions ranged from a minimum of 13.0% to a maximum of 15.0%. The discount rate used to determine the fair value of contingent consideration for the CORE acquisition was 13.0%. The discount rates used to determine the fair value of contingent consideration for the Other 2021 Acquisitions ranged from a minimum of 15.0% to a maximum of 22.0%. The discount rates used to determine the fair value of contingent consideration for the 2020 Acquisitions ranged from a minimum of 15.5% to a maximum of 17.5%. Changes in financial projections, market risk assumptions, discount rates or probability assumptions related to achieving the various earnout criteria would result in a change in the fair value of the recorded contingent liabilities. Such changes, if any, are recorded within Interest and other income/(loss), net in the Company's consolidated statement of income.

A reconciliation of the beginning and ending balances of Level 3 contingent consideration liabilities using significant unobservable inputs for the years ended December 31, 2020, December 31, 2021 and December 31, 2022 are as follows:

	<u>Amount</u>
Contingent consideration liabilities as of January 1, 2020	\$ 10,495
Acquisition date fair value of contingent consideration — 2020 Acquisitions	5,292
Changes in fair value of contingent consideration included in Interest and other income/(loss), net	1,827
Payment of contingent consideration for previously acquired businesses	(9,619)
Effect of net foreign currency exchange rate changes	(525)
Contingent consideration liabilities as of December 31, 2020	\$ 7,470
Acquisition date fair value of contingent consideration — PolSource acquisition	35,400
Acquisition date fair value of contingent consideration — CORE acquisition	4,007
Acquisition date fair value of contingent consideration — Emakina acquisition	213
Acquisition date fair value of contingent consideration — Other 2021 Acquisitions	17,629
Changes in fair value of contingent consideration included in Interest and other income/(loss), net	8,782
Payment of contingent consideration for previously acquired businesses	(50,000)
Effect of net foreign currency exchange rate changes	(387)
Contingent consideration liabilities as of December 31, 2021	\$ 23,114
Acquisition date fair value of contingent consideration — 2022 Acquisitions	2,645
Changes in fair value of contingent consideration included in Interest and other income/(loss), net	11,101
Payment of contingent consideration for previously acquired businesses	(11,328)
Effect of net foreign currency exchange rate changes	(1,224)
Contingent consideration liabilities as of December 31, 2022	\$ 24,308

See Note 2, “Impact of the Invasion of Ukraine” for discussion of the nonrecurring level 3 fair value assessment used in the impairment tests of long-lived assets in Russia.

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 on the Company’s consolidated balance sheets 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 uses the following methods to estimate the fair values of its financial instruments:

- for financial instruments that have quoted market prices, those quoted prices are used to estimate fair value;
- for financial instruments for which no quoted market prices are available, fair value is estimated using information obtained from independent third parties, or by discounting the expected cash flows using an estimated current market interest rate for the financial instrument;
- for financial instruments for which no quoted market prices are available and that have no defined maturity, have a remaining maturity of 360 days or less, or repriced frequently to a market rate, the Company assumes that the fair value of these instruments approximates their reported value, after taking into consideration any applicable credit risk.

The generally short maturities of certain assets and liabilities result in a number of assets and liabilities for which fair value equals or closely approximates the amount recorded on the Company’s consolidated balance sheets. Such financial assets and liabilities that are not carried at fair value on a recurring basis on the Company’s consolidated balance sheets are cash equivalents, restricted cash, short-term investments, employee loans and debt (Note 10 “Debt”).

The following tables present the estimated fair values of the Company's financial assets and liabilities not measured at fair value on a recurring basis as of the dates indicated:

	Balance	Estimated Fair Value	Fair Value Hierarchy		
			Level 1	Level 2	Level 3
December 31, 2022					
Financial Assets:					
Cash equivalents:					
Money market funds	\$ 312,321	\$ 312,321	\$ 312,321	\$ —	\$ —
Total cash equivalents	\$ 312,321	\$ 312,321	\$ 312,321	\$ —	\$ —
Restricted cash	\$ 2,292	\$ 2,292	\$ 2,292	\$ —	\$ —
Time deposits included in Short-term investments	\$ 60,336	\$ 60,336	\$ —	\$ 60,336	\$ —
Financial Liabilities:					
Short-term debt	\$ 2,861	\$ 2,861	\$ —	\$ 2,861	\$ —
Borrowings under 2021 Credit Agreement	\$ 25,000	\$ 25,000	\$ —	\$ 25,000	\$ —
Other long-term debt	\$ 2,693	\$ 2,693	\$ —	\$ 2,693	\$ —
Deferred consideration for asset acquisition	\$ 53,636	\$ 53,636	\$ —	\$ 53,636	\$ —

	Balance	Estimated Fair Value	Fair Value Hierarchy		
			Level 1	Level 2	Level 3
December 31, 2021					
Financial Assets:					
Cash equivalents:					
Money market funds	\$ 78,302	\$ 78,302	\$ 78,302	\$ —	\$ —
Total cash equivalents	\$ 78,302	\$ 78,302	\$ 78,302	\$ —	\$ —
Restricted cash	\$ 2,722	\$ 2,722	\$ 2,722	\$ —	\$ —
Employee loans	\$ 818	\$ 818	\$ —	\$ —	\$ 818
Financial Liabilities:					
Short-term debt	\$ 16,018	\$ 16,018	\$ —	\$ 16,018	\$ —
Borrowings under 2021 Credit Agreement	\$ 25,000	\$ 25,000	\$ —	\$ 25,000	\$ —
Other long-term debt	\$ 5,234	\$ 5,234	\$ —	\$ 5,234	\$ —

Non-Marketable Securities Without Readily Determinable Fair Values

The Company holds investments in equity securities that do not have readily determinable fair values. These investments are recorded at cost and are remeasured to fair value based on certain observable price changes or impairment events as they occur. The carrying amount of these investments was \$28.4 million and \$27.5 million as of December 31, 2022 and December 31, 2021, respectively and is classified as Other noncurrent assets in the Company's consolidated balance sheets.

6. DERIVATIVE FINANCIAL INSTRUMENTS

In the normal course of business, the Company uses derivative financial instruments to manage the risk of fluctuations in foreign currency exchange rates. The Company has a hedging program whereby it enters into a series of foreign exchange forward contracts with durations of twelve months or less that are designated as cash flow hedges of forecasted Polish zloty, Hungarian forint and Indian rupee transactions.

During the three months ended March 31, 2022, in response to the invasion of Ukraine, the Company de-designated its Russian ruble foreign exchange forward contracts as hedges and entered into offsetting foreign exchange forward contracts with the same counterparty. The Company determined it was probable the underlying forecasted foreign currency transactions which were hedged would not occur and reclassified the accumulated loss of \$43.9 million on the underlying hedges into income which is classified as foreign exchange loss in the consolidated statement of income.

The Company measures derivative instruments and hedging activities at fair value and recognizes them as either assets or liabilities in its consolidated balance sheets. Accounting for the gains and losses resulting from changes in fair value depends on the use of the derivative and whether it is designated and qualifies for hedge accounting. To receive hedge accounting treatment, all hedging relationships are formally documented at the inception of the hedge, and the hedges must be highly effective in offsetting changes to future cash flows on hedged transactions. As of December 31, 2022, all of the Company's foreign exchange forward contracts, except the Russian ruble foreign exchange forward contracts, were designated as hedges.

Derivatives may give rise to credit risks from the possible non-performance by counterparties. The Company has limited its credit risk by entering into derivative transactions only with highly rated financial institutions and by conducting an ongoing evaluation of the creditworthiness of the financial institutions with which the Company does business. There is no financial collateral (including cash collateral) required to be posted by the Company related to the foreign exchange forward contracts.

