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

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2023

- OR -

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

For the transition period from _____ to _____

Commission file number 001-37470

TransUnion

(Exact name of registrant as specified in its charter)

Delaware	**61-1678417**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
555 West Adams, Chicago, Illinois	**60661**
(Address of principal executive offices)	**(Zip Code)**

312-985-2000
(Registrant's telephone number, including area code)

Securities Registered Pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.01 per share	TRU	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 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 and post such files).

☒ Yes ☐ No

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

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

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

☐

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

☒

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

☒

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

☒

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act).

☐ Yes	☒ No

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant was approximately $15.1 billion as of June 30, 2023 (based on the closing stock price of such stock as quoted on the New York Stock Exchange).

As of January 31, 2024, there were 194.0 million shares of TransUnion common stock outstanding, par value $0.01 per share.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Proxy Statement of TransUnion for the Annual Meeting of Stockholders to be held May 2, 2024 are incorporated by reference to the extent specified in Part III of this Form 10-K.

TRANSUNION
ANNUAL REPORT ON FORM 10-K
YEAR ENDED DECEMBER 31, 2023
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Cautionary Notice Regarding Forward-Looking Statements

This Annual Report on Form 10-K, including the exhibits hereto, contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. These statements are based on the current beliefs and expectations of TransUnion's management and are subject to significant risks and uncertainties. Actual results may differ materially from those described in the forward-looking statements. Any statements made in this report that are not statements of historical fact, including statements about our beliefs and expectations, are forward-looking statements. Forward-looking statements include information concerning possible or assumed future results of operations, including descriptions of our business plans and strategies. These statements often include words such as "anticipate," "expect," "guidance," "suggest," "plan," "believe," "intend," "estimate," "target," "project," "should," "could," "would," "may," "will," "forecast," "outlook," "potential," "continues," "seeks," "predicts," or the negatives of these words and other similar expressions.

Factors that could cause actual results to differ materially from those described in the forward-looking statements, or that could materially affect our financial results or such forward-looking statements include:

- macroeconomic effects and changes in market conditions, including the impact of inflation, risk of recession, and industry trends and adverse developments in the debt, consumer credit and financial services markets, including the impact on the carrying value of our assets in all of the markets where we operate;
- our ability to provide competitive services and prices;
- our ability to retain or renew existing agreements with large or long-term customers;
- our ability to maintain the security and integrity of our data;
- our ability to deliver services timely without interruption;
- our ability to maintain our access to data sources;
- government regulation and changes in the regulatory environment;
- litigation or regulatory proceedings;
- our ability to effectively manage our costs;
- our efforts to execute our transformation plan and achieve the anticipated benefits and savings;
- our ability to remediate existing material weaknesses in internal control over financial reporting and maintain effective internal control over financial reporting or disclosure controls and procedures;
- economic and political stability in the United States and international markets where we operate;
- our ability to effectively develop and maintain strategic alliances and joint ventures;
- our ability to timely develop new services and the market's willingness to adopt our new services;
- our ability to manage and expand our operations and keep up with rapidly changing technologies;
- our ability to acquire businesses, successfully secure financing for our acquisitions, timely consummate our acquisitions, successfully integrate the operations of our acquisitions, control the costs of integrating our acquisitions and realize the intended benefits of such acquisitions;
- our ability to protect and enforce our intellectual property, trade secrets and other forms of unpatented intellectual property;
- our ability to defend our intellectual property from infringement claims by third parties;
- geopolitical conditions and other risks associated with our international operations;
- the ability of our outside service providers and key vendors to fulfill their obligations to us;
- further consolidation in our end-customer markets;
- the increased availability of free or inexpensive consumer information;
- losses against which we do not insure;
- our ability to make timely payments of principal and interest on our indebtedness;
- our ability to satisfy covenants in the agreements governing our indebtedness;
- our ability to maintain our liquidity;
- share repurchase plans; and
- our reliance on key management personnel.

There may be other factors, many of which are beyond our control, that may cause our actual results to differ materially from the forward-looking statements, including factors disclosed under the sections entitled "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" in this report. You should evaluate all forward-looking statements made in this report in the context of these risks and uncertainties.

The forward-looking statements contained in this report speak only as of the date of this report. We undertake no obligation to publicly release the result of any revisions to these forward-looking statements to reflect the impact of events or circumstances that may arise after the date of this report.

PART I

Unless the context indicates otherwise, any reference to the "Company," "we," "us" and "our" refers to TransUnion and its direct and indirect subsidiaries.

ITEM 1 BUSINESS

Overview

TransUnion is a leading global information and insights company that makes trust possible between businesses and consumers, helping people around the world access opportunities that can lead to a higher quality of life. That trust is built on TransUnion's ability to deliver safe, innovative solutions with credibility and consistency. We call this Information for Good.

Grounded in our heritage as a credit reporting agency, we have built robust and accurate databases of information for a large portion of the adult population in the markets we serve. We use our identity resolution methodology to link and match our expanding high-quality datasets. We use these enriched data and analytics, combined with our expertise, to continuously develop more insightful solutions for our customers, all while maintaining compliance with global laws and regulations. Because of our work, organizations can better understand consumers in order to make more informed decisions, and earn consumer trust through great, personalized experiences, and the proactive extension of the right opportunities, tools and offers. In turn, we believe consumers can be confident that their data identities will result in better offers and opportunities.

We provide solutions that enable businesses to manage and measure credit risk, market to new and existing customers, verify consumer identities, mitigate fraud, and effectively manage call center operations. Businesses embed our solutions into their process workflows to deliver critical insights and enable effective actions. Consumers use our solutions to view their credit profiles, access analytical tools that help them understand and manage their personal financial information, and take precautions against identity theft. We have deep domain expertise across a number of attractive industries, which we also refer to as verticals, including Financial Services and Emerging Verticals. Emerging Verticals consists of Technology, Commerce & Communications, Insurance, Media, Services and Collections, Tenant and Employment, and Public Sector. We have a global presence in over 30 countries and territories across North America, Latin America, Europe, Africa, India and Asia Pacific.

Our addressable market includes the global data and analytics market, which continues to grow as companies around the world increasingly recognize the benefits of data and analytics-based decision making, and as consumers recognize the important role that their data identities play in their ability to procure goods and services. There are several underlying trends supporting this market growth, including the proliferation of data, advances in technology and analytics that enable data to be processed more quickly and efficiently to provide business insights, and growing demand for these business insights across industries and geographies. Leveraging our established position as a leading provider of information and insights, we have grown our business by expanding the breadth and depth of our data, strengthening our analytics capabilities, expanding into complementary adjacent and vertical markets, deepening our solution suite in fraud mitigation and marketing, building out our geographic portfolio, investing in technology infrastructure, and enhancing our global operating model. As a result, we believe we are well positioned to expand our share within the markets we currently serve and capitalize on the larger data and analytics opportunity.

Our solutions are based on a foundation of data assets across financial, credit, alternative credit, identity, phone activity, digital device information, marketing, bankruptcy, lien, judgment, insurance claims, automotive and other relevant information obtained from thousands of sources including financial institutions, private databases and public records repositories. We refine, standardize and enhance this data using sophisticated algorithms to create proprietary databases. Our acquisition of Neustar, Inc. ("Neustar") has further enhanced our ability to deliver real-time, persistent identity resolution of disparate data fragments and attributes in a privacy compliant manner. Our technology infrastructure allows us to efficiently integrate our data with our analytics to build and deliver innovative solutions to our customers. Our deep analytics resources, including our people and tools driving predictive modeling and scoring, customer segmentation, benchmarking and forecasting, enable us to provide businesses and consumers with better insights.

We leverage our differentiated capabilities in order to serve a global customer base across multiple geographies and industry verticals. We offer our solutions to business customers in Financial Services, Insurance and other industries, and our customer base includes many of the largest companies in the industries we serve. We sell our solutions to leading consumer lending banks, credit card issuers, alternative lenders, online-only lenders ("FinTechs"), Point of Sale ("POS")/Buy Now Pay Later ("BNPL") lenders, auto lenders, auto insurance carriers, cable and telecom operators, retailers, media companies, and federal, state and local government agencies. We have been successful in leveraging our brand, our expertise and our solutions and have a leading presence in several high-growth international markets. Millions of consumers across the globe also use our data to help manage their personal finances and take precautions against identity theft.

We believe we have an attractive business model that has recurring and diversified revenue streams, low capital requirements, significant operating leverage and strong and stable cash flows. The proprietary and embedded nature of our solutions and the integral role that we play in our customers' decision-making processes have historically translated into high customer retention and revenue visibility. We continue to deliver organic growth by increasing our sales to existing customers, developing new

solutions and gaining new customers. We have a diversified portfolio of businesses across our segments, reducing our exposure to cyclical trends in any particular industry vertical or geography. We operate primarily on contributory data models in which we typically obtain updated information at little or no cost.

Our Evolution

We are dedicated to building upon our foundation as a global information and insights company that makes trust possible, so people around the world can access the opportunities that can lead to a higher quality of life. We have been in business for over 50 years and have established a long track record of providing innovative solutions to businesses and consumers. Since our founding as a provider of regional credit reporting services, we have built a comprehensive, valuable, and unique database of United States ("U.S.") consumer information to build products that span many industry verticals. We have also strengthened our data, analytics and technology delivery capabilities and acquired complementary businesses enabling us to enhance our solutions. Leveraging our foundational strength in credit risk oriented products, we have also expanded our solution sets into complementary competencies such as fraud mitigation and marketing.

Globally, we continue to grow our presence, building and acquiring credit reporting agencies in new geographies, establishing strong international footholds to expand into other emerging markets, and expanding the verticals served and solutions offered in local markets. We have also expanded the reach of our consumer solutions both directly and by partnering with other market leaders and innovators.

As part of our continued evolution, we have invested in a number of strategic initiatives that we believe will allow us to better serve our customers. These initiatives include:

- ***Growing our Data***: We continue to invest in the breadth and depth of our data. We introduced the concept of trended data to provide the trajectory of a consumer's risk profile, used public records data to enhance the scope of business issues we can address, incorporated alternative data into our databases to allow for a more comprehensive risk assessment of banked and unbanked consumers, and have increased our breadth and depth of offline and online data to resolve consumer identities. We continue to improve the quality of our data, provide deeper insights and create differentiated solutions for our customers.
- ***Expanding into New Verticals and Geographic Markets:*** We have established and grown our presence in diversified verticals which consists of Technology, Commerce & Communications, Insurance, Media, Services and Collections, Tenant and Employment, and Public Sector. We have also expanded the reach of our consumer offerings by partnering with traditional and emerging providers, as well as adding identity protection and breach remediation offerings. We have also diversified geographically by establishing a presence in attractive high-growth markets such as the Philippines and India, as well as investing in strategically important markets such as the United Kingdom ("U.K.") and Canada.
- ***Broadening our Solution Sets:*** From our foundation in the credit risk space, we have expanded into adjacent solution areas that can leverage our datasets and competencies, most notably fraud mitigation and marketing, which can be sold across verticals.
- ***Strengthening our Analytics Capabilities:*** We have strengthened our analytics capabilities by leveraging modern technology and differentiated data assets, strategic acquisitions, utilizing more advanced tools and growing our analytics team. This has allowed us to create solutions that produce greater insights and more predictive results, which help our customers make better decisions. Our strengthened analytics capabilities have also shortened our time-to-market to create and deliver these solutions to our customers.
- ***Investing in our Technology:*** Technology is at the core of the solutions we provide to our customers. We continue to make significant investments to evolve our technology infrastructure by leveraging both internal and external resources. Our technology investments will fundamentally transform our technology infrastructure by implementing a global cloud-based approach to streamline product development, increase the efficiency of ongoing operations and maintenance, and enable a continuous improvement approach. We also leverage the latest data and analytics technologies, enabling us to be quicker and increase our operational efficiency. Our significant ongoing investments allow us to organize and handle high volumes of disparate data, improve delivery speeds, provide better availability, strengthen product development capabilities and continuously enhance our information security measures. Neustar bolsters our identity resolution capabilities through its OneID platform. Our technology also allows us to build and leverage capabilities across multiple geographies and industry verticals.
- ***Enhancing our Global Operating Model:*** We continue to enhance our business processes and capabilities to support our growth. We have structured our Global Solutions organization around key capabilities such as credit, fraud, marketing, analytics, decisioning, and others, and staffed the teams with experienced leaders to develop and diffuse configurable platform solutions across our geographies and vertical markets. Our Global Operations organization has centralized previously disparate functions, focusing on high-volume, repeatable activities that deliver consistent and

predictable outcomes at speed. Our Global Technology organization has invested to further streamline our application ecosystem and optimize to more modern and services-oriented architecture. To address our customers' needs, we have hired additional industry experts, which has allowed us to create and sell new vertical-specific solutions. Our global sales force structure includes dedicated teams for our largest customers, shared sales teams for our mid-sized customers, and call center support teams for our smaller customers, which increases our sales teams' effectiveness across our target markets.

As part of our Global Operating Model, we established our award-winning Global Capability Centers ("GCCs") in 2018 to centralize, standardize and automate work in locations with deep talent pools, which currently include India, South Africa and Costa Rica. Since 2018, our GCC network has grown to more than 4,000 employees, or about one-third of our workforce, who support a wide range of functions. In November 2023, we announced the next step in our ongoing, multi-year transformation effort to optimize our operating model and further capitalize on the success of our GCCs. This next step includes transitioning additional job responsibilities to our GCCs over the next two years, which we expect will improve productivity, reduce costs, fund growth and further optimize our operating model.

We believe that our ongoing focus on evolving with the market and with our customers' needs ensures continued improvement in our overall services to businesses and consumers. Leveraging our trusted brand, global scale and strong market position in the verticals we serve will allow us to capitalize on business opportunities worldwide and contribute to our long-term growth.

Our Market Opportunity

We believe we are well-positioned to capitalize on the long-term trend of businesses and consumers using data and analytics to make more informed decisions and manage risk more effectively. As worldwide spending on data and analytics increases, we believe there are several key trends in the global macroeconomic environment affecting the geographies and industry verticals we serve that will create increasing demand for our solutions:

- ***Rapid Growth in Data Creation and Application:*** Larger and more diversified datasets are now assembled faster while the breadth of analytical applications and solutions has expanded. Companies are increasingly relying on business analytics and data technologies to help process this data in a cost-efficient manner. Non-traditional sources of data have become important in deriving alternative metrics.
- ***Proliferation of Digital Commerce:*** Increases in online purchasing activity are creating new challenges and opportunities for businesses and consumers. Businesses are looking for solutions to improve targeting precision and identity verification in these digital environments, in order to enable better consumer experiences. We believe there is ample demand for data and insights to help businesses make better decisions, leveraging digital identity information and advanced analytics. Additionally, consumers are seeking more frictionless digital experiences, while also gaining a heightened awareness of and concern about the risks of identity theft.
- ***Advances in Technology and Analytics Unlocking the Value of Data:*** Ongoing advances in data collection, storage and analytics technology have contributed to the greater use and value of data and analytics in decision making. As businesses have gained the ability to rapidly aggregate and analyze data, they increasingly expect access to real-time data and analytics from their information providers as well as solutions that fully integrate into their workflows. We believe this has made sophisticated technology critical for gaining and retaining business in the risk and information services industry.
- ***Greater Adoption of Data Solutions Across New and Existing Industry Verticals:*** With the proliferation of data, we believe companies across new and existing industry verticals recognize the value of risk information and analytical tools, particularly when tailored to their specific needs.
    - ***Financial Services Industry:*** There is strong competition in the financial services space, with traditional financial services companies and consumer lenders competing against an increasing number of new FinTechs and POS/BNPL lenders. FinTechs and POS/BNPL lenders provide access to credit in a fast and efficient manner by utilizing sophisticated risk assessment tools that leverage data, such as behavioral data, transactional data and employment and credit information. Traditional lenders are also increasing their use of these new applications and data in order to grow their businesses while addressing regulatory requirements, lowering operating costs and better serving their customers.
    - ***Insurance Industry:*** As consumers increasingly obtain quotes from multiple insurers in an effort to lower their costs, insurers are trying to improve the accuracy of their risk assessments and initial quotes. For example, insurance carriers are using driver violation data to uncover offenses that will impact pricing earlier in the quoting process so consumers have a more accurate view of the premiums they will be charged.
    - ***Other Emerging Verticals****:* We offer solutions in a diversified portfolio of other emerging verticals, which includes Technology, Commerce & Communications, Insurance, Media, Services and Collections, Tenant

and Employment, and Public Sector. In the Technology, Commerce & Communications vertical we offer data-driven solutions that address the entire customer lifecycle. Within the Media vertical, our highly accurate consumer data helps companies improve their marketing investments, providing identity and audience solutions to reach the right consumers across digital channels. In Services and Collections, our solutions improve third party collectors' bottom line and help provide a quality customer experience by delivering actionable consumer insights and services. Our Tenant and Employment business provides data and insights to make informed investment, hiring, and rental decisions. Our suite of solutions in the Public Sector gives government agencies the superior data assets, analytics and security they need to manage compliance and boost services for the constituents they serve.

- ***Increasing Lending Activity in Emerging International Markets:*** As economies in emerging markets continue to develop and mature, we believe there will continue to be favorable socio-economic trends, such as an increase in the size of the middle class and a significant increase in the use of financial services by under-served and under-banked consumers. In addition, credit penetration, as measured by the proportion of credit active adults, is relatively low in emerging markets, such as India. Furthermore, the widespread adoption and use of mobile phones in emerging markets have enabled greater levels of financial inclusion and access to banking and credit. We expect the populations in emerging markets to continue to become more credit active, resulting in increased demand for our services.
- ***Increased Management and Monitoring of Personal Financial Information and Identity Protection by Consumers:*** We expect demand for consumer solutions to rise with the increasing availability of free credit information and greater consumer awareness of the importance of understanding and monitoring their credit information and protecting their identity. The proliferation of mobile devices has also made data much more accessible, enabling consumers to manage their finances and monitor their information in real-time. We believe these trends will continue to drive growth for our consumer business.

Our Competitive Strengths

Comprehensive and Unique Datasets

Our long operating history and thought leadership in the industry have allowed us to build comprehensive and unique data assets that would be difficult for a new market entrant to replicate. Our solutions are based on a foundation of financial, credit, alternative credit, fraud, marketing, identity, bankruptcy, lien, judgment, automotive and other relevant information obtained from thousands of sources including financial institutions, private databases, public records repositories and other alternative data sources. We refine, standardize and enhance this data using sophisticated algorithms to create proprietary databases. We are constantly updating our data to keep it current, and we continue to identify opportunities to acquire additional data. We believe that our data is unique and differentiates us from our competitors. We own several proprietary datasets such as consumer credit information, driver violation history, phone activity, digital device identifiers, business data and rental payment history. Our global data assets encompass alternative data, such as the voter registry in India, a vehicle information database in South Africa and a mobile device database. We believe we are the largest provider of scale in the United States to possess both nationwide consumer credit data and comprehensive, diverse public records data, which allows us to better predict behaviors, assess risk and address a broader set of business issues for our customers.

Innovative and Differentiated Solutions

We consistently focus on innovation to develop new and enhanced solutions that meet the evolving needs of our customers. We believe our specialized data, analytics and solution service, our collaborative approach with our customers and our ability to serve the needs of different buyers across nearly all industries differentiates us from our competitors. Our solutions are often scalable across different customers, geographies and verticals. Several examples of our innovative and differentiated solutions include:

- ***CreditVision***: We continue to enhance our credit data by including new data fields, enriching values in existing data fields and expanding account history. Our enhanced credit data has been combined with hundreds of algorithms to produce CreditVision and CreditVision Link, the market-leading trended data and alternative data solutions that provide greater granularity and evaluate consumer behavior patterns over time. This results in a more predictive view of the consumer, increases the total population of consumers who can effectively be scored, and helps consumers gain improved pricing. We continue to focus on driving CreditVision penetration globally, with particular opportunity for growth internationally.
- ***Point-of-Sale / Buy Now Pay Later:*** TransUnion remains at the forefront of the BNPL credit reporting industry. Beginning in 2022 and continuing through 2023, the cross-functional, global solutions-led BNPL team delivered online reporting capabilities coupled with solutions through data and insights that support the BNPL demand. Solutions development is now complete, and our teams are poised to complete the remaining operational efforts once

the furnished data are received. We continue to partner closely with key BNPL market leaders and regulators on next steps.

- ***Marketing***: Our Marketing Solutions offer advanced depth, breadth and sophistication of the marketing identity graph, leveraging new digital identity signals, such as in-home connected devices, and new matching models/algorithms that deepen the configurability of matched outcomes, and expanding always-on points of distribution to connect to more technology and media end-points. We have continued the expansion of audience creation tools and data availability, including an expanded set of available attributes and tools available to marketers for the rapid development and deployment of highly targeted audience segments. In late 2022, we launched TruAudience Data Collaboration, which combines Neustar's and TransUnion's identity resolution, machine learning, and privacy-enhancing technology capabilities into a single platform. In 2023, we released Native Identity in Snowflake, establishing the foundation for cloud native product expansion. We also launched TruAudience Identity integration with AWS Entity Resolution, which will bring advanced identity resolution capabilities to AWS customers.
- ***TruValidate:*** Our TruValidate solutions secure trust across channels and deliver friction-right experiences that empower businesses and consumers to safely and seamlessly transact in a digital world. TruValidate provides an enhanced suite of identity management, authentication, and fraud analytics solutions that protect businesses from fraud, increase acquisition rates and consumer loyalty, and optimize business operations. We continue to invest in innovative identity and fraud device proofing and authentication services and to expand our comprehensive consumer identity graph to translate the connections between personal and digital data into consumer trust decisions across their omni-channel journey. Further, Neustar has expanded our capabilities in the fraud space and enhances our ability to provide superior consumer identity insights and make trust possible between businesses and consumers. For instance, our partnership with Neuro-ID for Behavioral Analytics, which will be offered as part of a Digital Insights Solutions package that includes Device Risk and Neustar's Digital Identity Risk, will help reduce friction and eliminate false positives and negatives.
- ***TLOxp:*** TLOxp leverages proprietary data linking and matching capabilities across thousands of data sources to identify and provide insights on relationships among specific people, assets, locations, and businesses. This allows us to offer enhanced due diligence, investigation, risk management, threat assessment, identity authentication, and fraud prevention and detection solutions. Our ongoing investment in data, analytics, and innovation allows us to continue to help our customers improve critical aspects of their business and to expand our value proposition to serve additional use cases and verticals such as government, law enforcement, insurance and healthcare.
- ***TruEmpower Dashboard ("TED")*** (formerly known as CreditView Dashboard): TED is an interactive, customer-branded dashboard that empowers consumers to take control of their credit and financial health by providing them with credit information and insights, identity protection information and interactive educational tools in a comprehensive, user-friendly format. Consumers are able to easily view their credit profiles, see how they have changed over time, receive alerts on key credit and identity information changes, set goals for reaching a desired score and simulate the impact of financial decisions on those goals, understand recommended actions to attain a desired score, and receive relevant offers for financial products.
- ***TruIQ:*** TruIQ Solutions are a suite of data science technologies and consulting services that empower businesses with the ability to create intelligent, custom-made models and data analysis to drive better decisions and strategies. We launched two new TruIQ solutions in 2023: TruIQ Analytics Studio, which provides self-service access to TransUnion's depersonalized archive credit data for portfolio valuation and risk management; and TruIQ Data Enrichment, which includes a proprietary linking application to connect businesses first- and third-party data with TransUnion credit data. As a result, customers can execute highly targeted marketing campaigns or conduct cost-benefit analyses when entering a new segment, without creating the risk of sensitive data leaving their private environments, relying on third-party data processors or manually linking and matching data.
- ***Trusted Call Solutions ("TCS")*:** TCS is a Neustar solution that helps enterprises and communications providers reduce robocalling and spoofing, promote their brand, and improve call answer rates. Solutions include caller name optimization, robocall mitigation, certified caller, and branded call display. TCS has continued to deliver outsized growth since the acquisition. In 2023, we launched two key Trusted Call Solutions products: Rich Call Data and Spoof Call Protection. Rich Call Data is an extension of Branded Call Display that displays a company's logo and call reason. Spoof Call Protection is call-blocking designed primarily for banks.
- ***IdentityForce*:** IdentityForce is a solution from our acquisition of Sontiq, Inc. ("Sontiq") that provides identity protection services to consumers, including credit report monitoring, dark web monitoring, identity restoration services, and stolen fund disbursement, all in a flexible and user-friendly interface. Additional premium services include credit score simulators, bank monitoring, and reputation monitoring, among other features.

Technology Infrastructure

We continue to evolve our infrastructure and our capabilities to efficiently meet the needs of our business and consumer customers, and have expanded and evolved our enterprise approach to technology as we have made strides in shifting our infrastructure to a hybrid, multi-cloud environment. Our technology infrastructure allows us to continually improve our overall services to global businesses and consumers, while also increasing throughput, improving data matching, creating efficiencies, enhancing information security, and lowering operating costs. Our technology gives us the ability to process, organize and analyze high volumes of data across multiple operating systems, databases and file types as well as to deal with both structured and unstructured data that changes frequently. We process billions of transactions on a daily basis. Because our data matching technology is able to interrelate data across disparate sources, industries and time periods, we believe that we are able to create differentiated datasets and provide our customers with comprehensive insights that allow them to better evaluate risk.

Hybrid Public-Private Cloud Infrastructure

At the beginning of 2020, we announced Project Rise, a multi-phase initiative to fundamentally transform our technology infrastructure by implementing a global cloud-based approach. Once completed, we believe this cloud-based foundation will provide us with a secure, efficient and reliable infrastructure that we will leverage across all of TransUnion. In December 2021, the Company acquired Neustar and recognized the opportunity to take advantage of Neustar's capabilities to enhance and complement the Company's cloud-based technology already under development as part of Project Rise by leveraging Neustar's established cloud competence. In August 2023, we hit a major milestone in Brazil, when our first cloud-native bureau went live.

Unlocking Value with OneTru

In November 2023, we announced the next step in our technology modernization to further leverage Neustar's technology to standardize and streamline our product delivery platforms onto a single solutions enablement platform, OneTru, and one infrastructure operating system. Using the foundations of Neustar's OneID platform, and cloud infrastructure from both Neustar and Project Rise, this new target-state architecture will consolidate disparate platforms acquired through past business acquisitions to unlock additional value from these assets. We will also reduce the number of applications that were built over the last decade of expansion and acquisitions, allowing for an enhanced security posture to meet all of our regulatory demands. By creating a single infrastructure operating system across on-premise private cloud and public cloud providers, we are creating a single control plane that will allow us to optimize our data center posture. This will allow us to drive operational efficiency through services rationalization to provide a consistent and standardized set of global services and capabilities across our technology landscape, creating capacity for product innovation.

OneTru, our solutions enablement platform, will allow us to efficiently activate our assets in a single, multilayered ecosystem. OneTru helps TransUnion create a unified approach that makes rapid innovation possible by enabling three key outcomes:

- Concentration of our expertise, allowing us to accelerate product development and deployment;
- Improvement of scale and reusability by better utilizing our configurable computing power and eliminating data exchange across platforms; and
- Increased efficiencies and reduction of total cost by bringing together disparate data and product platforms.

It also allows us to deliver a more accurate picture of consumers faster than ever before. That means more accurate identity resolution, complete and contextualized insights, and compliant use of data, all delivered through our portfolio of business and consumer products via a single implementation.

OneTru will become the platform for all of the technological steps required to transform raw data into insights and solutions for customers, from data ingestion, data management, and identity resolution to analytics and delivery, across all global TransUnion product families.

Deep and Specialized Industry Expertise

We have deep expertise in a number of attractive industry verticals including Financial Services, Insurance and other verticals. Our expertise has allowed us to develop sophisticated solutions that play an integral role in our customers' decision-making processes and are often embedded into their workflows. Our team includes industry experts with significant experience in the verticals that we target and relationships with leading companies in those verticals. We also have regulatory compliance expertise across the industries that we serve. Together, this expertise provides us with a comprehensive understanding of business trends and insights for customers in these verticals, allowing us to build solutions that cater to these customers' specific requirements. We have been able to apply our industry knowledge, data assets, technology and analytics capabilities to develop new solutions and revenue opportunities within key verticals. For example, in Financial Services, our differentiated position allowed us to anticipate the increased demand from alternative consumer lending providers, including the prevalence of POS/BNPL lending, to create solutions that cater to these emerging providers. In Insurance, we partnered with a vehicle history data provider to launch a vehicle history score that helps insurance carriers further segment risk based on the attributes of a

specific automobile. In Marketing, we recognized that we already had the foundational datasets we needed to compete in audience segmentation and identity resolution, made strategic bolt-on acquisitions, and acquired Neustar to broaden our customer base and deepen our solution capabilities.

Leading Presence in Attractive International Markets

We have been operating internationally for over 30 years and have strong global brand recognition. We have strategically targeted attractive international markets in both developed and emerging economies and have a diversified global presence, including a strong presence in Canada, Latin America, the U.K., Africa, India, and Asia Pacific. Local senior management in our International markets provide us with deep insights into these markets and strong relationships with our customers. We have leveraged our brand, operating history, global footprint and technology infrastructure to establish new credit bureaus in several international markets, such as Canada in 1989, India in 2001 and the Philippines in 2011. Once we establish a foothold in a region, our model is to expand the services we offer within these markets and then move into adjacent emerging markets. For example, we have used our operations in Hong Kong to expand into other Asia Pacific countries and provide analytic scoring models in the Philippines, Singapore, Malaysia and Thailand. We have used our operations in South Africa to expand into neighboring African countries. We have also entered new markets through strategic acquisitions, including Brazil in 2011, Colombia in 2016, and the U.K. in 2018.

Proven and Experienced Management Team

Our senior management team has a proven track record of strong performance and significant expertise in the markets we serve, with decades of industry experience. We continue to attract and retain experienced management talent for our businesses. Our team has deep knowledge of the data and analytics sector and expertise across the various industries that we serve. Our team has overseen our expansion into new industries and geographies, while managing ongoing strategic initiatives including our significant technology investments. As a result of the sustained focus of our management team, we have been successful in consistently driving growth, both organically and through acquiring and integrating businesses.

Our Growth Strategy

Enhance Underlying Data, Technology and Analytics Capabilities to Develop Innovative Solutions

As the demand for data and analytics solutions grows across industries and geographies, we will continue to expand the scope of our underlying data, improve our tools and technology and enhance our analytics and technology solutions capabilities to provide innovative solutions that address this demand. With our insights and information, our customers can explore connections between people, businesses, assets and locations; identify assets, uncover inconsistencies and identify misrepresentations; and uncover evidence of financial distress.

With the unification of systems into OneTru and our solutions enablement platform, we will be able to help our customers meet their challenges more quickly and efficiently. We are also continuing to explore the use of machine learning, artificial intelligence and deep learning in our data and analytics strategies.

Our continuous technology investments have also reduced the time to market for new solutions, which allows us to react quickly to customer requirements. In addition, these investments have improved and, we believe, will continue to improve efficiency, reliability, security and performance. One of our innovative, quickly enabled customer solutions is TruIQ Data Enrichment ("TDE"), which enables customers to securely leverage TransUnion's dataset matching and identity linking technology in their own data infrastructure. TDE enables customers to compliantly link their sensitive first-party data to TransUnion's depersonalized consumer credit data and any additional third-party data to support contracted analytics use cases. This can all be done without requiring the customer's data to leave their environment, increasing speed to actionable insights.

Further Penetrate Existing Industry Verticals with Current and New Solutions

We are a leading provider of risk and information solutions in several industry verticals today, including Financial Services and Insurance. We believe there is significant opportunity for further growth within these industries by expanding the number of customers to whom we sell our current solutions as well as by creating innovative new solutions that we can use to grow our presence in these industries. We focus on developing new solutions that address evolving customer needs within our industry verticals. In order to more effectively address these opportunities, we have redeployed and reallocated our sales resources to focus either on new customer opportunities or on selling additional services and solutions to existing customers. With our leading market positions, existing strong relationships in the Financial Services and Insurance verticals, and with our consumer partners, we believe we have the opportunity to further penetrate our existing customer base and capture a strong proportion of their spending across the consumer lifecycle.

Extend Into New, Adjacent Industry Verticals

In addition to increasing penetration in industries where we have a substantial presence, we continue to extend our solutions to address customer needs across a variety of attractive industries. We believe that our capabilities allow us to quickly create and

deliver solutions across industries and geographies, thereby driving scalable growth based upon our foundational information and analytics. We continue to target other verticals including Technology, Commerce & Communications, Media & Entertainment, Services & Collections, and Public Sector, where we see opportunities to leverage our existing capabilities, including those acquired and expanded through our recent acquisitions, as discussed below.

Extend Further Into Fraud and Marketing Solutions

From our heritage in the credit risk space, we have expanded into adjacent solution areas that can leverage our datasets and competencies, most notably Fraud and Marketing. These solutions have broad applicability across the customers that we serve, including in key verticals such as Financial Services, Insurance, Retail and eCommerce, Media, and Public Sector. We have broadened these capabilities through acquisitions, most notably iovation, Inc. ("iovation") in 2018 and three subsequent acquisitions in 2019 and 2020, to build out our Media vertical. In addition, our late 2021 acquisition of Neustar adds scale and broadens the scope of our Fraud and Marketing solutions, which are sold across verticals.

Expand our Presence in Attractive International Markets

We believe international markets present a significant opportunity for growth. We have significant scale in some of the world's fastest growing markets, such as India and Latin America, which positions us to take advantage of the favorable dynamics in these regions as their populations become more credit active. We leverage solutions developed in the U.S. and in our regions and deploy them to international markets, after localizing them to individual market requirements. For example, after launching CreditVision in the U.S., we have expanded our offerings with similar solutions globally. In markets where we have established a presence, we will expand further into adjacent verticals, such as Insurance and Consumer Solutions, as well as complementary solutions, such as marketing and fraud. We intend to continue to expand into new geographic markets by forming alliances with financial services institutions, industry associations and other local partners, and by pursuing strategic acquisitions. Across all our international expansion initiatives, we will continue to leverage our technology infrastructure to drive speed to market, scale and differentiation.

Broaden Our Reach in Consumer Market through Direct and Indirect Channels

Our consumer business focuses on helping consumers shape their financial future and protect their identity, delivering innovative solutions to consumers both directly and indirectly through a collaborative partnership model that has expanded the market for these services, along with greater consumer awareness of the value of their credit information and increased risk of identity theft. With our acquisition of Sontiq, we added to our foundational credit monitoring solutions with a comprehensive set of identity protection offerings. Across both channels, our focus is on delivering value-added solutions and features while continuing to improve the consumer experience with more user-friendly interfaces and better customer service and educational tools. Within our indirect channel, we will continue to leverage and enhance our flexible technology platform to expand our relationship with existing partners as well as develop relationships with new partners and enter new verticals. We believe that partnerships not only enable us to grow our own business, but also expand the overall market and provide us access to new consumer segments. We will also continue to leverage our approach in the U.S. consumer market to further expand our consumer operations globally.

Integrate Strategic Acquisitions

While we will continue to evaluate strategic acquisitions that would allow us to accelerate growth within our existing businesses and diversify into new businesses, we have shifted our focus to completing the full integration of our acquisitions from previous years and reducing our debt. In recent years, we have broadened our geographic footprint, increased the breadth and depth of our datasets, enhanced our services, deepened our industry expertise in our key verticals and expanded our presence in our international markets through strategic acquisitions.

On April 8, 2022, we completed the acquisition of Verisk Financial Services ("VF"), the financial services business unit of Verisk Analytics, Inc. ("Verisk"). We have retained the leading core businesses of Argus Information and Advisory Services, Inc. and Commerce Signals, Inc. (collectively, "Argus") and have disposed of the remaining non-core businesses. Argus is relied upon by leading financial institutions, payments providers, and retailers worldwide for competitive studies, predictive analytics, models and advisory services to provide a clear perspective on where their business stands today and to best position them for success in the future. We leverage the data provider consortium and proprietary and differentiated benchmarking datasets of these entities to provide more enhanced and holistic solution capabilities to our customers to make better and faster decisions that will help them more fully understand consumer behavior, increase financial inclusion, acquire new accounts, and improve fraud prevention, risk management and other solutions.

On December 1, 2021, we completed two of the largest investments in our history with the acquisitions of Neustar and Sontiq. Neustar, a premier identity resolution company with leading solutions in Marketing, Risk and Communications, enables customers to build connected consumer experiences by combining decision analytics with real-time identity resolution services driven by its OneID platform. The acquisition of Neustar provided immediate scale to our identity resolution services through Neustar's large, well-established customer base and we believe that Neustar will help accelerate the future growth of our

identity-based solutions and expand our powerful digital identity capabilities through the addition of Neustar's distinctive data and analytics, enabling consumers and businesses to transact online with greater confidence.

Sontiq provides solutions including identity monitoring, restoration, and response products and services to empower consumers and businesses to help proactively protect against identity theft and cyber threats. The acquisition of Sontiq enables access to an attractive new base of customers and consumers through a recurring subscription-based revenue model and also complements and expands our Consumer Interactive solutions portfolio by providing valuable identity protection services for consumers. Sontiq's identity security monitoring products incorporate our credit data, are highly complementary to our capabilities and are expected to significantly increase our opportunities for growth.

In our Media vertical, our 2020 acquisitions of Tru Optik Data Corp. and Signal Digital, Inc., and our 2019 acquisition of TruSignal, Inc., provide us with an industry-leading position within a clearly defined part of the Media industry. These acquisitions allow us to deliver more real-time targeted data across online streaming services to improve our customers' digital marketing campaigns. Together with TransUnion's complementary capabilities, we believe these acquisitions allow us to enhance the customer base with higher accuracy and transparency that is missing in current identity and audience development products in the digital marketing space.

We enhanced our fraud and identity management service offerings when we acquired iovation in June 2018, one of the most advanced providers of device-based information in the world. We launched IDVision with iovation, which combines our extensive personal data with iovation's digital data to offer an enhanced suite of identity management, authentication and fraud prevention solutions that protect businesses from fraud while improving the online user experience. This results in a global network of fraud and risk insights that help businesses to quickly and accurately determine authentic customers from fraudulent ones.

In June 2018, we entered the world's second largest credit market in the U.K. Our U.K. business provides data, analytics and technology solutions to help businesses and consumers make informed decisions across a diverse group of industries. With a strong record of growth and innovation in both core credit and emerging solutions we have achieved strong market success.

We have also made a number of minority investments in businesses, which typically include strategic partnership arrangements that allow us to develop, expand, and deepen relationships with innovative companies with promising technologies and capabilities. We have a strong track record of integrating our acquisitions and driving long-term value creation, and we will continue to maintain a disciplined approach to pursuing acquisitions.

Segment Overview

We manage our business and report our financial results in three reportable segments: U.S. Markets, International and Consumer Interactive. We also report expenses for Corporate, which provides shared services and conducts enterprise functions. See Part II, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations," Part II, Item 8 "Financial Statements and Supplementary Data - Notes to Consolidated Financial Statements," and Note 21, "Reportable Segments," for further information about our reportable segments.

U.S. Markets

Our U.S. Markets segment provides consumer reports, actionable insights and analytics to businesses. These businesses use our services to engage and acquire customers, assess consumer ability to pay for services, identify cross-selling opportunities, measure and manage debt portfolio risk, collect debt, verify consumer identities and mitigate fraud risk.

We deliver our solutions across multiple industry vertical markets and report disaggregated revenue as follows:

Financial Services: The Financial Services vertical is comprised of our consumer lending, mortgage, auto and cards and payments lines of business. Our financial services customers consist of most banks, credit unions, finance companies, auto lenders, mortgage lenders, FinTechs, and other consumer lenders in the United States. We also distribute our solutions through most major resellers, secondary market players and sales agents. Beyond traditional lenders, we work with a variety of credit arrangers, such as auto dealers and peer-to-peer lenders. Our solutions span every aspect of the lending lifecycle, including customer acquisition and engagement, fraud and ID management, retention and recovery. Our core products include credit reporting, credit marketing, analytics and consulting, identity verification, fraud prevention, outbound calling and contact center solutions, people-based marketing solutions, and authentication and debt recovery solutions.

Emerging Verticals: Emerging Verticals include Technology, Commerce & Communications, Insurance, Media, Services and Collections, Tenant and Employment, and Public Sector. Our solutions in these verticals are also data-driven and address the entire customer lifecycle. Core products include: outbound calling and contact center solutions, onboarding and transaction processing solutions, scoring and analytic solutions, people-based marketing solutions, fraud and identity management solutions, public record solutions, and customer retention solutions.

Within U.S. Markets, we leverage our comprehensive data assets, data matching expertise and predictive analytics to develop solutions:

- ***Comprehensive Data Assets:*** Our credit database contains the name and address of substantially all of the U.S. credit-active population, a listing of their existing credit relationships and their timeliness in repaying debt obligations. The information in our database is voluntarily provided by thousands of credit-granting institutions and other data furnishers. We also enhance our data assets with alternative credit sources and actively seek information from courts, government agencies and other public records including suits, liens, judgments, bankruptcies, professional licenses, real property, vehicle ownership, other assets, driver violations, and contact information from certain databases. We continue to look for opportunities to gain access to new datasets to further enhance our proprietary datasets, including device-based information and phone activity data. Our databases are updated, reviewed and monitored on a regular basis.
- ***Predictive Analytics:*** Our predictive analytics capabilities allow us to analyze our proprietary datasets and provide insights to our customers to allow them to drive better business decisions. Our tools allow customers to investigate past behavior, reasonably predict the likelihood of future events and strategize actions based on those predictions. We have numerous tools such as predictive modeling and scoring, customer segmentation, marketing analytics, benchmarking, forecasting, fraud modeling and campaign optimization, all of which cater to specific customer requirements. Our predictive analytics capabilities are developed by analytics teams with deep industry experience and a broad array of specialized qualifications.

International

The International segment provides services similar to our U.S. Markets segment to businesses in select regions outside the United States. Depending on the maturity of the credit economy in each country, services may include credit reports, analytics and technology solutions services and other value-added risk management services. We also have insurance, business and automotive databases in select geographies. These services are offered to customers in a number of industries including financial services, retail credit, insurance, automotive, collections, public sector and communications, and are delivered through both direct and indirect channels. The International segment also provides consumer solutions similar to those offered by our Consumer Interactive segment to help consumers proactively manage their personal finances and take precautions against identity theft. We report disaggregated revenue of our International segment for the following regions:

Canada: We have operated in Canada since 1989 and are one of only two nationwide consumer reporting agencies in the Canadian market. We operate across multiple verticals in Canada with leading positions in insurance and automotive with a strong and growing presence in financial services. Our Canadian customer base encompasses some of the largest companies in their verticals, including many of the top banks, credit card issuers, insurance companies and auto manufacturer lenders.

Latin America: We have been active in Latin America since 1985 when we entered the Puerto Rican market, and now operate in numerous Central and South American countries, including a strong presence in two major markets - Colombia and Brazil. We also have significant credit bureau businesses in the Dominican Republic and Chile, and a 25.69% ownership interest in Trans Union de México, S.A., the primary credit reporting agency in Mexico. In Guatemala, we maintain a centralized database that services Guatemala, Nicaragua and Costa Rica.

U.K.: In June 2018, we entered the world's second largest credit market, the U.K., when we acquired Callcredit, the second largest consumer credit bureau in the U.K. Our U.K. business provides data, analytics and technology solutions to help businesses and consumers make informed decisions across a diverse group of industries, and serves a broad set of customers including leading financial institutions and customers in other attractive, high-growth segments.

Africa: We launched our operations in Africa by entering South Africa in 1993 and have since expanded into many surrounding countries. We are highly diversified and serve a variety of industries through traditional consumer credit reporting services, insurance solutions, auto information solutions, and commercial credit information services. We provide risk and information solutions in Africa to many of the leading banks, retailers, auto dealer groups, and insurance companies.

India: In 2001, we partnered with prominent Indian financial institutions to create CIBIL, the first consumer and business credit reporting agency in India. We have since launched the country's first generic credit score, which is the most widely used credit score across the financial services industry in India. In the absence of a comprehensive national ID, we created an innovative matching algorithm that allowed us to create the most extensive consumer credit database in India. We also own or have access to several non-credit data sources that we use to enhance our solutions, including the national voters' registry, the confirmed and suspected fraud registry, property registry and tax ID database. We offer a suite of risk and information solutions across the credit lifecycle for banks, telecommunication companies and insurance companies, as well as consumer solutions such as online credit reports and scores. India has become our largest and our fastest growing region.

Asia Pacific: Our operations in Asia Pacific include markets such as Hong Kong, the Philippines, Thailand, and Singapore. Asia Pacific is a growing market with increasing demand for credit driven by a rising middle class that offers significant growth

potential in analytics and technology solutions. We do business with many of the top financial institutions in the countries we serve. We have had a majority ownership interest in the principal consumer credit reporting company in Hong Kong since 1998. In partnership with leading credit card issuers in the Philippines, we launched the first consumer credit reporting agency in that market in 2011. We have also built credit risk scores for the National Credit Bureau of Thailand, in which we have a 12.25% ownership interest, the Credit Bureau of Singapore and the Credit Bureau of Malaysia.

Consumer Interactive

The Consumer Interactive segment offers solutions that help consumers manage their personal finances and take precautions against identity theft. Services in this segment include credit reports and scores, credit monitoring, identity protection and resolution, and financial management for consumers. The segment also provides solutions that help businesses respond to data breach events. Our products are provided through user-friendly online and mobile interfaces and are supported by educational content and customer support. With our acquisition of Sontiq, we added to our foundational credit monitoring solutions with a comprehensive set of identity protection offerings. Our Consumer Interactive segment serves consumers through both direct and indirect channels.

Direct: We provide a variety of solutions to consumers directly including free credit services with the ability to set and manage credit freezes and initiate disputes via online channels, and premium subscription-based credit health and identity protection products, offered via websites and mobile applications. Many consumers sign up for premium credit and identity products to access benefits and features such as credit reports, credit scores and analysis, alerts to changes in credit information, debt analysis, debt and retirement calculators, identity protection services, and credit locks. We complement these features with educational content that explains how credit and financial data is used in various industries to evaluate consumers, how a consumer's financial choices impact this evaluation, and how a consumer can best protect and monitor their identity. We continue to execute on an integrated, data-driven marketing approach spanning paid and organic search, online display, email, affiliate partners, and programmatic and portfolio marketing, which allows us to efficiently acquire and retain high quality consumers.

Indirect: We also provide consumer education and engagement, fraud and identity protection, and data breach services to partners who may offer them on a stand-alone basis or with their own or other branded services as a bundle to consumers, governmental agencies and businesses. We offer a broad suite of solutions that include many of the features, educational content and customer support available in our direct channel. We have taken a proactive and flexible partnership approach, which has resulted in long-term strategic relationships with some of the largest providers of credit information or identity protection services in the U.S. consumer market as well as with several large financial institutions and FinTech providers. Through these partnerships, we have significantly expanded the overall market as well as our ability to provide consumers with the information and tools they want.

Corporate

Corporate provides support services to each segment, holds investments and conducts enterprise functions. Certain costs incurred in Corporate that are not directly attributable to one or more of the segments remain in Corporate. These costs are typically enterprise-level costs and are primarily administrative in nature.

Markets and Customers

We have a highly diversified customer base that includes companies across multiple industries, including Financial Services and Insurance. A substantial portion of our revenue is derived from companies in the financial services industry and from sales in the United States.

We leverage our comprehensive data assets, industry expertise and our technology infrastructure, allowing us to build solutions once and deploy them multiple times across the different verticals and regions. Our evolution to a hybrid public-private cloud infrastructure augments this capability. We provide services to our customers through real-time, online delivery for services such as credit reports and predictive scores, in batch form for services that help our customers proactively acquire new customers, cross-sell to existing customers and help them monitor and manage risk, and through our software-as-a-service offerings, which include a number of solutions that help businesses interpret data, maximize reimbursements, visualize insights, predict model results and apply their customer-specific criteria to facilitate real-time automated decisions at the time of customer interaction, and through our websites to consumers, for various subscription-based and transaction-based products in the United States and in other regions we serve.

We market our services globally, primarily through our own sales force. We have dedicated sales teams for our largest customers focused by industry group and geography. These dedicated sales teams provide strategic account management and direct support to customers. We use shared sales teams to sell our services to mid-size customers. Smaller customers' sales needs are serviced primarily through call centers. We also market our services through indirect channels such as resellers, who sell directly to businesses and consumers. Our interactive direct-to-consumer services are sold primarily through our website.

Seasonality

Seasonality in the U.S. Markets segment is correlated to volumes of online credit data purchased by our financial services and mortgage customers, and our sales have generally been higher during the second and third quarters. Seasonality in our International segment is driven by local economic conditions and relevant macroeconomic market trends. In our Consumer Interactive segment, demand for our products is usually higher in the first half of the year, impacted by seasonality and our advertising spend.

Competition

The market for our services is highly competitive. We compete primarily on the basis of differentiated solutions, datasets, analytics capabilities, ease of integration with our customers' technology, stability of services, customer relationships, innovation and price. We believe that we compete favorably in each of these categories. Our competitors vary based on the business segment, industry vertical and geographical market that our solutions address.

In our U.S. Markets segment, our competition generally includes Equifax, Experian and LexisNexis, in addition to certain competitors with whom we only compete in specific industry verticals. For example, we compete with FICO in the Financial Services vertical and with Verisk Analytics, Inc. in the Insurance vertical, and with LiveRamp and Experian in the marketing solutions space.

In our International segment, we generally compete with Equifax and Experian directly or indirectly through their subsidiaries or investments. We also compete with other competitors that may focus on a particular vertical, country or region.

In our Consumer Interactive segment, we generally compete with Equifax, Experian, FICO and LifeLock as well as personal finance websites, some of whom offer free credit information.

In addition to these competitors, we also compete with a number of other companies that may offer niche solutions catering to more specific customer requirements.

We believe the services we provide to our customers reflect our understanding of our customers' businesses, the depth and breadth of our data and the quality of our analytics and technology solutions capabilities. By integrating our services into our customers' workflows, we ensure efficiency, continuous improvement and long-lasting relationships.

Information Technology

Technology

The continuous operation of our information technology systems is fundamental to our business. Our information technology systems collect, refine, access, process, deliver and store the data that is used to provide our solutions. Our technology is at the core of our innovative solutions, and we continually invest in our technology and thought leaders to be a market leader. There are four critical elements to our global technology enablement strategy:

Hardware + Cloud: Our technology infrastructure gives us the ability to organize and handle high volumes of disparate data, maintain and improve our delivery speeds, increase availability and enhance our product development capabilities, while at the same time lowering our overall cost structure. As announced in November 2023, we are investing in our technology to standardize and streamline our product delivery platforms and build a single global platform for fulfillment of our product lines.

Our environment is built upon strategic partnerships. Our technology relies on several third-party, best-of-breed solutions as well as proprietary software and tools which we integrate into our platforms. Our control of our technology and infrastructure allows us to prioritize any changes and manage the roll-out of any upgrades or changes. We contract with various third-party providers to help us maintain and support our systems.

Software: Our market-facing solutions are designed for global deployment, such as our Brazil bureau, our first cloud-native credit bureau where we deploy best in class components. Our software is built on a common set of components, tools and practices. With the ongoing migration to OneTru, our software applications will eventually also be deployed on the same software operating platform.

Operating Model: We have established a core set of global operating principles built on common practices, community, tools and training. We have established technology Centers-of-Excellence that utilize similar tools and technology in order to provide scale and efficiency in modifying existing applications and developing new applications for our businesses. We deploy new development methodologies globally to enable rapid delivery of solutions and increase our speed-to-market. Our technology team includes both our own employees as well as additional resources from third-party providers. We hire top talent from global hubs, like India, where we are expanding our resources at all levels, including senior and executive leadership. In November 2023, we announced an operating model optimization program that will further reduce our global workforce and transition certain job responsibilities to our GCCs, which we expect will improve productivity, save costs and fund growth, optimize business processes, and reduce our facility footprint.

Digital Associate Experience: We are also investing in our digital employee experience. We believe that to attract and retain talent we need to ensure an efficient and productive environment. We conducted a thorough needs analysis of our employees to ensure that our platforms are enabling the most effective work environment, facilitating productivity and the hybrid workspace, and providing a world-class technology foundation that enables our employees to innovate.

Data Centers and Business Continuity

In order to create redundancy and increase resiliency, we utilize multiple data centers in all of our major markets. We generally employ similar technologies and infrastructures in each data center to enable the optimal sharing of technical resources across geographies.

We maintain a governance framework for business continuity that includes written policies requiring each business and operating unit to identify and prepare continuity plans for critical functions. Our businesses and operating units have processes in place that are designed to maintain such functions in case there is a disruptive event. We also have a specific disaster recovery plan that will take effect if critical infrastructure or systems fail or become disabled.

As part of our program, each business unit's continuity plan is periodically updated and stored in a centralized database. These plans are monitored and reviewed by our compliance team. From time to time, our compliance team tests one or more of these plans using desktop exercises or in connection with actual events. We also periodically confirm the state of preparedness of our most critical disaster recovery procedures. We maintain systems redundancy plans for our primary U.S. data centers that allow for the transfer of capacity between geographically disbursed environments in the event there is a failure of computer hardware or a loss of our primary telecommunications lines or power sources. On an enterprise basis, our systems are designed to recover most of our operational capacity in a scenario where our primary data centers become inoperable.

Security

The security and protection of personal data is TransUnion's highest priority. TransUnion's written information security program focuses on managing risk and is guided by global information security regulations and standards, including ISO/IEC 27001:2013, NIST CSF, PCI-DSS, HIPAA, and other international regulatory expectations in locations where we operate. Our information security program follows a risk-based approach that continuously evaluates threats, industry events and asset values to introduce enhancements when necessary. We deploy a wide range of physical and technical safeguards that are intended to provide security around the collection, storage, use, access and delivery of information we have in our possession or with our partners. These safeguards include firewalls, intrusion protection and monitoring, anti-virus and malware protection, vulnerability threat analysis, control validation, advanced persistent threat monitoring, forensic tools, encryption technologies, data transmission standards, contractual provisions, customer and partner credentialing, identity and access management, data loss prevention, access and anomaly reports and training programs for associates. We, along with other global financial services organizations, including U.S. nationwide consumer credit reporting companies, share cyber threat and attack information that may be targeted at our industry through our participation in forums such as the Financial Information Sharing and Analysis Council. These forums allow us to better understand and monitor our systems and our connectivity to our customers and partners, as well as how specific solutions that were implemented to protect against such attacks are performing. We undergo SSAE 18 and SOC2 reviews annually, and many of our major customers routinely audit our security controls. We conduct an annual Payment Card Industry Data Security Standard (PCI-DSS) compliance program and remain PCI certified. We regularly engage independent third-party organizations to evaluate TransUnion's security program to conduct independent security assessments. See Part I, Item 1C, "Cybersecurity" for additional information.

