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

FORM 10-K

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

For the fiscal year ended: December 31, 2021

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: 0-15386

CERNER CORPORATION
(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of incorporation or organization)

43-1196944
(I.R.S. Employer Identification No.)

2800 Rock Creek Parkway
North Kansas City, MO
(Address of principal executive offices)

64117
(Zip Code)

(816) 221-1024
(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, $0.01 par value per share	CERN	The Nasdaq Stock Market LLC

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

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

Yes ☒ No ☐

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

Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

Yes ☒ No ☐

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

Large accelerated filer ☒ Accelerated filer ☐

Non-accelerated filer ☐ Smaller reporting company ☐ Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards 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. ☒

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

Yes ☐ No ☒

As of June 30, 2021, the aggregate market value of the registrant's common stock held by non-affiliates of the registrant was $20.9 billion based on the closing sale price as reported on the Nasdaq Global Select Market. Shares of common stock held by each executive officer, director and holder of 10% or more of the outstanding common stock have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status for purposes of this calculation is not intended as a conclusive determination of affiliate status for other purposes.

Indicate the number of shares outstanding of each of the registrant's classes of common stock, as of the latest practicable date.

Class	Outstanding at February 10, 2022
Common Stock, $0.01 par value per share	293,344,090 shares

DOCUMENTS INCORPORATED BY REFERENCE

Document	Parts into Which Incorporated
Portions of the registrant's Proxy Statement for the 2022 Annual Shareholders' Meeting	Part III

CERNER CORPORATION

TABLE OF CONTENTS

PART I.

This annual report on Form 10-K and the documents incorporated herein by reference contain forward-looking statements based on expectations, estimates, and projections as of the date of this filing. Actual results may differ materially from those expressed in forward-looking statements. See Item 1A of Part I — "Risk Factors."

Item 1. Business.

Overview

Cerner Corporation started doing business as a Missouri corporation in 1980 and was merged into a Delaware corporation in 1986. Unless the context otherwise requires, references in this report to "Cerner," the "Company," "we," "us" or "our" mean Cerner Corporation and its subsidiaries.

Our corporate world headquarters is located in a Company-owned office park in North Kansas City, Missouri, with our principal place of business located at 2800 Rock Creek Parkway, North Kansas City, Missouri 64117. Our Web site, which we use to communicate important business information, can be accessed at: www.cerner.com. We make our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and all amendments to those reports available free of charge on or through this Web site as soon as reasonably practicable after such material is electronically filed with or furnished to the Securities and Exchange Commission ("SEC"). We do not intend for information contained in our website to be part of this annual report on Form 10-K.
Cerner is a leading supplier of healthcare information technology ("HCIT") solutions and services. We offer a wide range of intelligent solutions and tech-enabled services that support the clinical, financial and operational needs of organizations of all sizes. *Cerner*® solutions and services help clinicians make care decisions and assist organizations in managing the health of their populations. We also offer integrated clinical and financial systems to help manage day-to-day revenue functions, as well as a wide range of services to support clinical, financial and operational needs. We have also expanded our presence in the life sciences industry, where we work with healthcare stakeholders to improve the safety, efficiency, and efficacy of clinical research.

Cerner solutions are primarily offered on the unified *Cerner Millennium*® architecture and on the *HealtheIntent*® cloud-based platform. *Cerner Millennium* is a person-centric computing framework, which includes integrated clinical, financial and management information systems. This architecture allows providers to securely access an individual's electronic health record ("EHR") at the point of care, and it organizes and proactively delivers information to meet the specific needs of physicians, nurses, laboratory technicians, pharmacists, front- and back-office professionals and consumers. On our *HealtheIntent* platform, we offer solutions that aggregate, transform and reconcile data across the continuum of care, enabling key stakeholders to manage the health of populations, improve outcomes, enhance clinical research and lower costs. Cerner also has an EHR agnostic platform, *CareAware*®, that facilitates connectivity of healthcare devices to EHRs and helps improve hospital operations, allowing for more efficient and effective care.