The fair value of foreign currency derivative instruments on the Company's consolidated balance sheets as of December 31, 2022 and December 31, 2021 were as follows:

	Balance Sheet Classification	As of December 31, 2022		As of December 31, 2021	
		Asset Derivatives	Liability Derivatives	Asset Derivatives	Liability Derivatives
Foreign exchange forward contracts - Designated as hedging instruments	Prepaid expenses and other current assets	\$ 12,191		\$ 1,429	
	Accrued expenses and other current liabilities		\$ 1,445		\$ 5,849
Foreign exchange forward contracts - Not designated as hedging instruments	Accrued expenses and other current liabilities		\$ 7,905		\$ —

7. PROPERTY AND EQUIPMENT, NET

Property and equipment, net consisted of the following:

	Weighted Average Useful Life (in years)	As of December 31, 2022	As of December 31, 2021
Computer hardware	3	\$ 157,283	\$ 167,546
Purchased computer software	5	99,414	33,649
Buildings	44	54,627	55,388
Leasehold improvements	9	32,949	37,828
Furniture, fixture and other equipment	7	22,153	31,961
Office equipment	7	19,039	22,881
Land improvements	18	2,137	2,137
Land	n/a	1,339	1,339
Construction in progress	n/a	51,502	50,133
		440,443	402,862
Less: accumulated depreciation and amortization		(167,095)	(166,648)
Total		\$ 273,348	\$ 236,214

Depreciation and amortization expense related to property and equipment was \$69.0 million, \$65.5 million and \$50.5 million during the years ended December 31, 2022, 2021 and 2020, respectively.

The Company has assets which generate lease income including subleases of portions of its office space to third parties. The gross amount of such assets was \$3.6 million and \$3.3 million, and the associated accumulated depreciation was \$0.3 million and \$0.2 million as of December 31, 2022 and 2021, respectively. Depreciation expense associated with these assets held under operating leases was \$0.1 million for both years ended December 31, 2022 and 2021.

The Company owns buildings located in Belarus, which are used in the Company's normal operations as office space for its employees. On November 17, 2021, the Company acquired an office building in the process of being constructed in Kyiv, Ukraine for \$50.1 million. Once completed, the acquired building is intended to be used in the Company's normal operations as office space for its employees. The office building is classified as construction-in-progress as of December 31, 2022 and due to Russia's invasion of Ukraine, it is uncertain when this office building will be available for its intended use. See Note 2 "Impact of the Invasion of Ukraine" for more information regarding the assets in Ukraine.

During the year ended December 31, 2022, the Company completed an asset acquisition of software licenses for use in the regular course of business for a purchase price of \$66.1 million, which includes an upfront payment of \$13.3 million and fixed deferred consideration, payable in annual installments, with an acquisition-date fair value of \$52.8 million. To estimate fair value, the future payments were discounted to present value using a discount rate based on the estimated borrowing rate of the Company. The weighted average discount rate used to determine the acquisition-date fair value was 5.20%. See Note 16 "Commitments and Contingencies" for more information regarding the deferred consideration.

8. ACCRUED EXPENSES AND OTHER CURRENT LIABILITIES

Accrued expenses and other current liabilities consisted of the following:

	As of December 31, 2022	As of December 31, 2021
Value added taxes payable	\$ 47,433	\$ 49,924
Deferred revenue	36,036	39,810
Contingent consideration, current (Note 5)	18,008	9,405
Other current liabilities and accrued expenses	50,001	42,875
Total	\$ 151,478	\$ 142,014

9. LEASES

The Company leases office space, corporate apartments, office equipment, and vehicles. Many of the Company's leases contain variable payments including changes in base rent and charges for common area maintenance or other miscellaneous expenses. Due to this variability, the cash flows associated with these variable payments are not included in the minimum lease payments used in determining the right-of-use assets and associated lease liabilities and are recognized in the period in which the obligation for such payments is incurred. The Company's leases have remaining lease terms ranging from 0.1 to 9.1 years. Certain lease agreements, mainly for office space, include options to extend or terminate the lease before the expiration date. The Company considers such options when determining the lease term when it is reasonably certain that the Company will exercise that option. The Company leases and subleases a portion of its office space to third parties. Lease income and sublease income were immaterial for the years ended December 31, 2022, 2021 and 2020. See Note 2 "Impact of the Invasion of Ukraine" for discussion of impairment of right-of-use assets in Russia.

During the years ended December 31, 2022, 2021 and 2020, the components of lease expense were as follows:

	Income Statement Classification	Year Ended December 31, 2022	Year Ended December 31, 2021	Year Ended December 31, 2020
Operating lease cost	Selling, general and administrative expenses	\$ 51,775	\$ 67,144	\$ 73,740
Variable lease cost	Selling, general and administrative expenses	10,372	8,555	6,461
Short-term lease cost	Selling, general and administrative expenses	5,289	2,248	1,169
Total lease cost		\$ 67,436	\$ 77,947	\$ 81,370

Supplemental cash flow information related to leases for the years ended December 31, 2022 and 2021 were as follows:

	Year Ended December 31, 2022	Year Ended December 31, 2021
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows used for operating leases	\$ 54,344	\$ 68,986
Right-of-use assets obtained in exchange for lease obligations:		
Operating leases	\$ 35,048	\$ 18,590
Non-cash net (decrease)/ increase due to lease modifications:		
Operating lease right-of-use assets	\$ (2,934)	\$ 7,000
Operating lease liabilities	\$ (4,254)	\$ 7,062

Weighted average remaining lease terms and discount rates as of December 31, 2022 and 2021, were as follows:

	As of December 31, 2022	As of December 31, 2021
Weighted average remaining lease term, in years:		
Operating leases	5.4	5.5
Weighted average discount rate:		
Operating leases	2.8 %	2.5 %

As of December 31, 2022, operating lease liabilities will mature as follows:

Year ending December 31,	Lease Payments
2023	\$ 43,813
2024	36,250
2025	28,485
2026	22,321
2027	14,324
Thereafter	28,254
Total lease payments	173,447
Less: imputed interest	(10,778)
Total	\$ 162,669

There were no lease agreements that contained material restrictive covenants or material residual value guarantees as of December 31, 2022. 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 \$15.7 million related to operating lease agreements that had not yet commenced as of December 31, 2022. These operating leases will commence on various dates during 2023 and 2024 with lease terms ranging from 0.1 to 7.3 years. The Company does not have any material finance lease agreements that had not yet commenced.

10. DEBT

Revolving Credit Facility — On October 21, 2021, the Company replaced its 2017 credit facility with a new unsecured credit agreement (the “2021 Credit Agreement”) with PNC Bank, National Association; PNC Capital Markets LLC; Citibank N.A.; Wells Fargo Bank, National Association; Santander Bank, N.A.; and Raiffeisen Bank International AG (collectively the “Lenders”). The 2021 Credit Agreement provides for a revolving credit facility (the “2021 Revolving Facility”) with a borrowing capacity of \$700.0 million, with the potential to increase the borrowing capacity up to \$1,000.0 million if certain conditions are met. The 2021 Credit Agreement matures on October 21, 2026.

Borrowings under the 2021 Revolving Facility may be denominated in U.S. dollars or up to a maximum of \$150.0 million equivalent in British pounds sterling, Canadian dollars, euros or Swiss francs and other currencies as may be approved by the administrative agent and the Lenders. Borrowings under the 2021 Revolving Facility bear interest at either a base rate or Euro-rate plus a margin based on the Company's leverage ratio. The base rate is equal to the highest of (a) the Overnight Bank Funding Rate, plus 0.5%, (b) the Prime Rate, or (c) the Daily LIBOR Rate, plus 1.0%, so long as the Daily LIBOR Rate is offered, ascertainable and not unlawful. As of December 31, 2022, the Company's outstanding borrowings are subject to a LIBOR-based interest rate, which resets regularly at issuance, based on lending terms.