Intellectual Property and Licensing Agreements

Our intellectual property is a strategic advantage and protecting it is critical to our business. Because of the importance of our intellectual property, we treat our brand, software, technology, know-how, concepts and databases as proprietary. We attempt to protect our intellectual property rights under the trademark, copyright, patent, trade secret and other intellectual property laws of the United States and other countries, as well as through the use of licenses and contractual agreements, such as nondisclosure agreements. While we hold various patents, we do not rely primarily on patents to protect our core intellectual property. Through contractual arrangements, disclosure controls and continual associate training programs, our principal focus is to treat our key proprietary information and databases as trade secrets. Also, we have registered certain trademarks, trade names, service marks, logos, internet URLs and other marks of distinction in the United States and foreign countries, the most important of which is the trademark TransUnion name and logo. This trademark is used in connection with most of the services we sell and we believe it is a known mark in the industry.

We own proprietary software that we use to maintain our databases and to develop and deliver our services. We develop and maintain business-critical software that transforms data furnished by various sources into databases upon which our services are built. We also develop and maintain software to manage our consumer interactions, including providing disclosures and resolving disputes. In all business segments, we develop and maintain software applications that we use to deliver services to our customers, through a software-as-a-service model. In particular, we develop and maintain analytics and technology

solutions infrastructure that we host and make available for our customers to develop and deploy analytics to improve business performance.

We license certain data and other intellectual property to other companies on arms-length terms that are designed to protect our rights to our intellectual property. We generally use standard licensing agreements and do not provide our intellectual property to third parties without a nondisclosure and license agreement in place.

We also license certain intellectual property that is important for our business from third parties. For example, we license credit-scoring algorithms and the right to sell credit scores derived from those algorithms from third parties for a fee.

Legal and Regulatory Matters

Compliance with legal and regulatory requirements is a top priority. We are subject to numerous laws governing the collection, protection, dissemination and use of non-public personal information, credit information and other types of information. These laws are enforced by U.S. federal, state and local regulatory agencies, foreign regulatory authorities and, in some instances, through private civil litigation. Our failure to comply with applicable legal and regulatory requirements could have a negative impact on our financial condition, results of operations, reputation and overall operations.

We proactively manage our compliance with laws and regulations through a global legal, risk and compliance framework that is designed to ensure that enterprise standards are followed. Through the legal, risk and compliance functions, we provide training to our associates, monitor all material laws and regulations, establish compliance policies, routinely review internal processes to determine whether business practice changes are warranted, assist in the development of new products and services, and regularly meet with principal regulators and legislators to ensure transparent engagement regarding our operations.

U.S. Data and Privacy Protection

Our U.S. operations are subject to numerous laws and regulations governing privacy, data security, consumer protection and the use of consumer credit information. Certain of these laws provide for civil and criminal penalties for the unauthorized release of, or access to, this protected information. The laws and regulations that affect our U.S. business include, but are not limited to, the following:

- *Fair Credit Reporting Act (the "FCRA")*: The FCRA applies to consumer reporting agencies, including us, as well as data furnishers and users of consumer reports. The FCRA promotes the accuracy, fairness and confidentiality of information in the files of consumer reporting agencies that engage in the practice of assembling and evaluating consumer credit and other information relating to consumers for certain specified purposes. The FCRA limits what information may be reported by consumer reporting agencies, limits the distribution and use of consumer reports, establishes consumer rights to access and dispute their own credit files, includes provisions designed to prevent identity theft and assist fraud victims and victims of human trafficking, requires consumer reporting agencies to make a free annual credit report available to consumers and imposes many other requirements on consumer reporting agencies, data furnishers and users of consumer report information. Violation of the FCRA can result in civil and criminal penalties. Regulatory enforcement of the FCRA is under the purview of the Federal Trade Commission (the "FTC"), the Consumer Financial Protection Bureau (the "CFPB") and state attorneys general, acting alone or in concert with one another. Many states have their own fair credit reporting laws, which may include more exacting requirements, if not preempted by the FCRA.
- *The Dodd-Frank Wall Street Reform and Consumer Protection Act ("Dodd-Frank Act")*: The Dodd-Frank Act prohibits unfair, deceptive or abusive acts or practices ("UDAAP") with respect to consumer financial products or services and provides the CFPB with authority to enforce those provisions. The CFPB has asserted broad regulatory authority and stated that its UDAAP authority may allow it to find statutory violations even where a specific regulation does not prohibit the relevant conduct, or prior published regulatory guidance or judicial interpretation has found the activity to be in accordance with law.
- *The Economic Growth, Regulatory Relief, and Consumer Protection Act (the "EGRRCPA")*: The EGRRCPA amended certain parts of the Dodd-Frank Act, FCRA and other U.S. federal laws applicable to us. Among other things, the EGRRCPA requires that consumer reporting agencies provide consumers the option to include with their credit file an initial fraud alert for at least one year, establishes a consumer's right to place a free national security freeze that prevents consumer reporting agencies from disclosing the content of the consumer's report to a lender, and mandates that consumer reporting agencies notify consumers of their right to a credit freeze and provide instructions on how to remove it. The EGRRCPA also requires consumer reporting agencies to provide additional credit protections and services to veterans and active-duty U.S. military consumers.
- *State unfair and deceptive practices acts and practices laws:* Many states have enacted statutes that prohibit unfair and deceptive acts and practices, relating to, among other things, marketing, disclosures and billing practices within the state or directed to consumers within the state. The Company and others in the industry may be subject to these laws with respect to the marketing of consumer credit information products.

- *Gramm-Leach Bliley Act (the "GLBA")*: The GLBA regulates, among other things, the receipt, use and disclosure of non-public personal information of consumers held by financial institutions, including us. Several of our datasets are subject to GLBA provisions, including limitations on the use or disclosure of the underlying data and rules relating to the technological, physical and administrative safeguarding of non-public personal information. Violation of the GLBA can result in civil and criminal liability.
- *Drivers' Privacy Protection Act (the "DPPA")*: The DPPA requires all states to safeguard certain personal information included in licensed drivers' motor vehicle records from improper use or disclosure. The DPPA limits the use of this information sourced from State departments of motor vehicles to certain specified purposes and does not apply if a driver has consented to the release of their data. The DPPA imposes criminal fines for non-compliance and grants individuals a private right of action, including actual and punitive damages and attorneys' fees. The DPPA provides a federal baseline of protections for individuals, and is only partially preemptive, meaning that except in a few narrow circumstances, state legislatures may pass laws to supplement the protections made by the DPPA. Many states' laws are more restrictive than the federal law.
- *Data security breach laws*: All states and some territories have adopted data security breach laws that may require notice be given to affected consumers in the event of a breach of personal information, and in some cases the provision of additional benefits such as free credit monitoring to affected individuals. Some of these laws require additional data protection measures over and above the GLBA data safeguarding requirements. If data within our system is compromised, we may be subject to provisions of various state security breach laws, including regulatory investigations or enforcement actions from state attorneys general, who enforce state data breach or unfair and deceptive practices laws.
- *Federal Trade Commission Act (the "FTC Act")*: The FTC Act prohibits unfair methods of competition and unfair or deceptive acts or practices. We must comply with the FTC Act when we market certain credit related products, such as consumer credit monitoring and identity protection services. Our data collection, use and disclosure practices and the security measures we employ to safeguard the personal data of consumers could also be subject to the FTC Act, and our data practices or our failure to safeguard data adequately may subject us to regulatory scrutiny or enforcement action.
- *The Credit Repair Organizations Act ("CROA")*: CROA regulates companies that claim to be able to assist consumers in improving their credit standing. Some courts have applied CROA to credit monitoring services offered by consumer reporting agencies and others. CROA allows for a private right of action and permits consumers to recover all money paid for alleged "credit repair" services in the event of violation.
- *The Health Insurance Portability and Accountability Act of 1996, as amended by the American Recovery and Reinvestment Act of 2009 ("HIPAA") and the Health Information Technology for Economic and Clinical Health Act ("HITECH")*: HIPAA and HITECH require companies to implement reasonable safeguards to prevent intentional or unintentional misuse or wrongful disclosure of protected health information. We obtain protected health information under a "business associate" agreement that is subject to the privacy, security and transactional requirements imposed by HIPAA and HITECH. As a business associate, we are obligated to limit our use and disclosure of health-related data to certain statutorily permitted purposes, HIPAA regulations, as outlined in our business associate agreements, and to preserve the confidentiality, integrity and availability of this data. HIPAA and HITECH also require, in certain circumstances, the reporting of breaches of protected health information to affected individuals and to the United States Department of Health and Human Services. A violation of any of the terms of a business associate agreement or noncompliance with HIPAA or HITECH data privacy or security requirements could result in administrative enforcement action and/or imposition of statutory penalties by the United States Department of Health and Human Services or a state attorney general. HIPAA and HITECH requirements supplement but do not preempt state laws regulating the use and disclosure of health-related information; state law remedies, which can include a private right of action, remain available to individuals affected by an impermissible use or disclosure of health-related data.
- *Comprehensive State Privacy Laws:* Five states — California, Colorado, Connecticut, Utah and Virginia — have enacted comprehensive privacy legislation, currently in effect, intended to provide consumers with greater transparency and control over their personal information by providing consumers in these states with certain rights regarding their personal information and by requiring businesses to make certain disclosures and take certain other acts in furtherance of those rights. These laws exempt practices and activities regulated by the FCRA, GLBA, HIPAA and DPPA, including our credit reporting business, but apply to other portions of our business that are not regulated by these laws. An additional eight states - Delaware, Indiana, Iowa, Montana, Oregon, New Jersey, Tennessee, and Texas — have passed similar comprehensive privacy laws, which will go into effect over the course of 2024 to 2026.
- *Washington My Health My Data Act; Nevada Consumer Health Data Privacy Law:* Washington and Nevada have enacted laws that impose broad requirements on collecting, using, and selling consumer health information. These laws take effect on March 31, 2024.

- *Requirements for government contractors*: Special requirements may apply to TransUnion when providing services to U.S. federal, state and local government agencies. For example, and without limitation, TransUnion may need to abide by the Privacy Act of 1974, the Internal Revenue Service's Publication 4812, and various Federal Acquisition Regulation and associated supplemental contract clauses. Each of these laws, regulations and contract clauses dictates particular measures for the protection of personal information or information that is otherwise categorized as sensitive by the government. Government agencies frequently modify or supplement these requirements, and consequences for violations of applicable requirements may include penalties, civil liability and for severe infractions, criminal liability.

We are also subject to U.S. federal and state laws that are generally applicable to any U.S. business with national or international operations, such as antitrust laws, the Foreign Corrupt Practices Act, the Americans with Disabilities Act, climate-related regulations and various employment laws. We continuously monitor U.S. federal and state legislative and regulatory activities that involve credit reporting, data privacy and security, and other relevant subjects to identify issues in order to remain in compliance with all applicable laws and regulations.

International Data and Privacy Protection

We are subject to data protection, privacy and consumer credit laws and regulations in other jurisdictions where we conduct business. These laws and regulations include, but are not limited to, the following:

- *Canada:* The Personal Information Protection and Electronic Documents Act of 2000 ("PIPEDA") and substantially similar provincial laws govern how private sector organizations collect, use and disclose personal information in the course of commercial activities. The PIPEDA gives individuals the right to access and request correction of their personal information collected by such organizations. The PIPEDA requires compliance with the Canadian Standard Association Model Code for the Protection of Personal Information. Most Canadian provinces also have laws dealing with consumer reporting. These laws typically impose an obligation on credit reporting agencies to have reasonable processes in place to maintain the accuracy of the information, place limits on the disclosure of the information and give consumers the right to have access to, and challenge the accuracy of, the information. Quebec's new privacy law made a number of notable changes to the province's privacy laws, most notably increasing requirements on organizations seeking to transfer personal information outside of Quebec.
- *Colombia*: The Colombian Financial Data Protection Regime (Law 1266 of 2008) regulates the collection, use and transfer of personal data pertaining to financial services, including credit reporting. The Colombian General Data Protection Regime (Law 1581 of 2012 and Decree 1377 of 2013) covers regulation of all other personal data. Both of these regimes have applicability to credit reporting services in Colombia and together address obligations of information furnishers, database owners, consumer right of access, consumer consent and permitted information disclosures.
- *European Union*: Our data management activities and the commercial solutions we make available to the European market are subject to the General Data Protection Regulation ("GDPR"). This law establishes significant data protection and privacy standards that empower European Union consumers to exercise significant control over their personal data. In addition to a litany of substantive provisions empowering consumers to limit how data may be used, GDPR also imposes operational, data processing, and other technical requirements with which we must comply. Failure to comply with any provision of GDPR could result in significant regulatory or other enforcement penalties.
- *U.K.*: Our U.K. operations are subject to GDPR and the Privacy and Electronic Communications Regulation (the "PECR"), which together govern the processing of personal data pertaining to U.K. citizens. Enforcement of data regulation and consumer privacy matters in the U.K. resides with the Information Commissioner's Office, an independent body set up to uphold the rights of individuals in relation to the use of their personal data. The provision of credit referencing services in the U.K. is also a regulated activity that is authorized by the Financial Conduct Authority (the "FCA"). The FCA has regulated credit reference agencies since 2014 with the objectives of protecting consumers, protecting financial markets and promoting competition. TransUnion U.K. (previously Callcredit), Experian and Equifax were granted full FCA authorization in early 2016 and are therefore all required to follow the rules and principles issued by the FCA.

  In 2018, the FCA introduced Open Banking which aims to improve customer experience and to increase competition in the banking sector. Consumers can share transaction data with third parties via application program interfaces ("APIs") to identify best products and take up multi-bank products. As part of Open Banking, the Second Payment Services Directive allows merchants to retrieve a customer's account data from their bank with their consent. The implementation of Open Banking platforms has increased the number of payment service providers available to consumers beyond traditional banks. TransUnion U.K. is an authorized information services provider under this regime.
- *South Africa*: The National Credit Act of 2005 (the "NCA") and its implementing regulations govern credit bureaus and consumer credit information. The NCA sets standards for filing, retaining and reporting consumer credit information. The NCA also defines consumers' rights with respect to accessing their own information and addresses

the process for disputing information in a credit file. The NCA is enforced by The National Credit Regulator who has authority to supervise and examine credit bureaus. In addition, the Protection of Personal Information Act ("POPIA") went into effect on July 1, 2020, with enforcement commencing on July 1, 2021. POPIA regulates the processing of personal information of legal and juristic persons, and imposes compliance obligations and sanctions.

- *India*: The Credit Information Companies Regulation Act of 2005 ("CICRA") requires entities that collect and maintain personal credit information to ensure that it is complete, accurate and protected. Entities must adopt certain privacy principles in relation to collecting, processing, preserving, sharing and using credit information. Data protection is currently covered under provisions of the Information Technology Act of 2000 as well as regulations promulgated by the Reserve Bank of India. On August 9, 2023, India passed The Digital Personal Data Protection Act, which covers personal information. Regulations implementing this law are forthcoming.
- *Hong Kong*: Personal Data (Privacy) Ordinance ("PDPO") and The Code of Practice on Consumer Credit Data regulate the operation of consumer credit reference agencies. They prescribe the methods and security controls under which credit providers and credit reference agencies may collect, access and manage credit data. The PDPO was amended in 2021 to provide new powers to the Privacy Commissioner and to make criminal the act of publicly releasing information identifying an individual or organization – a practice known as "doxxing."
- *Brazil*: The Brazilian General Data Protection Law ("LGPD"), went into effect on September 18, 2020. LGPD regulates the processing of personal information and imposes compliance obligations and sanctions comparable to those of GDPR. The sanctions provisions of the LGPD went into effect on August 1, 2021.

Other International Laws

Credit information and credit information companies have also become subject to, directly or indirectly, further governance regulations, such as those historically reserved for banks. We are also subject to various laws and regulations generally applicable to all businesses in the other countries where we operate.

Sustainability

We are dedicated to making meaningful, positive contributions to the world and the communities we serve. We are making an impact through our commitments to advancing underrepresented people, enabling life-changing access to credit in mature and emerging markets, and using trended data to help consumers improve their access to credit.

We focus our environmental, social, and governance ("ESG") efforts on issues that we believe are important to our business and to our key stakeholders. In 2021, we conducted our first global ESG assessment, which confirmed the importance of cybersecurity, privacy, and corporate governance to the continued success of our business. The assessment also confirmed the importance of TransUnion continuing to focus efforts on enhancing financial inclusion, employee wellness, diversity, equity, inclusion, and belonging, and climate change. In our 2023 Diversity Report, we will provide details regarding our efforts to drive a culture of inclusion and belonging across our organization, including matters of racial and gender inclusion in our workforce, and promote financial literacy in the communities we serve.

Climate Change

Climate change continues to be a key issue for companies worldwide. In 2021, in partnership with an external consultant, we completed a survey of our greenhouse gas ("GHG") emissions and designed climate change targets. We set two climate change targets, reaching operational net zero scope 1 and scope 2 GHG emissions by 2025 and 30 percent reductions on leased real estate scope 3 emissions by 2030, using 2019 as a baseline. Currently, we consider our scope 2 GHG emissions to be those indirect emissions from our owned (as distinct from our leased) properties and leased sites within our operational control. In addition, we consider scope 3 GHG emissions to include leased real estate, other than leased real estate within our operational control and captured in our scope 2 GHG emissions. We consider leased sites where TransUnion has sufficient influence over facilities to impact energy consumption and/or sourcing, as determined by an internal survey we conducted, to generally fall within operational control. Currently, we plan to achieve these reduction targets by utilizing renewable energy purchases, an environmentally friendly cloud migration, and our real estate consolidation strategy. In May 2023, TransUnion announced its partnership with Constellation Energy Corporation to support the production of new renewable energy in the United States. We anticipate that our 12-year contract with Constellation will help reduce carbon emissions associated with our energy use by more than 8,000 metric tons each year. For emissions that TransUnion is unable to reasonably avoid, we expect to mitigate our impact through annual offset purchases. In 2023, we completed our second offset and renewable energy credit purchase for our emissions impact for the year.

TransUnion has been reviewing climate risk with the help of an external consultant, and this review continued in 2023. While this review has identified that our exposure to climate risks does not appear to be as high as companies in certain industries, we are evaluating ways in which to further mitigate such risks, such as via our climate targets discussed above.

Human Capital Management

We employed approximately 13,200 employees as of December 31, 2023. Central to our long-term strategy is attracting, developing and retaining the best talent globally with the right skills to drive our success. Our Board of Directors (the "Board") receives regular updates on human capital topics such as employee retention, engagement and survey results, enterprise compliance, investigations and associate health and safety.

Other than certain employees in Brazil, none of our employees are currently represented by a labor union or have terms of employment that are subject to a collective bargaining agreement. We consider our relationships with our employees to be good and have not experienced any work stoppages.

Diversity Strategy

We see inclusion and diversity as a source of strength and know that it is essential to our mission, innovation and growth. At TransUnion, we know that diversity helps us win. We have a three-pronged approach to our diversity, equity and inclusion strategy consisting of the following:

- *Our People:* We value our talent through inclusive recruiting practices, continuous development, retention and support for our associate networks.
- *Our Culture:* We strive to cultivate an exceptional workplace culture of diversity, equity, inclusion, belonging, respect, and accountability.
- *Our Marketplace:* We take positive actions to promote fair and equitable access to our products and services, and utilize suppliers and strategies to reach potential candidates reflect the diversity of the communities in which we operate.

We believe that a critical component of continuing to deliver innovative products to consumers and customers is maintaining diverse and inclusive teams. Detailed below are select workforce diversity statistics informed by the Sustainability Accounting Standards Board reporting standards, including figures for 2023, 2022 and 2021:

	For the Year Ended December 31,		
	2023	2022 [6]	2021 [6]
Percent of TransUnion's Worldwide Workforce Based in the United States	36%	41%	46%
Worldwide Gender			
Women Executive Management[1]	30%	29%	28%
Women Non-Executive Management[2]	34%	33%	32%
Women Administrative & Professional[3]	44%	43%	43%
U.S. Race/Ethnicity[4]			
Black Executive Management[1]	4%	4%	4%
Black Non-Executive Management[2]	5%	5%	5%
Black Administrative & Professional[3]	11%	12%	12%
Hispanic Executive Management[1]	4%	4%	5%
Hispanic Non-Executive Management[2]	6%	5%	5%
Hispanic Administrative & Professional[3]	11%	11%	10%
Asian Executive Management[1]	14%	13%	12%
Asian Non-Executive Management[2]	23%	23%	22%
Asian Administrative & Professional[3]	25%	24%	22%
Other Executive Management [1,5]	2%	1%	1%
Other Non-Executive Management[2,5]	2%	2%	2%
Other Administrative & Professional [3,5]	3%	2%	2%

1. Executive Management include all employees at a Vice President level or above.
2. Non-Executive Management include all employees from Manager level to Senior Director level.
3. Includes all employees other than Executive and Non-Executive Management.
4. U.S. race/ethnicity diversity demographic information includes only U.S. employees who chose to self-identify and excludes those who did not self-identify.
5. Other race/ethnicity includes American Indian or Alaska Native, Native Hawaiian or Other Pacific Islanders, and those employees who disclosed two or more categories.

6. Human capital reporting includes all 2021 acquisitions and 2022 non-divested acquisitions.

Talent Acquisition and Retention

Our talent acquisition and retention strategy is multi-faceted. We aim to recruit the most qualified candidates and strive for a diverse and well-balanced workforce.

We reward and support employees through competitive pay, benefits, and perquisite programs that allow employees and their families to thrive. Our benefit offerings are designed to meet the varied and evolving needs of a diverse workforce tailored to the variety of businesses and geographies in which we operate.

We continue to support our employees and their families, including by providing child and adult care benefits that provide access to onsite or community centers, enhanced back-up care choices that include personal caregivers, child care and adult referral assistance and child and adult care provider discounts. In addition, we offer on-demand tutoring along with a specialist who can consult, research and provide referral services for a host of services such as child and parenting needs (e.g., pregnancy, adoption, and special needs), senior care, pets, home services, education (including college), to name a few of the many options provided to our employees. We also provide our employees with access to free mental and behavioral health resources, including on-demand access to the Employee Assistance Program for employees and their dependents. We continue to look for new ways to support our employees and their families.

Employee Engagement, Training and Development

We prioritize and invest in helping our employees grow and build their careers through several training and development programs. These include online, instructor-led and on-the-job learning formats as well as executive talent and succession planning paired with an individualized development approach.

Safety and Wellness

As TransUnion takes its duty to maintain a safe work environment seriously, the health and well-being of associates, customers and visitors remains a top priority. We continue to follow important health and safety guidelines, and implement effective practices to minimize workplace risks.

See our upcoming 2023 Sustainability Report and 2023 Diversity Report for additional information on these topics. Information contained in such reports are not incorporated herein by reference and should not be considered part of this report.

Available Information

Through our corporate website under the heading "About - Investor Relations," at http://www.transunion.com, you can access electronic copies of our governing documents free of charge, including our Corporate Governance Guidelines and the charters of the committees of our Board. In addition, through our website, you can access the documents we file with the U.S. Securities and Exchange Commission ("SEC"), including our annual reports on Form 10-K, quarterly reports on Form 10-Q and current reports on Form 8-K, and all amendments thereto, as soon as reasonably practicable after we file or furnish them. Investors and others should note that TransUnion routinely announces material information to investors and the marketplace using SEC filings, press releases, public conference calls, webcasts and the TransUnion Investor Relations website. While not all of the information that the Company posts to the TransUnion Investor Relations website is of a material nature, some information could be deemed to be material. Accordingly, the Company encourages investors, the media and others interested in TransUnion to review the information that it shares on www.transunion.com/tru. You also may request printed copies of our SEC filings or governance documents, free of charge, by writing to our corporate secretary at the address on the cover of this report. Information contained on our website is not incorporated herein by reference and should not be considered part of this report.

In addition, the SEC maintains an Internet site (www.sec.gov) that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC.

Our corporate headquarters are located at 555 West Adams Street, Chicago, Illinois 60661, and our telephone number is (312) 985-2000.

ITEM 1A. RISK FACTORS

You should carefully consider the following risks as well as the other information included in this report, including "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our financial statements and related notes. Any of the following risks could materially and adversely affect our business, financial condition or results of operations. However, the selected risks described below are not the only risks facing us. Additional risks and uncertainties not currently known to us or those we currently view to be immaterial may also materially and adversely affect our business, financial condition or results of operations.

Risk Factors Summary

The following is a summary of the principal risks and uncertainties described in more detail in this report:

- Our revenues are concentrated in the U.S. financial services and consumer credit industries. When these industries or the broader financial markets experience a downturn, demand for our services and revenues may be adversely affected.
- We are subject to significant competition in the markets in which we operate and we may face significant competition in the new markets that we plan to enter.
- To the extent the availability of free or relatively inexpensive consumer information increases, the demand for some of our services may decrease.
- Our relationships with key long-term customers may be materially diminished or terminated.
- If we are unable to develop successful new services in a timely manner, or if the market does not adopt our new services, our ability to maintain or increase our revenue could be adversely affected.
- If our outside service providers and key vendors are not able to or do not fulfill their service obligations, our operations could be disrupted and our operating results could be harmed.
- There may be further consolidation in our end-customer markets, which may adversely affect our revenues.
- Data security and integrity are critically important to our business, and cybersecurity incidents, including cyberattacks, breaches of security, unauthorized access to or disclosure of our intellectual property or confidential information, business disruption, or the perception that confidential information is not secure, could result in a material loss of business, regulatory enforcement, substantial legal liability and/or significant harm to our reputation.
- We may be unable to adequately anticipate, prevent or mitigate damage resulting from increasingly sophisticated methods of illegal or fraudulent activities committed against us, which could harm our business, financial condition and results of operations and could significantly harm our reputation.
- If we experience system failures, personnel disruptions or capacity constraints, or our customers do not modify their systems to accept new releases of our distribution programs, the delivery of our services to our customers could be delayed or interrupted, which could harm our business and reputation and result in the loss of revenues or customers.
- We could lose our access to data sources which could prevent us from providing our services.
- If we fail to maintain and improve our systems, our data matching technology, and our interfaces with data sources and customers, demand for our services could be adversely affected.
- Our business is subject to various governmental regulations, laws and orders, compliance with which may cause us to incur significant expenses or reduce the availability or effectiveness of our solutions, and the failure to comply with which could subject us to civil or criminal penalties or other liabilities.
- The CFPB has supervisory and examination authority over our business and has in the past, and may initiate enforcement actions with regard to our compliance with federal consumer financial laws. Actions by the CFPB or other regulators against us or our executives could result in increased operating costs, reputational harm, payment of damages and civil money penalties, injunctive relief and/or restitution, any of which could have a material adverse effect on our business, results of operations and financial condition.
- Regulatory oversight of our contractual relationships with certain of our customers may adversely affect our business.
- The outcome of litigation, inquiries, investigations, examinations or other legal proceedings in which we are involved, in which we may become involved, or in which our customers or competitors are involved could subject us to significant monetary damages or restrictions on our ability to do business.
- Our ability to expand our operations in, and the portion of our revenue derived from, markets outside the United States is subject to economic, political and other inherent risks, which could adversely impact our growth rate and financial performance.

- We face geopolitical and other risks associated with our international operations, which could materially adversely impact our results of operations and our financial condition.
- We may be unable to protect our intellectual property adequately or cost-effectively, which may cause us to lose market share or force us to reduce our prices. We also rely on trade secrets and other forms of unpatented intellectual property that may be difficult to protect.
- We may face claims for intellectual property infringement, which could subject us to monetary damages or limit us in using some of our technologies or providing certain services.
- When we engage in acquisitions, investments in new businesses or divestitures of existing businesses, we face risks that may adversely affect our business.
- We depend, in part, on strategic alliances, joint ventures and acquisitions to grow our business. If we are unable to make strategic acquisitions and develop and maintain these strategic alliances and joint ventures, our growth may be adversely affected.
- We have a substantial amount of debt which could adversely affect our financial position and prevent us from fulfilling our obligations under the debt instruments.
- Despite our current level of indebtedness, we may still be able to incur additional indebtedness. This could further the risks associated with our substantial indebtedness.
- We may not be able to generate sufficient cash to service all of our indebtedness, and may be forced to take other actions to satisfy our obligations under our indebtedness, which may not be successful.
- Our inability to generate sufficient cash flow to satisfy our debt obligations, or to refinance our indebtedness on commercially reasonable terms or at all, would materially and adversely affect our financial position and results of operations and our ability to satisfy our obligations.
- Our stock price has recently been volatile and has declined, and may continue to be volatile and/or decline, regardless of our operating performance, and you may not be able to resell shares of our common stock at or above the price you paid or at all.
- Our business and operations are exposed to risks arising from developments and trends associated with climate change and ESG, including risks associated with our own reporting.
- Anti-takeover provisions in our organizational documents might discourage, delay or prevent acquisition attempts for us that you might consider favorable.
- Our ability to pay cash dividends may be limited by the terms of our secured credit facility.
- Economic and other conditions may adversely impact the valuation of our assets resulting in impairment charges that could have a material adverse impact on our results from operations.
- Our efforts to execute any element of our business strategy, including our transformation plan to optimize our operating model and invest in our technology, could experience difficulties, delays, or unexpected costs and may not achieve anticipated benefits and savings.
- Management has determined that our internal control over financial reporting and disclosure controls and procedures were not effective as of December 31, 2023. A failure to maintain effective internal control over financial reporting or disclosure controls and procedures could impact our ability to accurately and timely report our financial results and other material disclosures or otherwise cause us to fail to meet our reporting obligations, which could have a material adverse effect on our operations, investor confidence in our business, and the trading price of our common stock.
- Pandemics, epidemics, disease outbreaks and other public health crises, such as the COVID-19 pandemic, have disrupted our business and operations, and future public health crises could materially adversely impact our business, financial condition, liquidity and results of operations.
- We may not be able to attract and retain the skilled employees that we need to support our business.
- We are subject to losses from risks for which we do not insure.
- If we experience changes in tax laws or adverse outcomes resulting from examination of our tax returns, it could adversely affect our results of operations.

Risks Related to Our Business

Our revenues are concentrated in the U.S. financial services and consumer credit industries. When these industries or the broader financial markets experience a downturn, demand for our services and revenues may be adversely affected.

Our largest customers, and therefore our business and revenues, are influenced by macroeconomic conditions and are impacted by the availability of credit, the level and volatility of interest rates, inflation, employment levels, consumer confidence and

housing demand. In addition, a significant amount of our revenue is concentrated among certain customers, industries, product offerings and in distinct geographic regions, primarily in the United States. Our 2023 revenue in our U.S. Markets Financial Services vertical and in our Consumer Interactive segment accounted for approximately 33% and 15% of consolidated gross revenues, respectively. If businesses in these industries experience economic hardship, we cannot assure you that we will be able to generate future revenue growth. Our customer base suffers when financial markets experience volatility, liquidity issues and disruption, which has occurred in the past and which could reoccur, and the potential for increased and continuing disruptions going forward, present considerable risks to our business and revenue. Changes in the macroeconomic environment have resulted, and may continue to result, in fluctuations in volumes, pricing and operating margins for our services. In addition, if consumer demand for financial services and products and the number of credit applications decrease, the demand for our services could also be materially reduced. High inflation levels has a negative impact on our business by decreasing demand for credit due to slower consumer spending on non-essential goods and services and due to the Federal Reserve raising interest rates to combat inflation. Continued inflation and additional interest rate increases could further materially impact our business. These types of disruptions could lead to a decline in the volumes of services we provide our customers and could negatively impact our revenue and results of operations.

We are subject to significant competition in the markets in which we operate and we may face significant competition in the new markets that we plan to enter.

The markets for our services are highly competitive, and we may not be able to compete successfully against our competitors, which could impair our ability to sell our services. We compete on the basis of differentiated solutions, datasets, analytics capabilities, ease of integration with our customers' technology, stability of services, customer relationships, innovation and price. Our regional and global competitors vary in size, financial and technical capability, and in the scope of the products and services they offer. Some of our competitors may be better positioned to develop, promote and sell their products. Larger competitors may benefit from greater cost efficiencies and may be able to win business simply based on pricing. We consistently face downward pressure on the pricing of our products, which could result in reduced prices for certain products, or a loss of market share. Our competitors may also be able to respond to opportunities before we do, by taking advantage of new technologies, changes in customer requirements or market trends.

Our Consumer Interactive segment experiences competition from emerging companies. In the past several years, there has been an influx of other companies offering similar services to ours, free of charge. These developments have resulted in increased competition.

Many of our competitors have extensive customer relationships, including relationships with our current and potential customers. New competitors, or alliances among competitors, may emerge and gain significant market share. Existing or new competitors may develop products and services that are superior to ours or that achieve greater market acceptance. If we are unable to respond to changes in customer requirements as quickly and effectively as our competition, our ability to expand our business and sell our services may be adversely affected.

Our competitors may be able to sell services at lower prices than we do, individually or as part of integrated suites of several related services. This ability may cause our customers to purchase from our competitors rather than from us. Price reductions by our competitors could also negatively impact our operating margins or harm our ability to obtain new long-term contracts or renewals of existing contracts on favorable terms. Additionally, some of our customers may develop products of their own that replace the products they currently purchase from us, which would result in lower revenue.

We also expect that there will be significant competition in the new markets that we enter. We cannot assure you that we will be able to compete effectively against current and future competitors. If we fail to successfully compete, our business, financial condition and results of operations may be adversely affected.

To the extent the availability of free or relatively inexpensive consumer information increases, the demand for some of our services may decrease.

Public and commercial sources of free or relatively inexpensive consumer information have become increasingly available and this trend is expected to continue. Public and commercial sources of free or relatively inexpensive consumer information, including free credit information from lead generation companies and from banks, may reduce demand for our services. Beginning in April 2020, we began offering free credit reports on a weekly basis. To the extent that our customers choose not to obtain services from us and instead rely on information obtained at little or no cost from these public and commercial sources, our business, financial condition and results of operations may be adversely affected.

Our relationships with key long-term customers may be materially diminished or terminated.

We have long-standing relationships with a number of our customers, many of whom could unilaterally terminate their relationship with us or materially reduce the amount of business they conduct with us at any time. Our customer agreements relating to our core credit reporting service offered through our U.S. Markets segment are terminable upon advance written

notice (typically ranging from 30 days to six months) by either us or the customer, which provides our customers with the opportunity to renegotiate their contracts with us or to award more business to our competitors.

We also provide our services to business partners who may combine them with their own or other branded services to be offered as a bundle to consumers, governmental agencies and businesses in support of fraud or credit protection, credit monitoring, identity authentication, insurance or credit underwriting, and collections. Some of these partners are the largest providers of credit information or identity protection services to the U.S. consumer market.

Market competition, business requirements, financial condition and consolidation through mergers or acquisitions, could adversely affect our ability to continue or expand our relationships with our customers and business partners. There is no guarantee that we will be able to retain or renew existing agreements, maintain relationships with any of our customers or business partners on acceptable terms or at all, or collect amounts owed to us from insolvent customers or business partners. The loss of one or more of our major customers or business partners could adversely affect our business, financial condition and results of operations.

If we are unable to develop successful new services in a timely manner, or if the market does not adopt our new services, our ability to maintain or increase our revenue could be adversely affected.

In order to keep pace with customer demands for increasingly sophisticated service offerings, to sustain expansion into growth industries and to maintain our profitability, we must continue to innovate and introduce new services to the market. The process of developing new services is complex and uncertain. Our industry solutions require extensive experience and knowledge from within the relevant industry. We must commit significant resources to this effort before knowing whether the market will accept new service offerings. Additionally, our business strategy is dependent on our ability to expand into new markets and to bring new products to market. We may not successfully enter into new markets or execute on our new services because of challenges in planning or timing, technical hurdles, difficulty in predicting market demand, changes in regulation or a lack of appropriate resources. Additionally, even if we successfully develop new products, our existing customers might not accept these new products or new markets might not adopt our products due to operational constraints, high switching costs or general lack of market readiness. Failure to successfully introduce new services to the market could adversely affect our reputation, business, financial condition and results of operations.

If our outside service providers and key vendors are not able to or do not fulfill their service obligations, our operations could be disrupted and our operating results could be harmed.

We depend on a number of service providers and key vendors such as telecommunication companies, software engineers, data processors, software and hardware vendors and providers of credit score algorithms, who are critical to our operations. These service providers and vendors are involved with our service offerings, communications and networking equipment, computer hardware and software and related support and maintenance. Although we have implemented service-level agreements and have established monitoring controls, our operations could be disrupted if we do not successfully manage relationships with our service providers, if they do not perform or are unable to perform agreed-upon service levels, or if they are unwilling to make their services available to us at reasonable prices. If our service providers and vendors do not perform their service obligations, it could adversely affect our reputation, business, financial condition and results of operations.

There may be further consolidation in our end-customer markets, which may adversely affect our revenues.

There has been, and we expect there will continue to be, merger, acquisition and consolidation activity in our customer markets. If our customers merge with, or are acquired by, other entities that are not our customers, or that use fewer of our services, our revenue may be adversely impacted. In addition, industry consolidation could affect the base of recurring transaction-based revenue if consolidated customers combine their operations under one contract, since most of our contracts provide for volume discounts. In addition, our existing customers might leave certain geographic markets, which would no longer require them to purchase certain products from us and, consequently, we would generate less revenue than we currently expect.

Risks Related to Technology and Cybersecurity

Data security and integrity are critically important to our business, and cybersecurity incidents, including cyberattacks, breaches of security, unauthorized access to or disclosure of our intellectual property or confidential information, business disruption, or the perception that confidential information is not secure, could result in a material loss of business, regulatory enforcement, substantial legal liability and/or significant harm to our reputation.

As a global consumer credit reporting agency and provider of risk and information solutions, we collect, store and transmit a large amount of sensitive and confidential consumer information on over one billion consumers, including financial information, personally identifiable information and protected health information. We also rely heavily on computer systems, hardware, software, technology infrastructure and online sites and networks for both internal and external operations that are critical to our business. We face significant and evolving cybersecurity risks that threaten the confidentiality, integrity and availability of our systems and data including unintentional events and deliberate attacks by third parties or insiders, such as the

exploitation of "bugs" or security vulnerabilities in software and hardware and sophisticated attack methods such as ransomware. These cyberattacks can take many forms, but they typically have one or more of the following objectives, among others:

- obtain unauthorized access to confidential data such as personal information;
- manipulate or destroy data;
- disrupt, sabotage or degrade service on our systems; or
- affect our operations or data through attacks on third-party business partners or service providers.

We experience numerous attempts to access our computer systems, software, networks, data and other technology assets on a daily basis. We have also experienced cyberattacks and other security incidents, and expect that such attacks and incidents will continue in varying degrees in the future. To date, none of these attacks or incidents has had a material impact on our business, operations or financial results. However, there can be no assurance that future attacks will be immaterial and even immaterial incidents may adversely impact us. For example, in March 2022, a criminal third party obtained access to a TransUnion South Africa server and certain customer personally identifiable information through misuse of an authorized client's credentials. We promptly initiated our response processes, implemented technical containment measures, engaged cybersecurity and forensic experts and launched an investigation. As a precautionary measure, TransUnion South Africa temporarily took certain elements of our services offline, all of which have been resumed.

The security and protection of non-public consumer information is TransUnion's top priority. However, there can be no assurance that our cybersecurity risk management program and processes, including our controls, will be fully implemented, complied with or effective. We cannot assure you that our systems, databases and services will not be compromised or disrupted in the future, whether as a result of deliberate attacks by malicious actors, breaches due to employee error or malfeasance, or other disruptions during the process of upgrading or replacing computer software or hardware, power outages, computer viruses, telecommunication or utility failures or natural disasters or other catastrophic events.

Further, it is possible that we may acquire a company that has experienced a security incident or has security vulnerabilities that the acquired company has yet to discover, investigate and remediate. While we execute security due diligence in these transactions, it is possible that neither the acquired company nor TransUnion may identify these issues in a timely manner, which could spread more broadly to other parts of TransUnion during the integration effort.

Highly publicized cybersecurity incidents, including the data incident announced by Equifax on September 7, 2017, and more recently, the December 13, 2020 announcement by SolarWinds that its software supply chain was compromised, have heightened consumer, legislative and regulatory awareness of cybersecurity risks. These events continue to embolden individuals or groups to target our systems more aggressively.

The preventive actions we take to address cybersecurity risk, including protection of our systems and networks, may be insufficient to repel or mitigate the effects of cyberattacks in the future as it may not always be possible to anticipate, detect or recognize threats to our systems, or to implement effective preventive measures against all cybersecurity risks. This is because, among other things:

- the techniques used in cyberattacks change frequently and are increasingly sophisticated (including due to attacker's use of artificial intelligence), and may not be recognized until after the attacks have succeeded;
- cyberattacks can originate from a wide variety of sources, including sophisticated threat actors involved in organized crime, sponsored by nation-states, or linked to terrorist or hacktivist organizations; and
- third parties may seek to gain access to our systems either directly or using equipment or security passwords belonging to employees, customers, third-party service providers or other users (such as through social engineering and phishing attacks).

Unauthorized disclosure, loss or corruption of our data or inability of our customers to access our systems could disrupt our operations, subject us to substantial regulatory and legal proceedings (including class actions) and potential liability, result in a material loss of business and/or significantly harm our reputation.

We may not be able to timely address the consequences of a cybersecurity incident because a successful breach of our computer systems, software, networks or other technology assets could occur and persist for an extended period of time before being detected due to, among other things:

- the breadth and complexity of our operations and the high volume of transactions that we process;
- the large number of customers, counterparties and third-party service providers with which we do business;
- the proliferation and increasing sophistication of cyberattacks;

- the possibility that a malicious third party compromises the software, hardware or services that we procure from a service provider unbeknownst to both the provider and to TransUnion; and
- the possibility that a third party, after establishing a foothold on an internal network without being detected, might obtain access to other networks and systems.

The extent of a particular cybersecurity incident and the steps that we may need to take to investigate it may not be immediately clear, and it may take a significant amount of time before such an investigation can be completed and full and reliable information about the incident is known. While such an investigation is ongoing, we may not necessarily know the extent of the harm or how best to remediate it, and certain errors or actions could be repeated or compounded before they are discovered and remediated, any or all of which could further increase the costs and consequences of a cybersecurity incident.

Due to concerns about data security and integrity, a growing number of legislative and regulatory bodies around the world have adopted consumer notification and other requirements in the event that consumer information is accessed by unauthorized persons and additional regulations regarding the use, access, accuracy and security of such data are possible. For example, in the United States, we are subject to federal and state laws that provide for more than 50 disparate notification regimes, some of which also provide for statutory damages and private rights of action for plaintiffs who experience certain types of data breaches. In the event of unauthorized access, our failure to comply with the complexities of these various regulations could subject us to regulatory scrutiny and additional liability.

We may be unable to adequately anticipate, prevent or mitigate damage resulting from increasingly sophisticated methods of illegal or fraudulent activities committed against us, which could harm our business, financial condition and results of operations and could significantly harm our reputation.

The defensive measures that we take to manage threats, especially cyber-related threats, to our business may not adequately anticipate, prevent or mitigate harm we may suffer from such threats. Criminals use evolving and increasingly sophisticated methods of perpetrating illegal and fraudulent activities. For example, in September 2020, TransUnion experienced a series of Distributed Denial of Service ("DDoS") attacks. While these attacks did not result in any unauthorized access to data or systems, there was disruption to TransUnion's normal operations including degraded customer response time, intermittent timeouts and degraded internal information technology services utilized by TransUnion associates. TransUnion deploys a number of defensive measures to mitigate DDoS attacks, but persistent attackers can challenge these protections.

Also, in July 2019, TransUnion Limited, a Hong Kong entity in which the Company holds a majority interest, was a victim of a fraud incident that occurred in July 2019 in our Asia Pacific region involving employee impersonation and fraudulent requests that successfully targeted TransUnion Limited, which resulted in a series of fraudulently induced wire transfers totaling $17.8 million, a portion of which has been subsequently recovered.

Fraudulent activities committed against us could disrupt our operations, have an adverse effect on our financial results, subject us to substantial legal proceedings and potential liability, result in a material loss of business and/or significantly harm our reputation.

If we experience system failures, personnel disruptions or capacity constraints, or our customers do not modify their systems to accept new releases of our distribution programs, the delivery of our services to our customers could be delayed or interrupted, which could harm our business and reputation and result in the loss of revenues or customers.

Our ability to provide reliable service largely depends on our ability to maintain the efficient and uninterrupted operation of our computer network, systems and data centers, some of which have been outsourced to third-party providers. In addition, we generate a significant amount of our revenues through channels that are dependent on links to telecommunications providers. Our systems, personnel and operations could be exposed to damage or interruption from fire, natural disasters, pandemic illness, power loss, war, terrorist acts, civil disobedience, telecommunication failures, computer viruses, DDoS attacks or human error. We may not have sufficient redundant operations to cover a loss or failure of our systems in a timely manner. Any significant interruption could severely harm our business and reputation and result in a loss of revenue and customers. Additionally, from time to time we send our customers new releases of our distribution programs, some of which contain security updates. Any failure by our customers to install these new releases could expose our customers to computer security risks.

We could lose our access to data sources which could prevent us from providing our services.

Our services and products depend extensively upon continued access to and receipt of data from external sources, including data received from customers, strategic partners and various government and public records repositories. In some cases, we compete with our data providers. Our data providers could stop providing data, provide untimely data or increase the costs for their data for a variety of reasons, including a perception that our systems are insecure as a result of a data security incidents, budgetary constraints, a desire to generate additional revenue or for regulatory or competitive reasons. We could also become subject to increased legislative, regulatory or judicial restrictions or mandates on the collection, disclosure or use of such data,

in particular if such data is not collected by our providers in a way that allows us to legally use the data. If we were to lose access to this external data or if our access or use were restricted or were to become less economical or desirable, our ability to provide services could be negatively impacted, which would adversely affect our reputation, business, financial condition and results of operations. We cannot provide assurance that we will be successful in maintaining our relationships with these external data source providers or that we will be able to continue to obtain data from them on acceptable terms or at all. Furthermore, we cannot provide assurance that we will be able to obtain data from alternative sources if our current sources become unavailable.

If we fail to maintain and improve our systems, our data matching technology, and our interfaces with data sources and customers, demand for our services could be adversely affected.

In our markets, there are continuous improvements in computer hardware, network operating systems, programming tools, programming languages, operating systems, data matching, data filtering and other database technologies and the use of the internet. These improvements, as well as changes in customer preferences or regulatory requirements, may require changes in the technology used to gather and process our data and deliver our services. Our future success will depend, in part, upon our ability to:

- internally develop and implement new and competitive technologies;
- use leading third-party technologies effectively;
- respond to changing customer needs and regulatory requirements, including being able to bring our new products to the market quickly; and
- transition customers and data sources successfully to new interfaces or other technologies.

We cannot provide assurance that we will successfully implement new technologies, cause customers or data furnishers to implement compatible technologies or adapt our technology to evolving customer, regulatory and competitive requirements. If we fail to respond, or fail to cause our customers or data furnishers to respond, to changes in technology, regulatory requirements or customer preferences, the demand for our services, the delivery of our services or our market reputation could be adversely affected. Additionally, our failure to implement important updates could affect our ability to successfully meet the timeline for us to generate cost savings resulting from our investments in improved technology. Failure to achieve any of these objectives would impede our ability to deliver strong financial results.

Risks Related to Laws, Regulations and Government Oversight

Our business is subject to various governmental regulations, laws and orders, compliance with which may cause us to incur significant expenses or reduce the availability or effectiveness of our solutions, and the failure to comply with which could subject us to civil or criminal penalties or other liabilities.

Our businesses are subject to regulation under the FCRA, the GLBA, the DPPA, HIPAA, HITECH, the Dodd-Frank Act, the FTC Act and various other international, federal, state and local laws and regulations. See "Business-Legal and Regulatory Matters" for a description of select regulatory regimes to which we are subject. These laws and regulations, which generally are designed to protect the privacy of the public and to prevent the misuse of personal information available in the marketplace, are complex, change frequently and have tended to become more stringent over time. We already incur significant expenses to ensure compliance with these laws.

Currently, public concern is high with regard to the operation of consumer reporting agencies in the United States, as well as the collection, use, accuracy, correction and sharing of personal information, including Social Security numbers, dates of birth, financial information, medical information, department of motor vehicle data and other personal data.

In addition, many consumer advocates, privacy advocates, legislatures and government regulators believe that existing laws and regulations do not adequately protect privacy and have become increasingly concerned with the collection and use of this type of personal information. As a result, thirteen U.S. states have passed comprehensive privacy legislation intended to provide consumers with greater transparency and control over their personal information by providing consumers with certain rights, such as the right to know what personal information is being collected about them, and the right to access, delete, correct, or opt out of the sale of their personal information. The original California Consumer Privacy Act became effective in 2020, with amendments in the California Privacy Rights Act effective in 2023. Similar laws in Colorado, Connecticut, Utah and Virginia became effective over the course of 2023. Similar laws in Delaware, Indiana, Iowa, Montana, Oregon, New Jersey, Tennessee, and Texas take effect over the course of 2024 to 2026. While these laws include specific exemptions for practices and activities regulated by FCRA, GLBA, HIPAA and DPPA, including our credit reporting business, they apply to other portions of our business that are not regulated by these laws.

Public concern regarding identity theft also has led to more transparency for consumers as to what is in their credit reports. We provide credit reports and scores and monitoring services to consumers for a fee, and this income stream could be reduced or restricted by legislation that requires us to provide these services to consumers free of charge. For example, under U.S. federal

law today, we are required to provide consumers with one credit report per year free of charge, and beginning in April 2020, we began offering consumers free weekly credit reports.

The following legal and regulatory developments also could have a material adverse effect on our business, financial condition or results of operations:

- amendment, enactment or interpretation of laws and regulations that restrict the access and use of personal information and reduce the availability or effectiveness of our solutions or the supply of data available to customers;
- changes in governmental, cultural and consumer attitudes in favor of further restrictions on information collection and sharing, which may lead to regulations that prevent full utilization of our solutions;
- failure of data suppliers or customers to comply with laws or regulations, where mutual compliance is required;
- failure of our solutions to comply with current laws and regulations; and
- failure of our solutions to adapt to changes in the regulatory environment in an efficient, cost-effective manner.

Changes in applicable legislation or regulations that restrict or dictate how we collect, maintain, combine and disseminate information, or that require us to provide services to consumers or a segment of consumers without charge, could adversely affect our business, financial condition or results of operations. Evolutions in consumer finance regulatory requirements or market practices involving our customers also might negatively affect our businesses and the markets into which we sell. For instance, the Federal Housing Finance Agency and various government sponsored entities continue to evaluate permitting mortgage originators to underwrite loans using only two credit reports, rather than the current mandate to use a credit report from each of the three national consumer reporting agencies. In the future, we may be subject to significant additional expense to ensure continued compliance with applicable laws and regulations and to investigate, defend or remedy actual or alleged violations. Any failure by us to comply with applicable laws or regulations could also result in significant liability to us, including liability to private plaintiffs as a result of individual or class action litigation, or may result in the cessation of our operations or portions of our operations or impositions of fines and restrictions on our ability to carry on or expand our operations. Moreover, our compliance with privacy laws and regulations and our reputation depend in part on our customers' adherence to privacy laws and regulations and their use of our services in ways consistent with consumer expectations and regulatory requirements. Certain of the laws and regulations governing our business are subject to interpretation by judges, juries and administrative entities, creating substantial uncertainty for our business. We cannot predict what effect the interpretation of existing or new laws or regulations may have on our business. See "Business-Legal and Regulatory Matters."

The CFPB has supervisory and examination authority over our business and may initiate enforcement actions with regard to our compliance with federal consumer financial laws. Actions by the CFPB or other regulators against us or our executives could result in increased operating costs, reputational harm, payment of damages and civil money penalties, injunctive relief and/or restitution, any of which could have a material adverse effect on our business, results of operations and financial condition.

The CFPB has broad authority over our business. This includes authority to issue regulations under federal consumer financial protection laws, such as under FCRA and other laws applicable to us and our financial customers. The CFPB is authorized to prevent "unfair, deceptive or abusive acts or practices" through its regulatory, supervisory and enforcement authority.

The CFPB conducts examinations and investigations, and may issue subpoenas and bring civil actions in federal court for violations of the federal consumer financial laws including FCRA. In these proceedings, the CFPB can seek relief that includes: rescission or reformation of contracts, restitution, disgorgement of profits, payment of damages, limits on activities and civil money penalties of up to $1.0 million per day for knowing violations. The CFPB conducts periodic examinations of us and the consumer credit reporting industry, which could result in new regulations or enforcement actions or proceedings. Actions by the CFPB could result in requirements to alter or cease offering affected products and services, making them less attractive and restricting our ability to offer them.

For example, in January 2017, as part of a Consent Order entered into with the CFPB, we agreed among other things, to implement certain practice changes in the way we advertise, market and sell products and services offered directly to consumers. In June 2021, we received a Notice and Opportunity to Respond and Advise ("NORA") letter from the CFPB, informing us that the CFPB's Enforcement Division was considering whether to recommend that the CFPB take legal action against us and certain of our executive officers. The NORA letter alleged that we failed to comply with and timely implement the January 2017 Consent Order (the "2017 Consent Order"), and further alleged additional violations related to TransUnion Interactive Inc.'s marketing practices. On April 12, 2022, after failed settlement negotiations with the CFPB related to the matter, the CFPB filed a lawsuit against us, Trans Union LLC, TransUnion Interactive, Inc. (collectively, the "TU Entities") and the former President of our Consumer Interactive business, John Danaher, seeking restitution, civil money penalties, and injunctive relief, among other remedies, and alleging that the TU Entities violated the 2017 Consent Order and engaged in deceptive acts and practices in marketing the TransUnion Credit Monitoring product, among other allegations. The CFPB further alleges that Mr. Danaher violated the 2017 Consent Order and that we and Trans Union LLC provided substantial

assistance to TransUnion Interactive, Inc. in violating the 2017 Consent Order and the law. We are currently in active litigation with the CFPB on this matter. As of December 31, 2023, we have an accrued liability of $56.0 million in connection with this matter and there is a reasonable possibility that a loss in excess of the amount accrued may be incurred, and such an outcome could have a material adverse effect on our results of operations and financial condition.

See Part II, Item 8, "Financial Statements and Supplementary Data - Notes to Consolidated Financial Statements," Note 23, "Contingencies" for information regarding the CFPB matter.

Additionally, in March 2022, we received a NORA letter from the CFPB, informing us that the CFPB's Enforcement Division is considering whether to recommend that the CFPB take legal action against us related to our tenant and employment screening business, TransUnion Rental Screening Solutions, Inc. ("TURSS"). The NORA letter alleged that Trans Union LLC and TURSS violated the FCRA by failing to (i) follow reasonable procedures to assure maximum possible accuracy of information in consumer reports and (ii) disclose to consumers the sources of such information. On July 27, 2022, the CFPB's Enforcement Division advised us that it had obtained authority to pursue an enforcement action jointly with the FTC. On October 5, 2023, we reached a settlement in the form of a Consent Order with the CFPB and the FTC regarding this matter, pursuant to which we agreed to pay $11.0 million in redress and $4.0 million in civil money penalties and implement certain business process changes. As of December 31, 2023, the settlement was paid in full to the CFPB.