On February 2, 2015, Cerner acquired the Health Services business from Siemens AG, which offered a portfolio of enterprise-level clinical and financial healthcare information technology solutions, as well as departmental and care coordination solutions globally. Refer to Notes (8) and (9) of the notes to consolidated financial statements ("Notes") for information on our acquisitions and dispositions.

We offer a broad range of tech-enabled services, including implementation and training, remote hosting, application management services, revenue cycle services, support and maintenance, healthcare data analysis, real-world evidence, clinical process optimization, transaction processing, employer health centers, and data-driven services that help life sciences companies with the discovery, development and deployment of therapies.

In addition to software and services, we offer a wide range of complementary hardware and devices, primarily as a reseller for third parties.

The following table presents consolidated revenues by our business models and by segment, as a percentage of total revenues:

	For the Years Ended		
	2021	2020	2019
Revenues by Business Models			
Licensed software	12 %	12 %	12 %
Technology resale	3 %	3 %	4 %
Subscriptions	7 %	7 %	6 %
Professional services	37 %	35 %	35 %
Managed services	22 %	23 %	21 %
Support and maintenance	18 %	19 %	20 %
Reimbursed travel	1 %	1 %	2 %
	100 %	100 %	100 %
Revenues by Segment			
Domestic	88 %	89 %	89 %
International	12 %	11 %	11 %
	100 %	100 %	100 %

A description of our business models is as follows:

- Licensed software - We develop and license intellectual property ("IP") (our architectures, application software, executable and referential knowledge, data and algorithms) to our clients. Our licensed software business model includes revenues from IP delivered via perpetual license and software as a service, where functionality is delivered via "the cloud".
- Technology resale - We bundle licensed software with other companies' IP in the form of sublicenses to create complete technology solutions for our clients. We also resell bundled computer equipment (hardware) from technology companies to create a completely functional system. Additionally, we resell medical devices for medical device companies.

- Subscriptions - Another method by which we provide IP is on a time-based subscription model that has a periodic usage charge. This is the primary way we package and provide medical knowledge, which changes frequently based on research and can be updated independently from the software in which it is embedded. Also included in this category of revenue is our Electronic Data Interchange ("EDI") transaction revenue. EDI is the electronic transfer of data between healthcare providers and payers.

- Professional services - We provide a wide range of professional services to assist our clients in the implementation of our information systems in their organizations. These services are in the form of project management, technical and application expertise, clinical process optimization, regulatory consulting and education and training of our clients' workforce to assist in the design and implementation of our systems. This business model also includes certain outsourcing services utilized by healthcare organizations as well as services provided to the life sciences industry through our *Cerner Enviza*SM offerings.

- Managed services - Our managed services business model includes revenues from remote hosting, operational management services, and disaster recovery. Remote hosting is the largest of these offerings, and it involves Cerner buying the necessary equipment, installing it in one of our data centers, and operating the entire system on the client's behalf.

- Support and maintenance - This business model is comprised of the ongoing support and maintenance services we provide our clients. Almost all of our clients contract for these services. Clients with support contracts get 24x7 access to our immediate response center, which serves as our "emergency room," as well as access to our SolutionWorks organization for less urgent issues. In addition, our clients' support payments give them ongoing access to the latest releases of our IP. We also provide support for sublicensed software and maintenance for third party hardware.

- Reimbursed travel - Includes reimbursable out-of-pocket expenses (primarily travel) incurred in connection with our client service activities.

Healthcare and Healthcare IT Industry

There are several major forces shaping healthcare worldwide.

- **Rising Healthcare Costs** - Healthcare costs continue to grow faster than the economy, with total healthcare expenditures increasing 4.5% to $3.8 trillion in 2019 and 9.7% to $4.1 trillion in 2020, representing 19.7% of the U.S. Gross Domestic Product ("GDP"). Health expenditures are expected to grow over 5% annually through 2028, which would bring them to approximately 20% of GDP. Similar growth trends exist in most major non-U.S. markets as well.

  We believe the trajectory of healthcare expenditure growth is unsustainable, and we believe information technology can play an important role in addressing the key drivers of this growth by driving efficiencies, reducing waste, and improving management of chronic conditions and helping prevent them in the first place. In summary, IT can play a key role in facilitating a shift from a high-cost healthcare system that incents volume to a proactive system that incents health, quality and efficiency.