The 2021 Credit Agreement includes customary business and financial covenants that may restrict the Company's ability to make or pay dividends (other than certain intercompany dividends) if a potential or an actual event of default has occurred or would be triggered. As of December 31, 2022, the Company was in compliance with all covenants contained in the 2021 Credit Agreement.

The following table presents the outstanding debt and borrowing capacity of the Company under the 2021 Credit Agreement as of December 31, 2022 and 2021:

	<u>As of December 31, 2022</u>	<u>As of December 31, 2021</u>
Outstanding debt	\$ 25,000	\$ 25,000
Interest rate	5.2 %	1.0 %
Available borrowing capacity	\$ 675,000	\$ 675,000
Maximum borrowing capacity	\$ 700,000	\$ 700,000

Other Debt - On November 3, 2021, in connection with the acquisition of Emakina, the Company assumed the debt obligations of the acquired companies. As of December 31, 2022, debt that matures within one year is classified as Short-term debt on the consolidated balance sheets and consists of multiple bank loans and credit lines totaling \$2.9 million that bear a weighted average interest rate of 1.9%. As of December 31, 2022, debt that matures in more than one year and through 2026 is classified as Long-term debt on the consolidated balance sheets and consists of multiple bank loans and credit lines totaling \$2.7 million that bear interest at a weighted average interest rate of 1.3%. Some of this debt is secured by assets of the Company and some of the debt agreements contain covenants. As of December 31, 2022, the Company was in compliance with all those covenants.

11. PENSION AND POSTRETIREMENT BENEFITS

Defined Contribution Pension Plans

The Company offers defined contribution plans for its employees in certain countries including a 401(k) retirement plan covering substantially all of the Company's U.S. employees. Employer contributions charged to expense for defined contribution benefit plans for the years ended December 31, 2022, 2021 and 2020, were \$29.0 million, \$21.3 million, and \$16.0 million, respectively.

Defined Benefit Pension Plans

The Company sponsors defined benefit pension plans for its employees in certain countries as governed by local regulatory requirements. During the years ended December 31, 2022, 2021 and 2020, the Company recorded expense of \$8.3 million, \$5.5 million and \$4.3 million, respectively, related to these plans.

The overfunded balance of the Company's defined benefit pension plans is included in Other noncurrent assets in the consolidated balance sheets and the underfunded balance is included in Accrued compensation and benefits expenses for the current portion and Other noncurrent liabilities for the noncurrent portion. As of December 31, 2022 and 2021, the amounts recognized in the Company's consolidated balance sheets for the Company's defined benefit pension plans were as follows:

	<u>As of December 31, 2022</u>	<u>As of December 31, 2021</u>
Assets/(Liabilities) recognized:		
Other noncurrent assets	\$ —	\$ 1,167
Accrued compensation and benefits expenses	(832)	(561)
Other noncurrent liabilities	(9,793)	(3,489)
Funded status	<u>\$ (10,625)</u>	<u>\$ (2,883)</u>

12. REVENUES

Revenues are sourced from four geographic markets: Americas, EMEA, APAC and CEE. The Company presents and discusses revenues by customer location based on the location of the specific customer site that it serves, irrespective of the location of the headquarters of the customer or the location of the delivery center where the work is performed. Revenues by customer location is different from revenues by reportable segment as segments are not based on the geographic location of the customers, but instead they are based on the location of the Company's management responsible for a particular customer or market (see Note 17 "Segment Information"). The Company assigns customers into one of five main industries or a group of various industries where the Company is increasing its presence, which is labeled as "Emerging Verticals." Emerging Verticals include customers in multiple industries such as energy, utilities, manufacturing, automotive, telecommunications and several others.

Disaggregation of Revenues

The following tables show the disaggregation of the Company's revenues by major customer location, including a reconciliation of the disaggregated revenues with the Company's reportable segments (Note 17 "Segment Information") for the years ended December 31, 2022, 2021 and 2020:

Customer Locations	Year Ended December 31, 2022			
	Reportable Segments			Consolidated Revenues
	North America	Europe	Russia	
Americas	\$ 2,792,156	\$ 92,244	\$ 2,804	\$ 2,887,204
EMEA	95,706	1,642,114	99	1,737,919
APAC	3,837	116,533	—	120,370
CEE	6,855	2,165	70,185	79,205
Revenues	\$ 2,898,554	\$ 1,853,056	\$ 73,088	\$ 4,824,698

Customer Locations	Year Ended December 31, 2021			
	Reportable Segments			Consolidated Revenues
	North America	Europe	Russia	
Americas	\$ 2,145,163	\$ 77,351	\$ 4,316	\$ 2,226,830
EMEA	87,121	1,172,267	329	1,259,717
APAC	3,224	100,335	—	103,559
CEE	6,740	531	160,767	168,038
Revenues	\$ 2,242,248	\$ 1,350,484	\$ 165,412	\$ 3,758,144

Customer Locations	Year Ended December 31, 2020			
	Reportable Segments			Consolidated Revenues
	North America	Europe	Russia	
Americas	\$ 1,546,093	\$ 45,553	\$ 3,490	\$ 1,595,136
EMEA	45,733	834,033	76	879,842
APAC	2,177	67,621	—	69,798
CEE	7,817	98	106,787	114,702
Revenues	\$ 1,601,820	\$ 947,305	\$ 110,353	\$ 2,659,478

The following tables show the disaggregation of the Company's revenues by industry vertical, including a reconciliation of the disaggregated revenues with the Company's reportable segments (Note 17 "Segment Information") for the years ended December 31, 2022, 2021 and 2020:

	Year Ended December 31, 2022			
	Reportable Segments			Consolidated Revenues
	North America	Europe	Russia	
Industry Verticals				
Travel & Consumer	\$ 505,227	\$ 571,437	\$ 15,560	\$ 1,092,224
Financial Services	522,970	460,858	42,858	1,026,686
Business Information & Media	467,664	341,344	944	809,952
Software & Hi-Tech	655,122	136,273	1,866	793,261
Life Sciences & Healthcare	454,102	52,465	800	507,367
Emerging Verticals	293,469	290,679	11,060	595,208
Revenues	\$ 2,898,554	\$ 1,853,056	\$ 73,088	\$ 4,824,698

	Year Ended December 31, 2021			
	Reportable Segments			Consolidated Revenues
	North America	Europe	Russia	
Industry Verticals				
Travel & Consumer	\$ 359,306	\$ 354,041	\$ 27,781	\$ 741,128
Financial Services	361,611	372,394	114,365	848,370
Business Information & Media	389,613	275,502	1,826	666,941
Software & Hi-Tech	559,707	102,270	2,620	664,597
Life Sciences & Healthcare	340,706	49,900	703	391,309
Emerging Verticals	231,305	196,377	18,117	445,799
Revenues	\$ 2,242,248	\$ 1,350,484	\$ 165,412	\$ 3,758,144

	Year Ended December 31, 2020			
	Reportable Segments			Consolidated Revenues
	North America	Europe	Russia	
Industry Verticals				
Travel & Consumer	\$ 221,977	\$ 220,448	\$ 16,364	\$ 458,789
Financial Services	199,594	278,355	77,286	555,235
Business Information & Media	334,063	224,922	1,695	560,680
Software & Hi-Tech	419,895	73,288	3,630	496,813
Life Sciences & Healthcare	260,518	35,347	448	296,313
Emerging Verticals	165,773	114,945	10,930	291,648
Revenues	\$ 1,601,820	\$ 947,305	\$ 110,353	\$ 2,659,478

The Company derives revenues from a variety of customized and integrated service arrangements. These contracts may be in the form of time-and-materials or fixed-price arrangements.