In August 2022, the TU Entities received a NORA letter from the CFPB, informing us that the CFPB's Enforcement Division was considering whether to recommend that the CFPB take legal action against us following an investigation relating to potential violations of law related to the placement and lifting of security freezes resulting from certain system issues. We have corrected associated system issues and have processes in place to monitor and address issues going forward. On April 14, 2023, the CFPB's Enforcement Division advised us that it had obtained authority to pursue an enforcement action. On October 10, 2023, we reached a settlement in the form of a Consent Order with the CFPB regarding this matter, pursuant to which we agreed to pay $3.0 million in redress and $5.0 million in civil penalties. As of December 31, 2023, the settlement was paid in full to the CFPB.

Recently, the consumer reporting industry has been subject to heightened scrutiny. Based in part on public comments by CFPB officials, we believe that this trend is likely to continue and could result in more regulatory and legislative scrutiny of the practices of our industry and additional regulatory enforcement actions and litigation, which could adversely affect our business and results of operations.

Our compliance costs and legal and regulatory exposure could increase materially if we are targeted by the CFPB for additional enforcement actions, or if the CFPB or other regulators enact new regulations, change regulations that were previously adopted, modify through supervision or enforcement past regulatory guidance, or interpret existing regulations in a manner different or stricter than have been previously interpreted. For example, the CFPB recently issued guidance that indicates increased focus on consumer reporting agencies' compliance with the accuracy and dispute obligations under the FCRA with respect to rental information. Although we have committed resources to enhancing our risk and compliance programs, actions by the CFPB or other regulators against us or our current or former executives could result in increased operating costs, reputational harm, payment of damages and civil monetary penalties, injunctive relief and/or restitution, any of which could have a material adverse effect on our business, results of operations and financial condition.

Regulatory oversight of our contractual relationships with certain of our customers may adversely affect our business.

The Office of the Comptroller of the Currency's (the "OCC") guidance to national banks and federal savings associations on assessing and managing risks associated with third-party relationships, which include all business arrangements between a bank and another entity, by contract or otherwise, requires banks to exercise comprehensive oversight throughout each phase of a bank's business arrangement with third-party service providers, and instructs banks to adopt risk management processes commensurate with the level of risk and complexity of its third-party relationships. The OCC expects especially rigorous oversight of third-party relationships that involve certain "critical activities," which include significant bank functions or significant shared services or other activities that could have a major impact on a bank's operations. In light of this guidance, our existing or potential financial services customers subject to OCC regulation may continue to revise their third-party risk management policies and processes and the terms on which they do business with us, which may adversely affect our relationship with such customers.

The outcome of litigation, inquiries, investigations, examinations or other legal proceedings in which we are involved, in which we may become involved, or in which our customers or competitors are involved could subject us to significant monetary damages or restrictions on our ability to do business.

Legal proceedings arise frequently as part of the normal course of our business. These may include individual consumer cases, class action lawsuits and inquiries, investigations, examinations, regulatory proceedings or other actions brought by federal or state authorities or by consumers. The scope and outcome of these proceedings is often difficult to assess or quantify. Plaintiffs in lawsuits may seek recovery of large amounts and the cost to defend such litigation may be significant. There may also be

adverse publicity and uncertainty associated with investigations, litigation and orders (whether pertaining to us, our customers or our competitors) that could decrease customer acceptance of our services or result in material discovery expenses. In addition, a court-ordered injunction or an administrative cease-and-desist order or settlement may require us to modify our business practices or may prohibit conduct that would otherwise be legal and in which our competitors may engage. Many of the technical and complex statutes to which we are subject, including state and federal credit reporting, medical privacy and financial privacy requirements, may provide for civil and criminal penalties and may permit consumers to maintain individual or class action lawsuits against us and obtain statutorily prescribed damages. Additionally, our customers might face similar proceedings, actions or inquiries, which could affect their business and, in turn, our ability to do business with those customers. While we do not believe that the outcome of any pending or threatened legal proceeding, investigation, examination or supervisory activity will have a material adverse effect on our financial position, such events are inherently uncertain and adverse outcomes could result in significant monetary damages, penalties or injunctive relief against us.

See Part II, Item 8, "Financial Statements and Supplementary Data - Notes to Consolidated Financial Statements," Note 23, "Contingencies" for information regarding our legal proceedings.

Risks Related to Global Operations

Our ability to expand our operations in, and the portion of our revenue derived from, markets outside the United States is subject to economic, political and other inherent risks, which could adversely impact our growth rate and financial performance.

Over the last several years, we have derived a growing portion of our revenues from customers outside the United States, and it is our intent to continue to expand our international operations. We have sales and technical support personnel in numerous countries worldwide. We expect to continue to add personnel internationally to expand our abilities to deliver differentiated services to our international customers. Expansion into international markets will require significant resources and management attention and will subject us to new regulatory, economic and political risks. Moreover, the services we offer in developed and emerging markets must match our customers' demand for those services. Due to price, limited purchasing power and differences in the development of consumer credit markets, there can be no assurance that our services will be accepted in any particular developed or emerging market, and we cannot be sure that our international expansion efforts will be successful. The results of our operations and our growth rate could be adversely affected by a variety of factors arising out of international commerce, some of which are beyond our control. These factors include:

- currency exchange rate fluctuations;
- foreign exchange controls that might prevent us from repatriating cash to the United States;
- difficulties in managing and staffing international offices;
- increased travel, infrastructure, legal and compliance costs of multiple international locations;
- foreign laws and regulatory requirements;
- terrorist activity, natural disasters and other catastrophic events;
- restrictions on the import and export of technologies;
- difficulties in enforcing contracts and collecting accounts receivable;
- longer payment cycles;
- failure to meet quality standards for outsourced work;
- unfavorable tax rules;
- political and economic conditions in foreign countries, particularly in emerging markets;
- the presence and acceptance of varying level of business corruption in international markets;
- varying business practices in foreign countries; and
- reduced protection for intellectual property rights.

For example, in 2023, reported revenue from our International segment increased 9.2% including the impact of foreign currencies, or 12.2% on a constant currency basis which excludes the impact of foreign currencies. See "Management's Discussion and Analysis of Financial Condition and Results of Operations-Twelve Months Ended December 31, 2023, 2022 and 2021-Revenue-International Segment." As we continue to expand our business, our success will partially depend on our ability to anticipate and effectively manage these and other risks. Our failure to manage these risks could adversely affect our business, financial condition and results of operations.

We face geopolitical and other risks associated with our international operations, which could materially adversely impact our results of operations and our financial condition.

We conduct operations in over 30 countries and, in the fiscal year ended December 31, 2023, approximately 21.1% of our revenue was derived from our international operations, which subjects us to various risks inherent in global operations. We may conduct business in additional foreign jurisdictions in the future, which may carry operational risks. At any particular time, our global operations may be affected by local changes in laws, regulations, and political and economic environments, including inflation, recession, currency volatility, and competition, as well as business and operational decisions made by joint venture partners.

Furthermore, geopolitical dynamics caused by political, economic, social or other conditions in foreign countries and regions may impact our business and results of operations. Significantly higher and sustained rates of inflation, with subsequent increases in operational costs, could have a material adverse effect on our business, financial position and results of operations. The continued threat of terrorism and heightened security and military action in response thereto, or any other current or future acts of terrorism, war (such as the ongoing conflicts in Ukraine and between Israel and Hamas), and other events (such as economic sanctions and trade restrictions, including those related to the ongoing Russia and Ukraine conflict and in the Middle East) may cause further disruptions to the economies of the United States and other countries and create further uncertainties or could otherwise negatively impact our business, operating results, and financial condition.

Changes or uncertainty in U.S. policies or policies in other countries and regions in which we do business, including any changes or uncertainty with respect to U.S. or international trade policies or tariffs, also can disrupt our global operations, as well as our customers and suppliers, in a particular location and may require us to spend more money to source certain products or materials that we purchase. Any of these factors could adversely affect our business, financial position, and results of operations.

Risks Related to Intellectual Property

We may be unable to protect our intellectual property adequately or cost-effectively, which may cause us to lose market share or force us to reduce our prices. We also rely on trade secrets and other forms of unpatented intellectual property that may be difficult to protect.

Our success depends, in part, on our ability to protect and preserve the proprietary aspects of our technology and services. If we are unable to protect our intellectual property, including trade secrets and other unpatented intellectual property, our competitors could use our intellectual property to market and deliver similar services, decreasing the demand for our services. We rely on the patent, copyright, trademark, trade secret and other intellectual property laws of the United States and other countries, as well as contractual restrictions, such as nondisclosure agreements, to protect and control access to our proprietary intellectual property. These measures afford limited protection, however, and may be inadequate. We may be unable to prevent third parties from using our proprietary assets without our authorization or from breaching any contractual restrictions with us. Enforcing our rights could be costly, time-consuming, distracting and harmful to significant business relationships. Claims that a third party illegally obtained and is using trade secrets can be difficult to prove, and courts outside the United States may be less willing to protect trade secrets. Additionally, others may independently develop non-infringing technologies that are similar or superior to ours. Any significant failure or inability to adequately protect and control our proprietary assets may harm our business and reduce our ability to compete.

We may face claims for intellectual property infringement, which could subject us to monetary damages or limit us in using some of our technologies or providing certain services.

There has been substantial litigation in the United States regarding intellectual property rights in the information technology industry. We cannot be certain that we do not infringe on the intellectual property rights of third parties, including the intellectual property rights of third parties in other countries, which could result in a liability to us. Historically, patent applications in the United States and some foreign countries have not been publicly disclosed until eighteen months following submission of the patent application, and we may not be aware of currently filed patent applications that relate to our products or processes. If patents are later issued on these applications, we may be liable for infringement. In the event that claims are asserted against us, we may be required to obtain licenses from third parties (if available on acceptable terms or at all). Any such claims, regardless of merit, could be time consuming and expensive to litigate or settle, divert the attention of management and materially disrupt the conduct of our business, and we may not prevail. Intellectual property infringement claims against us could subject us to liability for damages and restrict us from providing services or require changes to certain products or services. Although our policy is to obtain licenses or other rights where necessary, we cannot provide assurance that we have obtained all required licenses or rights. If a successful claim of infringement is brought against us and we fail to develop non-infringing products or services, or to obtain licenses on a timely and cost-effective basis, our reputation, business, financial condition and results of operations could be adversely affected.

Risks Related to Our Growth Strategy

When we engage in acquisitions, investments in new businesses or divestitures of existing businesses, we face risks that may adversely affect our business.

We have acquired and may continue to acquire or make investments in businesses that offer complementary services and technologies. Acquisitions may not be completed on favorable terms and acquired assets, data or businesses may not be successfully integrated into our operations. Even if we devote substantial management attention and resources to integrating acquired businesses in order to fully realize the anticipated benefits of such acquisitions, the businesses and assets acquired may not be successful or continue to grow at the same rate as when operated independently or may require greater resources and investments than we originally anticipated. Acquisitions involve significant risks and uncertainties, including:

- failing to achieve the financial and strategic goals for the acquired business;
- paying more than fair market value for an acquired company or assets;
- failing to integrate the operations and personnel of the acquired businesses in an efficient and timely manner;
- disrupting our ongoing businesses, including loss of sales;
- distracting management focus from our existing businesses;
- assumption of unanticipated or contingent liabilities;
- failing to retain key personnel;
- incurring the expense of an impairment of assets due to the failure to realize expected benefits;
- damaging relationships with employees, customers or strategic partners;
- diluting the share value of existing stockholders; and
- incurring additional debt or reducing available cash to service our existing debt.

We have divested our Healthcare business and may in the future divest certain assets or businesses that no longer fit with our growth strategy. Divestitures involve significant risks and uncertainties, including:

- disrupting our ongoing businesses;
- failure to effectively transfer liabilities, contracts, facilities and employees to buyers;
- reducing our revenues;
- losing key personnel;
- distracting management focus from our existing businesses;
- the possibility that we will become subject to third-party claims arising out of such divestiture;
- indemnification claims for breaches of representations and warranties in sale agreements;
- damaging relationships with employees and customers as a result of transferring a business to new owners; and
- failure to close a transaction due to conditions such as financing or regulatory approvals not being satisfied.

These risks could harm our business, financial condition or results of operations, particularly if they occur in the context of a significant acquisition or divestiture. In addition, changes in laws and regulations following a significant acquisition or divestiture could adversely impact our business, financial condition, results of operations and growth prospects. Acquisitions of businesses having a significant presence outside the United States will increase our exposure to the risks of conducting operations in international markets.

Further, we are required to assess the effectiveness of the internal control over financial reporting for companies we acquire pursuant to the Sarbanes-Oxley Act of 2002 ("Sarbanes-Oxley Act"). In order to comply with the Sarbanes-Oxley Act, we will need to implement or enhance internal control over financial reporting at any company we acquire, and we may identify control deficiencies that require remediation as part of our evaluation and testing of internal controls. Companies we acquire may not have had previous public reporting obligations and therefore may not have instituted or evaluated internal controls in the context of the Sarbanes-Oxley Act. Implementing, enhancing, or remediating effective internal controls as part of our integration of acquired companies may be time-consuming and we may encounter difficulties assimilating or integrating internal controls. We may be required to hire or engage additional resources and incur substantial costs to implement the necessary new internal controls as part of our acquisition activities. Any failure to implement and maintain effective internal control over financial reporting could result in material weaknesses or significant deficiencies in our internal controls, and could result in a material misstatement of our financial statements or otherwise cause us to fail to meet our financial reporting obligations, which could have an adverse effect on our business, financial condition, results of operations, or stock price.

We depend, in part, on strategic alliances, joint ventures and acquisitions to grow our business. If we are unable to make strategic acquisitions and develop and maintain these strategic alliances and joint ventures, our growth may be adversely affected.

An important focus of our business is to identify business partners who can enhance our services and enable us to develop solutions that differentiate us from our competitors. We have entered into several alliance agreements or license agreements with respect to certain of our datasets and services and may enter into similar agreements in the future. These arrangements may require us to restrict our use of certain of our technologies among certain customer industries, or to grant licenses on terms that ultimately may prove to be unfavorable to us, either of which could adversely affect our business, financial condition or results of operations. Relationships with our alliance agreement partners may include risks due to incomplete information regarding the marketplace and commercial strategies of our partners, and our alliance agreements or other licensing agreements may be the subject of contractual disputes. If we or our alliance agreements' partners are not successful in maintaining or commercializing the alliance agreements' services, such commercial failure could adversely affect our business.

In addition, a significant strategy for our international expansion is to establish operations through strategic alliances or joint ventures with local financial institutions and other partners. We cannot provide assurance that these arrangements will be successful or that our relationships with our partners will continue to be mutually beneficial. If these relationships cannot be established or maintained, it could negatively impact our business, financial condition and results of operations. Moreover, our ownership in and control of our foreign investments may be limited by local law.

We also selectively evaluate and consider acquisitions as a means of expanding our business and entering into new markets. We may not be able to acquire businesses we target due to a variety of factors such as competition from companies that are better positioned to make the acquisition. Our inability to make such strategic acquisitions could restrict our ability to expand our business and enter into new markets which would limit our ability to generate future revenue growth. Additionally, given some of our equity interests in various companies, we may be limited in our ability to require or influence such companies to make acquisitions or take other actions that we believe to be in our or their best interests. Our inability to take such actions could have a material impact on our revenues or earnings.

Risks Related to Our Indebtedness

We have a substantial amount of debt which could adversely affect our financial position and prevent us from fulfilling our obligations under the debt instruments.

As of December 31, 2023, the book value of our debt was approximately $5,340.4 million consisting of outstanding borrowings under Trans Union LLC's senior secured credit facility. We may also incur significant additional indebtedness in the future. Our substantial indebtedness may:

- make it difficult for us to satisfy our financial obligations, including with respect to our indebtedness;
- limit our ability to borrow additional funds for working capital, capital expenditures, acquisitions or other general business purposes;
- limit our ability to use our cash flow or obtain additional financing for future working capital, capital expenditures, acquisitions or other general business purposes;
- require us to use a substantial portion of our cash flow from operations to make debt service payments;
- expose us to the risk of increased interest rates as certain of our borrowings, including Trans Union LLC's senior secured credit facility, are at variable rates of interest;
- limit our ability to pay dividends;
- limit our flexibility to plan for, or react to, changes in our business and industry;
- place us at a competitive disadvantage compared with our less-leveraged competitors; and
- increase our vulnerability to the impact of adverse economic and industry conditions.

In addition, the credit agreement governing Trans Union LLC's senior secured credit facility contains restrictive covenants that may limit our ability to engage in activities that may be in our long-term best interest. Our failure to comply with those covenants could result in an event of default which, if not cured or waived, could result in the acceleration of substantially all of our debt.

Lastly, in the United States, the Secured Overnight Financing Rate ("SOFR") has replaced the London Inter-Bank Offered Rate ("LIBOR"), as of June 2023 for U.S. dollar-denominated LIBOR-benchmarked obligations. Because SOFR is a backward-looking, fully secured overnight rate and LIBOR is a forward-looking, unsecured rate, SOFR is likely to be lower than LIBOR on most dates, and any spread adjustment applied by market participants to alleviate any mismatch during a transition period will be subject to methodology that remains undefined. The discontinuation of LIBOR and the transition to SOFR or other benchmark rates could have an unpredictable impact on contractual mechanics in the credit markets or result in disruption to the broader financial markets, including causing interest rates under our current or future agreements to perform differently than in the past, which could have an adverse effect on our results of operations.

Despite our current level of indebtedness, we may still be able to incur additional indebtedness. This could further the risks associated with our substantial indebtedness.

We and our subsidiaries may be able to incur substantial additional indebtedness in the future. The terms of the credit agreement govern our debt limit, but do not prohibit, us or our subsidiaries from incurring additional indebtedness, and any additional indebtedness incurred in compliance with these restrictions could be substantial. If we incur any additional debt, the priority of that debt may impact the ability of existing debt holders to share ratably in any proceeds distributed in connection with any insolvency, liquidation, reorganization, dissolution or other winding-up of us, subject to collateral arrangements. These restrictions will also not prevent us from incurring obligations that do not constitute indebtedness. We also have the ability to request incremental loans on the same terms under the existing senior secured credit facility up to the greater of $1.0 billion and 100% of consolidated EBITDA and may incur additional incremental loans so long as the senior secured net leverage ratio does not exceed 4.25 to 1.0, subject to certain additional conditions and commitments by existing or new lenders to fund any additional borrowings. If new indebtedness is added to our current debt levels, the related risks that we and our subsidiaries now face could intensify.

We may not be able to generate sufficient cash to service all of our indebtedness, and may be forced to take other actions to satisfy our obligations under our indebtedness, which may not be successful.

Our ability to make scheduled payments due on our debt obligations or to refinance our debt obligations depends on our financial condition and operating performance, which are subject to prevailing economic, industry and competitive conditions and to certain financial, business, legislative, regulatory and other factors beyond our control as discussed above. Our total scheduled principal repayments of debt made in 2023 and 2022 were $100.0 million and $114.5 million, respectively. Our total interest expense for 2023 and 2022 was $288.2 million and $230.9 million, respectively. We may be unable to maintain a level of cash flow from operating activities sufficient to permit us to pay the principal, premium, if any, and interest on our indebtedness.

If our cash flow and capital resources are insufficient to fund our debt service obligations, we could face substantial liquidity problems and could be forced to reduce or delay investments and capital expenditures or to dispose of material assets or operations, seek additional debt or equity capital or restructure or refinance our indebtedness. We may not be able to implement any such alternative measures on commercially reasonable terms or at all and, even if successful, those alternative actions may not allow us to meet our scheduled debt service obligations. The credit agreement governing Trans Union LLC's senior secured credit facility restricts our ability to dispose of assets and use the proceeds from those dispositions and may also restrict our ability to raise debt or equity capital to be used to repay other indebtedness when it becomes due. We may not be able to consummate those dispositions or to obtain proceeds in an amount sufficient to meet any debt service obligations then due. In addition, under the covenants of the credit agreement governing our senior secured credit facility, TransUnion Intermediate Holdings, Inc. is restricted from making certain payments, including dividend payments to TransUnion, subject to certain exceptions.

Our inability to generate sufficient cash flow to satisfy our debt obligations, or to refinance our indebtedness on commercially reasonable terms or at all, would materially and adversely affect our financial position and results of operations and our ability to satisfy our obligations.

If we cannot make our scheduled debt payments, we will be in default and all outstanding principal and interest on our debt may be declared due and payable, the lenders under Trans Union LLC's senior secured credit facility could terminate their commitments to loan money, Trans Union LLC's secured lenders (including the lenders under Trans Union LLC's senior secured credit facility) could foreclose against the assets securing their borrowings and we could be forced into bankruptcy or liquidation.

Risks Related to Ownership of Our Common Stock

Our stock price has recently been volatile and has declined, and may continue to be volatile and/or decline, regardless of our operating performance, and you may not be able to resell shares of our common stock at or above the price you paid or at all.

Our stock price has recently been volatile and has declined due to a number of factors, including the deteriorating macroeconomic environment, changing expectations about our future revenue and operating results, and softening of the forward-looking guidance we have provided. The financial markets have at various times experienced significant price and volume fluctuations that have impacted the stock prices of many companies in the broader markets and in our industry in particular. These broad market and industry-specific fluctuations, as well as deteriorating macroeconomic conditions, could have a material adverse effect on our results of operations, financial condition and stock price. We reconcile the fair value of our reporting units to our market capitalization during our annual goodwill impairment test, which we conduct more frequently if events or circumstances indicate that the carrying value of goodwill may be impaired. A further decrease in our market capitalization could be an indicator that one or more of our reporting units has a goodwill impairment. During the three months ended September 30, 2023, we identified a triggering event requiring an interim impairment assessment for our United Kingdom reporting unit, which resulted in a goodwill impairment of $414 million.

This market volatility, as well as general economic, market or political conditions, could adversely affect the market price of our common stock, regardless of our actual operating performance, and you may not be able to resell your shares at or above the price you paid. In addition to the risks described in this section, several factors that could cause the price of our common stock to fluctuate significantly include, among others, the following, most of which we cannot control:

- quarterly variations in our operating results compared to market expectations;
- guidance that we provide to the public, any changes in this guidance or our failure to meet this guidance;
- changes in preferences of our customers;
- announcements of new products or significant price reductions by us or our competitors;
- size of our public float;
- stock price performance of our competitors;
- publication of research reports about our industry;
- changes in market valuations of our competitors;
- fluctuations in stock market prices and volumes;
- default on our indebtedness;
- actions by our competitors;
- changes in senior management or key personnel;
- changes in financial estimates by securities analysts;
- negative earnings or other announcements by us or other credit reporting agencies;
- downgrades in our credit ratings or the credit ratings of our competitors;
- issuances of capital stock or future sales of our common stock or other securities;
- investor perceptions or the investment opportunity associated with our common stock relative to other investment alternatives;
- the public response to press releases or other public announcements by us or third parties, including our filings with the SEC;
- announcements relating to litigation;
- the sustainability of an active trading market for our stock;
- changes in accounting principles;
- global economic, legal and regulatory factors unrelated to our performance; and
- other events or factors, including those resulting from natural disasters, war, acts of terrorism or responses to these events.

In addition, price volatility may be greater if the public float and trading volume of our common stock is low, and the amount of public float on any given day can vary depending on whether our stockholders choose to hold their shares for the long term.

In the past, companies that have experienced volatility in the market price of their stock have been subject to securities class action litigation. We may be the target of this type of litigation in the future. Securities litigation against us could result in substantial costs and divert our management's attention from other business concerns, which could seriously harm our business.

Our business and operations are exposed to risks arising from developments and trends associated with climate change and ESG, including risks associated with our own reporting.

There are inherent climate-related risks wherever business is conducted. Various meteorological phenomena and extreme weather events (including, but not limited to, storms, flooding, drought, wildfire, and extreme temperatures) may directly or indirectly disrupt our operations (including the productivity of our employees) or those of our suppliers or infrastructure on which we rely, require us to incur additional operating or capital expenditures or otherwise adversely impact our business, financial condition, or results of operations. Climate change may impact the frequency and/or intensity of such events, as well as contribute to chronic physical changes, such as shifting precipitation or temperature patterns or rising sea-levels, which may also impact our operations or infrastructure on which we rely. While we may take various actions to mitigate our business risks associated with climate change, this may require us to incur substantial costs and may not be successful, due to, among other things, the uncertainty associated with the longer-term projections associated with managing climate risks. Any significant failure, compromise, interruption or a significant slowdown of operations, whether as a result of climate change or otherwise, may impair the Company's ability to deliver its products and services. Additionally, we expect to be subject to increased regulations, reporting requirements, standards or expectations regarding the environmental impacts of our business. Changing market dynamics and other global and domestic policy developments also have the potential to disrupt our business, the business of our suppliers and/or customers, or otherwise adversely impact our business, financial condition, or results of operations.

Finally, increased scrutiny regarding ESG practices and disclosures are likely to continue. With this increased focus, public reporting regarding ESG practices is becoming more broadly expected. Such increased scrutiny may result in increased costs, changes in demand, enhanced compliance or disclosure obligations, increased legal exposure or other adverse impacts on our business, financial condition or results of operations. While we have engaged and may engaged in the future in voluntary initiatives and reporting on ESG matters, such initiatives and reporting may be costly and may not have the desired effect. While we have established ESG practices, including climate-related targets and goals, these targets and goals, including our GHG emission reduction goals, are based on certain assumptions, estimates, calculation methodologies and third-party data, and we may not meet such targets or goals on our established timeline or at all, including due to a variety of factors that may be in or out of our control. In addition, we may decide in the future not to pursue certain targets or goals further if our Board or management determines that further pursuit of any such target or goal is no longer in the long-term best interests of our business or our stockholders and any such decision could have an adverse impact on our reputation or stock price. Expectations regarding our ESG initiatives and reporting are evolving quickly and are often subject to factors outside of our control. For example, there have also been targeted efforts by certain parties to reduce companies' attention to EGS matters which may result in additional costs or complexities in navigating stakeholder expectations. Moreover, actions or statements that we may make based on expectations, assumptions, calculation methodologies or third-party information that we currently believe to be reasonable may subsequently be determined to be erroneous or be subject to misinterpretation. For example, there have been increasing allegations of greenwashing against companies making significant ESG claims due to a variety of perceived deficiencies in performance, including as stakeholder perceptions of sustainability continue to evolve. Our approach to measuring and assessing our GHG emissions and establishing targets for the reduction of our emissions may ultimately be deemed to be inconsistent with future regulatory requirements or best practices. Even if this is not the case, our current actions may subsequently be determined to be insufficient or not aligned to best practices by various stakeholders. Our disclosures on these matters, a failure to satisfy evolving stakeholder expectations for ESG practices and reporting, or a failure or perceived failure to meet our commitments or targets (including the manner in which we complete such initiatives) on our established timeline may potentially harm our reputation and impact relationships with investors. If our ESG practices, reporting and performance do not meet investor, consumer, or employee, or other stakeholder expectations, or are perceived as not meeting those expectations, our brand, reputation and customer retention may be negatively impacted, and we may be subject to investor or regulator engagement regarding such matters, which could adversely impact our business, financial condition or results of operations.

Anti-takeover provisions in our organizational documents might discourage, delay or prevent acquisition attempts for us that you might consider favorable.

Certain provisions of our third amended and restated certificate of incorporation ("Charter") and fourth amended and restated bylaws may have an anti-takeover effect and may delay, defer or prevent a merger, acquisition, tender offer, takeover attempt or other change of control transaction that a stockholder might consider in its best interest, including those attempts that might result in a premium over the market price for the shares held by our stockholders.

These provisions provide for, among other things:

- the ability of our Board to issue one or more series of preferred stock;
- advance notice for nominations of directors by stockholders and for stockholders to include matters to be considered at our annual meetings; and
- certain limitations on convening special stockholder meetings.

The anti-takeover provisions discussed above could make it more difficult for a third party to acquire us, even if the third party's offer may be considered beneficial by many of our stockholders. As a result, our stockholders may be limited in their ability to obtain a premium for their shares.

Our ability to pay cash dividends may be limited by the terms of our secured credit facility.

In February 2018, our Board approved a dividend policy pursuant to which we intend to pay quarterly cash dividends on our common stock. The terms of our senior secured credit facility impose certain limitations on our ability to pay dividends. We may, however, declare and pay cash dividends up to an unlimited amount unless a default or event of default exists under the senior secured credit facility. Any determination to pay dividends in the future will be at the discretion of our Board and will depend upon results of operations, financial condition, contractual restrictions, restrictions imposed by applicable law and other factors our Board deems relevant.

General Risks

Economic and other conditions may adversely impact the valuation of our assets resulting in impairment charges that could have a material adverse impact on our results from operations.

We have significant amounts of goodwill and intangible assets. On a regular basis, we evaluate our assets for impairment based on various factors, including actual operating results and expected trends of projected revenues, profitability and cash flows. As of December 31, 2023, our Consolidated Balance Sheet included goodwill of $5,176.0 million and other net intangibles of $3,515.3 million. We conduct a goodwill impairment test in the fourth quarter of each year, or more frequently if events or circumstances indicate that the carrying value of goodwill may be impaired. We have the option to first perform a qualitative analysis to determine if it is more likely than not that the fair value of a reporting unit is less than its carrying value. If the qualitative analysis indicates that an impairment is more likely than not for any reporting unit, we perform a quantitative impairment test for that reporting unit. Our quantitative impairment test consists of a fair value calculation for each reporting unit that combines an income approach, using the discounted cash flow method, and a market approach, using the guideline public company method. The quantitative impairment test requires the application of a number of significant assumptions, including estimates of future revenue growth rates, EBITDA margins, discount rates, and market multiples. The projected future revenue growth rates and EBITDA margins, and the resulting projected cash flows of each reporting unit are based on historical experience and internal operating plans reviewed by management, extrapolated over the forecast period. Discount rates are determined using a weighted average cost of capital adjusted for risk factors specific to each reporting unit.

We believe the assumptions that we use in our qualitative and quantitative analysis are reasonable and consistent with assumptions that would be used by other marketplace participants. However, such assumptions are inherently uncertain. During times of economic distress, declining demand and declining earnings could lead to us to have less favorable estimates of our future cash flows, discount rates or market multiples. Such changes could lead to lower estimated fair values of our reporting units, which could lead to a material impairment charge. In certain markets where we operate, macroeconomic conditions are unfavorable. If these unfavorable macroeconomic conditions persist longer than we currently expect, or are worse than we currently expect, our estimates of revenue growth rates and EBITDA margins would decline, which could lead to an impairment of goodwill.

During the three months ended September 30, 2023, we identified a triggering event requiring an interim impairment assessment for our United Kingdom reporting unit, which resulted in a goodwill impairment of $414 million. The worsening macroeconomic conditions during the third quarter from inflationary pressures and rising interest rates increasingly impacted our business for the third quarter and the near-term outlook. Due to these factors, management now believes the U.K. recovery will take longer, and will be at a slower pace, than previously expected. As a result, we revised our short-term and mid-term forecasts for revenue and EBITDA expectations for our United Kingdom. reporting unit. These factors have particularly impacted the online-only FinTech lenders that represent the largest vertical within our United Kingdom reporting unit. These lenders have seen significant declines in their access to capital impacting their ability to lend and in some cases leading to bankruptcies. Any future reduction to our forecasts of our United Kingdom reporting unit may result in a further impairment that could have a material adverse effect on our business and financial results.

Any change to the conclusion of our reporting units or the aggregation of components within our reporting units could result in a different outcome to our annual impairment test. See Part II, Item 7, "Management Discussion and Analysis of Financial Condition and Results of Operations - Critical Accounting Estimates - Goodwill" for further information.

Our efforts to execute any element of our business strategy, including our transformation plan to optimize our operating model and invest in our technology, could experience difficulties, delays, or unexpected costs and may not achieve anticipated benefits and savings.

In November 2023, our Board approved a transformation plan to optimize our operating model and continue to advance our technology. See Part II, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations - Factors Affecting Our Results of Operations" for additional information. We may not realize, in full or in part, the anticipated

benefits and savings from this plan due to unforeseen difficulties, delays, or unexpected costs, which may adversely affect our business and results of operations. Even if the anticipated benefits and savings of the plan are substantially realized, there may be consequences or business impacts that were not expected.

Management has determined that our internal control over financial reporting and disclosure controls and procedures were not effective as of December 31, 2023. A failure to maintain effective internal control over financial reporting or disclosure controls and procedures could impact our ability to accurately and timely report our financial results and other material disclosures or otherwise cause us to fail to meet our reporting obligations, which could have a material adverse effect on our operations, investor confidence in our business, and the trading price of our common stock.

Our management is responsible for establishing and maintaining adequate internal control over financial reporting to provide reasonable assurance regarding the reliability of our financial reporting and the preparation of financial statements for external purposes in accordance with U.S. generally accepted accounting principles. 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. We determined that our internal control over financial reporting and disclosure controls and procedures were not effective as of December 31, 2023 as a result of the material weaknesses related to the interim goodwill impairment test and an error in the classification of certain expenses between cost of services and selling, general and administrative, as discussed in Part II, Item 9A of this Form 10-K. These material weaknesses have not been remediated and accordingly our internal control over financial reporting and disclosure controls and procedures remain ineffective. Management is actively engaged in the planning for, and implementation of, remediation efforts to address our material weaknesses but there can be no assurance that those efforts will be successful. Refer to Part II, Item 9A for further details of the material weaknesses and remediation efforts.

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of a company's annual or interim financial statements will not be prevented or detected on a timely basis.

As such, if we do not remediate these material weaknesses in a timely manner, or if additional material weaknesses in our internal control over financial reporting are discovered, they may adversely affect our ability to record, process, summarize and report financial information timely and accurately and our financial statements may contain material misstatements or omissions. Additionally, our internal control environment and remediation efforts do not provide absolute assurance with regard to timely detecting or preventing control deficiencies and thus do not insulate us from any failure to meet our financial reporting obligations.

It is possible that additional control deficiencies could be identified by our management or by our independent registered public accounting firm in the future or may occur without being identified. Such a failure could require us to incur the expense of remediation, result in regulatory scrutiny, investigations or enforcement actions, cause investors to lose confidence in our reported financial condition and have a negative effect on the trading price of our common stock, lead to a default under our indebtedness, and otherwise have a material adverse effect on our business, financial condition, results of operations, and cash flows.

Pandemics, epidemics, disease outbreaks and other public health crises, such as the COVID-19 pandemic, have disrupted our business and operations, and future public health crises could materially adversely impact our business, financial condition, liquidity and results of operations.

We face various risks related to health epidemics, pandemics and similar outbreaks. For example, the COVID-19 pandemic and the mitigation efforts by governments to attempt to control its spread adversely impacted the global economy, leading to reduced consumer spending and lending activities. Our customers, and therefore our business and revenues, are sensitive to negative changes in general economic conditions. Any new pandemic or other public health crises, or future public health crises, could have a material impact on our business, financial condition and results of operations going forward.

We may not be able to attract and retain the skilled employees that we need to support our business.

Our success depends on our ability to attract and retain experienced management, sales, research and development, analytics, marketing and technical support personnel. If any of our key personnel were unable or unwilling to continue in their present positions, it may be difficult to replace them and our business could be seriously harmed. If we are unable to find qualified successors to fill key positions as needed, our business could be seriously harmed. The complexity of our services requires trained customer service and technical support personnel. We may not be able to hire and retain such qualified personnel at compensation levels consistent with our compensation structure. Some of our competitors may be able to offer more attractive terms of employment. In addition, we invest significant time and expense in training our employees, which increases their value to competitors who may seek to recruit them. If we fail to retain our employees, we could incur significant expense replacing employees and our ability to provide quality services could diminish, resulting in a material adverse effect on our business.

We are subject to losses from risks for which we do not insure.

For certain risks, we do not maintain insurance coverage because of cost and/or availability. Because we retain some portion of insurable risks, and in some cases retain our risk of loss completely, unforeseen or catastrophic losses in excess of insured limits could materially adversely affect our business, financial condition and results of operations.

If we experience changes in tax laws or adverse outcomes resulting from examination of our tax returns, it could adversely affect our results of operations.

We are subject to federal, state and local income and other taxes in the United States and in foreign jurisdictions. From time to time the United States federal, state, local and foreign governments make substantive changes to tax rules and the application thereof, which could result in materially different corporate taxes than would be incurred under existing tax law or interpretation and could adversely impact profitability. Governments have strengthened their efforts to increase revenues through changes in tax law, including laws regarding transfer pricing, economic presence and apportionment to determine the tax base.

Consequently, significant judgment is required in determining our worldwide provision for income taxes. Our future effective tax rates and the value of our deferred tax assets could be adversely affected by changes in tax laws. In addition, we are subject to the examination of our income tax returns and other tax returns by the Internal Revenue Service and other tax authorities. We regularly assess the likelihood of adverse outcomes resulting from such examinations to determine the adequacy of our provision for income taxes and reserves for other taxes. Although we believe we have made appropriate provisions for taxes in the jurisdictions in which we operate, changes in tax laws, or challenges from tax authorities under existing tax laws could adversely affect our business, financial condition and results of operations.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

Item 1C. CYBERSECURITY

Cybersecurity Risk Management and Strategy

We have developed and implemented a cybersecurity risk management program intended to protect the confidentiality, integrity, and availability of our systems and information. Our cybersecurity risk management program includes a cybersecurity incident response plan.

Our Information Security program is guided by the ISO/IEC 27001:2022 principles and led by a global-level Information Security Department that develops our security policies, standards and procedures. We seek to evolve our approach to protect against increasing and changing security threats around the world.

Our cybersecurity risk management program is integrated with our overall enterprise risk management program, and shares common methodologies, reporting channels and governance processes that apply across the enterprise risk management program to other legal, compliance, strategic, operational, and financial risk areas.

Our cybersecurity risk management program includes the following key elements:

- risk assessments designed to help identify material cybersecurity risks to our critical systems, information, services, and our broader enterprise information technology environment;
- monitoring and reporting of those risks to appropriate levels of management;
- a team comprised of information technology security, infrastructure, and compliance personnel principally responsible for directing our (1) cybersecurity risk assessment processes, (2) security operations processes, and (3) response to cybersecurity incidents;
- the use of external cybersecurity service providers, where appropriate, to assess, test or otherwise assist with aspects of our security processes;
- global associates with access to information technology systems in more than 30 countries and territories across North America, Latin America, Europe, Africa, India, and Asia Pacific receive a combination of general and targeted training to help keep Information Security top of mind;
- a cybersecurity incident response plan and Security Operations Center to respond to cybersecurity incidents; and
- a third-party security risk management process for key service providers based on their respective roles and risk profiles.

We have not identified risks from known cybersecurity threats, including as a result of any prior cybersecurity incidents, that have materially affected us, including our operations, business strategy, results of operations, or financial condition. We face certain ongoing risks from cybersecurity threats that, if realized, could be reasonably likely to materially affect us, including our operations, business strategy, results of operations, or financial condition. Refer to Part I, Item 1A “Risk Factors” for risks related to cybersecurity.

Cybersecurity Governance

Key Information Security risks are overseen by our Security and Technology Risk Committee (the “STRC”), which reports to our Enterprise Risk Management Committee (“ERMC”). The STRC, which is co-chaired by the Chief Technology, Data & Analytics Officer and the Chief Information Security Officer (“CISO”), provides oversight of mitigation of key risks related to technology and information security. This oversight includes monitoring and approving relevant policies, projects, and programs for the enterprise risk assessments related to technology and information security. The STRC also serves as an escalation point to the ERMC with respect to technology and information security risks. The ERMC is chaired by the Chief Risk & Compliance Officer, and includes the Chief Executive Officer, his direct reports and other key function heads or senior subject matter experts, including the CISO.

The ERMC, which meets monthly, also monitors TransUnion’s risk and governance policies and procedures to ensure that TransUnion risks are within the Board-approved Global Risk Taxonomy, which is described below. The ERMC reviews the broader risk environment and provides direction to mitigate (to an acceptable level) identified risks that may adversely affect our ability to achieve strategic objectives. The ERMC stewards our Enterprise Risk Management Policy and additional enterprise policies in risk-related areas, such as privacy and information security and key issues are reported to the appropriate committee of the Board.

Our Board considers cybersecurity risk as critical to the enterprise and delegates the cybersecurity risk oversight function to the Risk and Compliance Committee of the Board. The Risk and Compliance Committee oversees the quality and effectiveness of our information security framework, including capabilities, policies and controls, and methods for identifying, assessing and mitigating information and cybersecurity risks. The Risk and Compliance Committee also assesses the effectiveness of the Company's management of information security-related risks, including consulting with internal and external advisors as appropriate.

Our CISO reports quarterly to the Risk and Compliance Committee and leads the Company's overall cybersecurity function. The Risk and Compliance Committee receives reports from our CISO on key security topics, which may include, among other things, the cybersecurity risk landscape, and briefings on our cyber risk management program and significant cybersecurity incidents. The Board receives quarterly reports from the Chair of the Risk and Compliance Committee with applicable updates on the Company's cybersecurity risk landscape, and briefings on our cyber risk management program and significant cybersecurity incidents. The CISO and/or the Chief Legal Officer also periodically present to the Board on cybersecurity topics that impact public companies.

Our CISO supervises and assists the ERMC in staying informed about and monitoring efforts to prevent, detect, mitigate, and remediate cybersecurity risks and incidents through various means, which include briefings from internal security personnel; threat intelligence and other information obtained from governmental, public or private sources, including external cybersecurity service providers; and alerts and reports produced by security tools deployed in the information technology environment.

Our CISO, along with the STRC, are responsible for assessing and managing our material risks from cybersecurity threats. Our CISO has primary responsibility for leading our overall cybersecurity risk management program and supervises both our internal cybersecurity personnel and our external cybersecurity service providers. Our CISO has significant global experience in managing and leading information technology and cybersecurity teams. Our CISO has over 20 years' experience in the technology and security fields, including over 10 years in executive security leadership roles. Our CISO and senior members of the cybersecurity team also participate in both private and public knowledge shares, including maintaining ongoing relationships with government and non-public entities.

ITEM 2. PROPERTIES

Properties

Our corporate headquarters and main data center are located in Chicago, Illinois in an office building that we own. As of December 31, 2023, we lease space in over 110 other locations, including office space and additional data centers. These locations are geographically dispersed to meet our sales and operating needs. We anticipate that suitable additional or alternative space will be available at commercially reasonably terms for future expansion.

ITEM 3. LEGAL PROCEEDINGS

See Part II, ITEM 8 "Financial Statements and Supplementary Data - Notes to Consolidated Financial Statements," Note 23, "Contingencies" for information regarding our legal proceedings.

ITEM 4. MINE SAFETY DISCLOSURES

Not Applicable.

INFORMATION ABOUT OUR EXECUTIVE OFFICERS

Our executive officers, and their positions and ages as of February 28, 2024, are set forth below:

Name	Age	Position
Christopher A. Cartwright	58	President & Chief Executive Officer and Director
Venkat Achanta	51	Executive Vice President, Chief Technology, Data & Analytics Officer
Todd M. Cello	48	Executive Vice President, Chief Financial Officer
Steven M. Chaouki	51	President, U.S. Markets and Consumer Interactive
Timothy J. Martin	53	Executive Vice President, Chief Global Solutions Officer
R. Dane Mauldin	53	Executive Vice President, Chief Operations Officer
Susan W. Muigai	54	Executive Vice President, Chief Human Resources Officer
Heather J. Russell	52	Executive Vice President, Chief Legal Officer
Todd C. Skinner	54	President, International

Christopher A. Cartwright has served as the President & Chief Executive Officer of TransUnion and a member of the Board of Directors since May 2019. He joined the Company in August 2013, previously serving as Executive Vice President, U.S. Information Services, where he helped drive TransUnion's transformation into a global information and insights company as the head of the largest business unit, including providing consumer reports, risk scores, analytical services and decision technology to customers in the U.S. across the financial services, insurance, tenant and employment screening and public sector industries.

Prior to joining TransUnion, Mr. Cartwright was the Chief Executive Officer of Decision Insight Information Group, a portfolio of independent businesses providing real property information, software and services to insurance, finance, legal and real estate professionals in the United States, Canada and Europe. Mr. Cartwright also spent almost 14 years at Wolters Kluwer, a global information services and workflow solutions company, where he held a variety of executive positions of increasing responsibility, culminating in CEO of the Corporate and Financial Services Division and Shared Services, North America. Prior to Wolters Kluwer, he was Senior Vice President, Strategic Planning & Operations for Christie's Inc. and Strategy Consultant for Coopers and Lybrand.

Mr. Cartwright earned his bachelor's degree in business administration and a master's in public accountancy from The University of Texas at Austin. He serves on the Board of Directors of P33 Chicago and the Board of Trustees of the Museum of Science and Industry.

Venkat Achanta has served as Executive Vice President, Chief Technology, Data & Analytics Officer for TransUnion since July 2023. Along with leading a unified data strategy and data science across the organization, in this role, Mr. Achanta is responsible for all aspects of the company's technology, including strategy, security, product engineering, operations, infrastructure and delivery of solutions that support TransUnion's global information systems. He previously held the role of Executive Vice President, Chief Data & Analytics Officer from February 2022 to July 2023. Mr. Achanta previously served as Executive Vice President and Chief Data & Technology Officer of Neustar, Inc., where he led data science, data strategy and technology teams across the company. While at Neustar, he helped lead the creation of the OneID platform and technology transformation across all products.

Prior to joining Neustar in 2016, Mr. Achanta was Chief Data Officer and Head of Data and Analytics at Walmart, beginning in 2014, leading all data and analytics delivery platforms across the company globally. While at Walmart, he spearheaded the data fabric, advanced analytics platforms and decision services groups. Prior to Walmart, Mr. Achanta was Global Head of Analytics and Big Data at AIG. Mr. Achanta also has held senior leadership positions in technology and data & analytics at Capital One and Experian.

Mr. Achanta earned his Bachelor of Science degree in Computer Science and Engineering from Andhra University in India and his M.B.A. from UCLA's Anderson School of Management.

Todd M. Cello joined the Company in October 1997 and has held numerous roles with increasing levels of responsibility in the corporate finance department. Mr. Cello has served as our Executive Vice President, Chief Financial Officer since August 2017. Prior to his current role, Mr. Cello served as Senior Vice President and International CFO from August 2015 to August 2017, overseeing financial operations for the International segment. Prior to that, Mr. Cello served as Vice President, Financial Planning and Analysis from January 2009 to August 2015, overseeing the enterprise financial planning and analysis function, where he played a lead role in the two leveraged buyouts of TransUnion in 2010 and 2012 and the initial public offering of TransUnion in 2015. Prior to that, Mr. Cello served as Vice President and U.S. Information Services CFO from October 2005 to

December 2008, overseeing financial operations of the U.S. Information Services segment. Mr. Cello also serves on the University of Illinois at Chicago's College of Business Advisory Council.

Mr. Cello earned his bachelor's degree in Accounting from University of Illinois at Chicago and is a certified public accountant.

Steven M. Chaouki is President, U.S. Markets and Consumer Interactive, overseeing two TransUnion business lines. U.S. Markets provides information and insights to business customers across financial services, insurance, public sector, media and diversified markets. Consumer Interactive provides credit, financial and identity protection services to consumers.

He previously held the role of Executive Vice President, Financial Services from 2013 until May 2019, responsible for the company's financial services business, which provides solutions to banks, credit unions, capital markets, financial services resellers, auto lenders and other customers. Before joining TransUnion, Mr. Chaouki held roles at HSBC in card/retail services and auto finance. Mr. Chaouki serves on the board of MAIA Biotechnology, Inc. (NYSE American: MAIA).

Mr. Chaouki earned his bachelor's degree from Boston University and his M.B.A. from the University of Chicago Booth School of Business.

Timothy J. Martin has served as Executive Vice President, Chief Global Solutions Officer since May 2019. In this role, Mr. Martin is responsible for managing revenue growth and profitability through the strategy, planning, innovation and commercialization of nearly all of TransUnion's products and solutions globally. He previously held business management roles at TransUnion leading both a number of industry vertical-focused teams and a high growth horizontal solution called the Specialized Risk Group.

Prior to joining TransUnion in September 2009, Mr. Martin was President and Chief Operating Officer of HSBC Auto Finance where he had direct profit and loss responsibility for all strategy, business development, sales, marketing, pricing, risk management, underwriting operations, customer service and collections. Prior to joining HSBC, he was a consultant with Booz Allen Hamilton (now PWC Strategy&) from 1998 to 2003, and senior marketing analyst with American Airlines from 1992 to 1996. Mr. Martin serves on the board of Juvenile Diabetes Research Foundation of South Florida and the Child Rescue Coalition.

Mr. Martin earned his B.S. in Management from Purdue University and his M.B.A. from the University of Michigan Business School.

R. Dane Mauldin has served as Executive Vice President, Chief Operations Officer for TransUnion since May 2019. Mr. Mauldin leads the organization's focus on operations across the enterprise, including the vision, planning and execution required throughout the customer journey. Previously, he was Chief Product Officer from February 2013 until May 2019, where he was responsible for content acquisition, analytic discovery, product development and product delivery across the company's global footprint.

Mr. Mauldin has an extensive background in the information solutions industry. Prior to joining TransUnion, he served as Chief Executive Officer of Screening Solutions and Customer Operations for LexisNexis Risk Solutions, a division of Reed Elsevier. Other roles at LexisNexis were Vice President of Total Customer Experience and Vice President of Collections Market Planning. He also held management positions at Commercial Financial Services and Experian.

Mr. Mauldin earned his bachelor's degree in Journalism from the University of Oklahoma.

Susan W. Muigai has served as Executive Vice President, Chief Human Resources Officer since 2021. She is responsible for leading TransUnion's human resource strategy and function, and nurturing an inclusive, high-performance culture to help TransUnion achieve its vision and strategy.

Ms. Muigai brings deep expertise in talent strategy with an extensive background in global HR, human capital management, organizational leadership, diversity and inclusion, legal and compliance, business transformation and more. She previously spent 16 years at Walmart, based in the U.S., Canada and India, serving as Senior Vice President, People from March 2020 to September 2021, Executive Vice President People/Corporate Affairs, Walmart Canada from August 2016 to August 2020, Senior Vice President People, Walmart Canada from January 2016 to July 2016, Vice President People, Walmart Canada from February 2015 to December 2015, Vice President, International Real Estate and Vice President International Real Estate, Walmart International Real Estate from March 2014 to February 2015, Senior Vice President Legal, General Counsel & Chief Ethics Officer, Walmart India from November 2012 to March 2014, Vice President Audit, Walmart Canada from September 2009 to October 2012, and Senior Director, Risk Management, Walmart Canada from June 2005 to September 2009.

Ms. Muigai earned her Bachelor of Law from the University of Windsor in Canada, and her Master of Law in International Business from the University of London. She serves on the board of directors of Coursera, Inc. (NYSE: COUR) and Breakfast Club of Canada.

Heather J. Russell is Executive Vice President, Chief Legal Officer of TransUnion. Ms. Russell is an accomplished legal executive with more than 25 years of diverse experience across the global financial services and technology sectors. She is

responsible for legal, risk, compliance, government and regulatory relations, corporate governance, consumer privacy and ESG functions for TransUnion and its subsidiaries around the world. Prior to joining the Company in 2018, Ms. Russell was a partner at the law firm of Buckley, LLP, where she led the firm's Financial Institutions Regulation, Supervision and FinTech practices. Previously, she served as Executive Vice President, Chief Legal Officer and Corporate Secretary at Fifth Third Bank. Prior to that, she served as Managing Director and Global Head of Public Policy and Regulatory Affairs at Bank of New York Mellon, and as Senior Vice President and Associate General Counsel at Bank of America. She also spent eight years at Skadden in Washington, D.C. and London focused on financial services, corporate finance, and mergers and acquisitions.

Ms. Russell earned her B.A. from the College of William & Mary and her J.D. with honors from American University's Washington College of Law, where she received the Outstanding Graduate Award. Ms. Russell serves on the board of directors of the U.S. Chamber of Commerce, the world's largest business organization, representing the interests of over three million businesses and organizations. She is also on the boards of Illinois Legal Aid Online and the Chicago Council on Global Affairs where she chairs the board's Nominating and Governance Committee.

Todd C. Skinner has served as President, International since August 2021 and is responsible for leading TransUnion's growth across international markets. Mr. Skinner has nearly 30 years of experience delivering information solutions at leading global companies. He joined TransUnion in 2014, previously serving as TransUnion's Regional President of Canada, Latin American and Caribbean. Prior to joining TransUnion, Mr. Skinner was the President of First Canadian Title Default Solutions, a technology recovery business. Previously, he served as Chief Credit Officer and Chief Operations Officer for Retail Banking and Wealth Management at HSBC. He also served as President and Chief Executive Officer for HSBC Financial, an HSBC subsidiary that operated in consumer finance, private label credit card financing, MasterCard, wholesale mortgage lending, mortgage brokering and full spectrum auto finance.

Mr. Skinner earned his bachelor's degree of commerce from St. Mary's University and his M.B.A. from the Kellogg-Schulich Executive M.B.A. He serves as TransUnion's representative on the Global Board of the U.S.-India Business Council (USIBC) and the board of directors for Trans Union de Mexico S.A., TransUnion International UK Ltd., TransUnion CIBIL Limited. He is also on the board of directors of Cliffside Capital.

Our executive officers are elected annually by our Board. There are no family relationships among any of the Company's executive officers.

PART II

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

Market Information

Our common stock has been listed on The New York Stock Exchange under the symbol "TRU" since June 25, 2015.

Holders of Record

As of January 31, 2024, we had 12 stockholders of record. We have a greater number of beneficial owners of our stock who own their shares through brokerage firms and other nominees.

Recent Sales of Unregistered Securities

None.