- **Evolving Reimbursement** - With the full enactment of The Patient Protection and Affordable Care Act ("ACA"), Medicaid expansion, and the aging population driving Medicare growth, the government is playing an increasingly material role in U.S. healthcare economics. The implications for providers include increased regulatory requirements for payment at less favorable terms than commercial payers. This reality has exacerbated an already tough margin profile and is expected to be the new normal for the years to come. Provider organizations are also dealing with an ongoing shift to value-based reimbursement models that reward clinicians for value over volume. These changes, over time, could materially change provider economics, but also represent an opportunity for the industry to move to where providers are more incented to keep people healthy than based on the volume of visits and procedures.

- **Aging Population** - As Baby Boomers continue to reach retirement age, they are putting stress on our healthcare system. The first Boomer turned 65 in 2011, and the last will turn 65 in 2029. Their healthcare needs—and Medicare costs—are increasing at the same time their contributions to Medicare decline, placing additional pressure on the healthcare industry to rein in costs while also improving quality and ability to manage chronic conditions.

- **Consumer Expectations** - Increased out-of-pocket expense and technology utilization outside healthcare have contributed to rising consumer expectations on cost, convenience and service. This growing consumerism has increased the political focus on rising drug prices, surprise medical bills, and escalating premiums, highlighting the importance of having comprehensive strategies for engaging consumers.

- **Cognitive Computing** - Today, healthcare is principally digitized across the core clinical, operational and financial settings. However, while workflows have been digitized, business processes remain largely unautomated and the industry has yet to realize the benefits of digitization achieved in other industries. Cognitive computing represents a meaningful opportunity to leverage the digitization that now exists in healthcare to improve efficiency and quality, and we believe Cerner is well positioned to play a key role in helping the healthcare industry achieve this potential.

- **Coronavirus ("COVID-19") Pandemic** - The healthcare and life sciences industries are at the forefront of the pandemic with heroic efforts by healthcare providers on the frontlines and advances in technology and science enabling vaccines to get to market in an unprecedented timeframe. Longer term, we believe the pandemic could lead to an acceleration of macro trends already playing out. Examples of this include the likelihood the pandemic accelerates the role of the Federal government as the top regulator and payor for healthcare; ongoing health system consolidation; and increased consumer expectations, particularly around the convenience of telehealth.

For the core provider market, many of these forces are contributing to an overall challenging macro environment. Providers are simultaneously seeking to grow key service lines, drive operational efficiencies to make money at Medicare rates, and build out the competencies required to take and effectively manage risk and participate in value-based reimbursement models. Information technology is seen as an enabler of these efforts, which represents an opportunity for Cerner. At the same time, the low-margin nature of provider businesses can make it difficult to fund required investment, making it important for solutions and services to have a clear return on investment.

Cerner Vision and Growth Strategy

Throughout our history, Cerner has focused on creating innovation at the intersection of healthcare and information technology. Our vision has long been to create a Health Network Architecture ("HNA") for providers of care in every community. HNA has four core pillars: automate the care process; connect the person; structure, store and study the data; and then 'close the loop' by pushing analytic insights back into the care process. The base digitization that now exists in healthcare is foundational to achieving this vision, and we continue to believe it can be achieved in the decade to come.

Our framework for growth as we work towards achieving our long-term vision includes three core areas.

First, we are focused on delivering in our core market, including executing effectively on our large U.S. federal contracts, continuing to enhance key solution areas, such as revenue cycle, that are important to existing clients and represent revenue growth opportunities, and aligning with our provider clients to help them increase revenue in key service lines, tackle margin compression and optimize their reimbursement dollars. In addition, we are investing in our core products and platforms with a focus on delivering software as a service that we expect to improve clinician experience and patient outcomes, lower total cost of ownership, enable clients to accelerate adoption of new functionality, and better leverage third-party innovations. These efforts can differentiate Cerner and position our installed client base to better manage the forces of change playing out in healthcare.