The following tables show the disaggregation of the Company's revenues by contract type, including a reconciliation of the disaggregated revenues with the Company's reportable segments (Note 17 "Segment Information") for the years ended December 31, 2022, 2021 and 2020:

	Year Ended December 31, 2022			
	Reportable Segments			Consolidated Revenues
	North America	Europe	Russia	
Contract Types				
Time-and-material	\$ 2,615,213	\$ 1,578,786	\$ 45,581	\$ 4,239,580
Fixed-price	263,603	269,669	27,195	560,467
Licensing and other revenues	19,738	4,601	312	24,651
Revenues	\$ 2,898,554	\$ 1,853,056	\$ 73,088	\$ 4,824,698

	Year Ended December 31, 2021			
	Reportable Segments			Consolidated Revenues
	North America	Europe	Russia	
Contract Types				
Time-and-material	\$ 1,981,696	\$ 1,145,606	\$ 82,445	\$ 3,209,747
Fixed-price	244,249	202,436	82,711	529,396
Licensing and other revenues	16,303	2,442	256	19,001
Revenues	\$ 2,242,248	\$ 1,350,484	\$ 165,412	\$ 3,758,144

	Year Ended December 31, 2020			
	Reportable Segments			Consolidated Revenues
	North America	Europe	Russia	
Contract Types				
Time-and-material	\$ 1,440,635	\$ 790,203	\$ 60,166	\$ 2,291,004
Fixed-price	151,769	151,718	48,525	352,012
Licensing and other revenues	9,416	5,384	1,662	16,462
Revenues	\$ 1,601,820	\$ 947,305	\$ 110,353	\$ 2,659,478

Timing of Revenue Recognition

The following tables show the revenues disaggregated by timing of revenue recognition and reconciled with the Company's reportable segments (Note 17 "Segment Information") for the years ended December 31, 2022, 2021 and 2020:

	Year Ended December 31, 2022			
	Reportable Segments			Consolidated Revenues
	North America	Europe	Russia	
Timing of Revenue Recognition				
Transferred over time	\$ 2,888,342	\$ 1,849,011	\$ 72,795	\$ 4,810,148
Transferred at a point of time	10,212	4,045	293	14,550
Revenues	\$ 2,898,554	\$ 1,853,056	\$ 73,088	\$ 4,824,698

	Year Ended December 31, 2021			
	Reportable Segments			Consolidated Revenues
	North America	Europe	Russia	
Timing of Revenue Recognition				
Transferred over time	\$ 2,232,308	\$ 1,349,956	\$ 165,301	\$ 3,747,565
Transferred at a point of time	9,940	528	111	10,579
Revenues	\$ 2,242,248	\$ 1,350,484	\$ 165,412	\$ 3,758,144

	Year Ended December 31, 2020			
	Reportable Segments			Consolidated Revenues
	North America	Europe	Russia	
Timing of Revenue Recognition				
Transferred over time	\$ 1,595,786	\$ 946,379	\$ 108,826	\$ 2,650,991
Transferred at a point of time	6,034	926	1,527	8,487
Revenues	\$ 1,601,820	\$ 947,305	\$ 110,353	\$ 2,659,478

During the years ended December 31, 2022, 2021 and 2020 the Company recognized \$7.5 million, \$18.7 million and \$5.0 million, respectively, of revenues from performance obligations satisfied in previous periods.

The following table includes the estimated revenues expected to be recognized in the future related to performance obligations that are partially or fully unsatisfied as of December 31, 2022. The Company applies a practical expedient and does not disclose the value of unsatisfied performance obligations for contracts that (i) have an original expected duration of one year or less and (ii) contracts for which it recognizes revenues at the amount to which it has the right to invoice for services provided:

Contract Type	Less than 1 year	1 Year	2 Years	3 Years	Total
Fixed-price	\$ 11,182	\$ 2,146	\$ 2,145	\$ —	\$ 15,473

The Company applies a practical expedient and does not disclose the amount of the transaction price allocated to the remaining performance obligations nor provide an explanation of when the Company expects to recognize that amount as revenue for certain variable consideration.

Contract Balances

The following table provides information on the classification of contract assets and liabilities in the consolidated balance sheets:

	As of December 31, 2022	As of December 31, 2021
Contract assets included in Trade receivables and contract assets	\$ 11,490	\$ 13,798
Contract liabilities included in Accrued expenses and other current liabilities	\$ 36,036	\$ 39,810
Contract liabilities included in Other noncurrent liabilities	\$ 42	\$ 84

Contract assets comprise amounts where the Company's right to bill is contingent on something other than the passage of time. Contract liabilities comprise amounts collected from the Company's customers for revenues not yet earned and such amounts are anticipated to be recorded as revenues when services are performed in subsequent periods.

During the year ended December 31, 2022, the Company recognized \$35.4 million of revenues that were included in Accrued expenses and other current liabilities at December 31, 2021. During the year ended December 31, 2021, the Company recognized \$16.2 million of revenues that were included in Accrued expenses and other current liabilities at December 31, 2020.

13. STOCK-BASED COMPENSATION

The following costs related to the Company's stock compensation plans were included in the consolidated statements of income:

	For the Years Ended December 31,		
	2022	2021	2020
Cost of revenues (exclusive of depreciation and amortization)	\$ 47,470	\$ 51,580	\$ 32,785
Selling, general and administrative expenses	52,439	60,075	42,453
Total	\$ 99,909	\$ 111,655	\$ 75,238

Equity Plans

The Company has long-term incentive plans under which 3.564 million shares of common stock are available for issuance to Company personnel and 517 thousand shares of common stock are available for issuance to non-employee directors as of December 31, 2022. All of the awards issued pursuant to the long-term incentive plans expire 10 years from the date of grant.

In addition, the Company maintains an Employee Stock Purchase Plan (“ESPP”) to enable eligible employees to purchase shares of EPAM’s common stock at a discount through payroll deductions of up to 10% of their eligible compensation at the end of each designated offering period, which occurs every six months in April and November. The purchase price is equal to 85% of the fair market value of a share of EPAM’s common stock on the first date of an offering or the date of purchase, whichever is lower. As of December 31, 2022, 780 thousand shares of common stock remained available for issuance under the ESPP.

Stock Options

Stock option activity under the Company’s long-term incentive plans is set forth below:

	Number of Options	Weighted Average Exercise Price	Aggregate Intrinsic Value	Weighted Average Remaining Contractual Term (in years)
Options outstanding as of January 1, 2020	3,323	\$ 50.85	\$ 536,015	
Options granted	158	\$ 187.76		
Options exercised	(700)	\$ 37.79		
Options forfeited	(9)	\$ 119.30		
Options outstanding as of December 31, 2020	<u>2,772</u>	<u>\$ 61.71</u>	<u>\$ 822,152</u>	
Options granted	94	\$ 410.03		
Options exercised	(536)	\$ 49.13		
Options forfeited	(12)	\$ 248.74		
Options outstanding as of December 31, 2021	<u>2,318</u>	<u>\$ 77.79</u>	<u>\$ 1,369,132</u>	
Options granted	133	\$ 277.85		
Options exercised	(514)	\$ 44.02		
Options forfeited	(11)	\$ 350.19		
Options expired	(3)	\$ 128.11		
Options outstanding as of December 31, 2022	<u><u>1,923</u></u>	<u><u>\$ 98.92</u></u>	<u><u>\$ 447,503</u></u>	3.4
Options vested and exercisable as of December 31, 2022	1,627	\$ 67.51	\$ 425,184	2.6
Options expected to vest as of December 31, 2022	279	\$ 270.39	\$ 21,357	8.2

The fair value of each option award is estimated on the date of grant using the Black-Scholes option valuation model. The model incorporated the following weighted average assumptions:

	For the Years Ended December 31,		
	2022	2021	2020
Expected volatility	46.7 %	35.3 %	36.9 %
Expected term (in years)	6.24	6.24	6.25
Risk-free interest rate	2.6 %	1.2 %	0.5 %
Expected dividends	— %	— %	— %

Expected volatility is based on the historical volatility of the Company’s stock price. The expected term represents the period of time that options granted are expected to be outstanding. The risk-free rate is based on the U.S. Treasury yield curve for the periods equal to the expected term of the options in effect at the time of grant. The Company has not declared or paid any dividends on its common stock and does not anticipate paying any dividends in the foreseeable future.