Issuer Purchases of Equity Securities

Period	Total Number of Shares Purchased[1]	Average Price Paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs[2]
October 1 to October 31	1,043	$ 69.85	—	$ 166.5
November 1 to November 30	1,808	49.00	—	$ 166.5
December 1 to December 31	9,300	64.99	—	$ 166.5
Total	12,151	$ 63.03	—	

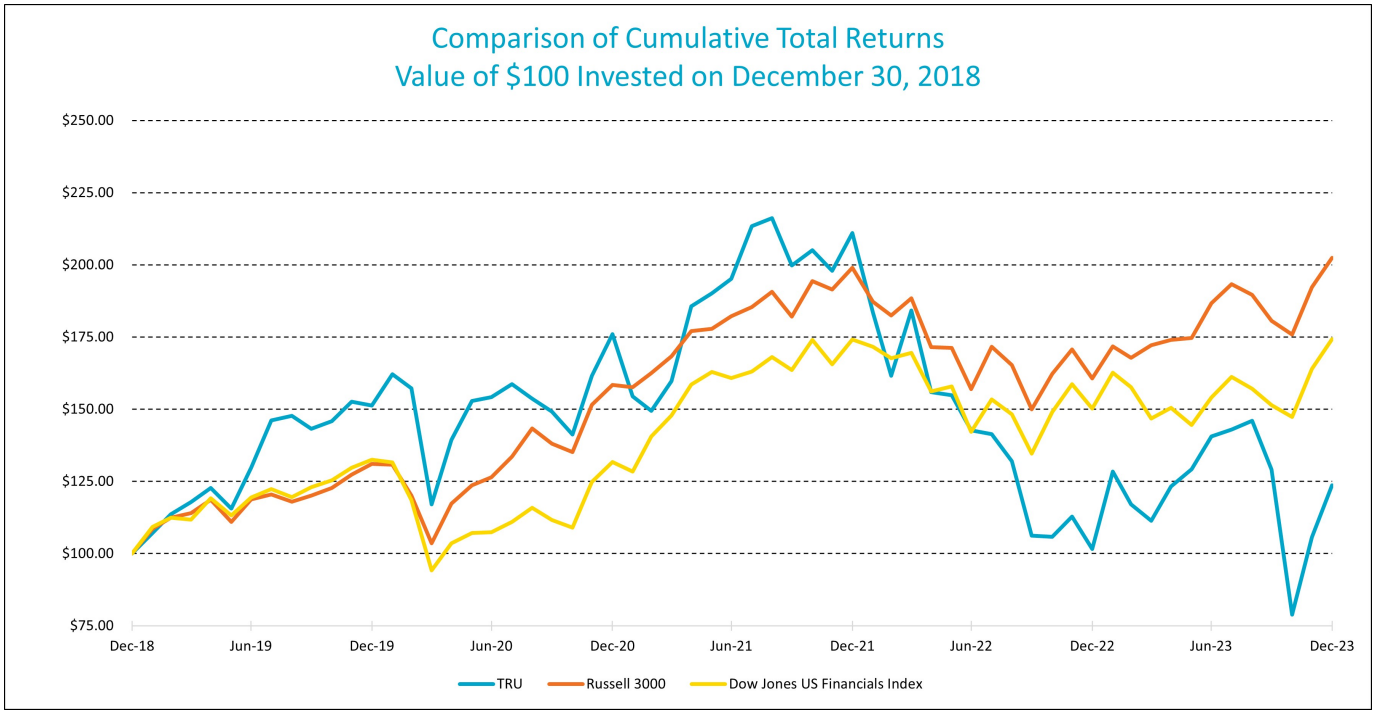
1. Represents shares that were repurchased from employees for withholding taxes for share-based awards pursuant to the Company's equity compensation plans.

2. On February 13, 2017, our Board authorized the repurchase of up to $300.0 million of our common stock through February 13, 2020. Our Board removed the three-year time limitation on February 8, 2018. Prior to the fourth quarter of 2017, we had purchased approximately $133.5 million of common stock under the program and may purchase up to an additional $166.5 million. Additional repurchases may be made from time to time at management's discretion at prices management considers to be attractive through open market purchases or through privately negotiated transactions, subject to availability. Open market purchases will be conducted in accordance with the limitations set forth in Rule 10b-18 of the Exchange Act and other applicable legal requirements. We have no obligation to repurchase additional shares, and the timing, actual number and value of the shares that are repurchased, if any, will be at the discretion of management and will depend on a number of factors, including market conditions, the cost of repurchasing shares, the availability of alternative investment opportunities, liquidity, and other factors deemed appropriate. Repurchases may be suspended, terminated or modified at any time for any reason. Any repurchased shares will have the status of treasury shares and may be used, if and when needed, for general corporate purposes.

Performance Graph

This performance graph shall not be deemed "soliciting material" or to be "filed" with the SEC for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or otherwise subject to the liabilities under that Section, and shall not be deemed to be incorporated by reference into any filing of TransUnion under the Securities Act of 1933, as amended, or the Exchange Act.

The following graph shows a comparison of cumulative total shareholder return for the Company's common stock, the Russell 3000 and the Dow Jones U.S. Financials Index. The graph assumes that $100 was invested at market close on December 31, 2018, in each of the Company's common stock, the Russell 3000 and the Dow Jones U.S. Financial Index. The cumulative total returns for the Russell 3000 and the Dow Jones U.S. Financial Index assume reinvestment of dividends. The stock price performance of the following graph is not necessarily indicative of future stock price performance.



ITEM 6. RESERVED

Reserved

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

The following discussion and analysis of TransUnion's financial condition and results of operations is provided as a supplement to, and should be read in conjunction with Part I, Item 1A, "Risk Factors," and Part II, Item 8, "Financial Statements and Supplementary Information," including TransUnion's audited consolidated financial statements and the accompanying notes. In addition to historical data, this discussion contains forward-looking statements about our business, operations and financial performance based on current expectations that involve risks, uncertainties and assumptions. Our actual results may differ materially from those discussed in the forward-looking statements as a result of various factors, including but not limited to those discussed in "Cautionary Notice Regarding Forward-Looking Statements" and Part I, Item 1A, "Risk Factors."

References in this discussion and analysis to the "Company," "we," "us," and "our" refer to TransUnion and its direct and indirect subsidiaries, including TransUnion Intermediate Holdings, Inc.

Overview

TransUnion is a leading global information and insights company that makes trust possible between businesses and consumers, helping people around the world access opportunities that can lead to a higher quality of life. That trust is built on TransUnion's ability to deliver safe, innovative solutions with credibility and consistency. We call this Information for Good.

Grounded in our heritage as a credit reporting agency, we have built robust and accurate databases of information for a large portion of the adult population in the markets we serve. We use our identity resolution methodology to link and match our expanding high-quality datasets. We use this enriched data and analytics, combined with our expertise, to continuously develop more insightful solutions for our customers, all while maintaining compliance with global laws and regulations. Because of our work, organizations can better understand consumers in order to make more informed decisions, and earn consumer trust through great, personalized experiences, and the proactive extension of the right opportunities, tools and offers. In turn, we believe consumers can be confident that their data identities will result in better offers and opportunities.

We provide solutions that enable businesses to manage and measure credit risk, market to new and existing customers, verify consumer identities, mitigate fraud, and effectively manage call center operations. Businesses embed our solutions into their process workflows to deliver critical insights and enable effective actions. Consumers use our solutions to view their credit profiles, access analytical tools that help them understand and manage their personal financial information, and take precautions against identity theft. We have deep domain expertise across a number of attractive industries, which we also refer to as verticals, including Financial Services and Emerging Verticals. Emerging Verticals consists of Technology, Commerce & Communications, Insurance, Media, Services and Collections, Tenant and Employment, and Public Sector. We have a global presence in over 30 countries and territories across North America, Latin America, Europe, Africa, India, and Asia Pacific.

Our addressable market includes the global data and analytics market, which continues to grow as companies around the world increasingly recognize the benefits of data and analytics-based decision making, and as consumers recognize the important role that their data identities play in their ability to procure goods and services. There are several underlying trends supporting this market growth, including the proliferation of data, advances in technology and analytics that enable data to be processed more quickly and efficiently to provide business insights, and growing demand for these business insights across industries and geographies. Leveraging our established position as a leading provider of information and insights, we have grown our business by expanding the breadth and depth of our data, strengthening our analytics capabilities, expanding into complementary adjacent and vertical markets, deepening our solution suite in fraud mitigation and marketing, building out our geographic portfolio, investing in technology infrastructure, and enhancing our global operating model. As a result, we believe we are well positioned to expand our share within the markets we currently serve and capitalize on the larger data and analytics opportunity.

Segments

We manage our business and report our financial results in three reportable segments: U.S. Markets, International and Consumer Interactive. See Part II, Item 8 "Financial Statements and Supplementary Data - Notes to Consolidated Financial Statement," Note 21, "Reportable Segments" for additional information.

U.S. Markets

Our U.S. Markets segment provides consumer reports, actionable insights and analytics to businesses. These businesses use our services to engage and acquire customers, assess consumer ability to pay for services, identify cross-selling opportunities, measure and manage debt portfolio risk, collect debt, verify consumer identities and mitigate fraud risk.

International

The International segment provides services similar to our U.S. Markets segment to businesses in select regions outside the United States. Depending on the maturity of the credit economy in each country, services may include credit reports, analytics and technology solutions services and other value-added risk management services. We also have insurance, business and automotive databases in select geographies. These services are offered to customers in a number of industries including financial services, retail credit, insurance, automotive, collections, public sector and communications, and are delivered through both direct and indirect channels. The International segment also provides consumer solutions similar to those offered by our Consumer Interactive segment to help consumers proactively manage their personal finances.

Consumer Interactive

The Consumer Interactive segment offers solutions that help consumers manage their personal finances and take precautions against identity theft. Services in this segment include credit reports and scores, credit monitoring, identity protection and resolution, and financial management for consumers. The segment also provides solutions that help businesses respond to data breach events. Our products are provided through user-friendly online and mobile interfaces and are supported by educational content and customer support. With our acquisition of Sontiq, we have added to our foundational credit monitoring solutions with a comprehensive set of identity protection offerings.

Corporate

Corporate provides support services for each of the segments, holds investments, and conducts enterprise functions. Certain costs incurred in Corporate that are not directly attributable to one or more of the segments remain in Corporate. These costs are typically enterprise-level costs and are primarily administrative in nature.

Factors Affecting Our Results of Operations

The following are certain key factors that affect, or have recently affected, our results of operations:

Macroeconomic and Industry Trends

Our revenues and results of operations have been and can be significantly influenced by general macroeconomic conditions, including but not limited to, interest rates, inflation, housing demand, the availability of credit and capital, employment levels, and consumer confidence.

During 2022, the labor market remained strong and supply chain constraints began to ease, while persistent inflation, rapidly increasing energy prices, and consecutive interest rate increases by the Federal Reserve all contributed to constrained economic activity. In addition, a slowing housing market, coupled with lower GDP growth, softening consumer confidence and global geopolitical events added to the deterioration of global macroeconomic conditions and increasing recession fears compared to the post-pandemic rebound of 2021.

During 2023, the U.S. labor market remained steady with low unemployment and rising real wages. However, subsiding but still elevated inflation, increasing housing costs, and continued interest rate increases by the Federal Reserve all contributed to constrained economic activity. In addition, liquidity challenges within the banking sector, a slowing housing market, and global geopolitical events all added to the deterioration of global macroeconomic conditions compared with the post-pandemic rebound of 2021 and early 2022. These slowing macroeconomic conditions had a more pronounced impact in our developed markets, including the U.K., compared with our emerging markets. The U.K. experienced persistently unfavorable and worsening macroeconomic conditions, including rising interest rates, subsiding but still elevated inflation, and a slowing labor market. In addition, the impact of exchange rates continued to have a significant impact on our International segment. In the U.S., the impact of higher interest rates has slowed demand for consumer loans and auto loans, and has been particularly acute in the housing sector, where higher borrowing rates significantly impact both home affordability, driving down purchase activity, and demand for mortgage loan refinancing. The impact of higher interest rates on slowing aggregate demand is expected to result in increased unemployment levels over the next year, which is likely to reduce consumer credit activity. These dynamics impact the comparability of our results of operations, including our revenue and expense, between the periods presented below.

The ongoing uncertainty and the unpredictable nature of the macroeconomic environment could have a material adverse impact on various aspects of our business in the future, including our stock price, results of operations and financial condition, including the carrying value of our long-lived assets such as goodwill and intangible assets.

Effects of Inflation

We believe that inflation has had and we expect will continue to have a negative impact on our business and results of operations, including decreased demand for our services resulting from the Federal Reserve and other central banks raising rates throughout 2023. While central banks have paused rate increases and current conditions indicate that they may begin to

cautiously lower rates from the higher interest rates established to combat inflation, rates that remain higher may result in slowing consumer spending on non-essential goods and services, and consequently lower demand for credit. The impact of elevated but subsiding levels of inflation and the resulting response by the Federal Reserve and other central banks to maintain higher but decreasing interest rates could have a material adverse impact on various aspects of our business in the future.

Recent Developments

The following developments impact the comparability of our balance sheets, results of operations and cash flows between years:

On November 12, 2023, our Board approved a transformation plan to optimize our operating model and continue to advance our technology. We expect to recognize one-time pre-tax expenses associated with this transformation plan of $355.0 to $375.0 million from the fourth quarter of 2023 through the end of 2025, with the majority of costs to be incurred by the end of 2024. All pre-tax expenses will be cash expenditures, other than approximately $15.0 to $20.0 million of non-cash, facility exit costs. In addition, we anticipate capital expenditures to increase to approximately 9% of revenue in 2024 and then return to approximately 8% of revenue for 2025 due to investment in our technology infrastructure in connection with this transformation plan. Upon completion of this program, we expect to generate annual savings of $120.0 to $140.0 million and reduce our capital expenditures from 8% of revenue to 6%, based on 2023 revenue. The following summarizes initiatives under the transformation plan.

- The operating model optimization program will reduce our global workforce, transition certain job responsibilities to our Global Capability Centers, which we expect will improve productivity, reduce costs and fund growth, optimize business processes, and reduce our facility footprint. We expect to incur total one-time pre-tax expenses of $205.0 to $215.0 million, including employee separation expenses of approximately $110.0 million, facility exit expenses of approximately $45.0 million, and business optimization expenses of approximately $55.0 million.
- The incremental investment to advance our technology is the final phase of our accelerated technology investment. We expect to incur one-time pre-tax expenses of $150.0 to $160.0 million, including approximately $65.0 million in 2024 related to the final year of Project Rise, and approximately $90.0 million of incremental expenses during 2024 and 2025 to streamline our product delivery platforms, and leverage the cloud-based infrastructure being established with Project Rise. The accelerated technology investment will fundamentally transform our technology infrastructure by implementing a global cloud-based approach to streamline product development, increase the efficiency of ongoing operations and maintenance, enable a continuous improvement approach, and provide a single global platform for fulfillment of our product lines. Project Rise was announced in February 2020 and expanded in February 2022, and is expected to be completed in 2024 with a total estimated expense of approximately $240.0 million, including the approximately $65.0 million to be incurred in 2024, as discussed above.

For the year ended December 31, 2023, we incurred total expenses associated with this effort of $77.6 million. comprised of restructuring expenses of $71.9 million for employee separation and $3.4 million for non-cash impairment charges associated with leased facilities, as well as $2.3 million of other business optimization expenses. Employee separation costs and non-cash impairment charges are included in Restructuring expenses in our Consolidated Statements of Operations. We have accrued liabilities for the payment of employee separation costs of $64.9 million as of December 31, 2023.

On October 27, 2023, we executed Amendment No. 21 to the Senior Secured Credit Facility, pursuant to which we: (1) refinanced our existing revolving credit facility with a new tranche of revolving credit commitments in an aggregate principal amount of $600.0 million (an increase of $300.0 million); and (2) entered into Senior Secured Term Loan A-4 with an aggregate principal amount of $1.3 billion, the proceeds of which were used to repay Senior Secured Term Loan A-3 in full, prepay $300.0 million of Senior Secured Term Loan B-6, and pay the related financing fees and expenses. We also extended the maturity date on our Senior Secured Revolving Credit Facility from December 10, 2024 to October 27, 2028. In connection with the refinancing, we expensed $5.9 million of the unamortized original issue discount, deferred financing fees, and other related fees to other income and expense in the Consolidated Statements of Operations for the year ended December 31, 2023. Additionally, we recorded incremental deferred financing fees of $4.8 million that will be amortized over the new loan term.

In October 2023, we agreed to settle two matters with federal regulators for a total of $23.0 million. On October 5, 2023, we reached a settlement in the form of a Consent Order with the CFPB and the FTC pursuant to which we agreed to pay $11.0 million in redress and $4.0 million in civil money penalties in connection with alleged violations under the FCRA related to our tenant and employment screening business. On October 10, 2023, we reached a settlement with the CFPB in the form of a Consent Order pursuant to which we agreed to pay $3.0 million in redress and $5.0 million in civil money penalties in connection with alleged violations of law in connection with the placement and lifting of security freezes resulting from certain system issues. See Part II, Item 8, “Financial Statements and Supplementary Data - Notes to Consolidated Financial Statements,” Note 23, “Contingencies,” for further information about these matters.

During the third quarter of 2023, we identified a triggering event requiring an interim impairment assessment for our United Kingdom reporting unit, which resulted in a goodwill impairment of $414.0 million, as discussed in Part II, Item 8, “Financial Statements and Supplementary Data - Notes to Consolidated Financial Statements,” Note 6, “Goodwill.”

In each of the first three quarters of 2023 we prepaid $75.0 million, and in the fourth quarter of 2023 we prepaid $25.0 million, for a total of $250.0 million in 2023, of our Senior Secured Term Loan B-6, funded from cash on hand. During the first quarter of 2022 we prepaid $400.0 million, and in the fourth quarter of 2022 we prepaid $200.0 million, for a total of $600.0 million in 2022, of our Senior Secured Term Loan B-6, funded from cash-on-hand. During 2021, we prepaid $85.0 million of Senior Secured Term Loan B-5, funded with cash on hand. These transactions affect the comparability of interest expense between years, as further discussed in “Results of Operations – Non-Operating Income and (Expense) – Interest Expense” below.

Since December 1, 2021, we have completed the acquisition of three businesses that collectively materially affected our results of operations in 2022 and 2023, and the comparability of results to 2021. See Part II, Item 8, “Financial Statements and Supplementary Data - Notes to the Consolidated Financial Statements,” Note 2, “Business Acquisitions” for further information about these transactions.

On December 30, 2022, we completed the previously announced sale of the non-core businesses of VF, the financial services business unit we acquired from Verisk Analytics, Inc. We classified the results of operations of these non-core businesses as discontinued operations, net of tax, in the Consolidated Statements of Operations since the acquisition in April 2022. Upon the sale, we received total proceeds of $173.9 million, consisting of $103.6 million in cash, and a note receivable with a face value of $72.0 million and a fair value of $70.3 million on the date of sale. We finalized the purchase price in the third quarter of 2023 and recorded a $0.5 million reduction of the gain on sale included in discontinued operations, net of tax. For the year ended December 31, 2022, we recognized a $7.5 million gain on the sale of these businesses, which is included in discontinued operations, net of tax.

On November 16, 2022, we entered into interest rate swap agreements with various counterparties that effectively fix our variable interest rate exposure on a portion of our Senior Secured Term Loan or similar replacement debt. These swaps replaced other swaps that expired on December 30, 2022. The new swaps commenced on December 30, 2022, and expire on December 31, 2024, with a current aggregate notional amount of $1,300.0 million that amortizes each quarter. The swaps require us to pay fixed rates varying between 4.3380% and 4.3870% in exchange for receiving a variable rate that matches the variable rate on our loans. We have designated these swap agreements as cash flow hedges.

On April 12, 2022, after failed settlement negotiations with the CFPB regarding a certain regulatory matter, the CFPB filed a lawsuit against us, Trans Union LLC, TransUnion Interactive, Inc. and our former President of Consumer Interactive. During 2022, we recorded an incremental $29.5 million of expense related to this matter. As of December 31, 2023 and 2022, we have an accrued liability of $56.0 million in connection with this matter and there is a reasonable possibility that a loss in excess of the amount accrued may be incurred, and such an outcome could have a material adverse effect on our results of operations and financial condition. However, any possible loss or range of loss in excess of the amount accrued is not reasonably estimable at this time. In addition, we will incur increased costs litigating this matter. See Part II, Item 8, “Financial Statements and Supplementary Data - Notes to the Consolidated Financial Statements,” Note 23, “Contingencies,” for further information about this matter.

On January 24, 2022, we reached a tentative class settlement with the plaintiffs in *Ramirez v. TransUnion LLC*, which required court approval. Accordingly, we revised the amount of the probable loss that we previously estimated, resulting in a reduction of our estimated liability and partially offsetting insurance receivable, and a corresponding net reduction recorded in selling, general and administrative expense for the year-end December 31, 2021. On December 19, 2022, the court entered final approval of the class settlement and we paid the settlement amount to the plaintiffs on January 20, 2023, resulting in a full resolution of this matter.

On December 23, 2021, we entered into a tranche of interest rate swap agreements with various counterparties that effectively fix our LIBOR exposure on a portion of our Senior Secured Term Loan or similar replacement debt. The tranche commenced on December 31, 2021, and expires on December 31, 2026, with a current aggregate notional amount of $1,568.0 million that amortizes each quarter. The tranche requires us to pay fixed rates varying between 1.3800% and 1.3915% in exchange for receiving a variable rate that matches the variable rate on our loans. We have designated these swap agreements as cash flow hedges.

On December 17, 2021, we completed the sale of our Healthcare business. The Healthcare business met the criteria for discontinued operations at December 31, 2021, as the sale represented a strategic shift in our business that will have a major effect on our results of operations. The results of operations are classified as discontinued operations, net of tax, in our Consolidated Statements of Operations for all periods presented. Discontinued operations, net of tax, also includes a gain on the divestiture of the Healthcare business of $982.5 million, net of tax, in the Consolidated Statements of Operations for 2021. All tables and discussions below exclude the impact of the Healthcare business.

On December 1, 2021, we entered into an agreement to amend certain provisions of the Senior Secured Credit Facility and exercise our right to draw additional debt in an amount of $3,100.0 million, less original issue discount and deferred financing fees of $7.8 million and $43.6 million, respectively. Proceeds from the incremental loan on the Senior Secured Credit Facility were used to finance the acquisition of Neustar.

On December 1, 2021, we entered into a Second Lien Credit Agreement to obtain term loans in an aggregate amount of $640.0 million (the "Second Lien Term Loan"), less original issue discount and deferred financing fees of $3.2 million and $14.3 million, respectively, used to fund the acquisition of Sontiq. On December 23, 2021, we fully repaid the Second Lien Term Loan using a portion of the proceeds from our sale of the Healthcare business. As a result of the prepayment, we expensed the unamortized original issue discount and deferred fees to other income and expense in the Consolidated Statements of Operations.

Recent Acquisitions

We selectively evaluate acquisitions as a means to expand our business and to enter new markets. Since January 1, 2021, we have completed the following acquisitions, including those that impact the comparability of our results between periods:

- On April 8, 2022, we acquired 100% of the equity of the entities that comprised VF. We retained the core businesses of Argus, and divested the remaining non-core businesses on December 30, 2022. Argus provides financial institutions, payments providers, and retailers worldwide with competitive studies, predictive analytics, models, and advisory services. The results of operations of Argus are included in the U.S. Markets segment in our Consolidated Statements of Operations since the date of the acquisition. See Part II, Item 8, "Financial Statements and Supplementary Data - Notes to Consolidated Financial Statements," Note 2, "Business Acquisitions" and Note 3 "Discontinued Operations," for additional information.
- On December 1, 2021, we acquired 100% of the equity of Neustar. Neustar, a premier identity resolution company with leading solutions in Marketing, Risk and Communications, enables customers to build connected consumer experiences by combining decision analytics with real-time identity resolution services driven by its OneID platform. The results of operations of Neustar are included in Financial Services and Emerging Verticals as part of our U.S. Markets segment in our Consolidated Statements of Operations since the date of the acquisition. See Item 8, "Financial Statements and Supplementary Data - Notes to Consolidated Financial Statements," Note 2, "Business Acquisitions."
- On December 1, 2021, we acquired 100% of the equity of Sontiq. Sontiq, a leader in digital identity protection and security, provides solutions including identity monitoring, restoration, and response products and services to help empower consumers and businesses to proactively protect against identity theft and cyber threats. The results of operations of Sontiq are included in the Consumer Interactive segment in our Consolidated Statements of Operations since the date of the acquisition. See Part II, Item 8, "Financial Statements and Supplementary Data - Notes to Consolidated Financial Statements," Note 2, "Business Acquisitions," for additional information.

Key Components of Our Results of Operations

Revenue

We report revenue for our three reportable segments, U.S. Markets, International and Consumer Interactive. Within the U.S. Markets segment, we report and disaggregate revenue by vertical, which consists of our Financial Services and Emerging Verticals. A portion of the revenue from our recent acquisition of Neustar is included in each vertical. Revenue from our recent acquisition of Argus is included in the Financial Services vertical. Within the International segment, we disaggregate revenue by regions, which consists of Canada, Latin America, the U.K., Africa, India, and Asia Pacific. For our Consumer Interactive segment, we do not disaggregate revenue. Revenue from our recent acquisition of Sontiq is included in our Consumer Interactive segment.

Cost of Services

Costs of services include data acquisition and royalty fees, personnel costs related to our databases and software applications, consumer and call center support costs, hardware and software maintenance costs, telecommunication expenses and occupancy costs associated with the facilities where these functions are performed.

Selling, General and Administrative

Selling, general and administrative expenses include personnel-related costs for sales, administrative and management employees, costs for professional and consulting services, advertising and occupancy and facilities expense of these functions.

Goodwill Impairment

Goodwill impairment relates to the impairment of our United Kingdom reporting unit, as discussed above.

Restructuring

Restructuring expenses relate to the operating model optimization program announced in November 2023.

Non-Operating Income and Expense

Non-operating income and expense includes interest expense, interest income, earnings from equity-method investments, dividends from Cost Method Investments, fair-value adjustments of equity method and Cost Method Investments, if any, expenses related to successful and unsuccessful business acquisitions, loan fees, debt refinancing expenses, certain acquisition-related gains and losses and other non-operating income and expenses.

Results of Operations—Twelve Months Ended December 31, 2023, 2022 and 2021

(Tabular amounts in millions, except per share amounts)

For the twelve months ended December 31, 2023, 2022 and 2021, our results of operations were as follows:

	Twelve Months Ended December 31,			Change 2023 vs. 2022		Change 2022 vs. 2021	
	2023	2022	2021	$	%	$	%
Revenue	$ 3,831.2	$ 3,709.9	$ 2,960.2	$ 121.3	3.3 %	$ 749.7	25.3 %
Operating expenses							
Cost of services (exclusive of depreciation and amortization below)[1]	1,517.3	1,385.1	1,022.3	132.2	9.5 %	362.8	35.5 %
Selling, general and administrative[1]	1,171.6	1,179.4	909.0	(7.8)	(0.7)%	270.4	29.7 %
Depreciation and amortization	524.4	519.0	377.0	5.4	1.0 %	142.0	37.7 %
Goodwill impairment	414.0	—	—	414.0	nm	—	— %
Restructuring	75.3	—	—	75.3	nm	—	— %
Total operating expenses	3,702.7	3,083.5	2,308.3	619.1	20.1 %	775.2	33.6 %
Operating income	128.5	626.3	651.9	(497.8)	(79.5)%	(25.6)	(3.9)%
Non-operating income and (expense)							
Interest expense	(288.2)	(230.9)	(112.6)	(57.3)	24.8 %	(118.3)	105.1 %
Interest income	20.7	4.7	3.4	16.1	nm	1.3	38.2 %
Earnings from equity method investments	16.3	13.0	12.0	3.3	25.4 %	1.0	8.3 %
Other income and (expense), net	(22.7)	(30.0)	(49.2)	7.3	(24.3)%	19.2	(39.0)%
Total non-operating income and (expense)	(273.9)	(243.3)	(146.3)	(30.6)	12.6 %	(97.0)	66.3 %
(Loss) income from continuing operations before income taxes	(145.3)	383.0	505.6	(528.4)	nm	(122.6)	(24.2)%
Provision for income taxes	(44.7)	(118.9)	(131.9)	74.2	(62.4)%	13.0	(9.9)%
(Loss) income from continuing operations	(190.1)	264.1	373.7	(454.2)	nm	(109.6)	(29.3)%
Discontinued operations, net of tax	(0.7)	17.4	1,031.7	(18.1)	nm	(1,014.3)	(98.3)%
Net (loss) income	(190.8)	281.5	1,405.4	(472.3)	nm	(1,123.9)	(80.0)%
Less: net income attributable to noncontrolling interests	(15.4)	(15.2)	(15.0)	(0.2)	1.3 %	(0.2)	1.3 %
Net (loss) income attributable to TransUnion	$ (206.2)	$ 266.3	$ 1,390.3	$ (472.4)	nm	$(1,124.0)	(80.8)%

nm: not meaningful

As a result of displaying amounts in millions, rounding differences may exist in the table above.

1. We revised our Consolidated Statement of Operations for the years ended December 31, 2022 and 2021 to correct errors in the classification of employee costs related to certain of our recent acquisitions identified in the second quarter of 2023 and certain expenses identified in the fourth quarter of 2023 between cost of services and selling, general and administrative in equal and offsetting amounts resulting in no impact to total operating expenses, operating income or net income. We also corrected an immaterial error related to an over accrual of expenses, net of the related income tax effect, during the year ended December 31, 2021, that had previously been corrected out of period during the twelve months ended December 31, 2022. See Part II, Item 8, "Financial Statements and Supplementary Data - Notes to Consolidated Financial Statements," Note 1, "Significant Accounting and Reporting Policies" and Note 26, "Quarterly Financial Data (Unaudited)."

Revenue

For 2023, revenue increased $121.3 million, or 3.3%, compared with 2022, due primarily to growth in our International and U.S. Markets segments, partially offset by a decrease in our Consumer Interactive segment and a decrease of 0.6% due to the impact of foreign currencies, as further discussed in the Segment Results of Operations section below.

For 2022, revenue increased $749.7 million, or 25.3%, compared with 2021, due primarily to 24.4% increase from our acquisitions in the U.S. Markets and Consumer Interactive segments and organic growth in our International segment, partially offset by a decrease of 2.3% from the impact of foreign currencies, as further discussed in the Segment Results of Operations below.

Operating Expenses

Cost of services

For 2023, cost of services increased $132.2 million compared with 2022. The increase was due primarily to:

- an increase of approximately $78.0 million in variable product costs primarily resulting from an increase in third-party royalty costs in our U.S. Markets segment and from the increase in revenue;
- an increase of approximately $30.0 million in technology-related costs, including costs for our accelerated technology investment;
- an increase of approximately $19.0 million in operating costs in the first quarter from our April 2022 acquisition in our U.S. Markets segment; and
- an increase of approximately $17.0 million in labor costs due to increased headcount and incentive compensation;

partially offset by:

- a decrease of approximately $5.0 million from the impact of foreign currencies on our international operations.

For 2022, cost of services increased $362.8 million compared with 2021. The increase was due primarily to:

- an increase of approximately $303.0 million in operating and integration-related costs from our recent acquisitions in our U.S. Markets and Consumer Interactive segments;
- an increase of approximately $41.0 million in labor costs, including an increase in stock-based compensation, primarily in our U.S. Markets and International segments, as we continue to invest in key strategic growth initiatives;
- an increase of approximately $30.0 million in technology-related costs, including cost for our accelerated technology investment; and
- an increase of approximately $9.0 million in product costs in our U.S. Markets and International segment due to the increase in revenue;

partially offset by:

- a decrease of approximately $16.0 million from the impact of foreign currencies on our international operations.

Selling, general and administrative

For 2023, selling, general and administrative expenses decreased $7.8 million compared with 2022. The increase was due primarily to:

- an increase of approximately $43.0 million in labor costs due to increased headcount and stock-based incentive compensation; and
- an increase of approximately $23.0 million of certain administrative expenses including travel, professional services and miscellaneous taxes;

partially offset by:

- a decrease of approximately $24.0 million in certain legal and regulatory expenses, primarily due to the CFPB litigation as discussed in Part II, Item 8, “Financial Statements and Supplementary Data - Notes to Consolidated Financial Statements,” Note 23, “Contingencies”;
- a decrease of approximately $22.0 million in advertising expense, primarily in our Consumer Interactive segment;

- a decrease of approximately $14.0 million in integration-related costs for our 2021 and 2022 acquisitions in our U.S. Markets and Consumer Interactive segments; and
- a decrease of approximately $6.0 million from the impact of foreign currencies on our international operations.

For 2022, selling, general and administrative expenses increased $270.4 million compared with 2021. The increase was due primarily to:

- an increase of approximately $254.0 million in operating and integration-related costs from our acquisitions in our U.S. Markets and Consumer Interactive segments;
- an increase of approximately $25.0 million for certain legal and regulatory expenses;
- an increase of approximately $12.0 million in travel and entertainment expenses due to increased travel following the easing of COVID-19 travel restrictions, primarily in our U.S. Markets and International segments; and
- an increase of approximately $7.0 million in labor costs, as we continue to invest in key strategic growth initiatives;

partially offset by:

- a decrease in advertising expense of approximately $18.0 million, primarily in our Consumer Interactive segment; and
- a decrease of approximately $14.0 million from the impact of foreign currencies on the expenses of our International segment.

Depreciation and amortization

For 2023, depreciation and amortization was consistent with 2022.

For 2022, depreciation and amortization increased $142.0 million compared with 2021, due primarily to recent acquisitions of tangible and intangible assets.

Goodwill impairment

For 2023, we recorded a partial goodwill impairment of $414.0 million related to our United Kingdom reporting unit.

See Part II, Item 8, “Financial Statements and Supplementary Data - Notes to Consolidated Financial Statements,” Note 6, “Goodwill,” for additional information.

Restructuring

Restructuring expenses relate to our operating model optimization program. For 2023, these expenses include approximately $71.9 million related to employee separation and $3.4 million related to facility exits.

See Part II, Item 8, “Financial Statements and Supplementary Data - Notes to Consolidated Financial Statements,” Note 11, “Restructuring,” for additional information.

Non-Operating Income and (Expense)

Interest expense

As discussed above, in December 2021, we borrowed a significant amount of additional debt to fund our acquisition of Neustar, and in 2022 and 2023, we prepaid a significant amount of debt, both of which impact the comparability of interest expense between periods.

For 2023, interest expense increased $57.3 million compared with 2022. The increase in interest expense for 2023 was due primarily to the impact of an increase in the average periodic variable interest rate on the unhedged portion of our debt, partially offset by a decrease in outstanding principal balance due to the prepayments made in 2022 and 2023. Approximately 73.9% of this debt is hedged with interest rate swaps.

For 2022, interest expense increased $118.3 million compared with 2021. The increase in interest expense for 2022 was due primarily to additional borrowings of $3,100.0 million under our Senior Secured Credit Facility to fund the acquisition of Neustar on December 1, 2021, and the impact of an increase in the average interest rate.

Interest income

For 2023, interest income increased $16.1 million, compared with 2022. The increase was due primarily to interest earned on notes receivable, including the note receivable issued in connection with our sale of the non-core VF

businesses as discussed above, as discussed above, and an increase in interest on our investments due to the increase in interest rates.

For 2022, interest income was consistent with 2021.

Other income and (expense), net

Other income and (expense), net includes acquisition fees, loan fees, and various other income and expenses.

	Twelve months ended December 31,			Change			
				2023 vs. 2022		2022 vs. 2021	
	2023	2022	2021	$	%	$	%
Other income and (expense), net:							
Acquisition fees	$ (8.2)	$ (23.7)	$ (48.1)	$ 15.5	65.4 %	$ 24.4	50.7 %
Debt-related expenses	(11.5)	(11.0)	(19.6)	(0.5)	(4.5)%	8.6	43.9 %
Other income (expense), net	(3.0)	4.7	18.5	(7.7)	nm	(13.8)	(74.7)%
Total other income and (expense), net	$ (22.7)	$ (30.0)	$ (49.2)	$ 7.3	(24.3)%	$ 19.2	39.0 %

nm: not meaningful

As a result of displaying amounts in millions, rounding differences may exist in the table above.

Acquisition fees

Acquisition fees represent costs we have incurred for various acquisition-related efforts, for both executed and exploratory transactions, and include costs related to our acquisitions of Argus in 2022, and Neustar and Sontiq in 2021.

Debt-related expenses

For 2023, debt-related expenses included $9.3 million of unamortized original issue discount, deferred financing fees, and other related fees expensed as a result of our debt prepayments and refinancing of our Senior Secured Term Loan A-3 and $2.2 million of other debt financing expenses. For 2022, debt-related expenses included $9.3 million of deferred financing fees and other net costs expensed as a result of our repayment of our Senior Secured Term Loans and the partial repayment of our other Term Loans. For 2021, debt-related expenses included $17.9 million of deferred financing fees and other net costs expensed as a result of our repayment of our Second Lien Term Loan and the partial repayment of our other Term Loans. See Part II, Item 8, “Financial Statements and Supplementary Data - Notes to Consolidated Financial Statements,” Note 13, “Debt,” for additional information about our debt.

Other income (expense), net

For 2023, other income (expense), net included impairment losses totaling $15.9 million on Cost Method Investments in our U.S. Markets segment and Corporate in 2023, partially offset by a $10.1 million adjustment to the fair value of a put option liability related to a minority investment, gains and losses on other Cost Method investments, currency remeasurement gains and losses, dividends received from Cost Method Investments, and other miscellaneous non-operating income and expense items. For 2022, other income and expense included $6.8 million of reimbursements for transition services related to divested businesses, net of separation expenses, a $3.4 million gain related to a government tax reimbursement from a recent business acquisition and dividends received from cost method investments, partially offset by currency remeasurement losses and other miscellaneous non-operating income and expense items. For 2021, other income and expense included $18.4 million of gains on Cost Method investments, dividends received from cost method investments, currency remeasurement losses, and other miscellaneous non-operating income and expense items.

Provision for Income Taxes

For 2023, we reported a (30.8)% effective tax rate, which is lower than the 21.0% U.S. federal corporate statutory rate due primarily to the impact of non-deductible goodwill impairment, partially offset by benefits on the remeasurement of deferred taxes due to changes in state apportionment rates.

For 2022, we reported a 31.0% effective tax rate, which is higher than the 21.0% U.S. federal corporate statutory rate due primarily to increases in valuation allowances on foreign tax credit carryforwards, nondeductible expenses in connection with certain legal and regulatory matters and executive compensation limitations, and other rate-impacting items, partially offset by benefits from the research and development credit and excess tax benefits on stock-based compensation.

For 2021, we reported a 26.1% effective tax rate, which is higher than the 21.0% U.S. federal corporate statutory rate due primarily to recording tax expense related to the remeasurement of our U.K. deferred taxes to reflect an increase in the U.K. corporate tax rate enacted in the second quarter 2021 and nondeductible transaction costs and penalties, partially offset by excess tax benefits on stock based compensation and a tax benefit related to electing the Global Intangible Low Tax Income ("GILTI") high-tax exclusion retroactively for the 2018 and 2019 tax years. On July 20, 2020, the U.S. Treasury issued and enacted final regulations related to GILTI that allow certain U.S. taxpayers to elect to exclude foreign income that is subject to a high effective tax rate from their GILTI inclusions. The GILTI high-tax exclusion is an annual election and is retroactively available.

Segment Results of Operations—Twelve Months Ended December 31, 2023, 2022 and 2021

Management, including our chief operating decision maker ("CODM"), evaluates the financial performance of our businesses based on revenue and segment Adjusted EBITDA. For the twelve months ended December 31, 2023, 2022 and 2021, our segment revenue and Adjusted EBITDA were as follows:

Revenue, Adjusted EBITDA and Adjusted EBITDA margin by Segment

	Twelve months ended December 31,			Change			
				2023 vs. 2022		2022 vs. 2021	
	2023	2022	2021	$	%	$	%
Revenue:							
U.S. Markets gross revenue							
Financial Services	$1,280.3	$1,255.1	$1,090.0	$ 25.2	2.0 %	$ 165.1	15.1 %
Emerging Verticals	1,223.9	1,192.1	701.0	31.8	2.7 %	491.1	70.1 %
U.S. Markets gross revenue	$2,504.2	$2,447.3	$1,791.0	$ 56.9	2.3 %	$ 656.3	36.6 %
International:							
Canada	$ 139.5	$ 128.2	$ 126.9	$ 11.3	8.8 %	$ 1.2	1.0 %
Latin America	120.6	112.9	103.2	7.7	6.8 %	9.7	9.4 %
UK	197.2	203.0	216.5	(5.7)	(2.8)%	(13.5)	(6.2)%
Africa	60.6	61.7	59.5	(1.1)	(1.8)%	2.2	3.7 %
India	218.8	174.2	133.1	44.6	25.6 %	41.1	30.9 %
Asia Pacific	88.6	75.9	62.7	12.6	16.7 %	13.2	21.1 %
International gross revenue	$ 825.3	$ 755.9	$ 701.9	$ 69.4	9.2 %	$ 54.0	7.7 %
Consumer Interactive gross revenue	$ 579.7	$ 585.3	$ 545.8	$ (5.6)	(0.9)%	$ 39.5	7.2 %
Total gross revenue	$3,909.3	$3,788.4	$3,038.7	$ 120.8	3.2 %	$ 749.8	24.7 %
Intersegment revenue eliminations	(78.1)	(78.6)	(78.4)	0.5	nm	(0.1)	nm
Total revenue as reported	$3,831.2	$3,709.9	$2,960.2	$ 121.3	3.3 %	$ 749.6	25.3 %
Adjusted EBITDA:							
U.S. Markets	$ 846.8	$ 869.0	$ 717.2	$ (22.2)	(2.6)%	$ 151.8	21.2 %
International	361.5	329.3	300.1	32.2	9.8 %	29.2	9.7 %
Consumer Interactive	278.2	282.3	263.1	(4.1)	(1.5)%	19.3	7.3 %
Adjusted EBITDA margin:							
U.S. Markets	33.8 %	35.5 %	40.0 %		(1.7)%		(4.5)%
International	43.8 %	43.6 %	42.8 %		0.2 %		0.8 %
Consumer Interactive	48.0 %	48.2 %	48.2 %		(0.3)%		— %

nm: not meaningful

As a result of displaying amounts in millions, rounding differences may exist in the table above.

We define Adjusted EBITDA margin for our segments as the segment Adjusted EBITDA divided by segment gross revenue.

U.S. Markets Segment

Revenue

For 2023, U.S. Markets revenue increased $56.9 million, or 2.3%, compared with the same period in 2022, due to organic growth in both verticals and an increase of 0.8% from our acquisition of Argus, which is included in our Financial Services vertical. Revenue from Emerging Verticals and Financial Services increased $31.8 million and $25.2 million, respectively, as discussed below.

For 2022, U.S. Markets revenue increased $656.3 million, compared with the same period in 2021, due primarily to a 36.6% increase from our acquisitions of Neustar and Argus, partially offset by a decrease in organic revenue in our Financial Services vertical.

Financial Services: For 2023, Financial Services revenue increased $25.2 million, or 2.0%, compared to 2022, due primarily to a 1.6% increase from our acquisition of Argus, an increase in our Mortgage line of business primarily from price increases partially offset by volume declines due to higher interest rates, and an increase in our Auto line of business due to price and volume increases. These increases were partially offset by decreases in our Consumer Lending line of business due to softness in the FinTech space from increasing interest rates and in our Card and Banking line of business due primarily to a decrease in volume.

For 2022, Financial Services revenue increased $165.1 million, compared with 2021, due primarily to a 16.7% increase from our acquisitions of Neustar and Argus, partially offset by a decrease in organic revenue. Organic revenue decreased in our Mortgage line of business as volumes declined due to the significant increases in interest rates, which was partially offset by an increase in revenue from new product initiatives in our card and banking, consumer lending, and auto lines of business.

Emerging Verticals: For 2023, Emerging Verticals revenue increased $31.8 million, or 2.7%, compared with 2022, due to increases in our Technology, Commerce and Communications, Insurance, Service & Collections, Public Sector, and Media verticals due primarily to increased volumes in existing products and new products from our recent acquisitions, partially offset by a decrease in our Tenant and Employment vertical due to volume decreases.

For 2022, Emerging Verticals revenue increased $491.1 million, compared to 2022, due primarily to a 64.7% increase from our acquisition of Neustar and an increase in organic revenue. Organic revenue increased in all of our verticals due primarily to new wins in our existing product portfolio.

Adjusted EBITDA

For 2023, Adjusted EBITDA decreased $22.2 million due primarily to higher variable product costs and an increase in people costs, partially offset by an increase in revenue. Adjusted EBITDA margins decreased 1.7% due primarily to a shift in the revenue mix and the lower margin profile of the Argus business.

For 2022, Adjusted EBITDA increased $151.8 million due primarily to an increase in Adjusted EBITDA from recent acquisitions. Adjusted EBITDA margins decreased 4.5% due primarily to the impact of the lower margin profile of the Neustar business, integration costs from our acquisition of Argus, and an increase in product costs resulting from the increase in revenue, and a decrease in organic revenue in our financial services vertical, partially offset by an increase in organic revenue in our Emerging Verticals.

International Segment

Revenue

For 2023, International revenue increased $69.4 million, or 9.2%, compared with 2022. The increase was due primarily to higher local currency revenue in all regions except for the United Kingdom, driven by increased volumes from improving economic conditions and new product initiatives, partially offset by a decrease of 3.0% from the impact of foreign currencies.

For 2022, International revenue increased $54.0 million, or 7.7%, compared with 2021. The increase was due primarily to higher local currency revenue in all regions from increased volumes, which resulted from improving economic conditions and from new product initiatives, partially offset by a decrease of 7.3% from the impact of foreign currencies.

Canada: For 2023, Canada revenue increased $11.3 million, or 8.8%, compared with 2022. The increase was due primarily to higher local currency revenue from new business wins at large banks and FinTechs, increased breach volumes and other volume increases across key verticals, partially offset by a decrease of 4.0% from the impact of foreign currencies.

For 2022, Canada revenue increased $1.2 million, or 1.0%, compared with 2021. The increase was due primarily to higher local currency revenue from new business wins and incremental revenue with current customers, partially offset by a decrease of 3.8% from the impact of foreign currencies and revenue earned from a significant breach contract in the prior year.

Latin America: For 2023, Latin America revenue increased $7.7 million, or 6.8%, compared with 2022. The increase was due primarily to higher local currency revenue from new business in the financial services vertical and an increase in batch jobs and an increase of 0.8% from the impact of foreign currencies.

For 2022, Latin America revenue increased $9.7 million, or 9.4%, compared with 2021. The increase was due primarily to higher local currency revenue from growth across our markets reflecting good local macroeconomic conditions and consumer fundamentals and ongoing new business wins and expansion of our new solutions, partially offset by a decrease of 4.5% from the impact of foreign currencies.

United Kingdom: For 2023, United Kingdom revenue decreased $5.7 million, or 2.8%, compared with 2022. The decrease was primarily driven by the impact of a drop in volume for a one-time contract compared to the prior year and a decline in FinTech revenue, partially offset by volume growth from new products across most verticals and an increase of 0.5% from the impact of foreign currencies.

For 2022, United Kingdom revenue decreased $13.5 million, or 6.3%, compared with 2021. The decrease was primarily driven by a decrease of 10.3% from the impact of foreign currencies and a drop in volume for a one-time contract compared to the prior year, partially offset by and increase in local currency revenue due to an expansion of key product offerings.

Africa: For 2023, Africa revenue decreased $1.1 million, or 1.8%, compared to 2022. The decrease was primarily driven by a decrease of 12.8% from the impact of foreign currencies, partially offset by an increase in local currency revenue in South Africa from large customers in emerging verticals and growth in the insurance and financial services verticals.

For 2022, Africa revenue increased $2.2 million, or 3.8%, compared to 2021. The increase was due primarily to higher local currency revenue from meaningful new business wins and contract renewals as well as growth in emerging countries, partially offset by a decrease of 10.1% from the impact of foreign currencies.

India: For 2023, India revenue increased $44.6 million, or 25.6%, compared to 2022. The increase was due primarily to higher local currency revenue across all lines of business, including online, batch, consumer and commercial, partially offset by a decrease of 6.5% from the impact of foreign currencies.

For 2022, India revenue increased $41.1 million, or 30.9%, compared to 2021. The increase was due primarily to higher local currency revenue from growth in consumer lending and card issuance driven by consumers who continue to spend despite rising inflation, partially offset by a decrease of 8.4% from the impact of foreign currencies.

Asia Pacific: For 2023, Asia Pacific revenue increased $12.6 million, or 16.7%, compared to 2022. The increase was due primarily to higher local currency revenue in the Philippines from volume and batch increases in the financial services vertical and an increase in the Fintech vertical in Hong Kong, partially offset by a decrease in revenue of 0.6% from the impact of foreign currencies.

For 2022, Asia Pacific revenue increased $13.2 million, or 21.1%, due primarily to higher local currency revenue from increased volumes resulting from improved macroeconomic conditions, and new business wins, particularly in the Philippines and Hong Kong, partially offset by a decrease of 3.1% from the impact of foreign currencies.

Adjusted EBITDA

For 2023, Adjusted EBITDA increased $32.2 million due primarily to increased revenue in India and other regions as discussed above, partially offset by an increase in labor and other people-related costs to support growth initiatives in certain regions. Adjusted EBITDA margins were relatively flat as the revenue increase was largely offset by an increase in labor costs to support growth initiatives in certain regions.

For 2022, Adjusted EBITDA increased $29.2 million due primarily to increases in India and all of the other regions except the United Kingdom. Adjusted EBITDA margins increased 0.8% due primarily to an increase in local currency revenue and improving market conditions in most of our regions, partially offset by an increase in labor costs.

Consumer Interactive Segment

Revenue

For 2023, Consumer Interactive revenue decreased $5.6 million, or 0.9%, compared with 2022, due primarily to a decrease in revenue in our Direct channel as reduced advertising and slowing macroeconomic conditions significantly reduced consumer demand for our paid credit products, partially offset by an increase in revenue in our indirect channel from breach revenue and an increase in volumes.

For 2022, Consumer Interactive revenue increased $39.5 million, or 7.2%, compared with 2021, due primarily to an increase of 15.8% from our acquisition of Sontiq, partially offset by a decrease in revenue in both of our channels. In our Indirect channel, revenue decreased due primarily to a large breach services contract which was recognized in the second half of 2021. In our Direct channel, slowing macroeconomic conditions significantly reduced consumer demand for our paid credit products.

Adjusted EBITDA

For 2023, Adjusted EBITDA decreased $4.1 million due primarily to a decrease in revenue. For 2022, Adjusted EBITDA increased $19.3 million due primarily to an increase in revenue. Adjusted EBITDA margins for both years were relatively flat as the changes in revenue were offset by changes in costs, including advertising expenses.

Non-GAAP Measures—Twelve Months Ended December 31, 2023, 2022 and 2021

In addition to the GAAP measures discussed above, Management, including our CODM, evaluates the financial performance of our businesses based on the non-GAAP measures Consolidated Adjusted EBITDA, Consolidated Adjusted EBITDA Margin, Adjusted Net Income, Adjusted Diluted Earnings per Share, Adjusted Provision for Income Taxes, Adjusted Effective Tax Rate and Leverage Ratio.

Non-GAAP Financial Measures

We present Consolidated Adjusted EBITDA, Consolidated Adjusted EBITDA Margin, Adjusted Net Income, Adjusted Diluted Earnings per Share, Adjusted Provision for Income Taxes, Adjusted Effective Tax Rate and Leverage Ratio for all periods presented. These are important financial measures for the Company but are not financial measures as defined by GAAP. These financial measures should be reviewed in conjunction with the relevant GAAP financial measures and are not presented as alternative measures of GAAP. Other companies in our industry may define or calculate these measures differently than we do, limiting their usefulness as comparative measures. Because of these limitations, these non-GAAP financial measures should not be considered in isolation or as substitutes for performance measures calculated in accordance with GAAP, including operating income, operating margin, effective tax rate, net income (loss) attributable to the Company, diluted earnings per share or cash provided by operating activities. Reconciliations of these non-GAAP financial measures to their most directly comparable GAAP financial measures are presented in the tables below.

We present Consolidated Adjusted EBITDA, Consolidated Adjusted EBITDA Margin, Adjusted Net Income, Adjusted Diluted Earnings per Share, Adjusted Provision for Income Taxes and Adjusted Effective Tax Rate as supplemental measures of our operating performance because these measures eliminate the impact of certain items that we do not consider indicative of our cash operations and ongoing operating performance. These are measures frequently used by securities analysts, investors and other interested parties in their evaluation of the operating performance of companies similar to ours.

Our Board and executive management team use Adjusted EBITDA as an incentive compensation measure for most eligible employees and Adjusted Diluted Earnings per Share as an incentive compensation measure for certain of our senior executives.

Under the credit agreement governing our Senior Secured Credit Facility, our ability to engage in activities such as incurring additional indebtedness, making investments and paying dividends is tied to our Leverage Ratio which is partially based on Adjusted EBITDA. Investors also use our Leverage Ratio to assess our ability to service our debt and make other capital allocation decisions.

Consolidated Adjusted EBITDA

Management has excluded the following items from net income (loss) attributable to TransUnion in order to calculate Adjusted EBITDA for the periods presented:

- *Discontinued operations, net of tax,* as reported on our Consolidated Statements of Operations. We exclude discontinued operations, net of tax because we believe it does not reflect the underlying and ongoing performance of our business operations.
- *Net interest expense*, which is the sum of interest expense and interest income as reported on our Consolidated Statements of Operations.
- *Provision for income taxes,* as reported on our Consolidated Statements of Operations.
- *Depreciation and amortization,* as reported on our Consolidated Statements of Operations.
- *Goodwill impairment,* as reported on our Consolidated Statements of Operations. We exclude goodwill impairment because the amount of such expenses in any specific period may not directly correlate to the underlying performance of our business operations during that period and such expense can vary significantly between periods.
- *Stock-based compensation* is used as an incentive to engage and retain our employees. It is predominantly a non-cash expense. We exclude stock-based compensation because it may not correlate to the underlying performance of our business operations during the period since it is measured at the grant date fair value and it is subject to variability as a result of performance conditions and timing of grants. These expenses are reported within cost of services and selling, general and administrative on our Consolidated Statements of Operations.
- *Operating model optimization program* represents employee separation costs, facility lease exit costs, and other business process optimization expenses incurred in connection with the transformation plan discussed further in "Results of Operations - Factors Affecting Our Results of Operations." We exclude these expenses as we believe they are not directly correlated to the underlying performance of our business. Further, these costs will vary and may not be comparable during the transformation initiative as we progress toward an optimized operating model. These costs are reported primarily in selling, general and administrative and restructuring expenses on our Consolidated Statements of Operations.
- *Accelerated technology investment* includes Project Rise and the final phase of our technology investment announced in November 2023. Project Rise was announced in February 2020 and was originally expected to be completed in 2022. Following our acquisition of Neustar in December 2021, we recognized the opportunity to take advantage of Neustar's capabilities to enhance and complement our cloud-based technology already under development as part of Project Rise. As a result, we extended Project Rise's timeline to 2024 and increased the total estimated cost to approximately $240 million. In November 2023, we announced our plans to further leverage Neustar's technology to standardize and streamline our product delivery platforms and to build a single global platform for fulfillment of our product lines. The additional investment is expected to be approximately $90 million during 2024 and 2025 and represents the final phase of the technology investment in our global technology infrastructure and core customer applications. We expect that the accelerated technology investment will fundamentally transform our technology infrastructure by implementing a global cloud-based approach to streamline product development, increase the efficiency of ongoing operations and maintenance and enable a continuous improvement approach to avoid the need for another major technology overhaul in the foreseeable future. The unique effort to build a secure, reliable and performant hybrid cloud infrastructure requires us to dedicate separate resources in order to develop the new cloud-based infrastructure in parallel with our current on-premise environment by maintaining our existing technology team to ensure no disruptions to our customers. The costs associated with the accelerated technology investment are incremental and redundant costs that will not recur after the program has been completed and are not representative of our underlying operating performance. Therefore, we believe that excluding these costs from our non-GAAP measures provides a better reflection of our ongoing cost structure. These costs are primarily reported in cost of services and therefore do not include amounts that are capitalized as internally developed software.
- *Mergers and acquisitions, divestitures and business optimization* expenses are non-recurring expenses associated with specific transactions (exploratory or executed) and consist of (i) transaction and integration costs, (ii) post-acquisition adjustments to contingent consideration or to assets and liabilities that occurred after the acquisition measurement period, (iii) fair value and impairment adjustments related to investments and call and put options, (iv) transition services agreement income, and (v) a loss on disposal of a business. We exclude these expenses as we believe they are not directly correlated to the underlying performance of our business operations and vary depending upon the timing of such transactions. These expenses are reported in costs of services, selling, general and administrative and other income and (expenses), net, on our Consolidated Statements of Operations.
- *Net other* adjustments principally relate to: (i) deferred loan fee expense from debt prepayments and refinancing, (ii) currency remeasurement on foreign operations, (iii) other debt financing expenses consisting primarily of revolving credit facility deferred financing fee amortization and commitment fees and expenses associated with ratings agencies and interest rate hedging, (iv) legal and regulatory expenses, net, and (v) other non-operating (income) expense. We exclude these expenses as we believe they are not directly

correlated to the underlying performance of our business and create variability between periods based on the nature and timing of the expense or income. These costs are reported in selling, general and administrative and in non-operating income and expense, net as applicable based on their nature on our Consolidated Statements of Operations.