Second, we are continuing work towards advancing the HNA vision that has driven Cerner almost since its inception. We believe that through the creation of a cohesive architecture for healthcare, the walls between care centers will become transparent as information travels seamlessly among care settings. Data collected at one setting will be available to others across the country, ensuring every individual in every part of the care process is connected to the right knowledge, resources and persons at the appropriate time and place. We believe the coming decade is the window when the confluence of technology, data liquidity and business model shifts can make this vision a reality. Health systems are increasingly building network strategies within specific regions to enhance contracting power, increase patient stickiness and move closer to the premium dollar. Cerner has an opportunity to become a strategic partner and assist with network design, provide services in areas such as cybersecurity and operational reporting, and improve performance under value-based contracting.

Third, Cerner has an opportunity to harness data to drive growth in new areas, including using real-world evidence to improve clinical research. Cerner has natural points of differentiation, including our trusted relationships with healthcare providers and access to data given our technology is in place in approximately a quarter of U.S. healthcare facilities, and our proven ability to aggregate and normalize multiple sources of data through our *HealtheIntent* platform, which contains data from more than 300 million longitudinal records.

To focus on this opportunity, we launched *Cerner Enviza* in 2021. *Cerner Enviza* combines the expertise of Cerner and Kantar Health, which we acquired in April 2021. Kantar Health's leading data, analytics, real-world evidence and commercial research consultancy, combined with Cerner's real-world data, positions *Cerner Enviza* to help accelerate discovery, development and deployment of therapies and advance clinical research and the life sciences industry to improve everyday health.

Importantly, Cerner's health data strategy is based on curating data from a willing and engaged network of providers with an emphasis on clear boundaries around the usage of patient data and based on clearly defined use cases with clarity and transparency around data rights.

In summary, we believe Cerner's core value proposition remains strong and there is ample opportunity to grow both organically and inorganically through the areas discussed above.

Oracle Merger Agreement

On December 20, 2021, we entered into an Agreement and Plan of Merger (as it may be amended or supplemented from time to time, the "Merger Agreement") with Cedar Acquisition Corporation ("Merger Subsidiary"), which is a wholly owned subsidiary of OC Acquisition LLC ("Parent"), Parent, which is a wholly owned subsidiary of Oracle Corporation ("Oracle"), and (solely with respect to performance of its obligations set forth in certain specified sections thereof) Oracle. Pursuant to the Merger Agreement, on January 19, 2022, Oracle commenced a cash tender offer (the "Offer") to acquire all of the issued and outstanding shares of our common stock for a purchase price of $95.00 per share, net to the holders thereof in cash, without interest and subject to any required tax withholding. Following the completion of the Offer, Merger Subsidiary will merge with and into Cerner (the "Merger"), with Cerner continuing as the surviving corporation and as a wholly owned indirect subsidiary of Oracle, at which time the shares of our common stock would cease to be publicly held. Completion of the Merger is subject to certain conditions, including but not limited to, a) shareholders holding a majority of the outstanding shares of our common stock tendering their shares in the Offer, and b) receipt of certain regulatory approvals, including the expiration or termination of the waiting periods or the obtaining of the required affirmative approvals applicable to the transaction under the Hart-Scott-Rodino Antitrust Improvements Act of 1976 and certain foreign antitrust and foreign direct investment laws. We have agreed to various customary covenants and agreements in the Merger Agreement, including with respect to the operation of our business prior to the closing of the transaction, such as restrictions on making certain acquisitions and divestitures, entering into certain contracts, incurring certain indebtedness and making certain capital expenditures, paying dividends in excess of our regular quarterly dividend, issuing or repurchasing stock and taking other specified actions. We do not believe these restrictions will prevent us from meeting our debt service obligations, ongoing costs of operations, working capital needs, or capital expenditure requirements. Additional information about the Offer and Merger and the Merger Agreement is set forth in our filings with the SEC.