The weighted average grant-date fair value of stock options granted during the years ended December 31, 2022, 2021 and 2020 was \$134.29, \$149.26 and \$68.53, respectively. The total intrinsic value of options exercised during the years ended December 31, 2022, 2021 and 2020 was \$154.4 million, \$251.9 million and \$151.3 million, respectively.

The Company recognizes the fair value of each option as compensation expense on a straight-line basis over the requisite service period, which is generally the vesting period. The options are typically scheduled to vest over four years from the time of grant, subject to the terms of the applicable plan and stock option agreement. The Company records share-based compensation expense only for those awards that are expected to vest and as such, the Company applies an estimated forfeiture rate at the time of grant and adjusts the forfeiture rate estimate quarterly to reflect actual forfeiture activity. In general, in the event of a participant's voluntary termination of service, unvested options are forfeited as of the date of such termination without any payment to the participant and the cumulative amount of previously recognized expense related to the forfeited options is reversed.

As of December 31, 2022, \$23.3 million of total remaining unrecognized compensation cost related to unvested stock options, net of estimated forfeitures, is expected to be recognized over a weighted average period of 2.6 years.

Restricted Stock and Restricted Stock Units

The Company grants restricted stock units ("RSUs") to Company personnel and non-employee directors. In addition, the Company has issued in the past, and may issue in the future, equity awards to compensate employees of acquired businesses for future services. Equity settled awards granted in connection with acquisitions of businesses may be issued in the form of service-based awards requiring continuing employment with the Company, restricted stock subject to trading restrictions, and performance-based awards, which would vest only if certain specified performance and service conditions are met. The awards issued in connection with acquisitions of businesses are subject to the terms and conditions contained in the applicable award agreements and acquisition documents.

Service-Based Awards

The table below summarizes activity related to the Company's equity-classified and liability-classified service-based awards for the years ended December 31, 2022, 2021 and 2020:

	Equity-Classified Restricted Stock		Equity-Classified Equity-Settled Restricted Stock Units		Liability-Classified Cash-Settled Restricted Stock Units	
	Number of Shares	Weighted Average Grant Date Fair Value Per Share	Number of Shares	Weighted Average Grant Date Fair Value Per Share	Number of Shares	Weighted Average Grant Date Fair Value Per Share
Unvested service-based awards outstanding as of January 1, 2020	10	\$ 162.96	759	\$ 122.48	242	\$ 105.40
Awards granted	—	\$ —	294	\$ 204.57	60	\$ 181.77
Awards modified	—	\$ —	(1)	\$ 122.55	—	\$ —
Awards vested	(1)	\$ 63.10	(317)	\$ 108.87	(122)	\$ 91.39
Awards forfeited	—	\$ —	(49)	\$ 148.11	(5)	\$ 113.94
Unvested service-based awards outstanding as of December 31, 2020	9	\$ 167.18	686	\$ 162.15	175	\$ 141.16
Awards granted	—	\$ —	238	\$ 429.41	27	\$ 394.24
Awards modified	—	\$ —	—	\$ —	—	\$ —
Awards vested	—	\$ —	(308)	\$ 139.83	(86)	\$ 118.05
Awards forfeited	—	\$ —	(40)	\$ 264.48	(4)	\$ 210.26
Unvested service-based awards outstanding as of December 31, 2021	9	\$ 167.18	576	\$ 277.38	112	\$ 217.28
Awards granted	—	\$ —	655	\$ 287.13	51	\$ 269.60
Awards modified	—	\$ —	(3)	\$ 387.74	3	\$ 220.00
Awards vested	(9)	\$ 167.18	(244)	\$ 235.96	(56)	\$ 184.96
Awards forfeited	—	\$ —	(68)	\$ 328.81	(11)	\$ 260.59
Unvested service-based awards outstanding as of December 31, 2022	—	\$ —	916	\$ 291.19	99	\$ 257.74

The fair value of vested service-based awards (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
Equity-classified equity-settled			
Restricted stock	\$ 3,990	\$ —	\$ 101
Restricted stock units	69,510	129,527	60,042
Liability-classified cash-settled			
Restricted stock units	16,238	33,947	22,014
Total fair value of vested service-based awards	\$ 89,738	\$ 163,474	\$ 82,157

As of December 31, 2022, \$183.9 million of total remaining unrecognized stock-based compensation costs related to service-based equity-classified RSUs, net of estimated forfeitures, is expected to be recognized over the weighted average remaining requisite service period of 2.8 years.

As of December 31, 2022, \$20.0 million of total remaining unrecognized stock-based compensation costs related to service-based liability-classified RSUs, net of estimated forfeitures, is expected to be recognized over the weighted average remaining requisite service period of 2.4 years.

The liability associated with the Company's service-based liability-classified RSUs as of December 31, 2022 and 2021 was \$10.2 million and \$31.5 million, respectively, and is classified as Accrued compensation and benefits expenses in the consolidated balance sheets.

Performance-Based Awards

The table below summarizes activity related to the Company's performance-based awards for the years ended December 31, 2022, 2021 and 2020:

	Equity-Classified Equity-Settled Restricted Stock		Equity-Classified Equity-Settled Restricted Stock Units	
	Number of Shares	Weighted Average Grant Date Fair Value Per Share	Number of Shares	Weighted Average Grant Date Fair Value Per Share
Unvested performance-based awards outstanding as of January 1, 2020	9	\$ 165.87	—	\$ —
Awards granted	—	\$ —	31	\$ 210.44
Awards vested	—	\$ —	(10)	\$ 177.81
Unvested performance-based awards outstanding as of December 31, 2020	9	\$ 165.87	21	\$ 227.16
Awards granted	—	\$ —	8	\$ 574.98
Awards vested	—	\$ —	(4)	\$ 177.81
Awards forfeited	—	\$ —	(2)	\$ 334.78
Unvested performance-based awards outstanding as of December 31, 2021	9	\$ 165.87	23	\$ 339.69
Awards granted	—	\$ —	6	\$ 418.26
Awards vested	—	\$ —	(9)	\$ 238.96
Awards forfeited	—	\$ —	(5)	\$ 377.87
Unvested performance-based awards outstanding as of December 31, 2022	9	\$ 165.87	15	\$ 412.60

As of December 31, 2022, \$0.3 million of total remaining unrecognized stock-based compensation costs related to performance-based equity-classified restricted stock is expected to be recognized over the weighted average remaining requisite service period of 0.7 years.

As of December 31, 2022, \$3.6 million of total remaining unrecognized stock-based compensation cost related to performance-based equity-classified RSUs is expected to be recognized over the weighted average remaining requisite service period of 2.3 years.