Consolidated Adjusted EBITDA Margin

Management defines Consolidated Adjusted EBITDA Margin as Consolidated Adjusted EBITDA divided by total revenue as reported.

Adjusted Net Income

Management has excluded the following items from net income (loss) attributable to TransUnion in order to calculate Adjusted Net Income for the periods presented:

- *Discontinued operations, net of tax* (see Consolidated Adjusted EBITDA above)
- *Goodwill impairment* (see Consolidated Adjusted EBITDA above)
- *Amortization of certain intangible assets* presents non-cash amortization expenses related to assets that arose from our 2012 change in control transaction and business combinations occurring after our 2012 change in control. We exclude these expenses as we believe they are not directly correlated to the underlying performance of our business operations and vary dependent upon the timing of the transactions that give rise to these assets. Amortization of intangible assets is included in depreciation and amortization on our Consolidated Statements of Operations.
- *Stock-based compensation* (see Consolidated Adjusted EBITDA above)
- *Operating model optimization program* (see Consolidated Adjusted EBITDA above)
- *Accelerated technology investment* (see Consolidated Adjusted EBITDA above)
- *Mergers and acquisitions, divestiture and business optimization* (see Consolidated Adjusted EBITDA above)
- *Net other* is consistent with the definition in Consolidated Adjusted EBITDA above except that other debt financing expenses and certain other miscellaneous income and expense that are included in the adjustment to calculate Adjusted EBITDA are excluded in the adjustment made to calculate Adjusted Net Income.
- *Total adjustments for income taxes* relates to the cumulative adjustments discussed below for Adjusted Provision for Income Taxes. This adjustment is made for the reasons indicated in Adjusted Provision for Income Taxes below. Adjustments related to the provision for income taxes are included in the line item by this name on our consolidated statement of operations.

Adjusted Diluted Earnings Per Share

Management defines Adjusted Diluted Earnings per Share as Adjusted Net Income divided by the weighted-average diluted shares outstanding.

Adjusted Provision for Income Taxes

Management has excluded the following items from our provision for income taxes for the periods presented:

- *Tax effect of above adjustments* represents the income tax effect of the adjustments related to Adjusted Net Income described above. The tax rate applied to each adjustment is based on the nature of each line item. We include the tax effect of the adjustments made to Adjusted Net Income to provide a comprehensive view of our adjusted net income.
- *Excess tax expense (benefit) for stock-based compensation* is the permanent difference between expenses recognized for book purposes and expenses recognized for tax purposes, in each case related to stock-based compensation expense. We exclude this amount from the Adjusted Provision for Income Taxes in order to be consistent with the exclusion of stock-based compensation from the calculation of Adjusted Net Income.
- *Other* principally relates to (i) deferred tax adjustments, including rate changes, (ii) infrequent or unusual valuation allowance adjustments, (iii) return to provision, tax authority audit adjustments, and reserves

related to prior periods, and (iv) other non-recurring items. We exclude these items because they create variability that impacts comparability between periods.

Adjusted Effective Tax Rate

Management defines Adjusted Effective Tax Rate as Adjusted Provision for Income Taxes divided by adjusted income from continuing operations before income taxes. We calculate adjusted income from continuing operations before income taxes by excluding the pre-tax adjustments in the calculation of Adjusted Net Income discussed above and noncontrolling interest related to these pre-tax adjustments from (loss) income from continuing operations before income taxes.

Leverage Ratio

Management defines Leverage Ratio as net debt divided by Consolidated Adjusted EBITDA for the most recent twelve-month period including twelve months of Adjusted EBITDA from significant acquisitions. Net debt is defined as total debt less cash and cash equivalents as reported on the balance sheet as of the end of the period.

For the twelve months ended December 31, 2023, 2022 and 2021, these non-GAAP measures were as follows:

Adjusted EBITDA and Adjusted EBITDA Margin

	Twelve Months Ended December 31,			Change 2023 vs. 2022		Change 2022 vs. 2021	
	2023	2022	2021	$	%	$	%
Reconciliation of net (loss) income attributable to TransUnion to consolidated Adjusted EBITDA:							
Net (loss) income attributable to TransUnion[6]	$(206.2)	$ 266.3	$1,390.3	$ (472.4)	nm	$(1,124.1)	(80.8)%
Discontinued operations, net of tax	0.7	(17.4)	(1,031.7)	18.1	nm	1,014.3	(98.3)%
Net (loss) income from continuing operations attributable to TransUnion[6]	$(205.4)	$ 248.9	$ 358.7	$ (454.3)	nm	$ (109.7)	(30.6)%
Net interest expense	267.5	226.2	109.2	41.3	18.3 %	117.1	nm
Provision for income taxes[6]	44.7	118.9	131.9	(74.2)	(62.4)%	(13.0)	(9.8)%
Depreciation and amortization	524.4	519.0	377.0	5.4	1.0 %	142.0	37.7 %
EBITDA[6]	$ 631.2	$1,113.1	$ 976.7	$ (481.9)	(43.3)%	$ 136.3	14.0 %
Adjustments to EBITDA:							
Goodwill impairment	414.0	—	—	414.0	nm	—	nm
Stock-based compensation	100.6	81.1	70.1	19.5	24.0 %	11.0	15.6 %
Operating model optimization program[1]	77.6	—	—	77.6	nm	—	nm
Accelerated technology investment[2,6]	70.6	54.0	39.7	16.6	30.7 %	14.3	36.0 %
Mergers and acquisitions, divestitures and business optimization[3]	34.6	50.7	52.6	(16.1)	(31.8)%	(1.9)	(3.6)%
Net other[4]	15.2	46.1	19.4	(30.9)	(67.0)%	26.7	nm
Total adjustments to EBITDA[6]	$ 712.5	$ 231.9	$ 181.8	$ 480.6	nm	$ 50.1	27.6 %
Consolidated Adjusted EBITDA[6]	$1,343.7	$1,344.9	$1,158.5	$ (1.3)	(0.1)%	$ 186.5	16.1 %
Net (loss) income attributable to TransUnion margin [6]	(5.4)%	7.2 %	47.0 %		(12.6)%		(39.8)%
Consolidated Adjusted EBITDA Margin[5,6]	35.1 %	36.3 %	39.1 %		(1.2)%		(2.8)%

nm: not meaningful

As a result of displaying amounts in millions, rounding differences may exist in the table above.

1. Consists of restructuring expenses of $71.9 million related to employee separation costs and $3.4 million related to non-cash facility lease impairments, as well as $2.3 million related to business process optimization expenses included primarily in selling, general and administrative.

2. Represents expenses associated with our accelerated technology investment to migrate to the cloud. There are three components of the accelerated technology investment: (i) building foundational capabilities which includes establishing a modern, API-based and services-oriented software architecture, (ii) the migration of each application and customer data to the new enterprise platform, including the redundant software costs during the migration period, as well as the efforts to decommission the legacy system, and (iii) program enablement, which includes dedicated resources to support the planning and execution of the program. The amounts for each category of cost are as follows:

	Twelve Months Ended December 31,		
	2023	2022	2021
Foundational Capabilities	$ 35.8	$ 34.1	$ 27.7
Migration Management	29.6	14.6	7.3
Program Enablement	5.2	5.3	4.7
Total accelerated technology investment	$ 70.6	$ 54.0	$ 39.7

3. Mergers and acquisitions, divestitures and business optimization consisted of the following adjustments:

	Twelve Months Ended December 31,		
	2023	2022	2021
Transaction and integration costs	$ 30.9	$ 56.9	$ 57.2
Post-acquisition adjustments	4.3	(3.4)	—
Fair value and impairment adjustments	1.6	4.0	(3.5)
Transition services agreement income	(2.5)	(6.8)	(1.1)
Loss on business disposal	0.3	—	—
Total mergers and acquisitions, divestitures and business optimization	$ 34.6	$ 50.7	$ 52.6

4. Net other consisted of the following adjustments:

	Twelve Months Ended December 31,		
	2023	2022	2021
Deferred loan fee expense from debt prepayments and refinancing	$ 9.3	$ 9.3	$ 17.9
Currency remeasurement on foreign operations	4.8	6.3	2.0
Other debt financing expenses	2.2	1.7	1.5
Legal and regulatory expenses, net	—	28.4	1.2
Other non-operating (income) and expense[a]	(1.0)	0.3	(3.3)
Total other adjustments	$ 15.2	$ 46.1	$ 19.4

   a. Other non-operating (income) and expense includes a $3.5 million net recovery from a fraud incident that occurred in July 2019 in our Asia Pacific region in the twelve months ended December 31, 2021.

5. Consolidated Adjusted EBITDA Margin is calculated by dividing Consolidated Adjusted EBITDA by total revenue.

6. Our results for the twelve months ended December 31, 2022 and 2021 have been adjusted to correct an immaterial error related to an over accrual of expenses, net of the related income tax effect, during the twelve months ended December 31, 2021, that had previously been corrected out of period during the twelve months ended December 31, 2022. A portion of this error impacted our accelerated technology investment adjustment.

Consolidated Adjusted EBITDA

For 2023, Consolidated Adjusted EBITDA was relatively consistent, as the increase in cost of services and selling, general and administrative expenses, excluding the operating expenses added back, was mostly offset by the increase in revenue, as disclosed in the discussions and tables above.

Adjusted EBITDA Margin decreased in 2023 primarily due to lower margins from our recent acquisitions and higher variable product costs in our U.S. Markets segment.

For 2022, Consolidated Adjusted EBITDA increased $186.5 million due primarily to an increase in Adjusted EBITDA from our recent acquisitions and the increase in revenue, partially offset by the increase in cost of services and selling, general and administrative expenses.

EBITDA Margin decreased in 2022 due primarily to lower margins from our recent acquisitions.

Adjusted Net Income and Adjusted Earnings Per Share

	Twelve Months Ended December 31,			Change 2023 vs. 2022		Change 2022 vs. 2021	
	2023	2022	2021	$	%	$	%
Reconciliation of net (loss) income attributable to TransUnion to Adjusted Net Income:							
Net (loss) income attributable to TransUnion[8]	$ (206.2)	$ 266.3	$ 1,390.3	$ (472.4)	nm	$(1,124.1)	(80.8)%
Discontinued operations, net of tax	0.7	(17.4)	(1,031.7)	18.1	nm	1,014.3	(98.3)%
(Loss) income from continuing operations attributable to TransUnion[8]	$ (205.4)	$ 248.9	$ 358.7	$ (454.3)	nm	$ (109.8)	(30.6)%
Pre-tax adjustments:							
Goodwill impairment	414.0	—	—	414.0	nm	—	nm
Amortization of certain intangible assets	293.6	306.7	189.3	(13.1)	(4.3)%	117.4	62.0 %
Stock-based compensation	100.6	81.1	70.1	19.5	24.0 %	11.0	15.7 %
Operating model optimization program[1]	77.6	—	—	77.6	nm	—	nm
Accelerated technology investment[2,8]	70.6	54.0	39.7	16.6	30.8 %	14.3	36.0 %
Mergers and acquisitions, divestitures and business optimization[3]	34.6	50.7	52.6	(16.1)	(31.7)%	(1.83)	(3.5)%
Net other[4]	14.0	44.3	17.7	(30.3)	(68.4)%	26.6	nm
Total adjustments before income tax items[8]	$ 1,005.0	$ 536.8	$ 369.4	$ 468.2	87.2 %	$ 167.4	45.3 %
Total adjustments for income taxes[5,8]	$ (144.1)	$ (86.8)	$ (62.3)	$ (57.3)	66.0 %	$ (24.5)	39.3 %
Adjusted Net Income[8]	$ 655.4	$ 698.9	$ 665.7	$ (43.5)	(6.2)%	$ 33.2	5.0 %
Weighted-average shares outstanding:							
Basic	193.4	192.5	191.4	0.9	0.5 %	1.1	0.6 %
Diluted	194.7	193.1	193.0	1.6	0.8 %	0.1	0.1 %
Adjusted Earnings per Share:[8]							
Basic	$ 3.39	$ 3.63	$ 3.48	$ (0.24)	(6.7)%	$ 0.15	4.3 %
Diluted	$ 3.37	$ 3.62	$ 3.45	$ (0.25)	(7.0)%	$ 0.17	4.9 %

	Twelve Months Ended December 31,		
	2023	2022	2021
Reconciliation of diluted (loss) earnings per share from net (loss) income attributable to TransUnion to Adjusted Diluted Earnings per Share:			
Diluted earnings per common share from:[7]			
Net (loss) income attributable to TransUnion[8]	$ (1.07)	$ 1.38	$ 7.20
Discontinued operations, net of tax	—	(0.09)	(5.35)
(Loss) income from continuing operations attributable to TransUnion[8]	$ (1.06)	$ 1.29	$ 1.86
Adjustments before income tax items:			
Goodwill impairment	2.13	—	—
Amortization of certain intangible assets	1.51	1.59	0.98
Stock-based compensation	0.52	0.42	0.36
Operating model optimization program[1]	0.40	—	—
Accelerated technology investment[2,8]	0.36	0.28	0.21
Mergers and acquisitions, divestitures and business optimization[3]	0.18	0.26	0.27
Net other[4]	0.07	0.23	0.09
Total adjustments before income tax items[8]	$ 5.16	$ 2.78	$ 1.91
Total adjustments for income taxes[5,8]	(0.74)	(0.45)	(0.32)
Impact of additional dilutive shares[6]	$ 0.02	$ —	$ —
Adjusted Diluted Earnings per Share[8]	$ 3.37	$ 3.62	$ 3.45

As a result of displaying amounts in millions, rounding differences may exist in the table above and footnotes below.

1. Consists of restructuring expenses of $71.9 million related to employee separation costs and $3.4 million related to non-cash facility lease impairments, as well as $2.3 million related to business process optimization expenses included primarily in selling, general and administrative.
2. Represents expenses associated with our accelerated technology investment to migrate to the cloud. There are three components of the accelerated technology investment: (i) building foundational capabilities which includes establishing a modern, API-based and services-oriented software architecture, (ii) the migration of each application and customer data to the new enterprise platform, including the redundant software costs during the migration period, as well as the efforts to decommission the legacy system, and (iii) program enablement, which includes dedicated resources to support the planning and execution of the program. The amounts for each category of cost are as follows:

	Twelve Months Ended December 31,		
	2023	2022	2021
Foundational Capabilities	$ 35.8	$ 34.1	$ 27.7
Migration Management	29.6	14.6	7.3
Program Enablement	5.2	5.3	4.7
Total accelerated technology investment	$ 70.6	$ 54.0	$ 39.7

3. Mergers and acquisitions, divestitures and business optimization consisted of the following adjustments:

	Twelve Months Ended December 31,		
	2023	2022	2021
Transaction and integration costs	$ 30.9	$ 56.9	$ 57.2
Post-acquisition adjustments	4.3	(3.4)	—
Fair value and impairment adjustments	1.6	4.0	(3.5)
Transition services agreement income	(2.5)	(6.8)	(1.1)
Loss on business disposal	0.3	—	—
Total mergers and acquisitions, divestitures and business optimization	$ 34.6	$ 50.7	$ 52.6

4. Net other consisted of the following adjustments:

	Twelve Months Ended December 31,		
	2023	2022	2021
Deferred loan fee expense from debt prepayments and refinancing	$ 9.3	$ 9.3	$ 17.9
Currency remeasurement on foreign operations	4.8	6.3	2.0
Legal and regulatory expenses, net	—	28.4	1.2
Other non-operating (income) and expense[a]	—	0.3	(3.5)
Total other adjustments	$ 14.0	$ 44.3	$ 17.7

   a. Other non-operating (income) and expense includes a $3.5 million net recovery from a fraud incident that occurred in July 2019 in our Asia Pacific region in the twelve months ended December 31, 2021.

5. Total adjustments for income taxes represents the total of adjustments discussed to calculate the Adjusted Provision for Income Taxes.
6. Diluted share counts for Adjusted Diluted Earnings Per Share includes an additional 1.3 million of dilutive securities for the twelve months ended December 31, 2023, which are not included in GAAP diluted weighted-average shares outstanding due to the Company's net loss position for the twelve months ended December 31, 2023.
7. For the twelve months ended December 31, 2023, each component of earnings per share is calculated independently, therefore, rounding differences exist in the table above.
8. Our results for the twelve months ended December 31, 2022 and 2021 have been adjusted to correct an immaterial error related to an over accrual of expenses, net of the related income tax effect, during the twelve months ended December 31, 2021, that had previously been corrected out of period during the twelve months ended December 31, 2022. A portion of this error impacted our accelerated technology investment adjustment and the income tax effect of this adjustment.

Adjusted Net Income

For 2023, Adjusted Net Income decreased slightly, due primarily to an increase in cost of services and selling, general and administrative expenses and net interest expense, partially offset by the increase in revenue.

For 2022, the increase in Adjusted Net Income was due primarily to earnings from our recent acquisitions and organic growth, partially offset by an increase in interest expense.

Adjusted Provision for Income Taxes and Effective Tax Rate

	Twelve Months Ended December 31,		
	2023	2022	2021
(Loss) income from continuing operations before income taxes[2]	$ (145.3)	$ 383.0	$ 505.6
Total adjustments before income tax items from Adjusted Net Income table above[2]	1,005.0	536.8	369.4
Noncontrolling interest portion of Adjusted Net Income adjustments	—	—	(2.0)
Adjusted income from continuing operations before income taxes[2]	$ 859.7	$ 919.8	$ 873.0
Reconciliation of Provision for income taxes to Adjusted Provision for Income Taxes			
Provision for income taxes[2]	$ (44.7)	$ (118.9)	$ (131.9)
Adjustments for income taxes:			
Tax effect of above adjustments[2]	(135.6)	(117.4)	(68.8)
Eliminate impact of excess tax expenses/(benefits) for stock-based compensation	3.0	(5.0)	(10.8)
Other[1]	(11.5)	35.6	17.3
Total adjustments for income taxes[2]	$ (144.1)	$ (86.8)	$ (62.3)
Adjusted Provision for Income Taxes[2]	$ (188.8)	$ (205.7)	$ (194.2)
Effective tax rate[2]	(30.8)%	31.0 %	26.1 %
Adjusted Effective Tax Rate[2]	22.0 %	22.4 %	22.2 %

As a result of displaying amounts in millions, rounding differences may exist in the table above.

1. Other adjustments for income taxes include:

	Twelve Months Ended December 31,		
	2023	2022	2021
Deferred tax adjustments	$ (12.9)	$ 6.7	$ 29.3
Valuation allowance adjustments	4.0	25.7	(4.5)
Return to provision, audit adjustments, and reserves related to prior periods	(1.0)	(0.3)	(5.4)
Other adjustments	(1.6)	3.5	(2.1)
Total other adjustments	$ (11.5)	$ 35.6	$ 17.3

2. Our results for the twelve months ended December 31, 2022 and 2021 have been adjusted to correct an immaterial error related to the income tax effect of an over accrual of expenses during the twelve months ended December 31, 2021, that had previously been corrected out of period during the twelve months ended December 31, 2022. A portion of this error impacted our accelerated technology investment adjustment and the income tax effect of this adjustment.

Adjusted Provision for Income Taxes

We reported an adjusted tax rate of 22.0%, 22.4% and 22.2%, for 2023, 2022 and 2021, respectively, each of which is higher than the 21.0% U.S. federal corporate statutory rate due primarily to increases for state taxes and foreign withholding taxes, partially offset by foreign taxes in jurisdictions which have tax rates lower than the U.S. federal corporate statutory rate and the research and development credit.

Leverage Ratio

	Twelve Months Ended December 31,		
	2023	2022	2021
Reconciliation of net (loss) income attributable to TransUnion to Consolidated Adjusted EBITDA:			
Net (loss) income attributable to TransUnion[7]	$ (206.2)	$ 266.3	$ 1,390.3
Discontinued operations, net of tax	0.7	(17.4)	(1,031.7)
(Loss) income from continuing operations attributable to TransUnion[7]	$ (205.4)	$ 248.9	$ 358.7
Net interest expense	267.5	226.2	109.2
Provision for income taxes[7]	44.7	118.9	131.9
Depreciation and amortization	524.4	519.0	377.0
EBITDA[7]	$ 631.2	$ 1,113.1	$ 976.7
Adjustments to EBITDA:			
Goodwill impairment	$ 414.0	$ —	$ —
Stock-based compensation	100.6	81.1	70.1
Operating model optimization program[1]	77.6	—	—
Accelerated technology investment[2,7]	70.6	54.0	39.7
Mergers and acquisitions, divestitures and business optimization[3]	34.6	50.7	52.6
Net other[4]	15.2	46.1	19.4
Total adjustments to EBITDA[7]	$ 712.5	$ 231.9	$ 181.8
Consolidated Adjusted EBITDA[7]	1,343.7	1,344.9	1,158.5
Adjusted EBITDA for Pre-Acquisition Period[5]	—	6.4	145.4
Leverage Ratio Adjusted EBITDA[7]	$ 1,343.7	$ 1,351.3	$ 1,303.9
Total debt	$ 5,340.4	$ 5,670.1	$ 6,365.9
Less: Cash and cash equivalents	476.2	585.3	1,842.4
Net Debt	$ 4,864.2	$ 5,084.8	$ 4,523.5
Ratio of Net Debt to Net (loss) income attributable to TransUnion[7]	(23.6)	19.1	3.3
Leverage Ratio[6,7]	3.6	3.8	3.5

As a result of displaying amounts in millions, rounding differences may exist in the table above.

1. Consists of restructuring expenses of $71.9 million related to employee separation costs and $3.4 million related to non-cash facility lease impairments, as well as $2.3 million related to business process optimization expenses included primarily in selling, general and administrative.

2. Represents expenses associated with our accelerated technology investment to migrate to the cloud. There are three components of the accelerated technology investment: (i) building foundational capabilities which includes establishing a modern, API-based and services-oriented software architecture, (ii) the migration of each application and customer data to the new enterprise platform including the redundant software costs during the migration period, as well as the efforts to decommission the legacy system, and (iii) program enablement, which includes dedicated resources to support the planning and execution of the program. The amounts for each category of cost are as follows:

	Twelve Months Ended December 31,		
	2023	2022	2021
Foundational Capabilities	$ 35.8	$ 34.1	$ 27.7
Migration Management	29.6	14.6	7.3
Program Enablement	5.2	5.3	4.7
Total accelerated technology investment	$ 70.6	$ 54.0	$ 39.7

3. Mergers and acquisitions, divestitures and business optimization consisted of the following adjustments:

	Twelve Months Ended December 31,		
	2023	2022	2021
Transaction and integration costs	$ 30.9	$ 56.9	$ 57.2
Post-acquisition adjustments	4.3	(3.4)	—
Fair value and impairment adjustments	1.6	4.0	(3.5)
Transition services agreement income	(2.5)	(6.8)	(1.1)
Loss on business disposal	0.3	—	—
Total mergers and acquisitions, divestitures and business optimization	$ 34.6	$ 50.7	$ 52.6

4. Net other consisted of the following adjustments:

	Twelve Months Ended December 31,		
	2023	2022	2021
Deferred loan fee expense from debt prepayments and refinancing	$ 9.3	$ 9.3	$ 17.9
Currency remeasurement on foreign operations	4.8	6.3	2.0
Other debt financing expenses	2.2	1.7	1.5
Legal and regulatory expenses, net	—	28.4	1.2
Other non-operating (income) and expense[a]	(1.0)	0.3	(3.3)
Total other adjustments	$ 15.2	$ 46.1	$ 19.4

   a. Other non-operating (income) and expense includes a $3.5 million net recovery from a fraud incident that occurred in July 2019 in our Asia Pacific region in the twelve months ended December 31, 2021.

5. For years in which we made significant acquisitions, we have included a twelve-month period of adjusted EBITDA including Adjusted EBITDA for the period prior to our acquisition. The twelve months ended December 31, 2021 includes the eleven months of Adjusted EBITDA related to Neustar and Sontiq prior to our acquisitions in December 2021. The twelve months ended December 31, 2022 includes the three months of Adjusted EBITDA related to Argus prior to our acquisition in April 2022.
6. We define Leverage Ratio as net debt divided by Leverage Ratio Adjusted EBITDA as shown in the table above.
7. Our results for the twelve months ended December 31, 2022 and 2021 have been adjusted to correct an immaterial error related to an over accrual of expenses, net of the related income tax effect, during the twelve months ended December 31, 2021, that had previously been corrected out of period during the twelve months ended December 31, 2022. A portion of this error impacted our accelerated technology investment adjustment.

Our Leverage Ratio decreased in 2023 compared with 2022 due primarily to a decrease in debt due to our prepayments and scheduled repayments made throughout the year and a decrease in Adjusted EBITDA, partially offset by a corresponding decrease in cash used to make the debt payments, which was partially offset by cash generated from operations. Our Leverage Ratio increased in 2022 compared with 2021 due primarily to the decrease in cash as a result of our acquisition of VF and the payment of taxes due on the gain on the divestiture of our Healthcare business, partially offset by proceeds received from the sale of the non-core VF businesses.

Liquidity and Capital Resources

Overview

Our principal sources of liquidity are cash flows provided by operating activities, cash and cash equivalents on hand, and our Senior Secured Revolving Line of Credit. Our principal uses of liquidity are working capital, capital expenditures, debt service and other capital structure obligations, business acquisitions, dividends, and other general corporate purposes. We believe our cash on hand, cash generated from operations, and funds available under the Senior Secured Revolving Line of Credit will be sufficient to fund our planned capital expenditures, debt service and other capital structure obligations, business acquisitions, dividends, and operating needs for the foreseeable future. Our ability to maintain adequate liquidity for our operations in the future is dependent upon a number of factors, including our revenue, macroeconomic conditions, our ability to contain costs, including capital expenditures, and to collect accounts receivable, and various other factors, many of which are beyond our control. We will continue to monitor our liquidity position and may elect to raise funds through debt or equity financing in the future to fund significant investments or acquisitions that are consistent with our growth strategy.

Cash and cash equivalents totaled $476.2 million and $585.3 million at December 31, 2023 and 2022, respectively, of which $356.4 million and $303.4 million was held outside the United States in each respective period. As of December 31, 2023, we had no outstanding balance under the Senior Secured Revolving Credit Facility and $1.2 million of outstanding letters of credit and an available borrowing balance of $598.8 million.

We also have the ability to request incremental loans on the same terms under the existing Senior Secured Credit Facility up to the greater of an additional $1,000.0 million and 100% of Consolidated EBITDA. In addition, as long as the senior secured net leverage ratio does not exceed 4.25-to-1, we may incur additional incremental loans, subject to certain additional conditions and commitments by existing or new lenders to fund any additional borrowings.

During the year ended December 31, 2023, we prepaid $250.0 million of our Senior Secured Term Loan B-6, funded from our cash-on-hand. As discussed above in “Results of Operations - Factors Affecting our Results of Operations,” we used proceeds from the October 27, 2023 refinancing of our Senior Secured Term Loan A-3 to prepay $300.0 million of Senior Secured Term Loan B-6.

Each year, the Company may be required to make additional principal payments on the Senior Secured Term Loan B based on excess cash flows of the prior year, as defined in our credit agreement. There were no excess cash flows for 2023 and therefore no additional payment will be required in 2024. See Part II, Item 8, “Financial Statements and Supplementary Data - Notes to Consolidated Financial Statements,” Note 13, “Debt,” for additional information about our debt.

With certain exceptions, the Senior Secured Credit Facility obligations are secured by a first-priority security interest in substantially all of the assets of Trans Union LLC, including its investments in subsidiaries. The Senior Secured Credit Facility contains various restrictions and nonfinancial covenants, along with a senior secured net leverage ratio test. The nonfinancial covenants include restrictions on dividends, investments, dispositions, future borrowings and other specified payments, as well as additional reporting and disclosure requirements. The senior secured net leverage test must be met as a condition to incur additional indebtedness, make certain investments, and may be required to make certain restricted payments. The senior secured net leverage ratio must not exceed 5.5-to-1 at any such measurement date.

On February 8, 2024, the Company refinanced its Senior Secured Term Loan B-6. The aggregate principal amount of this debt instrument immediately following the transaction was approximately $1.9 billion. See Part II, Item 8, “Financial Statements and Supplementary Data - Notes to Consolidated Financial Statements,” Note 25, “Subsequent Event,” for additional information about the refinancing.

The dividend rate was $0.105 per share in each quarter of 2023 and the third and fourth quarters of 2022, $0.095 per share in each quarter from the second quarter of 2021 to the second quarter of 2022, and $0.075 per share in the first quarter of 2021. During 2023, we paid total dividends of $81.8 million. Dividends declared accrue to outstanding restricted stock units and are paid to employees as dividend equivalents when the restricted stock units vest. While we currently expect to continue to pay quarterly dividends, any determination to pay dividends in the future will be at the discretion of our Board and will depend on a number of factors, including our liquidity, results of operations, financial condition, contractual restrictions, restrictions imposed by applicable law and other factors that our Board deems appropriate. We currently have capacity and intend to continue to pay a quarterly dividend, subject to approval by our Board.

In February 2017, our Board authorized the repurchase of up to $300.0 million of our common stock over the next 3 years. Our Board removed the three-year time limitation in February 2018. To date, we have repurchased $133.5 million of our common stock and have the ability to repurchase the remaining $166.5 million.

We have no obligation to repurchase additional shares, and the timing, actual number and value of the shares that are repurchased, if any, will be at the discretion of management and will depend on a number of factors, including market conditions, the cost of repurchasing shares, the availability of alternative investment opportunities, liquidity, and other factors deemed appropriate. Repurchases may be suspended, terminated or modified at any time for any reason. Any repurchased shares will have the status of treasury shares and may be used, if and when needed, for general corporate purposes.

Sources and Uses of Cash

	Twelve months ended December 31,			Change	
(dollars in millions)	2023	2022	2021	2023 vs. 2022	2022 vs. 2021
Cash provided by operating activities	$ 645.4	$ 297.2	$ 808.3	$ 348.2	$ (511.1)
Cash used in investing activities	(318.9)	(723.9)	(2,212.9)	405.0	1,489.0
Cash (used in) provided by financing activities	(438.8)	(820.5)	2,762.3	381.7	(3,582.8)
Effect of exchange rate changes on cash and cash equivalents	3.2	(9.9)	(8.0)	13.1	(1.9)
Net change in cash and cash equivalents	$ (109.1)	$ (1,257.1)	$ 1,349.7	$ 1,148.0	$ (2,606.8)

Operating Activities

For 2023, the increase in cash provided by operating activities was due primarily to prior year taxes paid on the gain from the divestiture of our Healthcare business and lower bonus and commission payments in the current year, partially offset by an increase in interest expense. For 2022, decrease in cash provided by operating activities was due primarily to payments for taxes due on the gain on the divestiture of our Healthcare business made in 2022, an increase in interest expense and an increase in cash paid for accrued incentive and other compensation.

Investing Activities

For 2023, the decrease in cash used in investing activities was due primarily to cash used for acquisitions of $508.1 million in 2022, partially offset by $103.6 million of proceeds from the sale of discontinued operations. For 2022, the decrease in cash used in investing activities was due primarily to $508.1 million of cash used for acquisitions in 2022 compared with $3,596.1 million in 2021, partially offset by $103.6 million of proceeds from the sale of discontinued operations in 2022 compared with $1,706.8 million in 2021 and an increase in capital expenditures.

Financing Activities

For 2023, the decrease in cash used in financing activities was due primarily to a decrease in debt payments and cash used to pay employee taxes on restricted stock. For 2022, the decrease in cash from financing activities was due primarily to net debt proceeds in 2021 to fund our acquisitions partially offset by an increase in debt prepayments in 2022.

Capital Expenditures

We make capital expenditures to grow our business by developing new and enhanced capabilities, to increase the effectiveness and efficiency of the organization and to reduce risks. We make capital expenditures for product development, disaster recovery, security enhancements, regulatory compliance, and the replacement and upgrade of existing equipment at the end of its useful life.

For 2023, cash paid for capital expenditures increased $12.6 million to $310.7 million. For 2022, cash paid for capital expenditures increased $74.0 million to $298.2 million. Capital expenditures as a percent of revenue represented 8.1% and 8.0% for 2023 and 2022, respectively.

Debt

Hedges

Effective May 31, 2023, we amended all our interest rate swaps to replace the reference rate from LIBOR to Term SOFR. We applied the practical expedient for reference rate reform to continue to apply hedge accounting to the existing relationships.

On November 16, 2022, we entered into interest rate swap agreements with various counterparties that effectively fix our variable interest rate exposure on a portion of our Senior Secured Term Loan or similar replacement debt. The new swaps commenced on December 30, 2022, and expire on December 31, 2024, with a current aggregate notional amount of $1,300.0 million that amortizes each quarter. The swaps require us to pay fixed rates varying between 4.3380% and 4.3870% in exchange for receiving a variable rate that matches the variable rate on our loans. We have designated these swap agreements as cash flow hedges.

On December 23, 2021, we entered into interest rate swap agreements with various counterparties that effectively fix our LIBOR exposure on a portion of our Senior Secured Term Loan or similar replacement debt. The swaps commenced on December 31, 2021, and expire on December 31, 2026, with a current aggregate notional amount of $1,568.0 million that amortizes each quarter. The swaps require us to pay fixed rates varying between 1.3800% and 1.3915% in exchange for receiving a variable rate that matches the variable rate on our loans. We have designated these swap agreements as cash flow hedges.

On March 10, 2020, we entered into two tranches of interest rate swap agreements with various counterparties that effectively fix our variable interest rate exposure on a portion of our Senior Secured Term Loans or similar replacement debt. The first swap commenced on June 30, 2020, and expired on June 30, 2022. The second swap commences on June 30, 2022, and expires on June 30, 2025, with a current aggregate notional amount of $1,080.0 million that amortizes each quarter after it commences. The second swap requires us to pay fixed rates varying between 0.8680% and 0.8800% in exchange for receiving a variable rate that matches the variable rate on our loans. We have designated these swap agreements as cash flow hedges.

Effect of Certain Debt Covenants

A breach of any of the covenants under the agreements governing our debt could limit our ability to borrow funds under the Senior Secured Revolving Line of Credit and could result in a default under the Senior Secured Credit Facility. Upon the occurrence of an event of default under the Senior Secured Credit Facility, the lenders could elect to declare all amounts then outstanding to be immediately due and payable, and the lenders could terminate all commitments to extend further credit. If we were unable to repay the amounts declared due, the lenders could proceed against any collateral granted to them to secure that indebtedness.

With certain exceptions, the Senior Secured Credit Facility obligations are secured by a first-priority security interest in substantially all of the assets of Trans Union LLC, including its investment in subsidiaries. The Senior Secured Credit Facility contains various restrictions and nonfinancial covenants, along with a senior secured net leverage ratio test. The nonfinancial covenants include restrictions on dividends, investments, dispositions, future borrowings and other specified payments, as well as additional reporting and disclosure requirements. The senior secured net leverage test must be met as a condition to incur additional indebtedness, make certain investments, and may be required to make certain restricted payments. The senior secured net leverage ratio must not exceed 5.5-to-1 at any such measurement date. Under the terms of the Senior Secured Credit Facility, TransUnion may make dividend payments up to the greater of $100 million or 10.0% of Consolidated EBITDA per year, or an unlimited amount provided that no default or event of default exists and so long as the total net leverage ratio does not exceed 4.75-to-1. As of December 31, 2023, we were in compliance with all debt covenants.

Our ability to meet our liquidity needs or to pay dividends on our common stock depends on our subsidiaries' earnings, the terms of their indebtedness, and other contractual restrictions.

For additional information about our debt and hedge, see Part II, Item 8, "Financial Statements and Supplementary Data — Notes to Consolidated Financial Statements," Note 13, "Debt."

Contractual Obligations

Refer to Part II, Item 8, "Financial Statements and Supplementary Data — Notes to Consolidated Financial Statements," Note 13, "Debt," Note 14, "Leases" and Note 22, "Commitments," for information about our long-term debt obligations, noncancelable lease obligations, and noncancelable purchase obligations as of December 31, 2023.

Application of Critical Accounting Estimates

We prepare our consolidated financial statements in conformity with generally accepted accounting principles ("GAAP"). See Part II, Item 8, "Financial Statements and Supplementary Data — Notes to Consolidated Financial Statements," Note 1, "Significant Accounting and Reporting Policies," for additional information about our significant accounting and reporting policies that require us to make certain judgments and estimates in reporting our operating results and our assets and liabilities.

The following paragraphs describe the accounting policies that require significant judgment and estimates due to inherent uncertainty or complexity.

Goodwill

As of December 31, 2023, our Consolidated Balance Sheet included goodwill of $5,176.0 million. We test goodwill for impairment on an annual basis in the fourth quarter and monitor throughout the year for impairment triggering events that indicate that the carrying value of one or more of our reporting units exceeds its fair value. We have the option to first perform a qualitative analysis to determine if it is more likely than not that the fair value of a reporting unit is less than its carrying value. If the qualitative analysis indicates that an impairment is more likely than not for any reporting unit, we perform a quantitative impairment test for that reporting unit. We also have the option to bypass the qualitative analysis for any reporting unit and proceed directly to performing a quantitative impairment test.

Our quantitative impairment test consists of a fair value calculation for each reporting unit that combines an income approach, using the discounted cash flow method, and a market approach, using the guideline public company method. The quantitative impairment test requires the application of a number of significant assumptions, including estimates of future revenue growth rates, EBITDA margins, discount rates, and market multiples. The projected future revenue growth rates and EBITDA margins, and the resulting projected cash flows of each reporting unit are based on historical experience and internal operating plans reviewed by management, extrapolated over the forecast period. Discount rates are determined using a weighted average cost of capital adjusted for risk factors specific to each reporting unit. Market multiples are based on the Guideline Public Company Method using comparable publicly traded company multiples of EBITDA for a group of benchmark companies.

We believe the assumptions that we use in our impairment analysis are reasonable and consistent with assumptions that would be used by other marketplace participants. However, such assumptions are inherently uncertain, and a change in assumptions could change the estimated fair values of our reporting units and, therefore, future impairment charges could be required, which could be material to the consolidated financial statements. In order to ensure the assumptions used in the analysis are reasonable, we reconcile the sum of the fair value of the reporting units to our market capitalization adjusted for an estimated control premium.

When we perform a quantitative impairment test, we engage a third-party valuation specialist to assist in our analysis of the fair value of our reporting units. All judgments, significant assumptions and estimates, and forecasts are either provided by or reviewed by us. While we choose to utilize a third-party valuation specialist for assistance, the fair value analyses reflect the conclusions of management and not those of any third party.

Third Quarter Interim Impairment Test for United Kingdom Reporting Unit

During the three months ended September 30, 2023, we identified a triggering event requiring an interim impairment assessment for our United Kingdom reporting unit, which resulted in a goodwill impairment of $414.0 million. The worsening macroeconomic conditions during the third quarter from inflationary pressures and rising interest rates increasingly impacted our United Kingdom business for the third quarter and the near-term outlook. Due to these factors, management believes the U.K. recovery will take longer, and will be at a slower pace, than previously expected. As a result, we revised our short-term and mid-term forecasts for revenue and EBITDA expectations for our United Kingdom reporting unit. These factors particularly impacted the online-only FinTech lenders that represent the largest vertical within our United Kingdom reporting unit. These lenders experienced declines in their access to capital impacting their ability to lend and in some cases leading to bankruptcies.

Annual Impairment Test

For our 2023 annual impairment test, we elected to bypass the qualitative goodwill impairment analysis similar to 2022 and 2021, and instead performed a quantitative goodwill impairment test for all reporting units. For each of our reporting units, the fair value exceeded the carrying value and no impairment was recorded. For our United Kingdom reporting unit, the fair value approximates the carrying value as a result of the impairment recorded in the three months ended September 30, 2023. Our annual impairment test for the United Kingdom reporting unit indicated no further impairment was required. As of December 31, 2023, we had $288.8 million of goodwill for our United Kingdom reporting unit, and an accumulated goodwill impairment of $414.0 million. Additionally, we did not identify any triggering events in the fourth quarter subsequent to our annual test that would require an interim impairment test for any of the reporting units.

We believe the assumptions that we used in our interim and annual impairment assessments for our United Kingdom reporting unit are reasonable and consistent with assumptions that would be used by other marketplace participants. However, such assumptions are inherently uncertain, and a change in assumptions could change the estimated fair value of our United Kingdom reporting unit. Therefore, future impairments of our United Kingdom reporting unit could be required, which could be material to the consolidated financial statements.

We performed a sensitivity assessment for the significant assumptions used with the annual goodwill impairment analysis for the United Kingdom reporting unit as of October 31, 2023:

- A hypothetical 50 basis point increase to the discount rate, holding all other assumptions constant, would result in a further impairment expense of approximately $35 million determined by the income approach.
- A hypothetical decrease in the expected average annual revenue growth rate of approximately 70 basis points over the entire forecast period, holding all other assumptions constant, would result in a further impairment expense of approximately $30 million determined by the income approach.
- A hypothetical decrease in the expected EBITDA margins of 150 basis points in each year over the entire forecast period, holding all other assumptions constant, would result in a further impairment expense of $30 million determined by the income approach.

Legal Contingencies

We are routinely named as defendants in, or parties to, various legal actions and proceedings relating to our current or past business operations. These actions generally assert claims for violations of federal or state credit reporting, consumer protection or privacy laws, or common law claims related to the unfair treatment of consumers, and may include claims for substantial or indeterminate compensatory or punitive damages, or injunctive relief, and may seek business practice changes. We believe that most of these claims are either without merit or we have valid defenses to the claims, and we vigorously defend these matters or seek non-monetary or small monetary settlements, if possible. However, due to the uncertainties inherent in litigation, we cannot predict the outcome of each claim in each instance.

In the ordinary course of business, we also are subject to governmental and regulatory examinations, information-gathering requests, investigations and proceedings (both formal and informal), certain of which may result in adverse judgments, settlements, fines, penalties, injunctions or other relief. In connection with formal and informal inquiries by these regulators, we routinely receive requests, subpoenas and orders seeking documents, testimony, and other information in connection with various aspects of our activities.

In view of the inherent unpredictability of legal and regulatory matters, particularly where the damages sought are substantial or indeterminate or when the proceedings or investigations are in the early stages, we cannot determine with any degree of certainty the timing or ultimate resolution of legal and regulatory matters or the eventual loss, fines or penalties, if any, that may result from such matters. We establish reserves for legal and regulatory matters when those matters present loss contingencies that are both probable and can be reasonably estimated. However, for certain of the matters, we are not able to reasonably estimate our exposure because damages have not been specified and (i) the proceedings are in early stages, (ii) there is uncertainty as to the likelihood of a class being certified or the ultimate size of the class, (iii) there is uncertainty as to the outcome of similar matters pending against our competitors, (iv) there are significant factual issues to be resolved, and/or (v) there are legal issues of a first impression being presented. The actual costs of resolving legal and regulatory matters, however, may be substantially higher than the amounts reserved for those matters, and an adverse outcome in certain of these matters could have a material adverse effect on our consolidated financial statements in particular quarterly or annual periods. We accrue amounts for certain legal and regulatory matters for which losses were considered to be probable of occurring based on our best estimate of the most likely outcome. It is reasonably possible actual losses could be significantly different from our current estimates. In addition, there are some matters for which it is reasonably possible that a loss will occur, however we cannot estimate a range of the potential losses for these matters. Legal fees incurred in connection with ongoing legal and regulatory matters are considered a period cost and are expensed as incurred.

To reduce our exposure to an unexpected significant monetary award resulting from an adverse judicial decision, we maintain insurance that we believe is appropriate and adequate based on our historical experience. We regularly advise our insurance carriers of the claims, threatened or pending, against us in legal and regulatory matters and generally receive a reservation of rights letter from the carriers when such claims exceed applicable deductibles. We are not aware of any significant monetary claim that has been asserted against us in the course of pending litigation except for the lawsuit filed by the CFPB referenced below, that would not have some level of coverage by insurance after the relevant deductible, if any, is met.

As of December 31, 2023 and 2022, we accrued $147.8 million and $125.0 million, respectively, for anticipated claims. These amounts were recorded in other accrued liabilities in the Consolidated Balance Sheets and the associated expenses were recorded in selling, general and administrative expenses in the Consolidated Statements of Operations. Legal fees incurred in connection with ongoing litigation are considered period costs and are expensed as incurred.

See Part II, Item 8 “Financial Statements and Supplementary Data - Notes to Consolidated Financial Statements,” Note 23, “Contingencies,” for further information.

Income Taxes

As of December 31, 2023, our Consolidated Balance Sheet included non-current deferred tax liabilities of $592.9 million. Certain deferred tax assets, including net operating loss and foreign tax credit carryforwards, may be deducted from future taxable income in computing our federal income tax liability. Our deferred tax liability includes deferred tax assets and liabilities resulting from net operating losses, tax credit carryforwards and temporary differences.

We have made certain judgments and estimates to determine various tax amounts recorded, including future tax rates, future taxable income, whether it is more likely than not a tax position will be sustained, and the amount of the unrecognized tax benefit to record. We have deferred tax assets related to loss and credit carryforwards of $228.0 million, net of valuation allowances of $104.7 million. Our estimate of the amount of the deferred tax asset we can realize requires significant assumptions about projected revenues and income that are impacted by future market and economic conditions. We believe the judgments and estimates used are reasonable, but events may arise that were not anticipated and the outcome of tax audits may differ significantly from what is expected.

Recent Accounting Pronouncements

For information about recent accounting pronouncements and the potential impact on our consolidated financial statements, see Part II, Item 8, “Financial Statements and Supplementary Data - Notes to Consolidated Financial Statements,” Note 1, “Significant Accounting and Reporting Policies.”

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

In the normal course of business, we are exposed to market risk, primarily from changes in variable interest rates and foreign currency exchange rates, which could impact our results of operations and financial position. We manage the exposure to this market risk through our regular operating and financing activities. We may use derivative financial instruments, such as foreign currency and interest rate hedges, but only as a risk management tool and not for speculative or trading purposes.

Interest Rate Risk

Our Senior Secured Credit Facility consists of senior secured term loans and a $600.0 million Senior Secured Revolving Line of Credit. The variable interest rates on these borrowings are based, at our election, on SOFR or an alternate base rate, subject to floors, plus applicable margins based on applicable net leverage ratios. As of December 31, 2023, essentially all of our outstanding debt was variable-rate debt, and had a weighted-average interest rate of 7.33% and a weighted-average life of 4.07 years. During 2023, a 10% change in the average Term SOFR rates utilized in the calculation of our actual interest expense would have increased our interest expense by approximately $8.0 million for the year.

On November 16, 2022, we entered into interest rate swap agreements with various counterparties that effectively fix our variable interest rate exposure on a portion of our Senior Secured Term Loan or similar replacement debt. The new swaps commenced on December 30, 2022, and expire on December 31, 2024, with a current aggregate notional amount of $1,300.0 million that amortizes each quarter. The new swaps require us to pay fixed rates varying between 4.3380% and 4.3870% in exchange for receiving a variable rate that matches the variable rate on our loans. We have designated these swap agreements as cash flow hedges.

On December 23, 2021, we entered into interest rate swap agreements with various counterparties that effectively fix our variable interest rate exposure on a portion of our Senior Secured Term Loan or similar replacement debt. The new swaps commenced on December 31, 2021, and expire on December 31, 2026, with a current aggregate notional amount of $1,568.0 million that amortizes each quarter. The tranche requires us to pay fixed rates varying between 1.3800% and 1.3915% in exchange for receiving a variable rate that matches the variable rate on our loans. We have designated these swap agreements as cash flow hedges.

On March 10, 2020, we entered into two interest rate swap agreements with various counterparties that effectively fix our variable interest rate exposure on a portion of our Senior Secured Term Loans or similar replacement debt. The first swap commenced on June 30, 2020, and expired on June 30, 2022. The second swap commences on June 30, 2022, and expires on June 30, 2025, with an initial aggregate notional amount of $1,080.0 million that amortizes each quarter after it commences. The second swap requires us to pay fixed rates varying between 0.8680% and 0.8800% in exchange for receiving a variable rate that matches the variable rate on our loans. We have designated these swap agreements as cash flow hedges.

Based on the amount of unhedged outstanding variable-rate debt, we have a material exposure to interest rate risk. In the future our exposure to interest rate risk may change due to changes in the amount borrowed, changes in interest rates, or changes in the amount we have hedged. The amount of our outstanding debt, and the ratio of fixed-rate debt to variable-rate debt, can be expected to vary as a result of future business requirements, market conditions or other factors.

See Part II, Item 8, “Financial Statements and Supplementary Data - Notes to Consolidated Financial Statements,” Note 13, “Debt,” for additional information about interest rates on our debt.

Foreign Currency Exchange Rate Risk

A substantial majority of our revenue, expense and capital expenditure activities are transacted in U.S. dollars. However, we transact business in a number of foreign currencies, including British pounds sterling, the South African rand, the Canadian dollar, the Indian rupee, the Colombian peso and the Brazilian real. In reporting the results of our foreign operations, we benefit from a weaker U.S. dollar and are adversely affected by a stronger U.S. dollar relative to the foreign currencies.

We are required to translate the assets and liabilities of our foreign subsidiaries that are measured in foreign currencies at the applicable period-end exchange rate in our Consolidated Balance Sheets. We are required to translate revenue and expenses at the average exchange rates prevailing during the year in our Consolidated Statements of Operations. The resulting translation adjustment is included in other comprehensive income, as a component of stockholders’ equity. Transaction gains and losses that arise from exchange rate fluctuations on transactions denominated in a currency other than the functional currency are included in other income and expense as incurred.

In 2023, revenue attributable to our International segment was $825.3 million, and Adjusted EBITDA attributable to our International segment was $361.5 million. A 10% change in the value of the U.S. dollar relative to a basket of the currencies for all foreign countries in which we had operations during 2023 would have changed our revenue by $82.5 million and our Adjusted EBITDA by $36.2 million. We derive an insignificant amount of international revenue and Adjusted EBITDA from our U.S. Markets and Consumer Interactive segments.

A 10% change in the value of the U.S. dollar relative to a basket of currencies for all foreign countries in which we had operations would not have had a significant impact on our 2023 realized foreign currency transaction gains and losses.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of TransUnion

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of TransUnion and its subsidiaries (the "Company") as of December 31, 2023 and 2022, and the related consolidated statements of operations, of comprehensive income (loss), of stockholders' equity and of cash flows for each of the three years in the period ended December 31, 2023, including the related notes and financial statement schedules listed in the index appearing under Item 15(a)(2) (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2023, 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 consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2023 and 2022, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2023 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company did not maintain, in all material respects, effective internal control over financial reporting as of December 31, 2023, based on criteria established in Internal Control - Integrated Framework (2013) issued by the COSO because material weaknesses in internal control over financial reporting existed as of that date as the Company did not design and maintain effective controls over (i) certain information used in the interim goodwill impairment test and (ii) the classification of certain costs between cost of services and selling, general and administrative expenses in the consolidated statement of operations.

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the annual or interim financial statements will not be prevented or detected on a timely basis. The material weaknesses referred to above are described in Management's Report on Internal Control over Financial Reporting appearing under Item 9A. We considered these material weaknesses in determining the nature, timing, and extent of audit tests applied in our audit of the 2023 consolidated financial statements, and our opinion regarding the effectiveness of the Company's internal control over financial reporting does not affect our opinion on those consolidated financial statements.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in management's report referred to above. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

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 (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) 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 (iii) 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.

Critical Audit Matters

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

Interim Goodwill Impairment Assessment – United Kingdom Reporting Unit

As described in Notes 1 and 6 to the consolidated financial statements, the Company's consolidated goodwill balance was $5,176 million as of December 31, 2023, of which $288.8 million was recorded at the United Kingdom reporting unit. Management conducts an impairment test annually in the fourth quarter of each year, or more frequently if events or circumstances indicate that the carrying value of goodwill may be impaired. For each reporting unit, management compares the fair value to its carrying value including goodwill. If the fair value of the reporting unit is less than its carrying value, management records an impairment charge based on that difference, up to the amount of goodwill recorded in that reporting unit. During the three months ended September 30, 2023, management identified a triggering event requiring an interim impairment assessment for the United Kingdom reporting unit, due to worsening macroeconomic conditions from inflationary pressures and rising interest rates, which resulted in a goodwill impairment of $414.0 million. When management performs a quantitative impairment test, they use a combination of an income approach, using the discounted cash flow method, and a market approach, using the guideline public company method, to determine the fair value of each reporting unit. Management's estimate of fair value requires the application of a number of significant assumptions, including estimates of future revenue growth rates, earnings before interest, taxes, depreciation and amortization (EBITDA) margins, discount rates, and market multiples.

The principal considerations for our determination that performing procedures relating to the interim goodwill impairment assessment of the United Kingdom reporting unit is a critical audit matter are (i) the significant judgment by management when developing the fair value estimate of the United Kingdom reporting unit; (ii) a high degree of auditor judgment, subjectivity, and effort in performing procedures and evaluating management's significant assumptions related to future revenue growth rates, EBITDA margins, the discount rate, and market multiples; and (iii) the audit effort involved the use of professionals with specialized skill and knowledge. As described in the "Opinions on the Financial Statements and Internal Control over Financial Reporting" section, a material weakness was identified related to this matter.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of certain controls relating to management's goodwill impairment assessment, including controls over the valuation of the United Kingdom reporting unit. These procedures also included, among others (i) testing management's process for developing the fair value estimate of the United Kingdom reporting unit; (ii) evaluating the appropriateness of the discounted cash flow method and guideline public company method used by management; (iii) testing the completeness and accuracy of underlying data used in the valuation methods; and (iv) evaluating the reasonableness of the significant assumptions used by management related to future revenue growth rates, EBITDA margins, the discount rate, and market multiple. Evaluating management's assumptions related to future

revenue growth rates and EBITDA margins involved evaluating whether the assumptions used by management were reasonable considering (i) the current and past performance of the United Kingdom reporting unit; (ii) the consistency with external market data; and (iii) whether these assumptions were consistent with evidence obtained in other areas of the audit. Professionals with specialized skill and knowledge were used to assist in evaluating (i) the appropriateness of the discounted cash flow method and guideline public company method and (ii) the reasonableness of the discount rate and market multiple assumptions.