Contracting with the Government

As we grow our federal business, revenue attributable to prime contracts or to subcontracts with other contractors engaged in work for the U.S. government is becoming a bigger contributor to our overall revenue. Within the U.S. government, our revenues are diversified across various agencies, including the Department of Defense and the U.S. Department of Veterans Affairs. During 2021 and 2020, approximately 20% and 18%, respectively, of our total revenues were attributable to our relationships (as the prime contractor or a subcontractor) with U.S. government agencies. Contracting with the U.S. government subjects us to substantial regulation and unique risks, including the U.S. government's ability to cancel any contract at any time through a termination for the convenience of the U.S. government. Government cancellation terms typically permit the recovery of all or a portion of our incurred costs and fees for work performed prior to termination when the U.S. government issues a termination for convenience. These regulations and risks are described in more detail below under "Risk Factors" in this annual report on Form 10-K.

Software Development

We commit significant resources to developing new health information system solutions and services. As of the end of 2021, approximately 6,150 associates were engaged in research and development activities. Total expenditures for the development and enhancement of our software solutions were $829 million, $797 million and $784 million during 2021, 2020 and 2019, respectively. These figures include both capitalized and non-capitalized portions and exclude amounts amortized for financial reporting purposes.

As discussed above, continued investment in research and development ("R&D") remains a core element of our strategy. This will include ongoing enhancement of our core solutions and development of new solutions and services.

Intellectual Property

We have a broad portfolio of intellectual property rights to protect the proprietary interests in our solutions, services, devices and brands. Our solutions constitute works of authorship protected by copyrights in the United States and globally. We own valuable trade secrets embodied in, or related to, our solutions, services and devices and protect these rights through a number of technical and legal measures. We have registered or applied to register certain trademarks and service marks in a number of countries with particular emphasis on the Cerner branding elements. We continue to develop our patent portfolio and own more than 650 issued patents with hundreds of patent applications pending. We do not consider any of our businesses to be dependent upon any one patent, copyright, trademark, or trade secret, or any family or families of the same.

Our solutions, devices and services incorporate or rely on intellectual property rights licensed from third parties, including software subject to open source software licenses. Certain technologies licensed to Cerner are also important for internal use in running our business and supporting our clients. Although replacing any existing licenses could be inconvenient, based on our experiences, existing contractual relationships, and the incentives of our technology suppliers, we believe that Cerner will continue to obtain these technologies or suitable alternatives for commercially reasonable prices on commercially reasonable terms or under open source software licenses acceptable to Cerner.

Managing Cybersecurity Risks

Our business operations, including the provision of the solutions and services described above, involve the compilation, hosting and transmission of confidential information, including patient health information. We have included security features in our solutions and services that are intended to protect the privacy and integrity of this information, but our solutions and services may be vulnerable to security breaches, viruses, programming errors and other similar disruptive problems. Cerner maintains documented information privacy, security and risk management programs with clearly defined roles, responsibilities, policies, and procedures which are designed to secure the information maintained on Cerner's platforms.

In addition, all of our associates are required to complete annual cybersecurity education and training, which includes identifying suspicious emails, Internet threats, telecommunication threats and ransomware. Cerner regularly reviews and modifies its security program to reflect changing technology, regulatory environment, laws, risk, industry and security practices and other business needs. We believe our policies and procedures are adequate to ensure that relevant information about cybersecurity risks and incidents is appropriately reported and disclosed.

Sales and Marketing

The markets for Cerner HCIT solutions, healthcare devices and services include integrated delivery networks, physician groups and networks, managed care organizations, hospitals, medical centers, free-standing reference laboratories, home health agencies, blood banks, imaging centers, pharmacies, pharmaceutical manufacturers, employers, governments and public health organizations. The majority of our sales are clinical and revenue cycle solutions and services to hospitals and health systems, but our solutions and services are highly scalable and sold to organizations ranging from physician practices, to community hospitals, to complex integrated delivery networks, to local, regional and national government agencies. Sales to large health systems typically take approximately nine to 18 months, while the sales cycle is often shorter when selling to smaller hospitals and physician practices.

Our executive marketing management is located at our world headquarters in North Kansas City, Missouri, while our client representatives are deployed across the United States and globally. In addition to the United States, through our subsidiaries, we have sales associates and/or offices giving us a presence primarily in Europe, the Middle East, Australia, Canada, and India.