The fair value of vested performance-based awards (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
Equity-classified equity-settled			
Restricted stock units	\$ 2,914	\$ 2,215	\$ 3,282
Total fair value of vested performance-based awards	\$ 2,914	\$ 2,215	\$ 3,282

Employee Stock Purchase Plan

The ESPP enables eligible employees to purchase shares of EPAM's common stock at a discount at the end of each designated offering period, which occurs every six months in April and November. The Company recognizes compensation expense related to shares issued pursuant to the ESPP on a straight-line basis over the six-month offering period. The Company uses the Black-Scholes option pricing model to calculate the fair value of shares issued under the ESPP. The Black-Scholes model relies on a number of key assumptions to calculate estimated fair values. The model incorporated the following weighted average assumptions for the years ended December 31, 2022 and 2021:

	For the Years Ended December 31,	
	2022	2021
Expected volatility	86.8 %	23.1 %
Expected term (in years)	0.50	0.50
Risk-free interest rate	3.0 %	0.1 %
Expected dividends	— %	— %

Expected volatility is based on the historical volatility of the Company's stock price. The expected term represents the purchase period for the ESPP. The risk-free rate is based on the U.S. Treasury yield curve for the period equal to the expected term in effect at the time of grant. The Company has not declared or paid any dividends on its common stock and does not anticipate paying any dividends in the foreseeable future.

During the year ended December 31, 2022, the weighted average price per share was \$315.60 and the weighted average grant-date fair value per share was \$119.76. During the year ended December 31, 2022, the ESPP participants purchased 120 thousand shares of common stock under the ESPP and the Company recognized \$13.9 million of stock-based compensation expense related to the ESPP. As of December 31, 2022, total unrecognized stock-based compensation cost related to the ESPP was \$4.4 million, which is expected to be recognized over a period of 0.33 years.

During the year ended December 31, 2021, the weighted average price per share was \$659.65 and the weighted average grant-date fair value per share was \$141.86. As of December 31, 2021, no purchases were made under the ESPP. For the year ended December 31, 2021, the Company recognized \$1.2 million of stock-based compensation expense related to the ESPP. As of December 31, 2021, total unrecognized stock-based compensation cost related to the ESPP was \$2.3 million, which is expected to be recognized over a period of 0.33 years.

Commitments for Future Equity Awards

In connection with the Company's acquisitions of businesses as discussed in Note 3 "Acquisitions", EPAM enters into agreements that contractually commit it to granting equity awards at future dates. The agreements are unique to each acquisition and terms vary to specify the number of future awards to be issued or a monetary value that will be settled with equity awards valued at future stock prices.

As of December 31, 2022, the Company has commitments to grant up to \$25.6 million of equity awards with the number of awards to be determined based on future stock prices. There is a service-based vesting requirement associated with these awards and certain of these awards contain performance criteria that will determine the amount of future awards to be issued. These awards are considered granted for accounting purposes. In determining the expense, the Company adjusts the expected settlement based on the probability of achievement of such performance criteria. Related to these awards, the amount of stock-based compensation expense recorded in the consolidated statements of income for the years ended December 31, 2022, 2021 and 2020 was not material.

As of December 31, 2022, the Company has issued 2 thousand performance-based equity-classified RSUs which are not considered granted for accounting purposes as the future vesting conditions have not yet been determined.

14. INCOME TAXES

Income Before Provision for Income Taxes

Income before provision for income taxes based on geographic location is disclosed in the table below:

	For the Years Ended December 31,		
	2022	2021	2020
Income before provision for income taxes:			
United States	\$ 78,564	\$ 128,498	\$ 100,411
Foreign	428,694	404,894	278,068
Total	\$ 507,258	\$ 533,392	\$ 378,479

Provision for Income Taxes

The provision for income taxes consists of the following:

	For the Years Ended December 31,		
	2022	2021	2020
Current			
Federal	\$ 20,044	\$ 22,742	\$ 19,249
State	10,116	6,735	7,022
Foreign	99,847	69,162	45,042
Deferred			
Federal	(26,379)	(40,421)	(16,235)
State	(3,483)	(2,576)	(1,682)
Foreign	(12,303)	(3,902)	(2,077)
Total	\$ 87,842	\$ 51,740	\$ 51,319

As part of the U.S. Tax Act, as determined as of December 31, 2017, the Company was required to make annual installment payments for the one-time transition tax on accumulated foreign subsidiary earnings not previously subject to U.S. income tax at a rate of 15.5% to the extent of foreign cash and certain other net current assets and 8.0% on the remaining earnings. As of December 31, 2022, the remaining unpaid balance of this one-time transition tax was \$34.3 million to be paid in annual installments with the final payment due in 2025.

As of December 31, 2022, the Company had approximately \$1.522 billion of accumulated undistributed foreign earnings that are expected to be indefinitely reinvested. Due to the enactment of the U.S. Tax Act and the one-time transition tax on accumulated foreign subsidiary earnings, these accumulated foreign earnings are no longer expected to be subject to U.S. federal income tax if repatriated but could be subject to state and foreign income and withholding taxes.

Effective Tax Rate Reconciliation

The reconciliation of the provision for income taxes at the federal statutory income tax rate to the Company's effective income tax rate is as follows:

	For the Years Ended December 31,		
	2022	2021	2020
Provision for income taxes at federal statutory rate	\$ 106,514	\$ 112,016	\$ 79,481
Increase/(decrease) in taxes resulting from:			
GILTI and BEAT U.S. taxes	355	229	191
Excess tax benefits relating to stock-based compensation	(35,119)	(71,628)	(36,646)
Foreign tax expense and tax rate differential	4,902	(206)	(387)
Effect of permanent differences	7,812	4,756	3,507
State taxes, net of federal benefit	9,323	9,192	5,323
Stock-based compensation expense	3,869	1,102	44
Impact of election to change entity classification	(8,264)	—	—
Tax credits	(2,876)	(4,100)	—
Other	1,326	379	(194)
Provision for income taxes	\$ 87,842	\$ 51,740	\$ 51,319

The Company's worldwide effective tax rate for the years ended December 31, 2022, 2021 and 2020 was 17.3%, 9.7% and 13.6%, respectively. The provision for income taxes in the year ended December 31, 2022 was favorably impacted by the recognition of \$8.3 million of net deferred tax assets resulting from the Company's decision to change the tax status and to classify certain of its foreign subsidiaries as disregarded for U.S. income tax purposes. The provision for income taxes in the year ended December 31, 2022 was unfavorably impacted by a charge of \$7.6 million associated with changes to certain U.S. tax regulations causing an increase in net foreign tax expense. In addition, the Company recorded excess tax benefits upon vesting or exercise of stock-based awards of \$35.1 million, \$71.6 million and \$36.6 million during the years ended December 31, 2022, 2021 and 2020, respectively.

In Belarus, member technology companies of High-Technologies Park, including the Company's local subsidiary, have a full exemption from Belarus income tax on qualifying income through January 2049. However, beginning February 1, 2018, the earnings of the Company's Belarus local subsidiary became subject to U. S. income taxation due to the Company's decision to change the tax status of the subsidiary. There was no aggregate dollar benefit derived or impact on diluted net income per share from this tax holiday for the years ended December 31, 2022, 2021 and 2020.

Deferred Income Taxes

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

	As of December 31, 2022	As of December 31, 2021
Deferred tax assets:		
Property and equipment	\$ 11,587	\$ 10,561
Accrued expenses	87,816	83,416
Accrued sales discounts	9,185	7,338
Stock-based compensation	33,078	31,959
Operating lease liabilities	43,662	52,806
R&D capitalization	36,915	—
Deferred consideration	14,030	—
Foreign currency exchange	11,284	11,750
Other	19,955	21,583
Deferred tax assets	\$ 267,512	\$ 219,413
Less: valuation allowance	(6,728)	(4,538)
Total deferred tax assets	<u>\$ 260,784</u>	<u>\$ 214,875</u>
Deferred tax liabilities:		
Property and equipment	\$ 15,324	\$ 1,095
Intangible assets	24,523	26,124
Operating lease right-of-use assets	42,211	51,871
U.S. taxation of foreign subsidiaries	11,465	3,770
Other	7,232	6,402
Total deferred tax liabilities	<u>\$ 100,755</u>	<u>\$ 89,262</u>
Net deferred tax assets	<u><u>\$ 160,029</u></u>	<u><u>\$ 125,613</u></u>

As of December 31, 2022 and 2021, the Company classified \$12.8 million and \$18.3 million, respectively, of deferred tax liabilities as Other noncurrent liabilities in the consolidated balance sheets.