/s/ PricewaterhouseCoopers LLP

Chicago, Illinois
February 28, 2024

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

TRANSUNION AND SUBSIDIARIES

Consolidated Balance Sheets

(in millions, except per share data)

	December 31, 2023	December 31, 2022
Assets		
Current assets:		
Cash and cash equivalents	$ 476.2	$ 585.3
Trade accounts receivable, net of allowance of $16.4 and $11.0	723.0	602.2
Other current assets	275.9	262.7
Total current assets	1,475.1	1,450.2
Property, plant and equipment, net of accumulated depreciation and amortization of $804.4 and $711.3	199.3	218.2
Goodwill	5,176.0	5,551.4
Other intangibles, net of accumulated amortization of $2,719.8 and $2,268.6	3,515.3	3,675.5
Other assets	739.4	771.0
Total assets	$ 11,105.1	$ 11,666.3
Liabilities and stockholders' equity		
Current liabilities:		
Trade accounts payable	$ 251.3	$ 250.4
Short-term debt and current portion of long-term debt	89.6	114.6
Other current liabilities	661.8	540.5
Total current liabilities	1,002.7	905.5
Long-term debt	5,250.8	5,555.5
Deferred taxes	592.9	762.0
Other liabilities	153.2	173.9
Total liabilities	6,999.6	7,396.9
Stockholders' equity:		
Common stock, $0.01 par value; 1.0 billion shares authorized at December 31, 2023 and December 31, 2022; 200.0 million and 198.7 million shares issued as of December 31, 2023 and December 31, 2022, respectively; and 193.8 million and 192.7 million shares outstanding as of December 31, 2023 and December 31, 2022, respectively	2.0	2.0
Additional paid-in capital	2,412.9	2,290.3
Treasury stock at cost; 6.2 million and 6.0 million shares at December 31, 2023 and December 31, 2022, respectively	(302.9)	(284.5)
Retained earnings	2,157.1	2,446.6
Accumulated other comprehensive loss	(260.9)	(284.5)
Total TransUnion stockholders' equity	4,008.2	4,169.9
Noncontrolling interests	97.3	99.5
Total stockholders' equity	4,105.5	4,269.4
Total liabilities and stockholders' equity	$ 11,105.1	$ 11,666.3

See accompanying notes to consolidated financial statements.

TRANSUNION AND SUBSIDIARIES
Consolidated Statements of Operations
(in millions, except per share data)

	Twelve Months Ended December 31,		
	2023	2022	2021
Revenue	$ 3,831.2	$ 3,709.9	$ 2,960.2
Operating expenses			
Cost of services (exclusive of depreciation and amortization below)	1,517.3	1,385.1	1,022.3
Selling, general and administrative	1,171.6	1,179.4	909.0
Depreciation and amortization	524.4	519.0	377.0
Goodwill impairment	414.0	—	—
Restructuring	75.3	—	—
Total operating expenses	3,702.7	3,083.5	2,308.3
Operating income	128.5	626.3	651.9
Non-operating income and (expense)			
Interest expense	(288.2)	(230.9)	(112.6)
Interest income	20.7	4.7	3.4
Earnings from equity method investments	16.3	13.0	12.0
Other income and (expense), net	(22.7)	(30.0)	(49.2)
Total non-operating income and (expense)	(273.9)	(243.3)	(146.3)
(Loss) income from continuing operations before income taxes	(145.3)	383.0	505.6
Provision for income taxes	(44.7)	(118.9)	(131.9)
(Loss) income from continuing operations	(190.1)	264.1	373.7
Discontinued operations, net of tax	(0.7)	17.4	1,031.7
Net (loss) income	(190.8)	281.5	1,405.4
Less: net income attributable to noncontrolling interests	(15.4)	(15.2)	(15.0)
Net (loss) income attributable to TransUnion	$ (206.2)	$ 266.3	$ 1,390.3
(Loss) income from continuing operations	$ (190.1)	$ 264.1	$ 373.7
Less: income from continuing operations attributable to noncontrolling interests	(15.4)	(15.2)	(15.0)
(Loss) income from continuing operations attributable to TransUnion	(205.4)	248.9	358.7
Discontinued operations, net of tax	(0.7)	17.4	1,031.7
Net (loss) income attributable to TransUnion	$ (206.2)	$ 266.3	$ 1,390.3
Basic (loss) earnings per common share from:			
(Loss) income from continuing operations attributable to TransUnion	$ (1.06)	$ 1.29	$ 1.87
Discontinued operations, net of tax	—	0.09	5.39
Net (loss) income attributable to TransUnion	$ (1.07)	$ 1.38	$ 7.26
Diluted (loss) earnings per common share from:			
(Loss) income from continuing operations attributable to TransUnion	$ (1.06)	$ 1.29	$ 1.86
Discontinued operations, net of tax	—	0.09	5.35
Net (loss) income attributable to TransUnion	$ (1.07)	$ 1.38	$ 7.20
Weighted-average shares outstanding:			
Basic	193.4	192.5	191.4
Diluted	193.4	193.1	193.0

As a result of displaying amounts in millions, and for the calculation of earnings per share, rounding differences may exist in the table above. See accompanying notes to consolidated financial statements.

TRANSUNION AND SUBSIDIARIES

Consolidated Statements of Comprehensive Income (Loss)

(in millions)

	Twelve Months Ended December 31,		
	2023	2022	2021
Net (loss) income	$ (190.8)	$ 281.5	$ 1,405.4
Other comprehensive (loss) income:			
Foreign currency translation:			
Foreign currency translation adjustment	81.1	(195.7)	(66.4)
(Expense) benefit for income taxes	(2.0)	(0.7)	0.3
Foreign currency translation, net	79.1	(196.4)	(66.1)
Hedge instruments:			
Net change on interest rate swap	(75.5)	260.1	67.3
Benefit (provision) for income taxes	18.9	(64.9)	(16.8)
Hedge instruments, net	(56.6)	195.2	50.5
Available-for-sale securities:			
Net unrealized loss	—	(0.3)	—
Benefit for income taxes	—	0.1	—
Available-for-sale securities, net	—	(0.2)	—
Total other comprehensive income (loss), net of tax	22.5	(1.4)	(15.6)
Comprehensive (loss) income	(168.3)	280.1	1,389.8
Less: comprehensive income attributable to noncontrolling interests	(14.3)	(12.9)	(12.7)
Comprehensive (loss) income attributable to TransUnion	$ (182.6)	$ 267.2	$ 1,377.1

See accompanying notes to consolidated financial statements.

TRANSUNION AND SUBSIDIARIES
Consolidated Statements of Cash Flows
(in millions)

	Twelve Months Ended December 31,		
	2023	2022	2021
Cash flows from operating activities:			
Net (loss) income	$ (190.8)	$ 281.5	$ 1,405.4
Less: Discontinued operations, net of tax	(0.7)	17.4	1,031.7
(Loss) income from continuing operations	(190.1)	264.1	373.7
Adjustments to reconcile net (loss) income to net cash provided by operating activities:			
Depreciation and amortization	524.4	519.0	377.0
Goodwill impairment	414.0	—	—
Loss on repayment of loans	7.6	9.4	17.9
Deferred taxes	(162.7)	(88.9)	(17.2)
Stock-based compensation	100.3	82.8	69.2
Other	26.0	22.6	(13.1)
Changes in assets and liabilities:			
Trade accounts receivable	(135.1)	(37.5)	(36.2)
Other current and long-term assets	(12.7)	(17.7)	(20.9)
Trade accounts payable	(6.5)	(16.5)	41.5
Other current and long-term liabilities	80.4	(436.3)	(32.5)
Cash provided by operating activities of continuing operations	645.6	301.0	759.4
Cash (used in) provided by operating activities of discontinued operations	(0.2)	(3.8)	48.9
Cash provided by operating activities	645.4	297.2	808.3
Cash flows from investing activities:			
Capital expenditures	(310.7)	(298.2)	(224.2)
Proceeds from sale/maturity of other investments	82.3	143.5	36.3
Purchases of other investments	(53.5)	(146.1)	(66.9)
Investments in consolidated affiliates, net of cash acquired	—	(508.1)	(3,596.1)
Investments in nonconsolidated affiliates and purchase of convertible notes	(36.9)	(16.2)	(75.4)
(Payments) proceeds related to disposal of discontinued operations	(0.5)	103.6	1,706.8
Other	0.4	2.7	(1.1)
Cash used in investing activities of continuing operations	(318.9)	(718.8)	(2,220.6)
Cash (used in) provided by investing activities of discontinued operations	—	(5.1)	7.7
Cash used in investing activities	(318.9)	(723.9)	(2,212.9)
Cash flows from financing activities:			
Proceeds from Term Loans	655.8	—	3,740.0
Repayments of Term Loans	(347.7)	—	(640.0)
Repayments of debt	(650.0)	(714.6)	(140.8)
Debt financing fees	(3.3)	—	(68.8)
Proceeds from issuance of common stock and exercise of stock options	23.1	18.7	21.9
Dividends to shareholders	(81.8)	(77.8)	(69.8)
Employee taxes paid on restricted stock units recorded as treasury stock	(18.4)	(32.5)	(36.8)
Payment of contingent consideration	—	(2.8)	(32.4)
Distributions to noncontrolling interests	(16.5)	(11.5)	(11.0)
Cash (used in) provided by financing activities of continuing operations	(438.8)	(820.5)	2,762.3
Effect of exchange rate changes on cash and cash equivalents	3.2	(9.9)	(8.0)
Net change in cash and cash equivalents	(109.1)	(1,257.1)	1,349.7
Cash and cash equivalents, beginning of period	585.3	1,842.4	492.7
Cash and cash equivalents, end of period	$ 476.2	$ 585.3	$ 1,842.4
Supplemental disclosure of cash flow information:			
Cash paid during the period for:			
Interest	$ 281.2	$ 221.1	$ 109.1
Income taxes, net of refunds	$ 206.4	$ 573.6	$ 181.2

See accompanying notes to consolidated financial statements.

TRANSUNION AND SUBSIDIARIES
Consolidated Statements of Stockholders' Equity
(in millions)

	Common Stock							
	Shares	Amount	Paid-In Capital	Treasury Stock	Retained Earnings	Accumulated Other Comprehensive Loss	Noncontrolling Interests	Total
Balance, December 31, 2020	190.5	$ 2.0	$ 2,088.1	$ (215.2)	$ 937.4	$ (272.1)	$ 95.9	$ 2,636.1
Net income	—	—	—	—	1,390.3	—	15.0	1,405.4
Other comprehensive loss	—	—	—	—	—	(13.3)	(2.3)	(15.6)
Distributions to noncontrolling interests	—	—	—	—	—	—	(11.0)	(11.0)
Stock-based compensation	—	—	75.7	—	—	—	—	75.7
Employee share purchase plan	0.2	—	22.2	—	—	—	—	22.2
Exercise of stock options	0.3	—	2.9	—	—	—	—	2.9
Vesting of restricted stock units and performance stock units	1.2	—	—	—	—	—	—	—
Treasury stock purchased	(0.4)	—	—	(36.8)	—	—	—	(36.8)
Dividends to shareholders	—	—	—	—	(69.9)	—	—	(69.9)
Other	—	—	—	—	—	—	0.5	0.5
Balance, December 31, 2021	191.8	$ 2.0	$ 2,188.9	$ (252.0)	$ 2,257.8	$ (285.4)	$ 98.1	$ 4,009.4

TRANSUNION AND SUBSIDIARIES
Consolidated Statements of Stockholders' Equity—Continued
(in millions)

	Common Stock							
	Shares	Amount	Paid-In Capital	Treasury Stock	Retained Earnings	Accumulated Other Comprehensive Loss	Noncontrolling Interests	Total
Balance, December 31, 2021	191.8	$ 2.0	$ 2,188.9	$ (252.0)	$ 2,257.8	$ (285.4)	$ 98.1	$ 4,009.4
Net income	—	—	—	—	266.3	—	15.2	281.5
Other comprehensive income (loss)	—	—	—	—	—	0.9	(2.3)	(1.4)
Distributions to noncontrolling interests	—	—	—	—	—	—	(11.5)	(11.5)
Stock-based compensation	—	—	79.6	—	—	—	—	79.6
Employee share purchase plan	0.2	—	21.0	—	—	—	—	21.0
Exercise of stock options	0.1	—	0.8	—	—	—	—	0.8
Vesting of restricted stock units and performance stock units	0.9	—	—	—	—	—	—	—
Treasury stock purchased	(0.3)	—	—	(32.5)	—	—	—	(32.5)
Dividends to shareholders	—	—	—	—	(77.5)	—	—	(77.5)
Balance, December 31, 2022	192.7	$ 2.0	$ 2,290.3	$ (284.5)	$ 2,446.6	$ (284.5)	$ 99.5	$ 4,269.4

TRANSUNION AND SUBSIDIARIES
Consolidated Statements of Stockholders' Equity—Continued
(in millions)

	Common Stock							
	Shares	Amount	Paid-In Capital	Treasury Stock	Retained Earnings	Accumulated Other Comprehensive Loss	Noncontrolling Interests	Total
Balance, December 31, 2022	192.7	$ 2.0	$ 2,290.3	$ (284.5)	$ 2,446.6	$ (284.5)	$ 99.5	$ 4,269.4
Net loss	—	—	—	—	(206.2)	—	15.4	(190.8)
Other comprehensive income (loss)	—	—	—	—	—	23.6	(1.1)	22.5
Distributions to noncontrolling interests	—	—	—	—	—	—	(16.5)	(16.5)
Stock-based compensation	—	—	95.6	—	—	—	—	95.6
Employee share purchase plan	0.4	—	26.4	—	—	—	—	26.4
Exercise of stock options	0.1	—	0.6	—	—	—	—	0.6
Vesting of restricted stock units and performance stock units	0.8	—	—	—	—	—	—	—
Treasury stock purchased	(0.2)	—	—	(18.4)	—	—	—	(18.4)
Dividends to shareholders	—	—	—	—	(83.3)	—	—	(83.3)
Balance, December 31, 2023	193.8	$ 2.0	$ 2,412.9	$ (302.9)	$ 2,157.1	$ (260.9)	$ 97.3	$ 4,105.5

See accompanying notes to consolidated financial statements.

TRANSUNION AND SUBSIDIARIES
Notes to Consolidated Financial Statements
Years Ended December 31, 2023, 2022 and 2021
(Tabular amounts in millions, except per share amounts)

1. Significant Accounting and Reporting Policies

Description of Business

TransUnion is a leading global information and insights company that makes trust possible between businesses and consumers, helping people around the world access opportunities that can lead to a higher quality of life. That trust is built on TransUnion's ability to deliver safe, innovative solutions with credibility and consistency. We call this Information for Good.

Grounded in our heritage as a credit reporting agency, we have built robust and accurate databases of information for a large portion of the adult population in the markets we serve. We use our identity resolution methodology to link and match our expanding high-quality datasets. We use this enriched data and analytics, combined with our expertise, to continuously develop more insightful solutions for our customers, all while maintaining compliance with global laws and regulations. Because of our work, organizations can better understand consumers in order to make more informed decisions, and earn consumer trust through great, personalized experiences, and the proactive extension of the right opportunities, tools and offers. In turn, we believe consumers can be confident that their data identities will result in better offers and opportunities.

We provide solutions that enable businesses to manage and measure credit risk, market to new and existing customers, verify consumer identities, mitigate fraud, and effectively manage call center operations. Businesses embed our solutions into their process workflows to deliver critical insights and enable effective actions. Consumers use our solutions to view their credit profiles, access analytical tools that help them understand and manage their personal financial information, and take precautions against identity theft.

Our addressable market includes the global data and analytics market, which continues to grow as companies around the world increasingly recognize the benefits of data and analytics-based decision making, and as consumers recognize the important role that their data identities play in their ability to procure goods and services. We leverage our differentiated capabilities in order to serve a global customer base across multiple geographies and industry verticals.

Basis of Presentation

The accompanying consolidated financial statements of TransUnion and subsidiaries have been prepared in accordance with U.S. generally accepted accounting principles ("GAAP"). Our consolidated financial statements reflect all adjustments which, in the opinion of management, are necessary for a fair presentation of the periods presented. All significant intercompany transactions and balances have been eliminated. As a result of displaying amounts in millions, rounding differences may exist in the financial statements and footnote tables. We have recast certain items, including the prior year's revenue disaggregation disclosures in Note 21, "Reportable Segments," to conform to the current year presentation.

Unless the context indicates otherwise, any reference in this report to the "Company," "we," "our," "us," and "its" refers to TransUnion and its consolidated subsidiaries, collectively.

For the periods presented, TransUnion does not have any material assets, liabilities, revenues, expenses or operations of any kind other than its ownership investment in TransUnion Intermediate Holdings, Inc.

Revision of Previously Issued Financial Statements

The Company identified an error in the classification of certain costs between cost of services and selling, general and administrative in the Consolidated Statements of Operations, which resulted in an understatement of cost of services and an overstatement of selling, general and administrative in equal and offsetting amounts resulting in no impact to total operating expenses, operating income or net income. This error was incremental to the classification error of employee costs related to certain of our recent acquisitions that was identified in the second quarter of 2023. In addition, the Company identified an overstatement of the supplemental disclosure for cash paid for interest on its Consolidated Statements of Cash Flows for the twelve months ended December 31, 2022.

The Company concluded that, while the expense classification errors and supplemental cash paid for interest disclosure were not material to its consolidated financial statements taken as a whole, it should revise its previously issued consolidated financial statements to correct the errors. In doing so, the Company has also corrected an immaterial error related to an over accrual of expenses, net of the related income tax effect, during the twelve months ended December 31, 2021, that had previously been corrected out of period during the twelve months ended December 31, 2022. Accordingly, the Company has revised its previously issued Consolidated Statements of Operations, Statements of Comprehensive Income (Loss), Consolidated Statements of Cash Flows, and Consolidated Statements of Stockholders' Equity for the twelve months ended

December 31, 2022 and 2021 to correct for these errors that are not material within these consolidated financial statements taken as a whole. The impact of the revisions is presented below.

Consolidated Statements of Operations

	Twelve Months Ended December 31, 2022			Twelve Months Ended December 31, 2021		
	As Reported	Adjustment	As Revised	As Reported	Adjustment	As Revised
Cost of services (exclusive of depreciation and amortization)	$ 1,222.9	$ 162.2	$ 1,385.1	$ 991.6	$ 30.7	$ 1,022.3
Selling, general and administrative	1,337.4	(158.0)	1,179.4	943.9	(34.9)	909.0
Total operating expenses	3,079.3	4.2	3,083.5	2,312.5	(4.2)	2,308.3
Operating income	630.5	(4.2)	626.3	647.7	4.2	651.9
Income from continuing operations before income taxes	387.2	(4.2)	383.0	501.4	4.2	505.6
Provision for income taxes	(119.9)	1.0	(118.9)	(130.9)	(1.0)	(131.9)
Income from continuing operations	267.3	(3.2)	264.1	370.5	3.2	373.7
Net income	284.7	(3.2)	281.5	1,402.2	3.2	1,405.4
Net income attributable to TransUnion	269.5	(3.2)	266.3	1,387.1	3.2	1,390.3
Income from continuing operations attributable to TransUnion	252.1	(3.2)	248.9	355.5	3.2	358.7
Basic earnings per common share from:						
Income from continuing operations attributable to TransUnion	$ 1.31	$ (0.02)	$ 1.29	$ 1.86	$ 0.02	$ 1.87
Net income attributable to TransUnion	$ 1.40	$ (0.02)	$ 1.38	$ 7.25	$ 0.02	$ 7.26
Diluted earnings per common share from:						
Income from continuing operations attributable to TransUnion	$ 1.31	$ (0.02)	$ 1.29	$ 1.84	$ 0.02	$ 1.86
Net income attributable to TransUnion	$ 1.40	$ (0.02)	$ 1.38	$ 7.19	$ 0.02	$ 7.20

Consolidated Statements of Comprehensive Income (Loss)

	Twelve Months Ended December 31, 2022			Twelve Months Ended December 31, 2021		
	As Reported	Adjustment	As Revised	As Reported	Adjustment	As Revised
Net income	$ 284.7	$ (3.2)	$ 281.5	$ 1,402.2	$ 3.2	$ 1,405.4
Comprehensive income	283.3	(3.2)	280.1	1,386.6	3.2	1,389.8
Comprehensive income attributable to TransUnion	270.4	(3.2)	267.2	1,373.9	3.2	1,377.1

Consolidated Statements of Cash Flows

	Twelve Months Ended December 31, 2022			Twelve Months Ended December 31, 2021		
	As Reported	Adjustment	As Revised	As Reported	Adjustment	As Revised
Net income	$ 284.7	$ (3.2)	$ 281.5	$ 1,402.2	$ 3.2	$ 1,405.4
Income from continuing operations	267.3	(3.2)	264.1	370.5	3.2	373.7
Trade accounts payable	(20.7)	4.2	(16.5)	45.7	(4.2)	41.5
Other current and long-term liabilities	(435.3)	(1.0)	(436.3)	(33.5)	1.0	(32.5)
Cash provided by operating activities of continuing operations	301.0	—	301.0	759.4	—	759.4

The Company revised its supplemental disclosure for cash paid for interest for the twelve months ended December 31, 2022 by $91.2 million, reducing it from the previously reported amount of $312.3 million to $221.1 million as revised.

Consolidated Statements of Stockholders' Equity

	Twelve Months Ended December 31, 2022			Twelve Months Ended December 31, 2021		
	As Reported	Adjustment	As Revised	As Reported	Adjustment	As Revised
Retained Earnings, Beginning Period Balance	$ 2,254.6	$ 3.2	$ 2,257.8	$ 937.4	$ —	$ 937.4
Net income	269.5	(3.2)	266.3	1,387.1	3.2	1,390.3
Retained Earnings, Ending Period Balance	$ 2,446.6	$ —	$ 2,446.6	$ 2,254.6	$ 3.2	$ 2,257.8
Total Equity Beginning Period Balance	$ 4,006.2	$ 3.2	$ 4,009.4	$ 2,636.1	$ —	$ 2,636.1
Net income	284.7	(3.2)	281.5	1,402.2	3.2	1,405.4
Total Equity Ending Period Balance	$ 4,269.4	$ —	$ 4,269.4	$ 4,006.2	$ 3.2	$ 4,009.4

The Company will also revise previously reported quarterly and year-to-date financial information for these errors in its future filings, as applicable. A summary of the corrections to the impacted financial statement line items to the Company's previously issued consolidated financial statements for each quarterly and year-to-date period is presented in Note 26, "Quarterly Financial Data (Unaudited)."

Principles of Consolidation

The consolidated financial statements of TransUnion include the accounts of TransUnion and all of its controlled subsidiaries. Investments in nonmarketable unconsolidated entities in which the Company is able to exercise significant influence are accounted for using the equity method. Investments in nonmarketable unconsolidated entities in which the Company is not able to exercise significant influence, our "Cost Method Investments," are accounted for at our initial cost, minus any impairment, plus or minus changes resulting from observable price changes in orderly transactions for the identical or a similar investment of the same issuer.

Use of Estimates

The preparation of consolidated financial statements and related disclosures in accordance with GAAP requires management to make estimates and judgments that affect the amounts reported. We believe that the estimates used in preparation of the accompanying consolidated financial statements are reasonable, based upon information available to management at this time. These estimates and judgments affect the reported amounts of assets, liabilities and disclosure of contingent assets and liabilities at the balance sheet date, as well as the amounts of revenue and expense during the reporting period. Estimates are inherently uncertain and actual results could differ materially from the estimated amounts.

Segments

Operating segments are businesses for which separate financial information is available and evaluated regularly by our chief operating decision maker ("CODM") deciding how to allocate resources and assess performance. We have three operating and

reportable segments; U.S. Markets, International and Consumer Interactive. We also report expenses for Corporate, which provides support services to each segment. Details of our segment results are discussed in Note 21, "Reportable Segments."

Revenue Recognition and Deferred Revenue

All of our revenue is derived from contracts with our customers and is reported as revenue in the Consolidated Statements of Operations generally as or at the point in time our performance obligations are satisfied. A performance obligation is a promise in a contract to transfer a distinct good or service to a customer. We have contracts with two general groups of performance obligations; those that require us to stand ready to provide goods and services to a customer to use as and when requested ("Stand Ready Performance Obligations") and those that do not require us to stand ready ("Other Performance Obligations"). Our Stand Ready Performance Obligations include obligations to stand ready to provide data, process transactions, access our databases, software-as-a-service and direct-to-consumer products, rights to use our intellectual property and other services. Our Other Performance Obligations include the sale of certain batch data sets and various professional and other services.

Deferred revenue generally consists of amounts billed in excess of revenue recognized for the sale of data services, subscriptions and set up fees. The current and long-term portions of deferred revenue are included in other current liabilities and other liabilities.

See Note 16, "Revenue," for a further discussion about our revenue recognition policies.

Costs of Services

Costs of services include data acquisition and royalty fees, personnel costs related to our databases and software applications, consumer and call center support costs, hardware and software maintenance costs, telecommunication expenses and occupancy costs associated with the facilities where these functions are performed.

Selling, General and Administrative Expenses

Selling, general and administrative expenses include personnel-related costs for sales, administrative and management employees, costs for professional and consulting services, advertising and occupancy and facilities expense of these functions. Advertising costs are expensed as incurred. Advertising costs, which include commissions we pay to our partners to promote our products online, for the years ended December 31, 2023, 2022 and 2021 were $64.2 million, $87.7 million and $92.9 million, respectively.

Stock-Based Compensation

Compensation expense for all stock-based compensation awards is determined using the grant date fair value. For all equity-based plans, we record the impact of forfeitures when they happen. Expense is recognized on a straight-line basis over the requisite service period of the award, which is generally equal to the vesting period. The details of our stock-based compensation program are discussed in Note 19, "Stock-Based Compensation."

Restructuring

Restructuring expenses consist of employee-separation costs, including severance and other benefits calculated based on long-standing benefit practices and local statutory requirements. In some jurisdictions, the Company has ongoing benefit arrangements under which the Company records estimated severance and other termination benefits when such costs are deemed probable and estimable, approved by the appropriate corporate management, and if actions required to complete the termination plan indicate it is unlikely that significant changes to the plan will be made or the plan will be withdrawn. Severance and other termination benefits for which there is not an ongoing benefit arrangement are recorded when appropriate corporate management has committed to the plan and the benefit arrangement is communicated to the affected employees. In addition, restructuring expenses include impairment of leased facility assets whenever events or changes in circumstances indicate that the carrying amount of an asset group may not be recoverable.

Income Taxes

Deferred income tax assets and liabilities are determined based on the estimated future tax effects of temporary differences between the financial statement and tax basis of assets and liabilities, as measured by current enacted tax rates. The effect of a tax rate change on deferred tax assets and liabilities is recognized in operations in the period that includes the enactment date of the change. We periodically assess the recoverability of our deferred tax assets, and a valuation allowance is recorded against deferred tax assets if it is more likely than not that some portion of the deferred tax assets will not be realized. See Note 18, "Income Taxes," for additional information.

Foreign Currency Translation

The functional currency for each of our foreign subsidiaries is generally that subsidiary's local currency. We translate the assets and liabilities of foreign subsidiaries at the year-end exchange rate, and translate revenues and expenses at the monthly average

rates during the year. We record the resulting translation adjustment as a component of other comprehensive income in stockholders' equity.

Transaction gains and losses that arise from exchange rate fluctuations on transactions denominated in a currency other than the functional currency of an entity are included in the results of operations as incurred. The exchange rate losses for the years ended December 31, 2023, 2022 and 2021 were not material.

Cash and Cash Equivalents

We consider investments in highly liquid debt instruments with original maturities of three months or less to be cash equivalents. The carrying value of our cash and cash equivalents approximate their fair value.

Trade Accounts Receivable

We base our allowance for doubtful accounts estimate on our historical loss experience, our current expectations of future losses, current economic conditions, an analysis of the aging of outstanding receivables and customer payment patterns, and specific reserves for customers in adverse financial condition or for existing contractual disputes.

The following is a roll-forward of the allowance for doubtful accounts for the periods presented:

	Twelve months ended December 31,		
	2023	2022	2021
Beginning Balance	$ 11.0	$ 10.7	$ 17.1
Provision for losses on trade accounts receivable	8.8	5.9	(2.6)
Write-offs, net of recovered accounts	(3.4)	(5.6)	(3.8)
Ending balance	$ 16.4	$ 11.0	$ 10.7

Contract acquisition costs

We recognize an asset for the incremental costs of obtaining a contract with a customer if we expect the benefit of those costs to be longer than one year. We have determined that certain sales incentive programs meet the requirements to be capitalized. We use a portfolio approach to amortize capitalized contract acquisition costs on a straight-line basis over five years, which reflects the estimated average period of benefit and is consistent with the transfer of our services to our customer to which the contract relates. We classify capitalized contract acquisition costs as current or noncurrent based on the timing of expense recognition. The current and noncurrent portions are included in "Other current assets" and "Other assets", respectively, in our Consolidated Balance Sheets. Amortization expense is included in "Selling, general and administrative" within our accompanying Consolidated Statements of Operations.

As of December 31, 2023 and 2022, we had capitalized contract acquisition costs of $39.9 million and $20.2 million, respectively, which have been included in "Other current assets" and "Other assets" in our accompanying Consolidated Balance Sheets.

Long-Lived Assets

Property, Plant, Equipment and Intangibles

Property, plant and equipment is depreciated primarily using the straight-line method, over the estimated useful lives of the assets. Buildings and building improvements are generally depreciated over 20 years. Computer equipment and furniture and purchased software are depreciated over 3 to 7 years. Leasehold improvements are depreciated over the shorter of the estimated useful life of the asset or the lease term. Intangibles, other than indefinite-lived intangibles, are amortized using the straight-line method, which approximates the pattern of usage, over their economic life, generally 3 to 40 years. Assets to be disposed of, if any, are separately presented in the Consolidated Balance Sheet and reported at the lower of the carrying amount or fair value, less costs to sell, and are no longer depreciated. See Note 5, "Property, Plant and Equipment" and Note 7, "Intangible Assets" for additional information about these assets.

Internal Use Software

We monitor the activities of each of our internal use software and system development projects and analyze the associated costs, making an appropriate distinction between costs to be expensed and costs to be capitalized. Costs incurred during the preliminary project stage are expensed as incurred. Many of the costs incurred during the application development stage are capitalized, including costs of software design and configuration, development of interfaces, coding, testing and installation of

the software. Once the software is ready for its intended use, it is amortized on a straight-line basis over its useful life, generally 3 to 10 years.

Impairment of Long-Lived Assets

We review long-lived asset groups that are subject to amortization for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset group may not be recoverable. Recoverability of asset groups to be held and used is measured by a comparison of the carrying amount of an asset group to the estimated undiscounted future cash flows expected to be generated by the asset group. If the carrying amount of an asset group exceeds its estimated future cash flows, an impairment charge is recognized equal to the amount by which the carrying amount of the asset group exceeds the fair value of the asset group. There were no significant impairment charges recorded during 2023, 2022 and 2021.

Goodwill

Other than goodwill, we have no other indefinite-lived assets. Goodwill is allocated to our reporting units, which are an operating segment or one level below an operating segment. We conduct an impairment test annually in the fourth quarter of each year, or more frequently if events or circumstances indicate that the carrying value of goodwill may be impaired.

We have the option to first perform a qualitative analysis to determine if it is more likely than not that the fair value of a reporting unit is less than its carrying value. If the qualitative analysis indicates that an impairment is more likely than not for any reporting unit, we perform a quantitative impairment test for that reporting unit. We have the option to bypass the qualitative analysis for any reporting unit and proceed directly to performing a quantitative impairment test.

When we perform a quantitative impairment test, we use a combination of an income approach, using the discounted cash flow method, and a market approach, using the guideline public company method, to determine the fair value of each reporting unit. For each reporting unit, we compare the fair value to its carrying value including goodwill. If the fair value of the reporting unit is less than its carrying value, we record an impairment charge based on that difference, up to the amount of goodwill recorded in that reporting unit.

The quantitative impairment test requires the application of a number of significant assumptions, including estimates of future revenue growth rates, EBITDA margins, discount rates, and market multiples. The projected future revenue growth rates and EBITDA margins, and the resulting projected cash flows of each reporting unit are based on historical experience and internal operating plans reviewed by management, extrapolated over the forecast period. Discount rates are determined using a weighted average cost of capital adjusted for risk factors specific to each reporting unit. Market multiples are based on the guideline public company method using comparable publicly traded company multiples of EBITDA for a group of benchmark companies.

See Note 6, “Goodwill,” for additional information about our 2023 impairment analysis and impairment of our United Kingdom reporting unit goodwill .

Marketable Securities

We classify our investments in debt and equity securities in accordance with our intent and ability to hold the investments. Held-to-maturity securities are carried at amortized cost, which approximates fair value, and are classified as either short-term or long-term investments based on the contractual maturity date. Earnings from these securities are reported as a component of interest income. Available-for-sale securities, if any, are carried at fair market value, with the unrealized gains and losses, net of tax, included in accumulated other comprehensive income.

At December 31, 2023 and 2022, the Company’s marketable securities consisted of available-for-sale securities. The available-for-sale securities relate to foreign exchange-traded corporate bonds. There were no significant realized or unrealized gains or losses for these securities for any of the periods presented. We follow fair value guidance to measure the fair value of our financial assets as further described in Note 20, “Fair Value”.

We periodically review our marketable securities to determine if there is an other-than-temporary impairment on any security. If it is determined that an other-than-temporary decline in value exists, we write down the investment to its market value and record the related impairment loss in other income. There were no other-than-temporary impairments of marketable securities in 2023, 2022 or 2021.

Benefit Plans

We maintain a 401(k) defined-contribution profit sharing plan for eligible employees. We provide a partial matching contribution and a discretionary contribution based on a fixed percentage of a participant’s eligible compensation. Contributions to this plan for the years ended December 31, 2023, 2022 and 2021 were $34.7 million, $32.9 million and $34.5 million, respectively.

Recently Adopted Accounting Pronouncements

There are no recent accounting pronouncements that have been adopted by TransUnion in 2023.

Recent Accounting Pronouncements Not Yet Adopted

On November 27, 2023, the FASB issued Accounting Standards Update ("ASU") 2023-07*, Segment Reporting (Topic 280), Improvements to Reportable Segment Disclosures*. This ASU updates the requirements for segment reporting to include, among other things, disaggregating and quantifying significant segment expenses that are regularly provided to the chief operating decision maker ("CODM") and included in the measure of segment profit, describing the nature of amounts not separately disaggregated, allowing for additional measures of a segment's profit or loss used by the CODM when deciding how to allocate resources, and extending nearly all annual segment reporting requirements to quarterly reporting requirements. The update is effective for annual periods for fiscal years beginning after December 15, 2023, and interim periods within fiscal years beginning after December 15, 2024, and requires retrospective application. Early adoption is permitted. We are currently assessing the impact of adopting the updated provisions.

On December 14, 2023, the FASB issued ASU 2023-09, *Income Taxes (Topic 740), Improvements to Income Tax Disclosures*. This ASU requires income tax disclosures to include consistent categories and greater disaggregation of information in the rate reconciliations and the disaggregation of income taxes paid by federal, state and foreign, and also for individual jurisdictions that are greater than 5% of total income taxes paid. The update is effective for annual periods for fiscal years beginning after December 15, 2024 on a prospective basis. Early adoption is permitted. We are currently assessing the impact of adopting the updated provisions.

2. Business Acquisitions

The following transactions were accounted for as business combinations under the acquisition method of accounting. The acquisition method requires, among other things, that assets acquired and liabilities assumed in a business combination generally be recognized at their fair values as of the acquisition date. The determination of fair value requires management to make significant estimates and assumptions. The excess of the purchase price over the fair value of the acquired net assets has been recorded as goodwill. The results of operations of these acquisitions are included in our consolidated financial statements from the respective dates of acquisition.

2022 Acquisitions

Verisk Financial Services

On April 8, 2022, we completed our acquisition of Verisk Financial Services ("VF"), the financial services business unit of Verisk Analytics, Inc. ("Verisk"). We acquired 100% of the outstanding equity interest of the entities that comprise VF for $505.7 million in cash, including a decrease of $2.3 million recorded subsequent to the acquisition date for certain customary purchase price adjustments. We have retained the leading core businesses of Argus Information and Advisory Services, Inc. and Commerce Signals, Inc. (collectively, "Argus"), and identified several non-core businesses that we classified as held-for-sale as of the acquisition date that we have subsequently divested. See Note 3, "Discontinued Operations," for a further discussion.

Argus provides financial institutions, payments providers, and retailers worldwide competitive studies, predictive analytics, models, and advisory services. We leverage the data provider consortium and proprietary and differentiated benchmarking datasets of these entities to provide more enhanced and holistic solution capabilities to our customers to make better and faster decisions that will help them increase financial inclusion, acquire new accounts, and improve fraud prevention, risk management, and other solutions.

We engaged in business activities with VF prior to the acquisition that were not material. The results of operations of Argus subsequent to the acquisition date are included in the U.S. Markets segment, including revenue of $71.5 million and net income of $2.8 million in 2022. The pro forma effects of this acquisition are not significant to the Company's reported financial results for any period presented. Accordingly, no pro forma financial statements have been presented herein.

Acquisition Costs

We recognized transaction costs related to the acquisition of $11.7 million for twelve months ended December 31, 2022, which we have recorded within other income and expense, net.

Purchase Price Allocation

The purchase price for this acquisition was finalized as of December 31, 2022. As of March 31, 2023, we finalized the valuation of the assets acquired and liabilities assumed, with no significant changes in the amounts and related disclosures compared with December 31, 2022.

The table below summarizes the final allocation of fair value of assets acquired and liabilities assumed as of April 8, 2022, the date of acquisition, inclusive of measurement period adjustments:

	April 8, 2022
Purchase price[1]:	$ 505.7
Assets acquired:	
Cash and cash equivalents	$ 4.1
Trade accounts receivable	26.0
Other current assets	3.3
Current assets of discontinued operations	16.5
Right of use lease assets	6.6
Property, plant and equipment	2.1
Goodwill[1,2]	167.2
Other intangibles[1]	195.0
Other assets	29.0
Other assets of discontinued operations	126.9
Total assets acquired	$ 576.7
Liabilities assumed:	
Trade accounts payable	$ 4.0
Other current liabilities	7.6
Current liabilities of discontinued operations	7.8
Deferred revenue	4.6
Lease liabilities	6.5
Deferred taxes[1]	39.8
Other liabilities	0.1
Other liabilities of discontinued operations	0.6
Total liabilities assumed	$ 71.0
Net assets acquired	$ 505.7

1. Since the date of acquisition, we decreased the purchase price for VF by $2.3 million to reflect the final purchase price adjustments. Additionally, we recorded other measurement period adjustments that resulted in a decrease to other intangibles of $25.0 million, an increase to goodwill of $18.0 million, a decrease in deferred taxes of $4.9 million and other insignificant changes.
2. We estimate that $46.8 million of the goodwill, which originated from previous acquisitions of VF, is tax deductible.

2021 Acquisitions

Neustar

On December 1, 2021, we completed the acquisition of Neustar, Inc. (“Neustar”). We acquired 100% of the equity of Neustar for $3,100.1 million in cash, including final purchase price adjustments as set forth in the purchase agreement. The acquisition was funded primarily with the proceeds from the issuance of our Incremental Term B-6 Loan, which closed concurrently with the closing of the transaction. The results of operations of Neustar, which are not material to our results of operations in 2021, have been included as part of our U.S. Markets segment in our Consolidated Statements of Operations since the date of acquisition.

The purchase price allocated to total assets acquired was $3,788.9 million, which included current assets of $266.0 million, goodwill of $1,882.2 million, intangible assets of $1,510.0 million, and other non-current assets of $130.7 million, and total liabilities of $688.8 million, which included deferred tax liabilities of $354.4 million, operating lease liabilities of $87.8 million, deferred revenue of $49.3 million, and other current and non-current liabilities of $197.3 million. Intangible assets have a weighted average amortization period of 16 years as of the acquisition date.

Sontiq

On December 1, 2021, we completed the acquisition of Sontiq, Inc. ("Sontiq"). We acquired 100% of the equity of Sontiq for $642.6 million in cash, including final purchase price adjustments as set forth in the purchase agreement. The acquisition was funded primarily with the proceeds from the issuance of our Second Lien Term Loan, which closed concurrently with the closing of the transaction. The Second Lien Term Loan was repaid in full prior to December 31, 2021. The results of operations of Sontiq, which are not material to our results of operations in 2021, have been included as part of our Consumer Interactive segment in our Consolidated Statements of Operations since the date of acquisition.

The purchase price allocated to total assets acquired was $708.7 million, which included current assets of $29.4 million, goodwill of $437.8 million, intangible assets of $237.2 million, and other non-current assets of $4.3 million, and total liabilities of $66.1 million, which included deferred tax liabilities of $32.4 million, deferred revenue of $19.1 million, and other current and non-current liabilities of $14.6 million. Intangible assets have a weighted average amortization period of 15 years as of the acquisition date.

Unaudited pro-forma financial information

The pro-forma revenues and results of operations of Sontiq and Argus are not included because the impact on our consolidated financial statements is immaterial. The supplemental pro-forma financial information for Neustar has been prepared using the acquisition method of accounting and is based on the historical financial information of TransUnion and Neustar, assuming the transaction occurred on January 1, 2021. The supplemental pro-forma financial information does not necessarily represent what the combined companies' revenue or results of operations would have been had the acquisition of Neustar been completed on January 1, 2021, nor is it intended to be a projection of future operating results of the combined company. It also does not reflect any operating efficiencies or potential cost savings that might be achieved from synergies of combining TransUnion and Neustar.

The unaudited supplemental pro-forma financial information has been calculated after applying TransUnion's accounting policies and adjusting the results of the combined company to reflect incremental amortization expense resulting from the fair value adjustments for acquired intangible assets as well as the net decrease to interest expense resulting from the elimination of the historical interest expense on Neustar debt that was paid off at closing partially offset by incremental interest expense resulting from the external debt borrowed by TransUnion to fund the acquisition, and the corresponding income tax impact of these adjustments.

Also, during the year ended December 31, 2021, TransUnion and Neustar incurred $29.7 million and $88.2 million of acquisition-related costs, respectively, and are included in other income (expense), net in our Consolidated Statements of Operations.

	(Unaudited) TransUnion and Neustar combined For the Year Ended December 31, 2021	
Pro-forma revenue	$	3,493.2
Pro-forma net income from continuing operations attributable to TransUnion	$	247.6

3. Discontinued Operations

Non-core businesses from the VF acquisition

As discussed in Note 2, "Business Acquisition," on April 8, 2022, we completed the acquisition of VF, which included Argus and several non-core businesses that we classified as held-for-sale as of the acquisition date. We classified the results of operations of the non-core businesses as discontinued operations, net of tax, in the Consolidated Statements of Operations for the year ended December 31, 2022, including a $7.5 million gain on the sale of these businesses. We sold these non-core businesses on December 30, 2022, and therefore have no assets or liabilities of these businesses on our Consolidated Balance Sheets for the periods presented. In 2022, we received total proceeds of $173.9 million, consisting of $103.6 million in cash, and a note receivable with a face value of $72.0 million and a fair value on the date of sale of $70.3 million. We finalized the purchase price in the third quarter of 2023 and recorded a $0.5 million reduction of the gain on sale included in discontinued operations, net of tax. Expenses related to these non-core businesses for the twelve months ended December 31, 2023 were not significant.

Healthcare business

On December 17, 2021, we completed the sale of our Healthcare business for total consideration of $1,706.4 million in cash, including a $0.5 million true-up to our estimate of net working capital recorded in the twelve months ended December 31, 2022. The after-tax net proceeds were approximately $1.4 billion. The terms and conditions of the transaction are set forth in the Stock Purchase Agreement dated as of October 26, 2021, by and between Trans Union LLC and nThrive, Inc. ("nThrive"). We also entered into a transition services agreement ("TSA") that requires Trans Union LLC to provide certain administrative and operational services to nThrive on a transitional basis for generally up to 24 months. This agreement is not material and does not confer upon us the ability to influence the operating or financial policies of nThrive subsequent to the closing date. Income generated from the services provided under the TSA has been recorded in other income and (expense), net in the Consolidated Statements of Operations.

As the transaction closed on December 17, 2021, there are no assets or liabilities of the Healthcare business on our Consolidated Balance Sheet as of December 31, 2023 and December 31, 2022. We classified the results of operations of our Healthcare business as discontinued operations, net of tax, in our Consolidated Statements of Operations in 2022 and 2021. We recognized gains on the sale of our Healthcare business within discontinued operations, net of tax, of $0.5 million and $982.5 million, in the Consolidated Statements of Operations for the twelve months ended December 31, 2022 and 2021, respectively, with respect to this sale.

Discontinued operations, net of tax

The activity reflected in the table below for the twelve months ended December 31, 2022, is related to the non-core businesses from the VF acquisition as well as an incremental gain on sale of discontinued operations, net of tax, related to our Healthcare business. The results reflected for the twelve months ended December 31, 2021, are exclusively attributed to the Healthcare business that we disposed of in December 2021. Discontinued operations, net of tax, as reported on our Consolidated Statements of Operations for the twelve months ended December 31, 2022 and 2021, consisted of the following:

	Twelve Months Ended December 31, `	
	2022	2021
Revenue	$ 36.7	$ 184.8
Operating expenses		
Cost of services (exclusive of depreciation and amortization below)	11.7	65.6
Selling, general and administrative	14.9	39.1
Depreciation and amortization	—	16.5
Total operating expenses	26.6	121.2
Operating income of discontinued operations	10.1	63.6
Non-operating income and (expense)	(0.5)	1.9
Income before income taxes from discontinued operations	9.6	65.5
Provision for income taxes	(0.1)	(16.3)
Gain on sale of discontinued operations, net of tax	8.0	982.5
Discontinued operations, net of tax	$ 17.4	$ 1,031.7

4. Other Current Assets

Other current assets consisted of the following:

	December 31, 2023	December 31, 2022
Prepaid expenses	$ 145.4	$ 145.1
Marketable securities (Note 20)	2.7	2.6
Other	127.8	115.0
Total other current assets	$ 275.9	$ 262.7

The increase in other is due to an increase in an indemnification receivable as discussed in Note 23, "Contingencies," partially offset by a decrease in other investments in non-negotiable certificates of deposit that are recorded at their carrying value, which approximates fair value.

5. Property, Plant and Equipment

Property, plant and equipment, including those acquired by finance lease, consisted of the following:

	December 31, 2023	December 31, 2022
Computer equipment and furniture	$ 615.8	$ 555.7
Purchased software	240.9	227.6
Building and building improvements	143.8	143.1
Land	3.2	3.2
Total cost of property, plant and equipment	1,003.7	929.6
Less: accumulated depreciation	(804.4)	(711.3)
Total property, plant and equipment, net of accumulated depreciation	$ 199.3	$ 218.2

Depreciation expense, including depreciation of assets recorded under finance leases, for the years ended December 31, 2023, 2022 and 2021, was $96.6 million, $105.9 million and $98.8 million, respectively.

6. Goodwill

Goodwill is allocated to our reporting units, which are an operating segment or one level below an operating segment. Our reporting units consist of U.S. Markets, Consumer Interactive, and the geographic regions of the United Kingdom, Africa, Canada, Latin America, India and Asia Pacific within our International reportable segment. We test goodwill for impairment on an annual basis in the fourth quarter and monitor throughout the year for impairment triggering events that indicate that the carrying value of one or more of our reporting units exceeds its fair value.

Our quantitative impairment test consists of a fair value calculation for each reporting unit that combines an income approach, using the discounted cash flow method, and a market approach, using the guideline public company method. The quantitative impairment test requires the application of a number of significant assumptions, including estimates of future revenue growth rates, EBITDA margins, discount rates, and market multiples. The projected future revenue growth rates and EBITDA margins, and the resulting projected cash flows of each reporting unit are based on historical experience and internal operating plans reviewed by management, extrapolated over the forecast period. Discount rates are determined using a weighted average cost of capital adjusted for risk factors specific to each reporting unit. Market multiples are based on the Guideline Public Company Method using comparable publicly traded company multiples of EBITDA for a group of benchmark companies.

Third Quarter Interim Impairment Test for our United Kingdom Reporting Unit

During the three months ended September 30, 2023, we identified a triggering event requiring an interim impairment assessment for our United Kingdom reporting unit, which resulted in a goodwill impairment of $414.0 million. The worsening macroeconomic conditions during the third quarter from inflationary pressures and rising interest rates increasingly impacted our United Kingdom business for the third quarter and the near-term outlook. Due to these factors, management believes the U.K. recovery will take longer, and will be at a slower pace, than previously expected. As a result, we revised our short-term and mid-term forecasts for revenue and EBITDA expectations for our United Kingdom reporting unit. These factors particularly impacted the online-only FinTech lenders that represent the largest vertical within our United Kingdom reporting unit. These lenders experienced declines in their access to capital impacting their ability to lend and in some cases leading to bankruptcies.

Annual Impairment Test

For our 2023 annual impairment test, we elected to bypass the qualitative goodwill impairment analysis similar to 2022 and 2021, and instead performed a quantitative goodwill impairment test for all reporting units. For each of our reporting units, the fair value exceeded the carrying value and no impairment was recorded. For our United Kingdom reporting unit, the fair value approximates the carrying value as a result of the impairment recorded in the three months ended September 30, 2023. Our annual impairment test for the United Kingdom reporting unit indicated no further impairment was required. As of December 31, 2023, we had $288.8 million of goodwill for our United Kingdom reporting unit, and an accumulated goodwill impairment of $414.0 million.

We believe the assumptions that we used in our interim and annual impairment assessments for our United Kingdom reporting unit are reasonable and consistent with assumptions that would be used by other marketplace participants. However, such assumptions are inherently uncertain, and a change in assumptions could change the estimated fair value of our United Kingdom reporting unit. Therefore, future impairments of our United Kingdom reporting unit could be required, which could be material to the consolidated financial statements.

Additionally, we did not identify any triggering events in the fourth quarter subsequent to our annual test that would require an interim impairment test for any of the reporting units.

There were no impairment charges recorded in 2022 or 2021.

Goodwill allocated to our reportable segments as of December 31, 2023 and 2022, and the changes in the carrying amount of goodwill during the periods, consisted of the following:

	U.S. Markets	International	Consumer Interactive	Total
Balance, December 31, 2021	$ 3,454.6	$ 1,384.1	$ 687.0	$ 5,525.7
Acquisitions	167.5	—	—	167.5
Purchase accounting measurement period adjustments	(18.1)	—	(7.9)	(26.0)
Foreign exchange rate adjustment	(1.3)	(114.5)	—	(115.8)
Balance, December 31, 2022	$ 3,602.7	$ 1,269.6	$ 679.1	$ 5,551.4
Purchase accounting measurement period adjustments	(0.5)	—	—	(0.5)
Foreign exchange rate adjustment	0.5	38.5	—	39.0
Impairment	—	(414.0)	—	(414.0)
Balance, December 31, 2023	$ 3,602.8	$ 894.1	$ 679.1	$ 5,176.0

The gross and net goodwill balances at each period were as follows:

	December 31, 2023			December 31, 2022		
	Gross Goodwill	Accumulated Impairment	Net Goodwill	Gross Goodwill	Accumulated Impairment	Net Goodwill
U.S Markets	$ 3,602.8	$ —	$ 3,602.8	$ 3,602.7	$ —	$ 3,602.7
International	1,308.1	(414.0)	894.1	1,269.6	—	1,269.6
Consumer Interactive	679.1	—	679.1	679.1	—	679.1
Total	$ 5,590.0	$ (414.0)	$ 5,176.0	$ 5,551.4	$ —	$ 5,551.4

7. Intangible Assets

Intangible assets are initially recorded at their acquisition cost, or fair value if acquired as part of a business combination, and amortized over their estimated useful lives. Intangible assets consisted of the following:

	December 31, 2023			December 31, 2022		
	Gross	Accumulated Amortization	Net	Gross	Accumulated Amortization	Net
Customer relationships	$ 2,060.2	$ (451.6)	$ 1,608.6	$ 2,048.6	$ (330.9)	$ 1,717.7
Internal use software	2,204.5	(1,239.7)	964.8	1,959.8	(1,029.8)	930.0
Database and credit files	1,372.2	(829.2)	543.0	1,337.7	(725.6)	612.1
Trademarks, copyrights and patents	587.7	(188.8)	398.9	587.7	(173.2)	414.5
Noncompete and other agreements	10.5	(10.5)	—	10.5	(9.1)	1.4
Total intangible assets	$ 6,235.1	$ (2,719.8)	$ 3,515.3	$ 5,944.1	$ (2,268.6)	$ 3,675.5

Changes in the carrying amount of intangible assets between periods consisted of the following:

	Gross	Accumulated Amortization	Net
Balance, December 31, 2022	$ 5,944.1	$ (2,268.6)	$ 3,675.5
Developed internal use software	234.9	—	234.9
Amortization	—	(427.8)	(427.8)
Reclassified to assets-held-for-sale	(1.1)	0.7	(0.4)
Disposals and retirements	(0.3)	—	(0.3)
Foreign exchange rate adjustment	57.5	(24.2)	33.3
Balance, December 31, 2023	$ 6,235.1	$ (2,719.8)	$ 3,515.3

All intangible assets are amortized on a straight-line basis, which approximates the pattern of benefit, over their estimated useful lives. Database and credit files are generally amortized over a 12 to 15 year period. Internal use software is generally amortized over 3 to 10 year period. Customer relationships are amortized over a 10 to 20 year period. Trademarks primarily consist of the TransUnion trade name, which is being amortized over a 40 year useful life, and the remaining trademark assets are generally amortized over a shorter period based on their estimated useful life, which ranges between 1 and 20 years. Copyrights, patents, noncompete and other agreements are amortized over varying periods based on their estimated useful lives. The weighted average lives of our intangibles is approximately 14 years.

Amortization expense related to intangible assets for the years ended December 31, 2023, 2022 and 2021, was $427.8 million, $413.1 million and $278.2 million, respectively. Estimated future amortization expense related to intangible assets at December 31, 2023 is as follows:

	Annual Amortization Expense
2024	$ 443.1
2025	420.8
2026	395.2
2027	332.2
2028	272.0
Thereafter	1,652.0
Total future amortization expense	$ 3,515.3

8. Other Assets

Other assets consisted of the following:

	December 31, 2023	December 31, 2022
Investments in affiliated companies (Note 9)	$ 291.4	$ 265.9
Right-of-use lease assets (Note 14)	98.9	127.4
Interest rate swaps (Notes 13 and 20)	162.3	237.7
Note receivable (Note 3 and 20)	82.0	70.3
Deferred income tax asset (Note 18)	11.1	8.2
Other	93.7	61.5
Total other assets	$ 739.4	$ 771.0

The increase is other is due primarily to an increase in deferred contract acquisition costs for certain commissions paid to employees for new contracts.