Included in the stock-based compensation expense deferred tax asset at December 31, 2022 and 2021 is \$4.6 million and \$5.4 million, respectively, that is related to acquisitions and is amortized for tax purposes over a 10 to 15-year period.

As of December 31, 2022, the Company's domestic and foreign net operating loss ("NOL") carryforwards for income tax purposes were approximately \$3.9 million and \$32.3 million, respectively. If not utilized, the domestic NOL carryforwards will begin to expire in 2023. The foreign NOL carryforwards include \$22.4 million from jurisdictions with no expiration date, with the remainder expiring as follows: \$1.1 million in 2023, \$1.9 million in 2024, \$2.7 million in 2025, \$1.3 million in 2026, \$2.5 million in 2027, and \$0.4 million beyond 2027. The Company maintains a valuation allowance primarily related to the net operating loss carryforwards in certain foreign jurisdictions that the Company believes are not likely to be realized, which totaled \$30.8 million as of December 31, 2022.

Unrecognized Tax Benefits

As of December 31, 2022 and 2021, the total amount of gross unrecognized tax benefits was \$7.9 million and \$8.2 million, respectively. These amounts represent the amount of unrecognized tax benefits that, if recognized, would favorably affect the effective tax rate in future periods and are included in Income taxes payable, noncurrent within the consolidated balance sheets.

The Company's policy is to recognize interest and penalties related to uncertain tax positions as a component of its provision for income taxes. As of December 31, 2022 and 2021, the Company accrued \$0.7 million and \$0.6 million respectively, of interest and penalties resulting from such unrecognized tax benefits.

A reconciliation of the beginning and ending balances of the gross unrecognized tax benefits changes for the years ended December 31, 2022, December 31, 2021 and December 31, 2020 are as follows:

	For the Years Ended December 31,		
	2022	2021	2020
Beginning Balance	\$ 8,155	\$ 3,317	\$ 2,914
Increases in tax positions from current year	4,739	5,310	902
Increases in tax positions from acquisitions	393	—	—
Increases in tax positions from prior years	2,447	1,350	—
Decreases in tax positions from prior years	(6,945)	—	—
Decreases due to lapse of statute of limitations	(1,121)	(1,298)	(528)
Currency	197	(524)	29
Ending Balance	\$ 7,865	\$ 8,155	\$ 3,317

There were no tax positions for which it was reasonably possible that unrecognized tax benefits will significantly increase or decrease within twelve months of the reporting date.

The Company is subject to taxation in the United States and various states and foreign jurisdictions including Germany, Ukraine, the United Kingdom, Hungary, Switzerland, Netherlands, Poland, India, and Mexico. With few exceptions, as of December 31, 2022, the Company is no longer subject to U.S. federal, state, local or foreign examinations by tax authorities for years before 2018.

15. EARNINGS PER SHARE

Basic earnings per share is computed by dividing net income available to common shareholders by the weighted average number of shares of common stock outstanding during the period. For purposes of computing basic earnings per share, any nonvested shares of restricted stock that have been issued by the Company and are contingently returnable to the Company are excluded from the weighted average number of shares of common stock outstanding during the period. Diluted earnings per share 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, unvested restricted stock, unvested equity-settled RSUs and the stock to be issued under the Company's ESPP. The dilutive effect of potentially dilutive securities is reflected in diluted earnings per share by application of the treasury stock method.

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

	For the Years Ended December 31,		
	2022	2021	2020
Numerator for basic and diluted earnings per share:			
Net income	\$ 419,416	\$ 481,652	\$ 327,160
Numerator for basic and diluted earnings per share	<u>\$ 419,416</u>	<u>\$ 481,652</u>	<u>\$ 327,160</u>
Denominator:			
Weighted average common shares for basic earnings per share	57,291	56,511	55,727
Net effect of dilutive stock options, restricted stock units, restricted stock awards and stock issuable under the ESPP	<u>1,878</u>	<u>2,553</u>	<u>2,719</u>
Weighted average common shares for diluted earnings per share	<u>59,169</u>	<u>59,064</u>	<u>58,446</u>
Net Income per share:			
Basic	\$ 7.32	\$ 8.52	\$ 5.87
Diluted	\$ 7.09	\$ 8.15	\$ 5.60

The number of shares underlying equity-based awards that were excluded from the calculation of diluted earnings per share as their effect would be anti-dilutive was 264 thousand, 32 thousand and 40 thousand for the years ended December 31, 2022, 2021 and 2020, respectively.

Net income attributable to noncontrolling interests recognized in connection with the acquisition of Emakina on November 3, 2021 was immaterial for the years ended December 31, 2022 and 2021.

16. COMMITMENTS AND CONTINGENCIES

Indemnification Obligations — In the normal course of business, the Company is a party to a variety of agreements under which it may be obligated to indemnify the other party for certain matters. These obligations typically arise in contracts where the Company customarily agrees to hold the other party harmless against losses arising from a breach of representations or covenants for certain matters, infringement of third-party intellectual property rights, data privacy violations, and certain tortious conduct in the course of providing services. The duration of these indemnifications varies, and in certain cases, is indefinite.

The Company is unable to reasonably estimate the maximum potential amount of future payments under these or similar agreements due to the unique facts and circumstances of each agreement and the fact that certain indemnifications provide for no limitation to the maximum potential future payments under the indemnification. Management is not aware of any such matters that would have a material effect on the consolidated financial statements of the Company.

Litigation — From time to time, the Company is involved in litigation, claims or other contingencies arising in the ordinary course of business. The Company accrues a liability when a loss is considered probable and the amount can be reasonably estimated. When a material loss contingency is reasonably possible but not probable, the Company does not record a liability, but instead discloses the nature and the amount of the claim, and an estimate of the loss or range of loss, if such an estimate can be made. Legal fees are expensed as incurred. In the opinion of management, the outcome of any existing claims and legal or regulatory proceedings, if decided adversely, is not expected to have a material effect on the Company's business, financial condition, results of operations or cash flows.

Ukraine Humanitarian Commitment — On March 4, 2022, EPAM announced that it has established a \$100.0 million humanitarian commitment to support its employees in Ukraine and their families. See Note 2 "Impact of the Invasion of Ukraine" for more information regarding commitments to humanitarian aid for Ukraine.

Deferred Consideration — During the year ended December 31, 2022, the Company purchased software licenses for use in the regular course of business in exchange for an upfront payment and fixed, future annual payments due over the next 4 years. As of December 31, 2022, the undiscounted deferred consideration amounts owed totaled approximately \$60.0 million and are expected to be paid as follows: \$14.2 million in 2023, \$14.0 million in 2024, \$15.1 million in 2025, and \$16.7 million in 2026. See Note 7 "Property and Equipment, Net" for more information regarding the purchase of software licenses.

17. SEGMENT INFORMATION

The Company determines its business segments and reports segment information in accordance with how the Company's chief operating decision maker ("CODM") organizes the segments to evaluate performance, allocate resources and make business decisions. Segment results are based on the segment's revenues and operating profit, where segment operating profit is defined as income from operations before unallocated costs. Expenses included in segment operating profit consist principally of direct selling and delivery costs as well as an allocation of certain shared services expenses. Certain corporate expenses are not allocated to specific segments as these expenses are not controllable at the segment level. Such expenses include certain types of professional fees, certain taxes included in operating expenses, compensation to non-employee directors and certain other general and administrative expenses, including compensation of specific groups of non-production employees. In addition, the Company does not allocate amortization of intangible assets acquired through business combinations, goodwill and other asset impairment charges, stock-based compensation expenses, acquisition-related costs and certain other one-time charges and benefits. These unallocated amounts are combined with total segment operating profit to arrive at consolidated income from operations as reported below in the reconciliation of segment operating profit to consolidated income before provision for income taxes. Additionally, management has determined that it is not practical to allocate identifiable assets by segment since such assets are used interchangeably among the segments.