9. Investments in Affiliated Companies

Investments in affiliated companies represent our investment in non-consolidated domestic and foreign entities. These entities are in businesses similar to ours.

For equity method investments, we adjust the carrying value for our proportionate share of the affiliates' earnings, losses and distributions, as well as for purchases and sales of our ownership interest.

For our Cost Method Investments, we adjust the carrying value for any purchases or sales of our ownership interests. We record any dividends received from these investments as other income in non-operating income and expense.

We have elected to account for our investment in a limited partnership, which is not material, using the net asset value fair value practical expedient. Gains and losses on this investment, which are not material, are included in other income and expense in the Consolidated Statements of Operations.

Investments in affiliated companies consisted of the following:

	December 31, 2023	December 31, 2022
Cost Method Investments	$ 233.8	$ 213.1
Equity method investments	53.9	49.8
Limited partnership investment	3.7	3.0
Total investments in affiliated companies (Note 8)	$ 291.4	$ 265.9

These balances are included in other assets in the Consolidated Balance Sheets. The increase in Cost Method Investments is due to three new Cost Method Investments we made during 2023, two of which are recorded in our U.S. Markets segment and one in our International segment. In addition, we recognized impairment losses totaling $15.9 million on Cost Method Investments in our U.S. Markets segment and Corporate unit in 2023. During 2022, we acquired a Cost Method Investment as part of our VF acquisition which had a carrying value of $25.1 million. We also recorded an impairment of $4.8 million of another Cost Method Investment. During 2021, we recorded a $12.5 million gain on a Cost Method Investment resulting from an observable price change for a similar investment of the same issuer. These gains and losses are included in other income and expense in the Consolidated Statements of Operations.

Earnings from equity method investments, which are included in other non-operating income and expense, and dividends received from equity method investments consisted of the following:

	Twelve Months Ended December 31,		
	2023	2022	2021
Earnings from equity method investments (Note 21)	$ 16.3	$ 13.0	$ 12.0
Dividends received from equity method investments	18.8	11.6	11.0

10. Other Current Liabilities

Other current liabilities consisted of the following:

	December 31, 2023	December 31, 2022
Accrued payroll and employee benefits	$ 216.2	$ 208.5
Accrued legal and regulatory matters (Note 23)	147.8	125.0
Deferred revenue (Note 16)	125.1	111.9
Accrued restructuring (Note 11)	64.9	—
Operating lease liabilities (Note 14)	26.2	33.7
Income taxes payable (Note 18)	10.2	8.0
Other	71.5	53.5
Total other current liabilities	$ 661.8	$ 540.5

11. Restructuring

On November 12, 2023, our Board of Directors ("Board") approved a transformation plan to optimize our operating model and continue to advance our technology. The transformation plan includes an operating model optimization program that will reduce our global workforce, transition certain job responsibilities to global capability centers, and reduce our facility footprint. The Company expects to record pre-tax expenses associated with the operating model optimization program of approximately $155.0 million from the fourth quarter of 2023 through the end of 2025, with the majority of expenses to be incurred by the end of 2024.

In total, we anticipate that the pre-tax expenses related to the restructuring component of the plan will consist of approximately $110.0 million of employee separation expenses and $45.0 million of facility exit expenses, of which a total of $75.3 million has been recorded to date.

The following table summarizes the expenses recorded to date.

	Twelve Months Ended December 31, 2023
Employee separation	$ 71.9
Facility exit[1]	3.4
Total restructuring expenses	$ 75.3

1. Consists of impairments of lease right-of-use ("ROU") assets.

The following table summarizes the changes in the accrued restructuring reserve during the period, which is included in other current liabilities on the Consolidated Balance Sheets.

	Employee Separation Costs
Balance, December 31, 2022	$ —
Restructuring expense	71.9
Cash payments	(7.2)
Foreign exchange rate adjustment	0.2
Balance, December 31, 2023 (Note 10)	$ 64.9

All restructuring expenses have been recorded in the Corporate unit, as these initiatives are predominantly centrally directed and controlled and are not included in internal measures of segment operating performance.

12. Other Liabilities

Other liabilities consisted of the following:

	December 31, 2023	December 31, 2022
Operating lease liabilities (Note 14)	$ 81.8	$ 102.0
Unrecognized tax benefits, net of indirect tax effects (Note 18)	40.2	40.1
Deferred revenue (Note 16)	15.1	5.3
Put option (Note 20)	—	10.0
Other	16.1	16.5
Total other liabilities	$ 153.2	$ 173.9

13. Debt

Debt outstanding consisted of the following:

	December 31, 2023	December 31, 2022
Senior Secured Term Loan B-6, payable in quarterly installments through December 1, 2028, with periodic variable interest (7.72%[1] at December 31, 2023, and 6.63%[2] at December 31, 2022), net of original issue discount and deferred financing fees of $3.5 million and $20.0 million, respectively, at December 31, 2023, and original issue discount and deferred financing fees of $5.3 million and $29.9 million, respectively, at December 31, 2022	$ 1,864.8	$ 2,433.7
Senior Secured Term Loan B-5, payable in quarterly installments through November 15, 2026, with periodic variable interest (7.21%[1] at December 31, 2023, and 6.13%[2] at December 31, 2022), net of original issue discount and deferred financing fees of $1.9 million and $4.6 million, respectively, at December 31, 2023, and original issue discount and deferred financing fees of $2.5 million and $6.2 million, respectively, at December 31, 2022	2,179.4	2,203.3
Senior Secured Term Loan A-4, payable in quarterly installments through October 27, 2028, with periodic variable interest (6.96%[1] at December 31, 2023), net of original issue discount and deferred financing fees of $0.4 million and $3.4 million, respectively, at December 31, 2023	1,296.1	—
Senior Secured Term Loan A-3, refinanced in 2023 with A-4 loans, with periodic variable interest (6.13%[2] at December 31, 2022) and original issue discount and deferred financing fees of $1.3 million and $0.8 million, respectively, at December 31, 2022	—	1,033.0
Finance leases	0.1	0.1
Senior Secured Revolving Credit Facility	—	—
Total debt	5,340.4	5,670.1
Less: short-term debt and current portion of long-term debt	(89.6)	(114.6)
Total long-term debt	$ 5,250.8	$ 5,555.5

1. Periodic variable interest at Term SOFR, plus a credit spread adjustment, or alternate base rate, plus applicable margin as of December 31, 2023.
2. Periodic variable interest at LIBOR or alternate base rate, plus applicable margin as of December 31, 2022.

Excluding any potential additional principal payments which may become due on the Senior Secured Credit Facility based on excess cash flows of the prior year, scheduled future maturities of total debt at December 31, 2023, were as follows:

	December 31, 2023
2024	$ 89.6
2025	89.5
2026	2,230.0
2027	96.0
2028	2,869.0
Thereafter	—
Unamortized original issue discounts and deferred financing fees	(33.7)
Total debt	$ 5,340.4

Senior Secured Credit Facility

On June 15, 2010, we entered into a Senior Secured Credit Facility with various lenders. This facility has been amended several times and currently consists of the Senior Secured Term Loan B-6, Senior Secured Term Loan B-5, Senior Secured Term Loan A-4 (collectively, the "Senior Secured Term Loans"), and the Senior Secured Revolving Credit Facility.

On December 1, 2021, we entered into an agreement to amend certain provisions of the Senior Secured Credit Facility and exercise our right to draw additional debt in an amount of $3,100.0 million, less original issue discount and deferred financing fees of $7.8 million and $43.6 million, respectively. Proceeds from the incremental loan on the Senior Secured Credit Facility were used to fund the acquisition of Neustar.

In addition, on December 1, 2021, we entered into a Second Lien Credit Agreement to obtain term loans (the "Second Lien Term Loan") in an aggregate amount of $640.0 million, less original issue discount and deferred financing fees of $3.2 million and $14.3 million, respectively, used to fund the acquisition of Sontiq. On December 23, 2021, we fully repaid the Second Lien Term Loan using a portion of the proceeds from our sale of the Healthcare business. As a result of the prepayment, we expensed $3.2 million and $14.2 million, respectively, of the unamortized original issue discount and deferred fees to other income and expense in the Consolidated Statements of Operations.

On May 15, 2023, we amended the Senior Secured Credit Facility to replace the reference rate from London Interbank Offered Rate ("LIBOR") to Term Secured Overnight Financing Rate ("Term SOFR"). We applied the practical expedient for reference rate reform to treat the amendment as a continuation of the existing debt agreement.

On October 27, 2023, we executed Amendment No. 21 to the Senior Secured Credit Facility pursuant to which we entered into Senior Secured Term Loan A-4 with an aggregate principal amount of $1.3 billion, the proceeds of which were used to repay Senior Secured Term Loan A-3 in full, repay $300.0 million of Senior Secured Term Loan B-6, and pay the related financing fees and expenses. In addition, we increased the borrowing capacity on the Senior Secured Revolving Credit Facility from $300.0 million to $600.0 million and extended the maturity date from December 10, 2024 to October 27, 2028. In connection with the refinancing, we expensed $5.9 million of the unamortized original issue discount, deferred financing fees, and other related fees to other income and expense in the Consolidated Statements of Operations for the year ended December 31, 2023. Additionally, we recorded incremental deferred financing fees of $4.8 million that will be amortized over the new loan term. Senior Secured Term Loans A-3 and A-4 are a syndicated debt instruments. As a result of the refinancing, we repaid $347.7 million of principal to lenders who left the syndicate and received $655.8 million of principal from new or existing lenders.

During 2023 and 2022, we prepaid $250.0 million and $600.0 million, respectively, of our Senior Secured Term Loan B-6, funded from our cash on hand. During 2021, we prepaid $85.0 million of Senior Secured Term Loan B-5, funded with cash on hand. As a result of these prepayments, we expensed $3.4 million, $9.3 million and $0.5 million in each respective year of the unamortized original issue discount and deferred fees to other income and expense in the Consolidated Statements of Operations.

Interest rates on the Senior Secured Term Loan B-6 are based on Term SOFR with a floor of 0.50%, unless otherwise elected, plus a margin of 2.25% or 2.00% depending on our total net leverage ratio, plus a credit spread adjustment. The Company is required to make principal payments at the end of each quarter of 0.25% of the 2021 incremental principal balance with the remaining balance due December 1, 2028.

Interest rates on the Senior Secured Term Loan B-5 are based on Term SOFR, unless otherwise elected, plus a margin of 1.75%, plus a credit spread adjustment. The Company is required to make principal payments at the end of each quarter of 0.25% of the 2019 refinanced principal balance with the remaining balance due November 15, 2026.

Interest rates on Senior Secured Term Loan A-4 are based on Term SOFR, unless otherwise elected, plus a margin of 1.25%, 1.50% or 1.75% depending on our total net leverage ratio, plus a credit spread adjustment. The Company is required to make principal payments of 0.625%, of the 2023 refinanced principal balance, at the end of each quarter through December 2025; principal payments increase to 1.25% each quarter thereafter with the remaining balance due October 27, 2028.

Interest rates on the Senior Secured Revolving Credit Facility are based on Term SOFR, unless otherwise elected, plus a margin of 1.25%, 1.50% or 1.75% depending on our total net leverage ratio, plus a credit spread adjustment. There is a 0.20%, 0.25% or 0.30% annual commitment fee, depending on our total net leverage ratio, payable quarterly based on the undrawn portion of the Senior Secured Revolving Credit Facility. The commitment under the Senior Secured Revolving Line of Credit expires on October 27, 2028.

The Company may be required to make additional payments based on excess cash flows of the prior year, as defined in the agreement. Depending on the senior secured net leverage ratio for the year, a principal payment of between zero and fifty percent of the excess cash flows will be due the following year. There is no required excess cash flow payment due for 2023. Additional payments based on excess cash flows could be due in future years.

As of December 31, 2023, we have no outstanding balance under the Senior Secured Revolving Credit Facility and $1.2 million of outstanding letters of credit and an available borrowing balance of $598.8 million.

TransUnion also has the ability to request incremental loans on the same terms under the Senior Secured Credit Facility up to the sum of the greater of $1,000.0 million and 100% of Consolidated EBITDA, minus the amount of secured indebtedness and the amount incurred prior to the incremental loan, and may incur additional incremental loans so long as the senior secured net leverage ratio does not exceed 4.25-to-1, subject to certain additional conditions and commitments by existing or new lenders to fund any additional borrowings.

With certain exceptions, the Senior Secured Credit Facility obligations are secured by a first-priority security interest in substantially all of the assets of Trans Union LLC, including its investment in subsidiaries. The Senior Secured Credit Facility contains various restrictions and nonfinancial covenants, along with a senior secured net leverage ratio test. The nonfinancial covenants include restrictions on dividends, investments, dispositions, future borrowings and other specified payments, as well as additional reporting and disclosure requirements. The senior secured net leverage test must be met as a condition to incur additional indebtedness, make certain investments, and may be required to make certain restricted payments. The senior secured net leverage ratio must not exceed 5.5-to-1 at any such measurement date. Under the terms of the Senior Secured Credit Facility, TransUnion may make dividend payments up to the greater of $100 million or 10.0% of Consolidated EBITDA per year, or an unlimited amount provided that no default or event of default exists and so long as the total net leverage ratio does not exceed 4.75-to-1. As of December 31, 2023, we were in compliance with all debt covenants.

Interest Rate Hedging

Effective May 31, 2023, we amended all our interest rate swaps to replace the reference rate from LIBOR to Term SOFR. We applied the practical expedient for reference rate reform to continue to apply hedge accounting to the existing relationships.

On November 16, 2022, we entered into interest rate swap agreements with various counterparties that effectively fix our variable interest rate exposure on a portion of our Senior Secured Term Loan or similar replacement debt. The swaps commenced on December 30, 2022, and expire on December 31, 2024, with a current aggregate notional amount of $1,300.0 million that amortizes each quarter. The swaps require us to pay fixed rates varying between 4.3380% and 4.3870% in exchange for receiving a variable rate that matches the variable rate on our loans. We have designated these swap agreements as cash flow hedges.

On December 23, 2021, we entered into interest rate swap agreements with various counterparties that effectively fix our variable interest rate exposure on a portion of our Senior Secured Term Loan or similar replacement debt. The swaps commenced on December 31, 2021, and expire on December 31, 2026, with a current aggregate notional amount of $1,568.0 million that amortizes each quarter. The swaps require us to pay fixed rates varying between 1.3800% and 1.3915% in exchange for receiving a variable rate that matches the variable rate on our loans. We have designated these swap agreements as cash flow hedges.

On March 10, 2020, we entered into two interest rate swap agreements with various counterparties that effectively fix our variable interest rate exposure on a portion of our Senior Secured Term Loans or similar replacement debt. The first swap commenced on June 30, 2020, and expired on June 30, 2022. The second swap commenced on June 30, 2022, and expires on June 30, 2025, with a current aggregate notional amount of $1,080.0 million that amortizes each quarter after it

commences. The second swap requires us to pay fixed rates varying between 0.8680% and 0.8800% in exchange for receiving a variable rate that matches the variable rate on our loans. We have designated these swap agreements as cash flow hedges.

The change in the fair value of our hedging instruments, included in our assessment of hedge effectiveness, is recorded in other comprehensive income, and reclassified to interest expense when the corresponding hedged debt affects earnings.

The net change in the fair value of the swaps resulted in an unrealized loss of $75.5 million ($56.6 million, net of tax), an unrealized gain of $260.1 million ($195.2 million, net of tax), and an unrealized gain of $67.3 million ($50.5 million, net of tax) for the years ended December 31, 2023, 2022 and 2021, respectively, recorded in other comprehensive income. Interest income on the swaps in the twelve months ended December 31, 2023 and 2022 was $112.6 million ($84.4 million, net of tax) and $8.3 million ($6.2 million, net of tax). Interest expense on the swaps in the twelve months ended December 31, 2021 was $41.8 million ($31.4 million, net of tax), respectively. We expect to recognize a gain of approximately $94.3 million as a reduction to interest expense due to our expectation that the variable rate that we receive will exceed the fixed rates of interest over the next twelve months.

Fair Value of Debt

As of December 31, 2023 and 2022, the fair value of our Senior Secured Term Loan B-6, excluding original issue discounts and deferred fees, was approximately $1,895.1 million and $2,450.5 million, respectively. As of December 31, 2023 and 2022, the fair value of our Senior Secured Term Loan B-5, excluding original issue discounts and deferred fees, was approximately $2,191.5 million and $2,184.4 million, respectively. As of December 31, 2023 and 2022, the fair value of our variable-rate Senior Secured Term Loan A-4, excluding original issue discounts and deferred fees was approximately $1,291.9 million and $1,026.6 million, respectively. The fair values of our variable-rate term loans are determined using Level 2 inputs, based on quoted market prices for the publicly traded instruments.

14. Leases

Our lease obligations consist of operating leases for office space and data centers and a small number of finance leases for equipment. Our operating leases have remaining lease terms of up to 9.2 years. As of December 31, 2023 and 2022, the weighted-average remaining lease terms were 6.1 years and 6.4 years, respectively. We have options to extend many of our operating leases for an additional period of time and options to terminate several of our operating leases early. The lease term consists of the non-cancelable period of the lease, periods covered by options to extend the lease if we are reasonably certain to exercise the option, periods covered by an option to terminate the lease if we are reasonably certain not to exercise the option, and periods covered by an option to extend or not to terminate the lease in which the exercise of the option is controlled by the lessor.

On the commencement date of an operating lease, we record a ROU asset, which represents our right to use or control the use of the specified asset for the lease term, and an offsetting lease liability, which represents our obligation to make lease payments arising from the lease, based on the present value of the net fixed future lease payments due over the initial lease term. We use an estimate of the incremental borrowing rate for similarly rated debt issuers, at the inception of the lease or when the lease is assumed, as the discount rate to determine the present value of the net fixed future lease payments, except for leases where the interest rate implicit in the lease is readily determinable. As of December 31, 2023 and 2022, the weighted-average discount rate at lease inception used to calculate the present value of the fixed future lease payments were 4.5% and 4.2%, respectively.

Lease accounting guidance under Accounting Standards Codification 842 Leases (“ASC 842”) requires us to expense the net fixed payments of operating leases on a straight-line basis over the lease term. ASC 842 requires us to include any built up deferred or prepaid rent balance resulting from the difference between the straight-line expense and the cash payments as a component of our ROU asset. Also included in our ROU asset is any monthly prepayment of rent. Our rent expense is typically due on the first day of each month, and we typically pay rent several weeks before it is due, so at any given month end, we will have a prepaid rent balance that is included as a component of our ROU asset.

Our operating leases principally involve office space with fixed monthly lease payments that may also contain variable non-lease components consisting of common area maintenance, operating expenses, insurance and similar costs of the space that we occupy. We have adopted the practical expedient to not separate these non-lease components from the lease components and instead account for them as a single lease component for all of our leases. This practical expedient allows us to allocate the fixed lease components and the non-lease components based on the contractually stated amounts, with the fixed lease components included in our ROU assets and lease liability values. The variable payments are not included within the operating lease ROU assets or lease liabilities and are expensed in the period in which they are incurred.

We have no significant short-term operating leases, finance leases, or subleases.

ROU assets are included in Other Assets, and operating lease liabilities are included in Other Current Liabilities and Other Liabilities in our Consolidated Balance Sheet. Finance lease assets are included in Property, Plant and Equipment, and finance lease liabilities, if any, are included in the Current Portion of Long-term Debt and Long-term Debt in our Consolidated Balance Sheet. See Note 8, “Other Assets,” Note 10, “Other Current Liabilities,” Note 12, “Other Liabilities,” and Note 13, “Debt,” for additional information about these items.

For the years ended December 31, 2023, 2022 and 2021 our operating lease costs, including fixed, variable and short-term lease costs, were $39.7 million, $44.5 million and $30.4 million, respectively. Cash paid for operating leases are included in operating cash flows and were $39.4 million, $36.5 million and $30.9 million, for the years ended December 31, 2023, 2022 and 2021, respectively. Our finance lease amortization expense, interest expense, and cash paid were not significant for the reported periods.

We have elected to use the portfolio approach to assess the discount rate we use to calculate the present value of our future lease payments. Using this approach does not result in a materially different outcome compared with applying separate discount rates to each lease in our portfolio.

We have adopted an accounting policy to recognize rent expense for short-term leases, those leases with initial lease terms of twelve months or less, on a straight-line basis in our income statement.

For leases where we will derive no economic benefit from leased space that we have vacated, we recognize an impairment of right-of-use assets at the time we vacate. As of December 31, 2023, we recognized an impairment of $3.4 million as disclosed in Note 11, “Restructuring.”

Future fixed payments for non-cancelable operating leases in effect as of December 31, 2023 are payable as follows:

	Operating Leases
2024	$ 30.4
2025	21.1
2026	17.0
2027	13.9
2028	9.0
Thereafter	31.2
Total operating lease payments	122.6
Less imputed interest	(14.3)
Totals	$ 108.3

The future fixed payments for non-cancelable finance leases are $0.1 million and are due in 2024.

15. Stockholders' Equity

Common Stock Dividends

The dividend rate was $0.105 per share in each quarter of 2023 and the third and fourth quarters of 2022, $0.095 per share in each quarter from the second quarter of 2021 to the second quarter of 2022, and $0.075 per share in the first quarter of 2021. During 2023, 2022 and 2021, we paid dividends of $81.8 million, $77.8 million and $69.8 million, respectively. Dividends declared accrue to outstanding restricted stock units and are paid to employees as dividend equivalents when the restricted stock units vest.

Any determination to pay dividends in the future will be at the discretion of our Board and will depend on a number of factors, including our liquidity, results of operations, financial condition, contractual restrictions, restrictions imposed by applicable law, and other factors our Board deems appropriate. We currently have capacity and intend to continue to pay a quarterly dividend, subject to approval by our Board.

Treasury Stock

In February 2017, our Board authorized the repurchase of up to $300.0 million of our common stock over the next three years. Our Board removed the three-year time limitation in February 2018. To date, we have repurchased $133.5 million of our common stock and have the ability to repurchase the remaining $166.5 million.

We have no obligation to repurchase additional shares. Any determination to repurchase additional shares will be at the discretion of management and will depend on a number of factors, including our liquidity, results of operations, financial condition, contractual restrictions, restrictions imposed by applicable law, market conditions, the cost of repurchasing shares, the availability of alternative investment opportunities, and other factors management deems appropriate. Any repurchased shares will have the status of treasury shares and may be used, if and when needed, for general corporate purposes.

During 2023, 2022 and 2021, 0.8 million, 0.8 million and 1.2 million outstanding employee restricted stock units vested and became taxable to the employees. Employees satisfy their payroll tax withholding obligations in a net share settlement arrangement. During 2023, 2022 and 2021 we remitted cash to the respective governmental agencies equivalent to the value of the shares employees used to satisfy their withholding obligations of $18.4 million, $32.5 million and $36.8 million, respectively.

Preferred Stock

As of December 31, 2023 and 2022, we had 100.0 million shares of preferred stock authorized and no preferred stock issued or outstanding.

16. Revenue

We have contracts with two general groups of performance obligations, Stand Ready Performance Obligations and Other Performance Obligations. Our Stand Ready Performance Obligations include obligations to stand ready to provide data, process transactions, access our databases, software-as-a-service, and direct-to-consumer products, provide rights to use our intellectual property and other services. Our Other Performance Obligations include the sale of certain batch data sets and various professional and other services.

Most of our Stand Ready Performance Obligations consist of a series of distinct goods and services that are substantially the same and have the same monthly pattern of transfer to our customers. We consider each month of service in this time series to be a distinct performance obligation and, accordingly, recognize revenue over time. For a majority of these Stand Ready Performance Obligations, the total contractual price is variable because our obligation is to process an unknown quantity of transactions, as and when requested by our customers, over the contract period. We allocate the variable price to each month of service using the time-series concept and recognize revenue based on the most likely amount of consideration to which we will be entitled**,** which is generally the amount we have the right to invoice. This monthly amount can be based on the actual volume of units delivered or a guaranteed minimum, if higher. Occasionally we have contracts where the amount we will be entitled to for the transactions processed is uncertain, in which case we estimate the revenue based on what we consider to be the most likely amount of consideration we will be entitled to and adjust any estimates as facts and circumstances evolve.

For all contracts that include a Stand Ready Performance Obligation with variable pricing, we are unable to estimate the variable price attributable to future performance obligations because the number of units to be purchased is not known. As a result, we use the exception available to forgo disclosures about revenue attributable to the future performance obligations where we recognize revenue using the time-series concept as discussed above, including those qualifying for the right to invoice practical expedient. We also use the exception available to forgo disclosures about revenue attributable to contracts with expected durations of one year or less.

Certain of our Other Performance Obligations, including certain batch data sets and certain professional and other services, are delivered at a point in time. Accordingly, we recognize revenue upon delivery once we have satisfied that obligation. For certain Other Performance Obligations, including certain professional and other services, we recognize revenue over time, based on an estimate of progress towards completion of that obligation. These contracts are not material.

In certain circumstances, we apply the revenue recognition guidance to a portfolio of contracts with similar characteristics. We use estimates and assumptions when accounting for a portfolio that reflect the size and composition of the portfolio of contracts.

Our contracts include standard commercial payment terms generally acceptable in each region, and do not include financing with extended payment terms. We have no significant obligations for refunds, warranties, or similar obligations. Our revenue does not include taxes collected from our customers.

Accounts receivable are shown separately on our balance sheet. Contract assets and liabilities result due to the timing of revenue recognition, billings, and cash collections. Contract assets include our right to payment for goods and services already transferred to a customer when the right to payment is conditional on something other than the passage of time, for example, contracts pursuant to which we recognize revenue over time but do not have a contractual right to payment until we complete the contract. Contract assets are included in our other current assets and are not material as of December 31, 2023 and 2022.

As most of our contracts with customers have a duration of one year or less, our contract liabilities consist of deferred revenue that is primarily short-term in nature. Contract liabilities include current and long-term deferred revenue that is included in other current liabilities and other liabilities. We expect to recognize the December 31, 2023 current deferred revenue balance as revenue during 2024. The majority of our long-term deferred revenue, which is not material, is expected to be recognized in less than two years.

We have certain contracts that have a duration of more than one year. For these contracts, the transaction price allocable to the future performance obligations is primarily fixed but contains a variable component. As of December 31, 2023, the aggregate amount of transaction price attributable to future performance obligations for long-term non-cancelable contracts, excluding the variable component, totals approximately $690 million. We expect to recognize approximately 55% of this amount in 2024, 30% in 2025 and 15% thereafter.

For additional disclosures about the disaggregation of our revenue see Note 21, “Reportable Segments.”

17. Earnings Per Share

Basic earnings per share represents income available to common stockholders divided by the weighted average number of common shares outstanding during the reported period. Diluted earnings per share reflects the effect of the increase in shares outstanding determined by using the treasury stock method for awards issued under our incentive stock plans.

As of December 31, 2023, 2022 and 2021, there were less than 1.0 million anti-dilutive weighted stock-based awards outstanding. As of December 31, 2023, 2022 and 2021, there were 0.4 million, 0.2 million and 0.1 million, respectively, of contingently issuable performance-based stock awards outstanding that were excluded from the diluted earnings per share calculation because the contingencies had not been met. Potentially dilutive shares whose effect would have been antidilutive are excluded from the computation of diluted net income per share.

Basic and diluted weighted average shares outstanding and earnings per share were as follows:

	Twelve Months Ended December 31,		
	2023	2022	2021
(Loss) income from continuing operations	$ (190.1)	$ 264.1	$ 373.7
Less: income from continuing operations attributable to noncontrolling interests	(15.4)	(15.2)	(15.0)
(Loss) income from continuing operations attributable to TransUnion	$ (205.4)	$ 248.9	$ 358.7
Discontinued operations, net of tax	(0.7)	17.4	1,031.7
Net (loss) income attributable to TransUnion	$ (206.2)	$ 266.3	$ 1,390.3
Basic (loss) earnings per common share[1] from:			
(Loss) income from continuing operations attributable to TransUnion	$ (1.06)	$ 1.29	$ 1.87
Discontinued operations, net of tax	—	0.09	5.39
Net (loss) income attributable to TransUnion	$ (1.07)	$ 1.38	$ 7.26
Diluted (loss) earnings per common share[1] from:			
(Loss) income from continuing operations attributable to TransUnion	$ (1.06)	$ 1.29	$ 1.86
Discontinued operations, net of tax	—	0.09	5.35
Net (loss) income attributable to TransUnion	$ (1.07)	$ 1.38	$ 7.20
Weighted-average shares outstanding:			
Basic	193.4	192.5	191.4
Dilutive impact of stock based awards	—	0.7	1.6
Diluted	193.4	193.1	193.0

1. For each period presented above, each component of (loss) earnings per share is calculated independently, therefore, rounding differences may exist in the table above.

18. Income Taxes

The provision for income taxes consisted of the following:

	Twelve Months Ended December 31,		
	2023	2022	2021
Federal			
Current	$ 100.0	$ 101.8	$ 62.9
Deferred	(102.1)	(55.9)	(9.3)
State			
Current	11.1	28.7	18.9
Deferred	(28.3)	(14.6)	—
Foreign			
Current	96.3	77.3	67.3
Deferred	(32.3)	(18.4)	(7.9)
Provision for income taxes	$ 44.7	$ 118.9	$ 131.9

The components of income before income taxes consisted of the following:

	Twelve Months Ended December 31,		
	2023	2022	2021
Domestic	$ (40.6)	$ 151.5	$ 322.5
Foreign	(104.7)	231.5	183.1
(Loss) income from continuing operations before income taxes	$ (145.3)	$ 383.0	$ 505.6

The effective income tax rate reconciliation consisted of the following:

	Twelve Months Ended December 31,					
	2023		2022		2021	
Income taxes at statutory rate	$ (30.5)	21.0 %	$ 80.4	21.0 %	$ 106.2	21.0 %
Increase (decrease) resulting from:						
State taxes, net of federal benefit	(21.9)	15.1 %	8.0	2.1 %	15.6	3.1 %
Foreign rate differential	(22.5)	15.5 %	(4.6)	(1.2)%	(6.8)	(1.3)%
Excess tax benefits on stock-based compensation	3.0	(2.0)%	(5.0)	(1.3)%	(10.8)	(2.2)%
Foreign tax law changes	—	— %	(0.1)	— %	22.7	4.5 %
Uncertain tax positions	7.5	(5.2)%	5.7	1.5 %	4.6	0.9 %
Valuation allowances	3.1	(2.1)%	18.3	4.7 %	(5.0)	(1.0)%
Foreign withholding taxes	13.0	(8.9)%	9.6	2.5 %	6.5	1.3 %
U.S. Federal tax on foreign earnings	0.2	(0.1)%	(1.4)	(0.4)%	(15.1)	(3.0)%
U.S. Federal R&D tax credit	(8.6)	5.9 %	(9.7)	(2.5)%	(6.4)	(1.3)%
Nondeductible expenses	6.8	(4.7)%	14.0	3.6 %	20.0	4.0 %
Nondeductible goodwill impairment	97.3	(67.0)%	—	— %	—	— %
Other	(2.7)	1.7 %	3.7	1.0 %	0.4	0.1 %
Total	$ 44.7	(30.8)%	$ 118.9	31.0 %	$ 131.9	26.1 %

For 2023, we reported a (30.8)% effective tax rate, is lower than the 21.0% U.S. federal corporate statutory rate due primarily to the impact of non-deductible goodwill impairment partially offset by benefits on the remeasurement of deferred taxes due to changes in state apportionment rates.

For 2022, we reported a 31.0% effective tax rate, which is higher than the 21.0% U.S. federal corporate statutory rate due primarily to increases in valuation allowances on foreign tax credit carryforwards, nondeductible expenses in connection with certain legal and regulatory matters and executive compensation limitations, and other rate-impacting items, partially offset by benefits from the research and development credit and excess tax benefits on stock-based compensation.

For 2021, we reported a 26.1% effective tax rate, which is higher than the 21.0% U.S. federal corporate statutory rate due primarily to recording tax expense related to the remeasurement of our U.K. deferred taxes to reflect an increase in the U.K. corporate tax rate enacted in the second quarter 2021 and nondeductible transaction costs and penalties, partially offset by excess tax benefits on stock based compensation and a tax benefit related to electing the Global Intangible Low Tax Income ("GILTI") high-tax exclusion retroactively for the 2018 and 2019 tax years. On July 20, 2020, the U.S. Treasury issued and enacted final regulations related to GILTI that allow certain U.S. taxpayers to elect to exclude foreign income that is subject to a high effective tax rate from their GILTI inclusions. The GILTI high-tax exclusion is an annual election and is retroactively available.

Components of net deferred income tax consisted of the following:

	December 31, 2023	December 31, 2022
Deferred income tax assets:		
Compensation	$ 21.7	$ 19.5
Employee benefits	38.4	25.5
Legal reserves and settlements	11.0	10.7
Loss and tax credit carryforwards	228.0	179.2
Leases	26.9	38.4
Section 174 R&D Expense	58.1	37.7
Other	36.3	36.7
Gross deferred income tax assets	$ 420.4	$ 347.7
Valuation allowance	(104.7)	(98.9)
Total deferred income tax assets, net	$ 315.7	$ 248.8
Deferred income tax liabilities:		

Depreciation and amortization	(789.8)	(874.9)
Right of use asset	(25.1)	(36.0)
Taxes on unremitted foreign earnings	(24.0)	(14.6)
Investment in affiliated companies	(7.6)	(7.3)
Hedge investments	(40.6)	(59.3)
Other	(10.4)	(10.5)
Total deferred income tax liability	(897.5)	(1,002.6)
Net deferred income tax liability	$ (581.8)	$ (753.8)

Deferred tax assets and liabilities result from temporary differences between tax and accounting methods. Our balance sheet includes a deferred tax assets of $11.1 million and $8.2 million at December 31, 2023 and 2022, respectively, which are included in other assets.

If certain deferred tax assets are not likely recoverable in future years a valuation allowance is recorded. As of December 31, 2023 and 2022, a valuation allowance of $104.7 million and $98.9 million, respectively, reduced deferred tax assets related to worldwide net operating losses and tax credit carryforwards. Our estimate of the amount of the deferred tax asset we can realize requires significant assumptions about projected revenues and income that are impacted by future market and economic conditions. Our carryforwards will expire as follows: U.S. federal net operating loss carryforwards over four years to an indefinite number of years, foreign loss carryforwards over one year to an indefinite number of years, foreign tax credit carryforwards over ten years, interest expense carryforwards over an indefinite number of years, state net operating loss carryforwards over one year to an indefinite number of years and state tax credit carryforwards over one year to an indefinite number of years. As of December 31, 2023, the deferred tax assets associated with U.S. foreign tax credit carryforwards and U.S. federal net operating loss carryforwards were $62.9 million and $6.7 million, respectively. Deferred tax assets associated with foreign net operating loss carryforwards and foreign interest expense carryforwards were $31.6 million and $60.3 million, respectively. Deferred tax assets associated with U.S. federal and state interest expense carryforwards is $42.9 million. Deferred tax assets associated with other loss and tax credit carryforwards were not significant.

The total amount of gross unrecognized tax benefits consisted of the following:

	December 31, 2023	December 31, 2022	December 31, 2021
Balance as of beginning of period	$ 45.1	$ 45.8	$ 36.9
Increase (decrease) in tax positions due to acquisition	—	(0.1)	5.3
Increase in tax positions of prior years	2.2	0.3	5.6
Decrease in tax positions of prior years	(3.4)	(3.7)	(4.5)
Increase in tax positions of current year	3.0	3.2	2.8
Reductions relating to settlement and lapse of statute	(1.9)	(0.4)	(0.4)
Balance as of end of period	$ 45.0	$ 45.1	$ 45.8

The amounts that would affect the effective tax rate if recognized are $34.5 million, $30.5 million and $28.3 million, respectively, for the years ended December 31, 2023, 2022 and 2021.

We classify interest and penalties as income tax expense in the Consolidated Statements of Operations and their associated liabilities as other liabilities in the Consolidated Balance Sheets. Interest and penalties on unrecognized tax benefits were $14.0 million, $10.1 million and $7.6 million, respectively, for the years ended December 31, 2023, 2022 and 2021.

We are regularly audited by federal, state and foreign taxing authorities. Given the uncertainties inherent in the audit process, it is reasonably possible that certain audits could result in a significant increase or decrease in the total amounts of unrecognized tax benefits. An estimate of the range of the increase or decrease in unrecognized tax benefits due to audit results cannot be made at this time. Tax years 2009 and forward remain open for examination in some foreign jurisdictions, 2015 and forward in some state jurisdictions, and 2012 and forward for U.S. federal purposes.

19. Stock-Based Compensation

Under the TransUnion Holding Company, Inc. 2012 Management Equity Plan (the "2012 Plan"), stock-based awards could be issued to executive officers, employees and independent directors of the Company. A total of 10.1 million shares were authorized for grant under the 2012 Plan. Effective upon the closing of our initial public offering, the Company's Board and its stockholders adopted the TransUnion 2015 Omnibus Incentive Plan, which has since been amended and restated (the "2015 Plan"), and no more shares can be issued under the 2012 Plan. During 2020, we increased the authorized shares available under the 2015 plan to a total of 12.4 million shares. The 2015 Plan provides for the granting of stock options, restricted stock awards and restricted stock units to key employees, directors or other persons having a service relationship with the Company and its affiliates. As of December 31, 2023, there were approximately 3.4 million of unvested awards outstanding and approximately 5.8 million of awards have vested under the 2015 Plan.

Effective upon the closing of the initial public offering, the Company's Board and its stockholders adopted the TransUnion 2015 Employee Stock Purchase Plan, which has since been amended and restated (the "ESPP"). A total of 2.4 million shares have been authorized to be issued under the ESPP. The ESPP provides certain employees of the Company with an opportunity to purchase the Company's common stock at a discount. As of December 31, 2023, the Company has issued approximately 1.7 million shares of common stock under the ESPP.

For the years ended December 31, 2023, 2022 and 2021, we recognized stock-based compensation expense of $100.6 million, $81.1 million and $70.1 million, respectively, with related income tax benefits of approximately $17.2 million, $13.5 million and $10.0 million, respectively. Stock-based compensation expense for cash-settleable awards was an expense of $0.2 million in 2023, a benefit of $1.7 million in 2022, and an expense of $0.9 million in 2021. Expense associated with the ESPP for the years ended December 31, 2023, 2022 and 2021 was $4.9 million, $3.3 million and $3.2 million, respectively. Stock-based compensation expense includes expense associated with cash-settleable awards and the ESPP.

2012 Plan

Stock Options

Stock options granted under the 2012 Plan have a 10-year term. For stock options granted to employees, 40% generally vest based on the passage of time (service condition options), and 60% generally vest based on the passage of time, subject to meeting certain stockholder return on investment conditions (market condition options). These stockholder return on investment conditions were satisfied in February 2017, and all remaining outstanding stock options now vest solely on the passage of time. All stock options granted to non-employee directors vest based on the passage of time.

Service condition options were valued using the Black-Scholes valuation model and vest over a 5-year service period, with 20% generally vesting one year after the grant date, and 5% vesting each quarter thereafter. Compensation costs for the service condition options are recognized on a straight-line basis over the requisite service period for the entire award. Market condition options were valued using a risk-neutral Monte Carlo valuation model and vest over a 5 year service period now that the market conditions have been satisfied. There were no stock options granted during 2023, 2022 and 2021.

Stock option activity as of December 31, 2023 and 2022 and for the year ended December 31, 2023 consisted of the following:

	Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in millions)
Outstanding as of December 31, 2022	102,298	$ 10.71	1.3	$ 4.7
Granted	—	—		
Exercised	(74,334)	8.77		
Forfeited	—	—		
Expired	—	—		
Outstanding as of December 31, 2023	27,964	$ 15.88	1.3	$ 1.5
Expected to vest as of December 31, 2023	—	$ —	0.0	$ —
Exercisable as of December 31, 2023	27,964	$ 15.88	1.3	$ 1.5

As of December 31, 2023, there was no stock-based compensation expense remaining to be recognized in future years related to options. During 2023, cash received from the exercise of stock options was $0.7 million and the tax benefit realized from the exercise of stock options was $0.2 million.

The intrinsic value of options exercised and the fair value of options vested for the periods presented are as follows:

	Twelve Months Ended December 31,		
	2023	2022	2021
Intrinsic value of options exercised	$ 3.9	$ 10.9	$ 31.4
Total fair value of options vested	$ 0.3	$ 0.6	$ 1.7

2015 Plan

Restricted Stock Units

During 2023, 2022 and 2021, restricted stock units were granted under the 2015 Plan. Restricted stock units issued to date generally consist of service-based restricted stock units that vest based on passage of time and performance-based awards. Performance-based restricted stock units consist of revenue and Adjusted EBITDA awards that vest based on the passage of time subject to meeting 3-year cumulative revenue and Adjusted EBITDA targets, and market-based relative total stockholder return ("TSR") awards that vest based on the passage of time, subject to how our stock price performs relative to a benchmark of similar companies over a three-year period. Service-based awards generally vest over 3.5 years. Performance-based awards generally vest over 3-years and vest between zero and 200% based on the final cumulative performance measures and TSR achievement relative to the targets over the measurement period. We occasionally issue off-cycle or special grants that could have different performance measurements and vesting terms.

Service-based and revenue and Adjusted EBITDA performance-based restricted stock units are valued based on the closing market price of our stock on the date of grant. Because of the market condition in our TSR restricted stock units, they are valued using a risk-neutral Monte-Carlo simulation model based on input assumptions that exist as of the date of each grant. The primary input assumptions utilized in determining the grant date fair value of the TSR restricted stock unit are the expected stock volatility for the Company and the benchmark group of companies, the risk-free interest rate, expected dividend yields, and correlations between our stock price and the stock prices of the peer group of companies. For our 2023 grants, the volatility inputs for our stock ranged between 33.60% and 34.22%, and the risk-free interest rate inputs ranged between 3.97% and 4.51%.

Restricted stock unit activity as of December 31, 2023 and 2022 and for the year ended December 31, 2023 consisted of the following:

	Shares	Weighted Average Grant Date Fair Value	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in millions)
Outstanding as of December 31, 2022	2,320,711	$ 94.73	1.3	$ 131.7
Granted	2,162,731	76.56		
Vested	(766,282)	93.60		
Forfeited	(310,457)	82.32		
Outstanding as of December 31, 2023	3,406,703	$ 84.59	1.5	$ 234.1
Expected to vest as of December 31, 2023	3,308,803	$ 84.82	1.5	$ 227.3

The fair value and intrinsic value of restricted stock units that vested during the year ended December 31, 2023 was $71.7 million and $54.6 million, respectively. As of December 31, 2023, stock-based compensation expense remaining to be recognized in future years related to restricted stock units that we currently expect to vest was $171.1 million with weighted-average recognition periods of 2.2 years. During 2023, the tax benefit realized from vested restricted stock units was $10.1 million.

20. Fair Value

The following table summarizes financial instruments measured at fair value, on a recurring basis, as of December 31, 2023:

	Total	Level 1	Level 2	Level 3
Assets				
Interest rate swaps (Note 8 and 13)	$ 162.3	$ —	$ 162.3	$ —
Note receivable (Note 2 and 8)	82.0	—	82.0	—
Available-for-sale debt securities (Note 4)	2.7	—	2.7	—
Total	$ 247.0	$ —	$ 247.0	$ —

The following table summarizes financial instruments measured at fair value, on a recurring basis, as of December 31, 2022:

	Total	Level 1	Level 2	Level 3
Assets				
Interest rate swaps (Note 8 and 13)	$ 237.7	$ —	$ 237.7	$ —
Note receivable (Note 2 and 8)	70.3	—	70.3	—
Available-for-sale debt securities (Note 4)	2.6	—	2.6	—
Total	$ 310.6	$ —	$ 310.6	$ —
Liabilities				
Put option on Cost Method Investment (Note 12)	10.0	—	—	10.0
Total	$ 10.0	$ —	$ —	$ 10.0

Level 2 instruments consist of foreign exchange-traded corporate bonds, interest rate swaps, and notes receivable. Foreign exchange-traded corporate bonds are available-for-sale debt securities valued at their current quoted prices. These securities mature between 2027 and 2033. Unrealized gains and losses on available-for-sale debt securities, which are not material, are included in other comprehensive income. The interest rate swaps fair values are determined using the market standard methodology of discounting the future expected net cash receipts or payments that would occur if variable interest rates rise above or fall below the fixed rates of the swaps. The variable interest rates used in the calculations of projected receipts on the swaps are based on an expectation of future interest rates derived from observable market interest rate curves and volatilities. As discussed in Note 13, “Debt,” there are three tranches of interest rate swaps. In December 2022, we sold the non-core businesses of our VF acquisition. A portion of the consideration was in the form of a $72.0 million note receivable. The note receivable accrues interest semiannually at a per annum rate of 10.6% and is payable at maturity. The note matures on June 30, 2025, subject to an option of the note issuer to extend the maturity date for two successive terms of three months each, at an increased rate of interest at each extension. The note was initially recorded at fair value of $70.3 million using an income approach for fixed income securities where contractual cash flows were discounted to present value at a risk-adjusted rate of return in a lattice model framework. The fair value of the note is determined each period by applying the same approach, considering changes to the risk-adjusted rate of return given observed changes to the interest rate environment, market pricing of credit risk, and issuer-specific credit risk.

Level 3 instruments consist of a put option on a Cost Method Investment. The put option allows the owners of the remaining shares to compel TransUnion to purchase their shares, subject to the fulfillment of certain conditions. The fair value of the put option is determined using a Monte Carlo analysis with assumptions that include revenue projections, volatility rates, discount rates and the option period, among others. We have adjusted the fair value of the put option to zero at December 31, 2023 with the adjustment recorded in other income and expense on the Consolidated Statements of Operations.

21. Reportable Segments

We have three reportable segments, U.S. Markets, International, and Consumer Interactive, and the Corporate unit, which provides support services to each of the segments. Our Chief Operating Decision Maker (“CODM”) uses the profit measure of Adjusted EBITDA, on both a consolidated and a segment basis, to allocate resources and assess performance of our businesses. We use Adjusted EBITDA as our profit measure because it eliminates the impact of certain items that we do not consider indicative of operating performance, which is useful to compare operating results between periods. Our Board and executive management team also use Adjusted EBITDA as a compensation measure for both segment and corporate management under our incentive compensation plans. Adjusted EBITDA is also a measure frequently used by securities analysts, investors, and other interested parties in their evaluation of the operating performance of companies similar to ours.

The segment financial information below aligns with how we report information to our CODM to assess operating performance and how we manage the business. The accounting policies of the segments are the same as described in Note 1, "Significant Accounting and Reporting Policies" and Note 16, "Revenue."

The following is a more detailed description of our reportable segments and the Corporate unit, which provides support services to each segment:

U.S. Markets

The U.S. Markets segment provides consumer reports, actionable insights and analytics to businesses. These businesses use our services to engage and acquire customers, assess consumers' ability to pay for services, identify cross-selling opportunities, measure and manage debt portfolio risk, collect debt, verify consumer identities, and mitigate fraud risk. The core capabilities and delivery methods in our U.S. Markets segment allow us to serve a broad set of customers across industries.

We report disaggregated revenue of our U.S. Markets segment for Financial Services and Emerging Verticals.

- ***Financial Services:*** The Financial Services vertical is comprised of our consumer lending, mortgage, auto and cards and payments lines of business. Our Financial Services clients consist of most banks, credit unions, finance companies, auto lenders, mortgage lenders, FinTechs, and other consumer lenders in the United States. We also distribute our solutions through most major resellers, secondary market players, and sales agents. Beyond traditional lenders, we work with a variety of credit arrangers, such as auto dealers and peer-to-peer lenders. Our solutions span every aspect of the lending lifecycle, including customer acquisition and engagement, fraud and ID management, retention, and recovery. Our core products include credit reporting, credit marketing, analytics and consulting, identity verification, fraud prevention, outbound calling and contact center solutions, people-based marketing solutions, and authentication and debt recovery solutions. The revenue of Argus is included in Financial Services since the date of the acquisition.
- ***Emerging Verticals:*** Emerging Verticals include Technology, Commerce & Communications, Insurance, Media, Services & Collections, Tenant & Employment, and Public Sector. Our solutions in these verticals are also data-driven and address the entire customer lifecycle. Our core products include outbound calling and contact center solutions, onboarding and transaction processing solutions, scoring and analytic solutions, people-based marketing solutions, fraud and identity management solutions, public record solutions, and customer retention solutions.

International

The International segment provides services similar to our U.S. Markets segment to businesses in select regions outside the United States. Depending on the maturity of the credit economy in each country, services may include credit reports, analytics and solutions services, and other value-added risk management services. In addition, we have insurance, business, and automotive databases in select geographies. These services are offered to customers in a number of industries including financial services, insurance, automotive, collections, and communications and are delivered through both direct and indirect channels. The International segment also provides consumer services similar to those offered by our Consumer Interactive segment that help consumers proactively manage their personal finances and take precautions against identity theft.

We report disaggregated revenue of our International segment for the following regions: Canada, Latin America, the United Kingdom, Africa, India, and Asia Pacific.

Consumer Interactive

The Consumer Interactive segment provides solutions that help consumers manage their personal finances and take precautions against identity theft. Services in this segment include paid and free credit reports, scores and freezes, credit monitoring, identity protection and resolution, and financial management for consumers. The segment also provides solutions that help businesses respond to data breach events. Our products are provided through user-friendly online and mobile interfaces and are supported by educational content and customer support. Our Consumer Interactive segment serves consumers through both direct and indirect channels.

Corporate

Corporate provides support services for each of the segments, holds investments, and conducts enterprise functions. Certain costs incurred in Corporate that are not directly attributable to one or more of the segments remain in Corporate. These costs are typically enterprise-level costs and are primarily administrative in nature.

Selected segment financial information and disaggregated revenue consisted of the following:

	Twelve Months Ended December 31,		
	2023	2022	2021
Gross Revenue:			
U.S. Markets:			
Financial Services	$ 1,280.3	$ 1,255.1	$ 1,090.0
Emerging Verticals	1,223.9	1,192.1	701.0
Total U.S. Markets	2,504.2	2,447.3	1,791.0
International:			
Canada	139.5	128.2	126.9
Latin America	120.6	112.9	103.2
United Kingdom	197.2	203.0	216.5
Africa	60.6	61.7	59.5
India	218.8	174.2	133.1
Asia Pacific	88.6	75.9	62.7
Total International	825.3	755.9	701.9
Total Consumer Interactive	579.7	585.3	545.8
Total revenue, gross	$ 3,909.3	$ 3,788.4	$ 3,038.7
Intersegment revenue eliminations:			
U.S. Markets	$ (71.7)	$ (71.5)	$ (70.5)
International	(5.7)	(6.0)	(5.9)
Consumer Interactive	(0.6)	(1.1)	(2.0)
Total intersegment eliminations	(78.1)	(78.6)	(78.4)
Total revenue as reported	$ 3,831.2	$ 3,709.9	$ 2,960.2

A reconciliation of Segment Adjusted EBITDA to (loss) income from continuing operations before income taxes for the periods presented is as follows:

	Twelve Months Ended December 31,		
	2023	2022	2021
U.S. Markets Adjusted EBITDA	$ 846.8	$ 869.0	$ 717.2
International Adjusted EBITDA	361.5	329.3	300.1
Consumer Interactive Adjusted EBITDA	278.2	282.3	263.1
Total	$ 1,486.5	$ 1,480.7	$ 1,280.4
Adjustments to reconcile to (loss) income from continuing operations before income taxes:			
Depreciation and amortization	(524.4)	(519.0)	(377.0)
Goodwill impairment	(414.0)	—	—
Net interest expense	(267.5)	(226.2)	(109.2)
Corporate expenses[1]	(142.8)	(135.7)	(121.9)
Stock-based compensation	(100.6)	(81.1)	(70.1)
Operating model optimization program[2]	(77.6)	—	—
Accelerated technology investment[3]	(70.6)	(54.0)	(39.7)
Mergers and acquisitions, divestitures and business[4]	(34.6)	(50.7)	(52.6)
Net other[5]	(15.2)	(46.1)	(19.4)
Net income attributable to non-controlling interests	15.4	15.2	15.0
Total adjustments	$ (1,631.8)	$ (1,097.7)	$ (774.8)
(Loss) income from continuing operations before income taxes	$ (145.3)	$ 383.0	$ 505.6

1. Certain costs that are not directly attributable to one or more of the segments remain in Corporate. These costs are typically enterprise-level costs and are primarily administrative in nature.
2. Consists of restructuring expenses as presented on our Consolidated Statements of Operations and other business process optimization expenses.
3. Accelerated technology investment represents expenses incurred in connection with the transformation of our technology infrastructure. The accelerated technology investment for the twelve months ended December 31, 2022 and 2021 includes the impact of an immaterial error related to an over accrual of expenses discussed in Note 1, “Significant Accounting and Reporting Policies.”
4. Mergers and acquisitions, divestitures and business optimization expenses consist of costs associated with exploratory or executed strategic transactions.
5. Net other expenses consist primarily of other non-operating income and expenses, primarily comprised of deferred loan fee expense from debt prepayments and refinancing, currency remeasurement on foreign operations, and other debt financing expenses, as well as certain legal and regulatory expenses.

Earnings from equity method investments included in non-operating income and expense was as follows:

	Twelve Months Ended December 31,		
	2023	2022	2021
U.S. Markets	$ 0.6	$ 1.0	$ 2.4
International	15.7	12.0	9.6
Total	$ 16.3	$ 13.0	$ 12.0

Total assets by segment consisted of the following:

	December 31, 2023	December 31, 2022
U.S. Markets	$ 7,071.1	$ 7,180.9
International	2,368.6	2,675.7
Consumer Interactive	1,222.3	1,202.9
Total segment assets	$ 10,662.0	$ 11,059.5
Corporate	443.2	606.8
Total assets	$ 11,105.1	$ 11,666.3

Cash paid for capital expenditures by segment was as follows:

	Twelve Months Ended December 31,		
	2023	2022	2021
U.S. Markets	$ 203.7	$ 181.0	$ 145.3
International	87.3	97.5	65.1
Consumer Interactive	18.5	17.7	11.8
Corporate	1.3	2.0	2.0
Total	$ 310.7	$ 298.2	$ 224.2

Depreciation and amortization expense by segment was as follows:

	Twelve Months Ended December 31,		
	2023	2022	2021
U.S. Markets	$ 359.0	$ 352.5	$ 222.0
International	126.4	126.9	132.4
Consumer Interactive	34.6	34.8	16.8
Corporate	4.4	4.9	5.7
Total	$ 524.4	$ 519.0	$ 377.0

Percentage of revenue based on where it was earned was as follows:

	Twelve Months Ended December 31,		
	2023	2022	2021
Domestic	79 %	80 %	76 %
International	21 %	20 %	24 %

Percentage of long-lived assets, other than intangibles, financial assets, and deferred tax assets, based on the location of the legal entity that owns the asset, was as follows:

	As of December 31,	
	2023	2022
Domestic	75 %	78 %
International	25 %	22 %

22. Commitments

Future minimum payments for noncancelable operating leases, purchase obligations, and other liabilities in effect as of December 31, 2023 are payable as follows:

	Operating Leases	Purchase Obligations and Other	Total
2024	$ 30.4	$ 209.0	$ 239.4
2025	21.1	100.9	122.0
2026	17.0	51.7	68.7
2027	13.9	31.5	45.4
2028	9.0	12.3	21.3
Thereafter	31.2	0.3	31.5
Less imputed interest	(14.3)	—	(14.3)
Totals	$ 108.3	$ 405.7	$ 514.0

Purchase obligations and other excludes trade accounts payable that are included in our balance sheet as of December 31, 2023. Purchase obligations and other include commitments for outsourcing services, royalties, data licenses, and maintenance and other operating expenses.