The Company manages its business primarily based on the managerial responsibility for its client base and market. As managerial responsibility for a particular customer relationship generally correlates with the customer's geographic location, there is a high degree of similarity between customer locations and the geographic boundaries of the Company's reportable segments. In some cases, managerial responsibility for a particular customer is assigned to a management team in another region and is usually based on the strength of the relationship between customer executives and particular members of EPAM's senior management team. In such cases, the customer's activity would be reported through the respective management team member's reportable segment.

See Note 2 "Impact of the Invasion of Ukraine" for more information regarding the Company's decisions to no longer serve customers in Russia and the subsequent decision to exit its operations in Russia.

Revenues from external customers and operating profit, before unallocated expenses, by reportable segments were as follows:

	For the Years Ended December 31,		
	2022	2021	2020
Segment revenues:			
North America	\$ 2,898,554	\$ 2,242,248	\$ 1,601,820
Europe	1,853,056	1,350,484	947,305
Russia	73,088	165,412	110,353
Total revenues	\$ 4,824,698	\$ 3,758,144	\$ 2,659,478
Segment operating profit/(loss):			
North America	\$ 589,412	\$ 462,798	\$ 345,196
Europe	223,276	233,727	152,902
Russia	(13,460)	32,547	5,811
Total segment operating profit	\$ 799,228	\$ 729,072	\$ 503,909

Intersegment transactions were excluded from the above on the basis that they are neither included in the measure of a segment's profit and loss results, nor considered by the CODM during the review of segment results.

There were no customers individually exceeding 10% of our total segment revenues for the years ended December 31, 2022, 2021 and 2020.

Reconciliation of segment operating profit to consolidated income before provision for income taxes is presented below:

	For the Years Ended December 31,		
	2022	2021	2020
Total segment operating profit:	\$ 799,228	\$ 729,072	\$ 503,909
Unallocated costs:			
Stock-based compensation expense	(99,909)	(111,655)	(75,238)
Amortization of purchased intangibles	(22,223)	(17,646)	(12,340)
Other acquisition-related expenses	(1,537)	(6,397)	(1,868)
Other unallocated costs	(102,593)	(51,058)	(35,139)
Income from operations	572,966	542,316	379,324
Interest and other income/(loss), net	10,025	(1,727)	3,822
Foreign exchange loss	(75,733)	(7,197)	(4,667)
Income before provision for income taxes	\$ 507,258	\$ 533,392	\$ 378,479

Geographic Area Information

Long-lived assets include property and equipment, net of accumulated depreciation and amortization, and management has determined that it is not practical to allocate these assets by segment since such assets are used interchangeably among the segments. Physical locations and values of the Company's long-lived assets are presented below:

	As of December 31,	As of December 31,	As of December 31,
	2022	2021	2020
Ukraine	\$ 70,183	\$ 78,289	\$ 30,980
United States	68,804	14,843	15,718
Belarus	57,311	75,422	73,988
Poland	14,685	8,240	5,434
Hungary	8,552	5,339	5,365
India	8,506	9,459	7,079
Russia	—	16,611	15,036
Other	45,307	28,011	15,933
Total	\$ 273,348	\$ 236,214	\$ 169,533

The table below presents the Company's revenues by customer location for the years ended December 31, 2022, 2021 and 2020:

	For the Years Ended December 31,		
	2022	2021	2020
United States	\$ 2,761,050	\$ 2,125,301	\$ 1,523,731
United Kingdom	619,305	474,941	331,217
Switzerland	323,424	271,208	203,391
Netherlands	215,444	154,816	114,678
Germany	161,758	113,727	84,902
Canada	114,910	96,646	68,416
Russia	64,745	155,186	104,846
Other locations	564,062	366,319	228,297
Revenues	\$ 4,824,698	\$ 3,758,144	\$ 2,659,478

18. ACCUMULATED OTHER COMPREHENSIVE LOSS

The following table summarizes the changes in the accumulated balances for each component of accumulated other comprehensive loss:

	For the Years Ended December 31,		
	2022	2021	2020
Foreign currency translation			
Beginning balance	\$ (52,747)	\$ (28,168)	\$ (32,666)
Foreign currency translation	(45,295)	(29,323)	5,802
Income tax (expense)/ benefit	(3,738)	4,744	(1,304)
Foreign currency translation, net of tax	(49,033)	(24,579)	4,498
Ending balance	\$ (101,780)	\$ (52,747)	\$ (28,168)
Cash flow hedging instruments			
Beginning balance	\$ (3,417)	\$ 3,642	\$ 1,292
Unrealized (loss)/ gain in fair value	(49,233)	(13,781)	8,076
Net loss/ (gain) reclassified into Cost of revenues (exclusive of depreciation and amortization)	20,331	4,649	(5,031)
Net loss reclassified into Foreign exchange loss	44,067	—	—
Income tax (expense)/ benefit	(3,442)	2,073	(695)
Cash flow hedging instruments, net of tax	11,723	(7,059)	2,350
Ending balance⁽¹⁾	\$ 8,306	\$ (3,417)	\$ 3,642
Defined benefit plans			
Beginning balance	\$ 1,957	\$ (986)	\$ —
Actuarial (losses)/ gains	(4,892)	3,805	(1,275)
Income tax benefit/ (expense)	1,088	(862)	289
Defined benefit plans, net of tax	(3,804)	2,943	(986)
Ending balance	\$ (1,847)	\$ 1,957	\$ (986)
Accumulated other comprehensive loss	\$ (95,321)	\$ (54,207)	\$ (25,512)

(1) As of December 31, 2022, the ending balance of net unrealized gain related to derivatives designated as cash flow hedges is expected to be reclassified into Cost of revenues (exclusive of depreciation and amortization) in the next twelve months.

19. SUBSEQUENT EVENTS

On February 13, 2023, the Board of Directors authorized a repurchase program for up to \$500 million of the Company's outstanding common stock. EPAM may repurchase shares of its common stock on a discretionary basis from time to time through open market purchases, privately negotiated transactions or other means, including through the use of trading plans intended to qualify under Rule 10b5-1. The timing and total amount of stock repurchases will depend upon business, economic and market conditions, corporate and regulatory requirements, prevailing stock prices, and other considerations. The share repurchase program will have a term of 24 months, may be suspended or discontinued at any time, and does not obligate the company to acquire any amount of common stock.

SCHEDULE II
VALUATION AND QUALIFYING ACCOUNTS
FOR THE YEARS ENDED DECEMBER 31, 2022, 2021 AND 2020
(In thousands)

	<u>Balance at Beginning of Year</u>	<u>Additions</u>	<u>Deductions/ Write offs</u>	<u>Balance at End of Year</u>
Year Ended December 31, 2022				
Allowance for doubtful accounts for trade receivables and contract assets	\$ 5,521	14,419	(4,630)	\$ 15,310
Valuation allowance on deferred tax assets	\$ 4,537	—	2,191	\$ 6,728
Year Ended December 31, 2021				
Allowance for doubtful accounts for trade receivables and contract assets	\$ 4,886	3,888	(3,253)	\$ 5,521
Valuation allowance on deferred tax assets	\$ 5,485	—	(948)	\$ 4,537
Year Ended December 31, 2020				
Allowance for doubtful accounts for trade receivables and contract assets	\$ 3,210	3,282	(1,606)	\$ 4,886
Valuation allowance on deferred tax assets	\$ 3,877	1,608	—	\$ 5,485

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