Licensing agreements

We have agreements with Fair Isaac Corporation to license credit-scoring algorithms and the right to sell credit scores derived from those algorithms. Payment obligations under these agreements vary due to factors such as the volume of credit scores we sell, what type of credit scores we sell, and how our customers use the credit scores. There are no minimum payments required under these licensing agreements. However, we do have a significant level of sales volume related to these credit scores.

23. Contingencies

Legal and Regulatory Matters

We are routinely named as defendants in, or parties to, various legal actions and proceedings relating to our current or past business operations. These actions generally assert claims for violations of federal or state credit reporting, consumer protection or privacy laws, or common law claims related to the unfair treatment of consumers, and may include claims for substantial or indeterminate compensatory or punitive damages, or injunctive relief, and may seek business practice changes. We believe that most of these claims are either without merit or we have valid defenses to the claims, and we vigorously defend these matters or seek non-monetary or small monetary settlements, if possible. However, due to the uncertainties inherent in litigation, we cannot predict the outcome of each claim in each instance.

In the ordinary course of business, we also are subject to governmental and regulatory examinations, information-gathering requests, investigations and proceedings (both formal and informal), certain of which may result in adverse judgments, settlements, fines, penalties, injunctions or other relief. In connection with formal and informal investigations and inquiries by regulators, we sometimes receive civil investigative demands, requests, subpoenas and orders seeking documents, testimony, and other information in connection with various aspects of our activities.

In view of the inherent unpredictability of legal and regulatory matters, particularly where the damages sought are substantial or indeterminate or when the proceedings or investigations are in the early stages, we cannot determine with any degree of certainty the timing or ultimate resolution of legal and regulatory matters or the eventual loss, fines or penalties, if any, that may result from such matters. We establish reserves for legal and regulatory matters when those matters present loss contingencies that are both probable and can be reasonably estimated. However, for certain of the matters, we are not able to reasonably estimate our exposure because damages or penalties have not been specified and (i) the proceedings are in early stages, (ii) there

is uncertainty as to the likelihood of a class being certified or the ultimate size of the class, (iii) there is uncertainty as to the outcome of similar matters pending against our competitors, (iv) there are significant factual issues to be resolved, and/or (v) there are legal issues of a first impression being presented. The actual costs of resolving legal and regulatory matters, however, may be substantially higher than the amounts reserved for those matters, and an adverse outcome in certain of these matters could have a material adverse effect on our consolidated financial statements in particular quarterly or annual periods. We accrue amounts for certain legal and regulatory matters for which losses were considered to be probable of occurring based on our best estimate of the most likely outcome. It is reasonably possible actual losses could be significantly different from our current estimates. In addition, there are some matters for which it is reasonably possible that a loss will occur, however we cannot estimate a range of the potential losses for these matters.

To reduce our exposure to an unexpected significant monetary award resulting from an adverse judicial decision, we maintain insurance that we believe is appropriate and adequate based on our historical experience. We regularly advise our insurance carriers of the claims, threatened or pending, against us in legal and regulatory matters and generally receive a reservation of rights letter from the carriers when such claims exceed applicable deductibles. We are not aware of any significant monetary claim that has been asserted against us, except for the lawsuit filed by the Consumer Financial Protection Bureau (the "CFPB") referenced below, that would not have some level of coverage by insurance after the relevant deductible, if any, is met.

As of December 31, 2023 and 2022, we have accrued $147.8 million and $125.0 million, respectively, for legal and regulatory matters. These amounts were recorded in other accrued liabilities in the Consolidated Balance Sheets and the associated expenses were recorded in selling, general and administrative expenses in the Consolidated Statements of Operations. Legal fees incurred in connection with ongoing litigation are considered period costs and are expensed as incurred.

CFPB Matters

In June 2021, we received a Notice and Opportunity to Respond and Advise ("NORA") letter from the CFPB, informing us that the CFPB's Enforcement Division was considering whether to recommend that the CFPB take legal action against us and certain of our executive officers. The NORA letter alleged that we failed to comply with and timely implement the January 2017 Consent Order (the "2017 Consent Order"), and further alleged additional violations related to Consumer Interactive's marketing practices. On September 27, 2021, the Enforcement Division advised us that it had obtained authority to pursue an enforcement action. On April 12, 2022, after failed settlement negotiations with the CFPB related to the matter, the CFPB filed a lawsuit against us, Trans Union LLC, TransUnion Interactive, Inc. (collectively, the "TU Entities") and the former President of Consumer Interactive, John Danaher, in the United States District Court for the Northern District of Illinois seeking restitution, civil money penalties, and injunctive relief, among other remedies, and alleging that the TU Entities violated the 2017 Consent Order, engaged in deceptive acts and practices in marketing the TransUnion Credit Monitoring product, failed to obtain signed written authorizations from consumers before debiting their bank accounts for the TransUnion Credit Monitoring product and diverted consumers from their free annual file disclosure into paid subscription products. The CFPB further alleges that Mr. Danaher violated the 2017 Consent Order and that we and Trans Union LLC provided substantial assistance to TransUnion Interactive, Inc. in violating the 2017 Consent Order and the law. We continue to believe that our marketing practices are lawful and appropriate and that we have been, and remain, in compliance with the 2017 Consent Order, and we will vigorously defend against allegations to the contrary in such proceedings. We continue to be in active litigation on this matter.

As of December 31, 2023 and 2022, we have accrued $56.0 million, in connection with this matter and there is a reasonable possibility that a loss in excess of the amount accrued may be incurred, and such an outcome could have a material adverse effect on our results of operations and financial condition. However, any possible loss or range of loss in excess of the amount accrued is not reasonably estimable at this time. In addition, we will incur increased costs litigating this matter.

In March 2022, we received a NORA letter from the CFPB, informing us that the CFPB's Enforcement Division was considering whether to recommend that the CFPB take legal action against us related to our tenant and employment screening business, TransUnion Rental Screening Solutions, Inc. ("TURSS"). The NORA letter alleged that Trans Union LLC and TURSS violated the Fair Credit Reporting Act by failing to (i) follow reasonable procedures to assure maximum possible accuracy of information in consumer reports and (ii) disclose to consumers the sources of such information. On July 27, 2022, the CFPB's Enforcement Division advised us that it had obtained authority to pursue an enforcement action jointly with the Federal Trade Commission ("FTC"). On October 5, 2023, we reached a settlement in the form of a Consent Order with the CFPB and the FTC regarding this matter, pursuant to which we agreed to pay $11.0 million in redress and $4.0 million in civil money penalties and to implement certain business process changes. As of December 31, 2023, the settlement was paid in full to the CFPB.

In June 2022, the CFPB informed Trans Union LLC that it intended to issue a NORA letter following an investigation relating to alleged violations of law in connection with the placement and lifting of security freezes resulting from certain system issues. We have corrected associated system issues and have processes in place to monitor and address issues going forward. In August 2022, the TU Entities received a NORA letter from the CFPB, informing us that the CFPB's Enforcement Division was

considering whether to recommend that the CFPB take legal action against us. On April 14, 2023, the CFPB's Enforcement Division advised us that it had obtained authority to pursue an enforcement action. On October 10, 2023, we reached a settlement in the form of a Consent Order with the CFPB regarding this matter, pursuant to which we agreed to pay $3.0 million in redress and $5.0 million in civil money penalties. As of December 31, 2023, the settlement was paid in full to the CFPB.

Argus Department of Justice Matter

We are cooperating with an investigation originating from the civil division of the United States Attorney's Office for the Eastern District of Virginia related to Argus's use of certain data it collected under certain government contracts. We acquired Argus in connection with our acquisition of VF in April 2022. This matter pertains to alleged conduct that commenced before we acquired Argus. We are cooperating with Verisk Analytics, Inc. (the "Seller") to respond to the Department of Justice's ("DOJ") investigation and, along with the Seller, are engaged in ongoing settlement discussions with the DOJ regarding a potential resolution of the matter, with no assurance that the discussions will lead to resolution.

We cannot predict the timing, outcome, or potential impact of this matter, financial or otherwise. Under the stock purchase agreement Trans Union LLC entered into with the Seller pursuant to which we acquired VF, including Argus, the Seller agreed to indemnify us for certain losses with respect to this matter, including all losses directly resulting from any settlement agreement with the DOJ in connection with this matter, including civil money penalties, remediation costs and fees and expenses. As of December 31, 2023, we have recorded an accrued liability of $37.0 million and a related indemnification receivable for this matter.

24. Accumulated Other Comprehensive Loss

The following table sets forth the changes in each component of accumulated other comprehensive loss, net of tax:

	Foreign Currency Translation Adjustment	Net Unrealized (Loss)/Gain On Hedges	Net Unrealized Gain/(Loss) On Available-for-sale Securities	Accumulated Other Comprehensive Loss
Balance, December 31, 2020	$ (205.4)	$ (67.1)	$ 0.4	$ (272.1)
Change	(63.8)	50.5	—	(13.3)
Balance, December 31, 2021	$ (269.2)	$ (16.6)	$ 0.4	$ (285.4)
Change	(194.3)	195.2	(0.2)	0.9
Balance, December 31, 2022	$ (463.5)	$ 178.6	$ 0.2	$ (284.5)
Change	80.2	(56.6)	—	23.6
Balance, December 31, 2023	$ (383.4)	$ 122.0	$ 0.2	$ (260.9)

25. Subsequent Event

On February 8, 2024, the Company refinanced its Senior Secured Term Loan B-6 with Senior Secured Term Loan B-7. The aggregate principal amount of Senior Secured Term Loan B-7 is approximately $1.9 billion. As a result of the transaction, the margin was set to 2.00% and is no longer a function of our total net leverage ratio. Additionally, the credit spread adjustment was removed. The new rate on our Senior Secured Term Loan B-7 is SOFR plus margin of 2.00%. The Senior Secured Term Loan B-7 remains subject to quarterly principal payments with the remaining balance due December 1, 2028.

26. Quarterly Financial Data (Unaudited)

	Three Months Ended			
	December 31, 2023	September 30, 2023	June 30, 2023	March 31, 2023
Revenue	$ 954.3	$ 968.7	$ 968.0	$ 940.3
Operating income (loss)	61.3	(236.3)	158.4	145.2
Income (loss) from continuing operations	9.5	(313.9)	57.3	57.0
Net income (loss)	9.5	(314.4)	57.2	56.9
Net income (loss) attributable to TransUnion	6.1	(318.8)	53.9	52.6
Income (loss) from continuing operations attributable to TransUnion	6.0	(318.3)	54.1	52.7
Basic earnings (loss) per common share from:				
Income (loss) from continuing operations attributable to TransUnion	$ 0.03	$ (1.65)	$ 0.28	$ 0.27
Net income (loss) attributable to TransUnion	$ 0.03	$ (1.65)	$ 0.28	$ 0.27
Diluted earnings (loss) per common share from:				
Income (loss) from continuing operations attributable to TransUnion	$ 0.03	$ (1.65)	$ 0.28	$ 0.27
Net income (loss) attributable to TransUnion	$ 0.03	$ (1.65)	$ 0.28	$ 0.27

	Three Months Ended			
	December 31, 2022	September 30, 2022	June 30, 2022	March 31, 2022
Revenue	$ 902.1	$ 938.2	$ 948.3	$ 921.3
Operating income	143.5	169.5	178.9	134.4
Income from continuing operations	35.3	80.3	96.5	51.9
Net income	50.4	82.7	96.8	51.6
Net income attributable to TransUnion	46.4	79.2	92.8	47.9
Income from continuing operations attributable to TransUnion	31.4	76.8	92.5	48.3
Basic earnings per common share from:				
Income from continuing operations attributable to TransUnion	$ 0.16	$ 0.40	$ 0.48	$ 0.25
Net Income attributable to TransUnion	$ 0.24	$ 0.41	$ 0.48	$ 0.25
Diluted earnings per common share from:				
Income from continuing operations attributable to TransUnion	$ 0.16	$ 0.40	$ 0.48	$ 0.25
Net Income attributable to TransUnion	$ 0.24	$ 0.41	$ 0.48	$ 0.25

As discussed in Note 1, the Company identified errors in the classification of certain expenses between cost of services and selling, general and administrative in the Consolidated Statements of Operations. In addition, the Company corrected an immaterial error related to an over accrual of expenses, net of the related income tax effect, during the twelve months ended December 31, 2021, that had previously been corrected out of period during the twelve months ended December 31, 2022. A summary of the corrections to the impacted financial statement line items of the Company's previously issued consolidated financial statements previously filed in unaudited Quarterly Reports on Form 10-Q for the period ended March 31, 2023 and the period ended June 30, 2023, and in Amendment No. 1 to the Quarterly Report on Form 10-Q/A for the period ended September 30, 2023, are as follows:

Consolidated Statements of Operations

	Three Months Ended March 31, 2023		
	As Reported	Adjustment	As Revised
Cost of services (exclusive of depreciation and amortization)	$ 324.9	$ 55.9	$ 380.8
Selling, general and administrative	340.5	(55.9)	284.6
Total operating expenses	795.1	—	795.1

	Three Months Ended June 30, 2023			Six Months Ended June 30, 2023		
	As Reported	Adjustment	As Revised	As Reported	Adjustment	As Revised
Cost of services (exclusive of depreciation and amortization)	$ 365.5	$ 21.5	$ 387.0	$ 728.2	$ 39.6	$ 767.8
Selling, general and administrative	314.0	(21.5)	292.5	616.7	(39.6)	577.1
Total operating expenses	809.6	—	809.6	1,604.7	—	1,604.7

	Three Months Ended September 30, 2023			Nine Months Ended September 30, 2023		
	As Reported	Adjustment	As Revised	As Reported	Adjustment	As Revised
Cost of services (exclusive of depreciation and amortization)	$ 344.8	$ 24.0	$ 368.8	$ 1,073.2	$ 63.6	$ 1,136.8
Selling, general and administrative	314.8	(24.0)	290.8	931.3	(63.6)	867.7
Total operating expenses	1,205.0	—	1,205.0	2,809.6	—	2,809.6

	Three Months Ended March 31, 2022		
	As Reported	Adjustment	As Revised
Cost of services (exclusive of depreciation and amortization)	$ 298.0	$ 35.4	$ 333.4
Selling, general and administrative	359.5	(34.8)	324.7
Total operating expenses	786.3	0.6	786.9
Operating income	135.0	(0.6)	134.4
Income from continuing operations before income taxes	76.7	(0.6)	76.1
Provision for income taxes	(24.4)	0.2	(24.2)
Income from continuing operations	52.3	(0.4)	51.9
Net income	52.0	(0.4)	51.6
Net income attributable to TransUnion	48.3	(0.4)	47.9
Income from continuing operations attributable to TransUnion	48.7	(0.4)	48.3
Basic earnings per common share from:			
Income from continuing operations attributable to TransUnion	$ 0.25	$ —	$ 0.25
Net income attributable to TransUnion	$ 0.25	$ —	$ 0.25
Diluted earnings per common share from:			
Income from continuing operations attributable to TransUnion	$ 0.25	$ —	$ 0.25
Net income attributable to TransUnion	$ 0.25	$ —	$ 0.25

	Three Months Ended June 30, 2022			Six Months Ended June 30, 2022		
	As Reported	Adjustment	As Revised	As Reported	Adjustment	As Revised
Cost of services (exclusive of depreciation and amortization)	$ 328.9	$ 16.7	$ 345.6	$ 650.0	$ 29.0	$ 679.0
Selling, general and administrative	306.3	(13.1)	293.2	642.7	(24.8)	617.9
Total operating expenses	765.8	3.6	769.4	1,552.1	4.2	1,556.3
Operating income	182.5	(3.6)	178.9	317.4	(4.2)	313.2
Income from continuing operations before income taxes	128.5	(3.6)	124.9	205.2	(4.2)	201.0
Provision for income taxes	(29.2)	0.8	(28.4)	(53.5)	1.0	(52.5)
Income from continuing operations	99.3	(2.8)	96.5	151.7	(3.2)	148.5
Net income	99.6	(2.8)	96.8	151.6	(3.2)	148.4
Net income attributable to TransUnion	95.6	(2.8)	92.8	143.9	(3.2)	140.7
Income from continuing operations attributable to TransUnion	95.3	(2.8)	92.5	143.9	(3.2)	140.7
Basic earnings per common share from:						
Income from continuing operations attributable to TransUnion	$ 0.49	$ (0.01)	$ 0.48	$ 0.75	$ (0.02)	$ 0.73
Net income attributable to TransUnion	$ 0.50	$ (0.01)	$ 0.48	$ 0.75	$ (0.02)	$ 0.73
Diluted earnings per common share from:						
Income from continuing operations attributable to TransUnion	$ 0.49	$ (0.01)	$ 0.48	$ 0.75	$ (0.02)	$ 0.73
Net income attributable to TransUnion	$ 0.49	$ (0.01)	$ 0.48	$ 0.75	$ (0.02)	$ 0.73

	Three Months Ended September 30, 2022			Nine Months Ended September 30, 2022		
	As Reported	Adjustment	As Revised	As Reported	Adjustment	As Revised
Cost of services (exclusive of depreciation and amortization)	$ 338.2	$ 13.4	$ 351.6	$ 988.2	$ 42.4	$ 1,030.6
Selling, general and administrative	301.0	(13.4)	287.6	943.6	(38.2)	905.5
Total operating expenses	768.8	—	768.8	2,320.8	4.2	2,325.0
Operating income	169.5	—	169.5	487.0	(4.2)	482.8
Income from continuing operations before income taxes	110.8	—	110.8	316.1	(4.2)	311.9
Provision for income taxes	(30.6)	—	(30.6)	(84.1)	1.0	(83.1)
Income from continuing operations	80.3	—	80.3	232.0	(3.2)	228.8
Net income	82.7	—	82.7	234.3	(3.2)	231.1
Net income attributable to TransUnion	79.2	—	79.2	223.0	(3.2)	219.8
		—				
Income from continuing operations attributable to TransUnion	76.8	—	76.8	220.7	(3.2)	217.5
Basic earnings per common share from:						
Income from continuing operations attributable to TransUnion	$ 0.40	$ —	$ 0.40	$ 1.15	$ (0.02)	$ 1.13
Net income attributable to TransUnion	$ 0.41	$ —	$ 0.41	$ 1.16	$ (0.02)	$ 1.14
Diluted earnings per common share from:						
Income from continuing operations attributable to TransUnion	$ 0.40	$ —	$ 0.40	$ 1.14	$ (0.02)	$ 1.13
Net income attributable to TransUnion	$ 0.41	$ —	$ 0.41	$ 1.15	$ (0.02)	$ 1.14

Consolidated Statements of Comprehensive Income (Loss)

	Three Months Ended March 31, 2022		
	As Reported	Adjustment	As Revised
Net income	$ 52.0	$ (0.4)	$ 51.6
Comprehensive income	152.6	(0.4)	152.2
Comprehensive income attributable to TransUnion	148.9	(0.4)	148.5

	Three Months Ended June 30, 2022			Six Months Ended June 30, 2022		
	As Reported	Adjustment	As Revised	As Reported	Adjustment	As Revised
Net income	$ 99.6	$ (2.8)	$ 96.8	$ 151.6	$ (3.2)	$ 148.4
Comprehensive (loss) income	(0.7)	(2.8)	(3.5)	152.0	(3.2)	148.8
Comprehensive (loss) income attributable to TransUnion	(3.2)	(2.8)	(6.0)	145.8	(3.2)	142.6

	Nine Months Ended September 30, 2022		
	As Reported	Adjustment	As Revised
Net income	$ 234.3	$ (3.2)	$ 231.1
Comprehensive income	159.7	(3.2)	156.5
Comprehensive income attributable to TransUnion	151.2	(3.2)	148.0

Consolidated Statements of Cash Flows

	Three Months Ended March 31, 2022			Six Months Ended June 30, 2022		
	As Reported	Adjustment	As Revised	As Reported	Adjustment	As Revised
Net income	$ 52.0	$ (0.4)	$ 51.6	$ 151.6	$ (3.2)	$ 148.4
Income from continuing operations	52.3	(0.4)	51.9	151.7	(3.2)	148.5
Trade accounts payable	(10.3)	0.6	(9.7)	6.4	4.2	10.6
Other current and long-term liabilities	(116.2)	(0.2)	(116.4)	(461.4)	(1.0)	(462.4)
Cash provided by (used in) operating activities of continuing operations	11.6	—	11.6	(115.4)	—	(115.4)

	Nine Months Ended September 30, 2022		
	As Reported	Adjustment	As Revised
Net income	$ 234.3	$ (3.2)	$ 231.1
Income from continuing operations	232.0	(3.2)	228.8
Trade accounts payable	(20.4)	4.2	(16.2)
Other current and long-term liabilities	(448.8)	(1.0)	(449.8)
Cash provided by operating activities of continuing operations	70.8	—	70.8

Consolidated Statements of Stockholders' Equity

	Three Months Ended March 31, 2022			Three Months Ended June 30, 2022		
	As Reported	Adjustment	As Revised	As Reported	Adjustment	As Revised
Retained Earnings, Beginning Period Balance	$ 2,254.6	$ 3.2	$ 2,257.8	$ 2,284.5	$ 2.8	$ 2,287.3
Net income	48.3	(0.4)	47.9	95.6	(2.8)	92.8
Retained Earnings, Ending Period Balance	$ 2,284.5	$ 2.8	$ 2,287.3	$ 2,361.5	$ —	$ 2,361.5
Total Equity Beginning Period Balance	$ 4,006.2	$ 3.2	$ 4,009.4	$ 4,141.9	$ 2.8	$ 4,144.7
Net income	52.0	(0.4)	51.6	99.6	(2.8)	96.8
Total Equity Ending Period Balance	$ 4,141.9	$ 2.8	$ 4,144.7	$ 4,138.9	$ —	$ 4,138.9

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

Not applicable.

ITEM 9A. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, has evaluated the effectiveness of our disclosure controls and procedures as of the end of the period covered by this report. The term "disclosure controls and procedures" as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms.

Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company's management, including its principal executive and principal financial officers, as appropriate, to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of December 31, 2023, the end of the period covered by this report, our Chief Executive Officer and Chief Financial Officer concluded that, as of such date, our disclosure controls and procedures were not effective because of the material weaknesses in internal control over financial reporting discussed below.

Management's Report on Internal Control over Financial Reporting

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. TransUnion'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 U.S. generally accepted accounting principles. Internal control over financial reporting includes those policies and procedures that:

- pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of TransUnion;
- provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with U.S. generally accepted accounting principles;
- provide reasonable assurance that receipts and expenditures of TransUnion are being made only in accordance with the authorizations of management and directors of TransUnion; and
- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of assets that could have a material effect on the consolidated 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.

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis. We identified the following material weaknesses as of December 31, 2023:

We did not design and maintain effective controls over our interim goodwill impairment test. Specifically, we did not design and maintain control activities over the accuracy of the manual translation of the base year forecast information used in the valuation model to calculate the reporting unit fair value. This material weakness resulted in an error to the goodwill balance and related impairment charge that resulted in the restatement of the unaudited interim financial statements as of and for the three and nine months ended September 30, 2023.

We did not design and maintain effective controls over the classification of certain costs between cost of services and selling, general and administrative in the Consolidated Statements of Operations. This material weakness resulted in an error in the classification of certain costs between cost of services and selling, general and administrative that resulted in the revision of the annual financial statements previously issued for 2022 and 2021 and the unaudited interim financial statements previously issued for 2023 and 2022 interim periods.

Additionally, these material weaknesses could result in misstatements of the aforementioned accounts or disclosures that would result in a material misstatement to the annual or interim consolidated financial statements that would not be prevented or detected.

Management assessed the effectiveness of TransUnion's internal control over financial reporting as of December 31, 2023. In making this assessment, management used the criteria described in *Internal Control—Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission in ("COSO"). Because of the material weaknesses described above, management has concluded that, as of December 31, 2023, TransUnion's internal control over financial reporting was not effective.

Our independent registered public accounting firm, PricewaterhouseCoopers LLP, has audited the effectiveness of TransUnion's internal control over financial reporting as of December 31, 2023, as stated in their report which is included in this Annual Report on Form 10-K.

Remediation of Material Weaknesses

Management is in the process of designing and implementing the remediation plans to address the material weaknesses discussed above. Remediation will not occur until the plans are implemented and there has been appropriate time for us to conclude through testing that the controls operate effectively.

Changes in Internal Control Over Financial Reporting

During the quarter ended December 31, 2023, there have been no changes in our internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

On November 17, 2023, Timothy J. Martin, Executive Vice President, Chief Global Solutions Officer, adopted a Rule 10b5-1 trading arrangement that is intended to satisfy the affirmative defense of Rule 10b5-1(c) for the sale of up to 12,000 shares of the Company's common stock until June 28, 2024. On November 20, 2023, Steven M. Chaouki, President, U.S. Markets and Consumer Interactive, adopted a Rule 10b5-1 trading arrangement that is intended to satisfy the affirmative defense of Rule 10b5-1(c) for the sale of up to 8,102 shares of the Company's common stock until June 28, 2024.

As discussed in Note 1, "Significant Accounting and Reporting Policies," the Company corrected an immaterial error related to an over accrual of expenses, net of the related income tax effect, during the twelve months ended December 31, 2021, that had previously been corrected out of period during the twelve months ended December 31, 2022 (the "revision"). As this correction impacted financial measures upon which the vesting of performance share units granted to the Company's executive officers on February 19, 2021 ("2021 PSUs") under the Company's Amended and Restated 2015 Omnibus Incentive Plan was based, in accordance with the Company's Policy for Recovery of Erroneously Awarded Compensation (the "Clawback Policy"), the Compensation Committee of the Board analyzed the impact of the revision on the Company's achievement of performance metrics for the performance period ending on December 31, 2023. The Compensation Committee determined that the revision had no impact, and accordingly, no recovery is required under the Clawback Policy. Following such analysis, the 2021 PSUs vested and were settled on February 16, 2024.

ITEM 9C. DISCLOSURES REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

Not applicable.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The following information with respect to our Board of Directors is presented as of February 28, 2024:

Name	Position	Principal Employment
Christopher A. Cartwright	President & Chief Executive Officer, Director	President & Chief Executive Officer, TransUnion
Dr. George M. Awad	Director	Principal, Gibraltar Capital Corporation
William P. (Billy) Bosworth	Director	Operating Managing Director, Vista Equity Partners
Suzanne P. Clark	Director	President and Chief Executive Officer, U.S. Chamber of Commerce
Hamidou Dia	Director	VP and Global Head of Generative AI Solution Architecture, Google Cloud
Russell P. Fradin	Director	Operating Partner, Clayton, Dubilier & Rice
Charles E. Gottdiener	Director	Chief Executive Officer, Anaplan, Inc.
Pamela A. Joseph	Director	Chief Executive Officer and Executive Chair, Xplor Technologies, Inc.
Thomas L. Monahan, III	Director	Chief Executive Officer - designate, Heidrick and Struggles, Inc.
Ravi Kumar Singisetti	Director	Chief Executive Officer, Cognizant Technology Solutions Corporation
Linda K. Zukauckas	Director	Former Chief Financial Officer, Nielsen Holdings

The other information required by this item is incorporated by reference to our Proxy Statement for the 2024 Annual Meeting of Stockholders to be held on May 2, 2024, which will be filed with the SEC within 120 days of the end of our fiscal year ended December 31, 2023.

See Part I, "Information about our Executive Officers" of this Annual Report on Form 10-K for information regarding our executive officers.

Code of Business Conduct and Ethics

We have adopted a Code of Business Conduct and Ethics that applies to all directors, officers and employees. Our Code of Business Conduct and Ethics is available in the “Investor Relations” section of our website at www.transunion.com, under the tab “Corporate Governance,” and a copy of the Code of Business Conduct and Ethics may also be obtained free of charge upon a request directed to TransUnion, 555 West Adams Street, Chicago, Illinois 60661, Attn: Corporate Secretary. Our Code of Business Conduct and Ethics is a “code of ethics,” as defined in Item 406(b) of Regulation S-K. We will make any legally required disclosures regarding amendments to, or waivers of, provisions of our code of ethics on our website.

ITEM 11. EXECUTIVE COMPENSATION

The information required by this item is incorporated by reference to our Proxy Statement for the 2024 Annual Meeting of Stockholders to be held on May 2, 2024, which will be filed with the SEC within 120 days of the end of our fiscal year ended December 31, 2023.

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

The information required by this item is incorporated by reference to our Proxy Statement for the 2024 Annual Meeting of Stockholders to be held on May 2, 2024, which will be filed with the SEC within 120 days of the end of our fiscal year ended December 31, 2023.

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

The information required by this item is incorporated by reference to our Proxy Statement for the 2024 Annual Meeting of Stockholders to be held on May 2, 2024, which will be filed with the SEC within 120 days of the end of our fiscal year ended December 31, 2023.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required by this item is incorporated by reference to our Proxy Statement for the 2024 Annual Meeting of Stockholders to be held on May 2, 2024, which will be filed with the SEC within 120 days of the end of our fiscal year ended December 31, 2023.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) **List of Documents Filed as a Part of This Report:**

(1) *Financial Statements*. The following financial statements are included in Item 8 of Part II:

- Consolidated Balance Sheets— December 31, 2023 and 2022;
- Consolidated Statements of Operations for the years ended December 31, 2023, 2022 and 2021;
- Consolidated Statements of Comprehensive Income (Loss) for the years ended December 31, 2023, 2022 and 2021;
- Consolidated Statements of Cash Flows for the years ended December 31, 2023, 2022 and 2021;
- Consolidated Statements of Stockholders' Equity for the years ended December 31, 2023, 2022 and 2021; and
- Notes to Consolidated Financial Statements.

(2) *Financial Statement Schedules.*

- Schedule I - Condensed Financial Information of TransUnion as of December 31, 2023 and 2022 and for the years ended December 31, 2023, 2022 and 2021 and the accompanying notes; and
- Schedule II—Valuation and Qualifying Accounts for the years ended December 31, 2023, 2022 and 2021.

Schedules I and II are filed as part of this Report and are set forth immediately following the signature page.

(3) The following exhibits are filed with this Annual Report on Form 10-K for the fiscal year ended December 31, 2022, or incorporated herein by reference.

Exhibit No.	Exhibit Name
2.1††	Securities Purchase Agreement, dated as of September 11, 2021, by and between Trans Union LLC and Aerial Investors LLC (Incorporated by reference to Exhibit 2.1 to TransUnion's Current Report on Form 8-K filed on September 13, 2021).
2.2††	Stock Purchase Agreement, dated as of October 26, 2021, by and between Trans Union LLC and nThrive, Inc. (Incorporated by reference to Exhibit 2.2 to TransUnion's Annual Report on Form 10-K filed on February 22, 2022).
3.1	Third Amended and Restated Certificate of Incorporation of TransUnion (Incorporated by reference to Exhibit 3.1.2 to TransUnion's Current Report on Form 8-K filed on May 18, 2020).
3.2	Fifth Amended and Restated Bylaws of TransUnion (Amended as of February 21, 2024) (Incorporated by reference to Exhibit 3.1 to TransUnion's Current Report on Form 8-K filed on February 27, 2024).
4.1	Form of Stock Certificate for Common Stock (Incorporated by reference to Exhibit 4.6 to TransUnion's Amendment No. 3 to Registration Statement on Form S-1 filed on June 15, 2015).
4.2	Description of TransUnion's securities (Incorporated by reference to Exhibit 4.2 to TransUnion's Annual Report on Form 10-K filed on February 16, 2021).
10.1	Amendment No. 13 to Credit Agreement, dated as of August 9, 2017, by and among TransUnion Intermediate Holdings, Inc., Trans Union LLC, the guarantors party thereto, Deutsche Bank AG New York Branch, as Administrative Agent and as Collateral Agent, Deutsche Bank AG New York Branch, as L/C Issuer, the other lenders from time to time party thereto and Deutsche Bank Securities, Inc., Capital One, N.A., Goldman Sachs Lending Partners LLC, JP Morgan Chase Bank, N.A., Merrill Lynch, Pierce, Fenner & Smith Incorporated, RBC Capital Markets and Wells Fargo Securities, LLC, as joint lead arrangers and joint bookrunners (Incorporated by reference to Exhibit 10.1 to TransUnion's Quarterly Report on Form 10-Q filed on October 27, 2017).

10.2	Amendment No. 14 to Credit Agreement, dated as of May 2, 2018, by and among TransUnion Intermediate Holdings, Inc. (f/k/a TransUnion Corp.), Trans Union LLC, the Guarantors, Deutsche Bank Securities Inc., Capital One, N.A., Merrill Lynch, Pierce, Fenner & Smith Incorporated and RBC Capital Markets, as joint lead arrangers, Deutsche Bank AG New York Branch, as administrative agent and collateral agent, and each of the other Lenders party thereto (Incorporated by reference to Exhibit 10.1 to TransUnion's Quarterly Report on Form 10-Q filed on July 25, 2018).
10.3	Amendment No. 15 to Credit Agreement, dated as of June 19, 2018, by and among TransUnion Intermediate Holdings, Inc. (f/k/a TransUnion Corp.), Trans Union LLC, the Guarantors, Deutsche Bank Securities Inc., RBC Capital Markets, Merrill Lynch, Pierce, Fenner & Smith Incorporated and Capital One, N.A., as joint lead arrangers, Deutsche Bank AG New York Branch, as administrative agent and collateral agent, and each of the other Lenders party thereto (Incorporated by reference to Exhibit 10.2 to TransUnion's Quarterly Report on Form 10-Q filed on July 25, 2018).
10.4	Amendment No. 16 to Credit Agreement, dated as of June 29, 2018, by and among TransUnion Intermediate Holdings, Inc. (f/k/a TransUnion Corp.), Trans Union LLC, the Guarantors, Deutsche Bank Securities Inc., RBC Capital Markets, Merrill Lynch, Pierce, Fenner & Smith Incorporated and Capital One, N.A., as joint lead arrangers, Deutsche Bank AG New York Branch, as administrative agent and collateral agent, and each of the other Lenders party thereto (Incorporated by reference to Exhibit 10.3 to TransUnion's Quarterly Report on Form 10-Q filed on July 25, 2018).
10.5	Amendment No. 17 to Credit Agreement, dated as of November 15, 2019, by and among TransUnion Intermediate Holdings, Inc. (f/k/a TransUnion Corp.), Trans Union LLC, the Guarantors, Deutsche Bank Securities Inc., BofA Securities, Inc., Capital One, N.A. and RBC Capital Markets, as joint lead arrangers, Deutsche Bank AG New York Branch, as administrative agent and collateral agent, and each of the other Lenders party thereto (Incorporated by reference to Exhibit 10.5 to TransUnion's Annual Report on Form 10-K filed on February 18, 2020).
10.6	Amendment No. 18 to Credit Agreement, dated as of December 10, 2019, by and among TransUnion Intermediate Holdings, Inc. (f/k/a TransUnion Corp.), Trans Union LLC, the Guarantors, Deutsche Bank Securities Inc., BofA Securities, Inc., Capital One, N.A. RBC Capital Markets, Wells Fargo Securities LLC and JP Morgan Chase Bank, N.A. as joint lead arrangers, Deutsche Bank AG New York Branch, as administrative agent and collateral agent, and each of the other Lenders party thereto (Incorporated by reference to Exhibit 10.6 to TransUnion's Annual Report on Form 10-K filed on February 18, 2020).
10.7	Amendment No. 19 to Credit Agreement, dated as of December 1, 2021, by and among TransUnion Intermediate Holdings, Inc. (f/k/a TransUnion Corp.), Trans Union LLC, the Guarantors, Deutsche Bank Securities Inc., Bank of America, N.A., Capital One, N.A., JP Morgan Chase Bank, N.A., Royal Bank of Canada as joint lead arrangers and joint bookrunners, Deutsche Bank AG New York Branch, as administrative agent and collateral agent, and each of the other Lenders party thereto. (Incorporated by reference to Exhibit 10.7 to TransUnion's Annual Report on Form 10-K filed on February 22, 2022).
10.8	Amendment No. 20 to the Credit Agreement, dated as of May 15, 2023 by and between Trans Union LLC and Deutsche Bank AG New York Branch, as administrative agent (Incorporated by reference to Exhibit 10.1 to TransUnion's Quarterly Report on Form 10-Q filed on July 25, 2023).
10.9**	Amendment No. 21 to the Credit Agreement, dated as of October 27, 2023, by and among TransUnion Intermediate Holdings, Inc. (f/k/a TransUnion Corp.), Trans Union LLC, the Guarantors, Deutsche Bank Securities Inc., BofA Securities, Inc., Capital One, N.A., JPMorgan Chase Bank, N.A., Royal Bank of Canada and Wells Fargo Securities, LLC, as joint lead arrangers and joint bookrunners, Deutsche Bank AG New York Branch, as administrative agent and collateral agent, and each of the other Lenders party thereto.
10.10	Second Lien Credit Agreement, dated as of December 1, 2021, by and among TransUnion Intermediate Holdings, Inc., Trans Union LLC, the Guarantors, JPMorgan Chase Bank, N.A., as administrative agent and collateral agent, each of the other Lenders party thereto, JPMorgan Chase Bank, N.A., Deutsche Bank Securities Inc. and Wells Fargo Securities, LLC, as joint lead arrangers and joint bookrunners. (Incorporated by reference to Exhibit 10.8 to TransUnion's Annual Report on Form 10-K filed on February 22, 2022).
10.11†	TransUnion Holding Company, Inc. 2012 Management Equity Plan (Effective April 30, 2012) (Incorporated by reference to Exhibit 10.1 to TransUnion's Registration Statement on Form S-4 filed July 31, 2012).
10.12†	TransUnion Holding Company, Inc. 2012 Management Equity Plan Stock Option Agreement (Effective April 30, 2012) (Incorporated by reference to Exhibit 10.2 to TransUnion's Registration Statement on Form S-4 filed July 31, 2012).

10.13†	Amendment No. 1 to TransUnion Holding Company, Inc. 2012 Management Equity Plan Stock Option Agreement, dated as of January 1, 2016 (Incorporated by reference to Exhibit 10.7 to TransUnion's Annual Report on Form 10-K for the year ended December 31, 2015).
10.14	Form of Director Indemnification Agreement for directors of TransUnion (Incorporated by reference to Exhibit 10.6 to TransUnion's Registration Statement on Form S-4 filed July 31, 2012).
10.15†	Employment Agreement with James M. Peck, President and Chief Executive Officer of TransUnion and TransUnion Intermediate Holdings, Inc., dated December 6, 2012 (Incorporated by reference to Exhibit 10.15 to TransUnion's and TransUnion Intermediate Holdings, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2012).
10.16†	Letter Agreement between TransUnion and Reed Elsevier with respect to the employment of James M. Peck as the President and Chief Executive Officer of TransUnion and TransUnion Intermediate Holdings, Inc., dated December 6, 2012 (Incorporated by reference to Exhibit 10.16 to TransUnion's and TransUnion Intermediate Holdings, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2012).
10.17†	Employment Agreement, dated as of November 13, 2018, by and between TransUnion and Christopher A. Cartwright (Incorporated by reference to Exhibit 10.1 to TransUnion's Current Report on Form 8-K filed on November 14, 2018).
10.18†	Employment Agreement, dated as of November 13, 2018, by and between TransUnion and James M. Peck (Incorporated by reference to Exhibit 10.2 to TransUnion's Current Report on Form 8-K filed on November 14, 2018).
10.19†	Retirement and Transition Agreement, dated as of April 1, 2021, by and between TransUnion and John Danaher (Incorporated by reference to Exhibit 10.1 to TransUnion's Current Report on Form 8-K filed on April 7, 2021).
10.20†	Retirement and Transition Agreement, dated as of August 12, 2021, by and between TransUnion and David Neenan (Incorporated by reference to Exhibit 10.1 to TransUnion's Current Report on Form 8-K filed on August 13, 2021).
10.21†	Employment Agreement, dated as of August 12, 2021 by and among TransUnion, Trans Union of Canada, Inc. and Todd Skinner (Incorporated by reference to Exhibit 10.2 to TransUnion's Quarterly Report on Form 10-Q filed on October 26, 2021).
10.22†	Form of TransUnion Executive Severance and Restrictive Covenant Agreement (Incorporated by reference to Exhibit 10.3 to TransUnion's Quarterly Report on Form 10-Q filed on October 26, 2021).
10.23†	Amended and Restated TransUnion 2015 Omnibus Incentive Plan (Incorporated by reference to Exhibit 10.1 to TransUnion's Current Report on Form 8-K filed on May 18, 2020).
10.24†	TransUnion 2015 Omnibus Incentive Plan Award Agreement with respect to Restricted Stock Units (U.S. Employees) (for awards granted in or after February 2022) (Incorporated by reference to Exhibit 10.22 to TransUnion's Annual Report on Form 10-K filed on February 22, 2022).
10.25†	TransUnion 2015 Omnibus Incentive Plan Award Agreement, as amended, with respect to Restricted Stock units (U.S. Employees) (for awards granted in or after February 2023) (Incorporated by reference to Exhibit 10.1 to TransUnion's Quarterly Report on Form 10-Q filed on April 25, 2023).
10.26†	TransUnion 2015 Omnibus Incentive Plan Award Agreement with respect to Performance Share Units (U.S. Employees) (for awards granted in or after February 2022) (Incorporated by reference to Exhibit 10.23 to TransUnion's Annual Report on Form 10-K filed on February 22, 2022).
10.27†	TransUnion 2015 Omnibus Incentive Plan Award Agreement, as amended, with respect to Performance Share Units (U.S. Employees) (for awards granted in or after February 2023) (Incorporated by reference to Exhibit 10.2 to TransUnion's Quarterly Report on Form 10-Q filed on April 25, 2023).
10.28†	TransUnion Amended and Restated 2015 Omnibus Incentive Plan Grant Notice, Applicable to Performance Share Unit Awards Granted on June 1, 2023. (Incorporated by reference to Exhibit 10.1 to TransUnion's Current Report on Form 8-K filed on May 30, 2023).
10.29†**	TransUnion 2015 Omnibus Incentive Plan Award Agreement with respect to Restricted Stock (Outside Directors), as amended, effective November 2, 2023.
10.30†	TransUnion 2015 Employee Stock Purchase Plan, as Amended and Restated, Effective November 6, 2018 (Incorporated by reference to Exhibit 10.24 to TransUnion's Annual Report on Form 10-K for the year ended December 31, 2018).

10.31	Consent Order Issued by the United States Consumer Financial Protection Bureau on January 3, 2017, Administrative Proceeding - File No. 2017-CFPB-0002, In the Matter of: TransUnion Interactive, Inc., Trans Union LLC and TransUnion (Incorporated by reference to Exhibit 10.25 to TransUnion's Annual Report on Form 10-K for the year ended December 31, 2016).
21**	Subsidiaries of TransUnion.
23.1**	Consent of PricewaterhouseCoopers LLP.
24**	Power of Attorney - TransUnion (included on the signature page of this Form 10-K).
31.1**	Certification of Principal Executive Officer for TransUnion pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2**	Certification of Principal Financial Officer for TransUnion pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32**	Certification of Chief Executive Officer and Chief Financial Officer for TransUnion pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
97.1**	TransUnion Policy for Recovery of Erroneously Awarded Compensation.
101.INS**	XBRL Instance Document.
101.SCH**	XBRL Taxonomy Extension Schema Document.
101.CAL**	XBRL Taxonomy Extension Calculation Linkbase Document.
101.DEF**	XBRL Taxonomy Extension Definition Linkbase Document.
101.LAB**	XBRL Taxonomy Extension Label Linkbase Document.
101.PRE**	XBRL Taxonomy Extension Presentation Linkbase Document.
104**	Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101).

† Identifies management contracts and compensatory plans or arrangement.
** Filed or furnished herewith.
†† Schedules and exhibits have been omitted pursuant to Item 601(a)(5) of Regulation S-K. A copy of any omitted schedule or exhibit will be furnished to the SEC upon request; provided, however, that the parties may request confidential treatment pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended, for any document so furnished.

(4) Valuation and qualifying accounts.

(b) **Exhibits.** See Item 15(a)(3).

(c) **Financial Statement Schedules.** See Item 15(a)(2).

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, on February 28, 2024.

TransUnion

By: /s/ Todd M. Cello

Todd M. Cello
Executive Vice President and Chief Financial Officer

POWER OF ATTORNEY

The officers and directors whose signatures appear below constitute and appoint Heather J. Russell and Rachel W. Mantz as their true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for them in their name, place and stead, in any and all capacities, to sign and file, with the Securities and Exchange Commission, this Form 10-K and any and all amendments and exhibits thereto, and all documents in connection therewith, granting unto each such attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done, as fully and to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that such attorneys-in-fact and agents or their substitutes may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities indicated on February 28, 2024.

Signature	Title
/s/ Christopher A. Cartwright Christopher A. Cartwright	President and Chief Executive Officer, Director (Principal Executive Officer)
/s/ Todd M. Cello Todd M. Cello	Executive Vice President and Chief Financial Officer (Principal Financial Officer)
/s/ Jennifer A. Williams Jennifer A. Williams	Senior Vice President and Chief Accounting Officer (Principal Accounting Officer)
/s/ George M. Awad George M. Awad	Director
/s/ William P. (Billy) Bosworth William P. (Billy) Bosworth	Director
/s/ Suzanne P. Clark Suzanne P. Clark	Director
/s/ Hamidou Dia Hamidou Dia	Director
/s/ Russell P. Fradin Russell P. Fradin	Director
/s/ Charles E. Gottdiener Charles E. Gottdiener	Director
/s/ Pamela A. Joseph Pamela A. Joseph	Director
/s/ Thomas L. Monahan, III Thomas L. Monahan, III	Director
/s/ Ravi Kumar Singisetti Ravi Kumar Singisetti	Director
/s/ Linda K. Zukauckas Linda K. Zukauckas	Director

Schedule I—Condensed Financial Information of TransUnion

TRANSUNION
Parent Company Only
Balance Sheets
(in millions, except per share data)

	December 31, 2023	December 31, 2022
Assets		
Current assets:		
Other current assets	$ —	$ —
Total current assets	—	—
Investment in TransUnion Intermediate Holdings, Inc.	4,524.6	4,587.0
Other assets	6.0	6.0
Total assets	$ 4,530.6	$ 4,593.0
Liabilities and stockholders' equity		
Current liabilities:		
Trade accounts payable	$ —	$ 0.1
Due to TransUnion Intermediate Holdings, Inc.	516.9	419.6
Other current liabilities	1.9	1.2
Total current liabilities	518.8	420.9
Other liabilities	3.6	2.2
Total liabilities	522.4	423.1
Stockholders' equity:		
Common stock, $0.01 par value; 1.0 billion shares authorized at December 31, 2023 and December 31, 2022; 200.0 million and 198.7 million shares issued as of December 31, 2023 and December 31, 2022 respectively; and 193.8 million and 192.7 million shares outstanding as of December 31, 2023 and December 31, 2022, respectively	2.0	2.0
Additional paid-in capital	2,412.9	2,290.3
Treasury stock at cost; 6.2 million and 6.0 million shares at December 31, 2023 and December 31, 2022, respectively	(302.9)	(284.5)
Retained earnings	2,157.1	2,446.6
Accumulated other comprehensive loss	(260.9)	(284.5)
Total stockholders' equity	4,008.2	4,169.9
Total liabilities and stockholders' equity	$ 4,530.6	$ 4,593.0

See accompanying notes to condensed financial statements.

Schedule I —Condensed Financial Information of TransUnion

TRANSUNION
Parent Company Only
Statements of Operations
(in millions)

	Twelve Months Ended December 31,		
	2023	2022	2021
Revenue	$ —	$ —	$ —
Operating expenses			
Selling, general and administrative	4.4	3.5	3.5
Total operating expenses	4.4	3.5	3.5
Operating loss	(4.4)	(3.5)	(3.5)
Non-operating income and expense			
Equity income from TransUnion Intermediate Holdings, Inc.	(202.9)	269.1	1,391.8
Total non-operating income and expense	(202.9)	269.1	1,391.8
(Loss) income from continuing operations before income taxes	(207.3)	265.6	1,388.3
Benefit for income taxes	1.1	0.7	2.0
Net (loss) income attributable to TransUnion Holding	$ (206.2)	$ 266.3	$ 1,390.3

See accompanying notes to condensed financial statements.

Schedule I —Condensed Financial Information of TransUnion

TRANSUNION
Parent Company Only
Statements of Comprehensive Income (Loss)
(in millions)

	Twelve Months Ended December 31,		
	2023	2022	2021
Net (loss) income attributable to TransUnion Holding	$ (206.2)	$ 266.3	$ 1,390.3
Other comprehensive (loss) income:			
Foreign currency translation of TransUnion Intermediate Holdings, Inc.:			
Foreign currency translation adjustment	82.2	(193.4)	(64.1)
(Expense) benefit for income taxes	(2.0)	(0.7)	0.3
Foreign currency translation, net	80.2	(194.1)	(63.8)
Hedge instruments of TransUnion Intermediate Holdings, Inc.:			
Net change on interest rate swap	(75.5)	260.1	67.3
Benefit (provision) for income taxes	18.9	(64.9)	(16.8)
Hedge instruments, net	(56.6)	195.2	50.5
Available-for-sale securities of TransUnion Intermediate Holdings, Inc.:			
Net unrealized loss	—	(0.3)	—
Benefit for income taxes	—	0.1	—
Available-for-sale securities, net	—	(0.2)	—
Total other comprehensive income (loss), net of tax	23.6	0.9	(13.3)
Comprehensive (loss) income attributable to TransUnion	$ (182.6)	$ 267.2	$ 1,377.0

See accompanying notes to condensed financial statements.

Schedule I —Condensed Financial Information of TransUnion

TRANSUNION
Parent Company Only
Statements of Cash Flows
(in millions)

	Twelve Months Ended December 31,		
	2023	2022	2021
Cash provided by operating activities	$ 77.1	$ 91.6	$ 84.7
Cash used in investing activities	—	—	—
Cash flows from financing activities:			
Proceeds from issuance of common stock and exercise of stock options	23.1	18.7	21.9
Dividends to shareholders	(81.8)	(77.8)	(69.8)
Treasury stock purchased	(18.4)	(32.5)	(36.8)
Cash used in financing activities	(77.1)	(91.6)	(84.7)
Net change in cash and cash equivalents	—	—	—
Cash and cash equivalents, beginning of period	—	—	—
Cash and cash equivalents, end of period	$ —	$ —	$ —

See accompanying notes to condensed financial statements.

Schedule I —Condensed Financial Information of TransUnion

TRANSUNION
Parent Company Only
Notes to Financial Statements

Note 1. Basis of Presentation

In the TransUnion parent company only financial statements, the Company's investment in subsidiaries is stated at cost plus equity in the undistributed earnings of subsidiaries since the date of acquisition. The Company's share of net income of its subsidiaries is included in consolidated income using the equity method. The parent company only financial information should be read in conjunction with TransUnion's consolidated financial statements.

Revision of Previously Issued Financial Statements

The Company revised its previously issued consolidated financial statements to correct an immaterial error related to an over accrual of expenses, net of the related income tax effect, during the twelve months ended December 31, 2021, that had previously been corrected out of period during the twelve months ended December 31, 2022. Accordingly, the Company has revised its previously issued Statements of Operations and Statements of Comprehensive Income (Loss) for the twelve months ended December 31, 2022 and 2021 to correct for this error. The impact of the revisions is presented below.

Statements of Operations

	Twelve Months Ended December 31, 2022			Twelve Months Ended December 31, 2021		
	As Reported	Adjustment	As Revised	As Reported	Adjustment	As Revised
Equity income from TransUnion Intermediate Holdings, Inc.	$ 272.3	$ (3.2)	$ 269.1	$ 1,388.6	$ 3.2	$ 1,391.8
Total non-operating income and expense	272.3	(3.2)	269.1	1,388.6	3.2	1,391.8
Income from continuing operations before income taxes	268.8	(3.2)	265.6	1,385.1	3.2	1,388.3
Net income	269.5	(3.2)	266.3	1,387.1	3.2	1,390.3

Statements of Comprehensive Income (Loss)

	Twelve Months Ended December 31, 2022			Twelve Months Ended December 31, 2021		
	As Reported	Adjustment	As Revised	As Reported	Adjustment	As Revised
Net income	$ 269.5	$ (3.2)	$ 266.3	$ 1,387.1	$ 3.2	$ 1,390.3
Comprehensive income attributable to TransUnion	270.4	(3.2)	267.2	1,373.8	3.2	1,377.0

Note 2. Income Tax

TransUnion entered into an intercompany tax allocation agreement with TransUnion Intermediate Holdings, Inc. in 2013, effective for all taxable periods from May 1, 2012, forward, in which they are members of the same consolidated federal or state tax groups. The agreement allocates the consolidated tax liability from those filings among the various members of the group.

Note 3. Dividends to Stockholders

The dividend rate was $0.105 per share in each quarter of 2023 and the third and fourth quarters of 2022, $0.095 per share in each quarter from the second quarter of 2021 to the second quarter of 2022, and $0.075 per share in the first quarter of 2021. During 2023, 2022 and 2021, we paid dividends of $81.8 million, $77.8 million and $69.8 million, respectively. Dividends declared accrue to outstanding restricted stock units and are paid to employees as dividend equivalents when the restricted stock units vest.

Schedule II—Valuation and Qualifying Accounts

TRANSUNION

(in millions)	Balance at Beginning of Year	Charged to Costs and Expenses	Charged to Other Accounts	Deductions	Balance at End of Year
Allowance for deferred tax assets:					
Year ended December 31,					
2023	$ 98.9	$ 9.4	$ 2.7	$ (6.3)	$ 104.7
2022	$ 70.8	$ 21.8	$ 9.7	$ (3.4)	$ 98.9
2021	$ 65.7	$ 3.8	$ 14.4	$ (13.1)	$ 70.8

As a result of displaying amounts in millions, rounding differences may exist in the table above.