We support our sales force with technical personnel who perform demonstrations of *Cerner* solutions and services and assist clients in determining the proper hardware and software configurations. Our primary direct marketing strategy is to generate sales contacts from our existing client base and, in years when COVID-19 was not a concern, through presentations at industry seminars and tradeshows. We market our ambulatory solutions, offered on a subscription basis, directly to the physician practice market using lead generation activities and through existing acute care clients that are looking to extend *Cerner* solutions to affiliated physicians. Normally, we attend a number of major tradeshows each year and sponsor executive user conferences, which feature industry experts who address the HCIT needs of large healthcare organizations.

Backlog

Backlog, which reflects contracted revenue that has not yet been recognized as revenue, was $13.26 billion as of December 31, 2021, of which we expect to recognize approximately 31% as revenue over the next 12 months.

We believe that backlog may not necessarily be a comprehensive indicator of future revenue as certain of our arrangements may be canceled (or conversely renewed) at our clients' option; thus contract consideration related to such cancellable periods has been excluded from our calculation of backlog. However, historically our experience has been that such cancellation provisions are rarely exercised. We expect to recognize $1.22 billion of revenue over the next 12 months under currently executed contracts related to such cancellable periods, which is not included in our calculation of backlog.

Competition

The market for HCIT solutions, devices and services is intensely competitive, rapidly evolving and subject to rapid technological change. The principle markets in which we compete include, without limitation, healthcare software solutions, HCIT services, ambulatory, healthcare device and technology resale, healthcare revenue cycle and transaction services, value-based care technologies, analytics systems, care management solutions, population health management, and post-acute care. Our principal existing competitors, including their affiliates, in these markets include, but are not limited to:

Allscripts Healthcare Solutions, Inc.	Epic Systems Corporation
Arcadia Solutions, LLC	Health Catalyst, Inc.
athenahealth, Inc.	InterSystems Corporation
Capsule Technologies, Inc.	Innovaccer, Inc.
Computer Programs and Systems, Inc.	Medical Information Technology, Inc. (MEDITECH)
eClinicalWorks, LLC	Optum, Inc.

In addition, we expect that major software information systems companies, large information technology consulting service providers and system integrators, start-up companies, managed care companies, healthcare insurance companies, accountable care organizations and others specializing in the healthcare industry may offer competitive software solutions, devices or services. The pace of change in the HCIT market is rapid and there are frequent new software solutions, devices or services introductions, enhancements and evolving industry standards and requirements. We believe that the principal competitive factors in our markets include the breadth and quality of solution and service offerings, the stability of the solution provider, the features and capabilities of the information systems and devices, the ongoing support for the systems and devices and the potential for enhancements and future compatible software solutions and devices. We believe that we compete favorably with our competitors on the basis of these factors and that we are the leader- or among the leaders- in each of our main offerings. Our brand recognition and reputation for innovative technology and service delivery, combined with our breadth of solution and services offerings, global distribution channels and client relationships position us as a strong competitor going forward.

Human Capital Management

Cerner believes that attracting, engaging and retaining employees is vital to the Company's continued success. Our Chief Human Resources Officer, reporting directly to our Chief Executive Officer, oversees our human capital management strategies. In addition, our Board of Directors is actively involved in our human capital management in its oversight of our long-term strategy and through its committees and engagement with management.

At Cerner, we're collectively working to create a culture and a community where our employees, who we refer to as our associates, feel their voice is heard in our ongoing efforts to make a difference in the future of healthcare. Our efforts have earned Cerner recognition over the years as one of Forbes' Best Employers, Best Employers for Diversity, Best Employers for LGBTQ Equality and a perfect score on the Human Right Campaign Equality Index.

The Company employed approximately 25,150 associates worldwide as of December 31, 2021. Of that total population, approximately 70% of our associates were employed in the United States and the remaining associates were employed outside the United States. Approximately 39% of our associates work in professional services (implementation, training, consulting and other services), 24% of our associates work in development (coding and engineering), 10% of our associates work in managed services (hosting), and the remaining associates work in other areas with no such area making up 10% or more of our associate base.

Our human capital management operating model focuses on the following strategic areas:

Talent Acquisition: We continue to actively hire talent and are primarily focused on recruiting talent in support of our strategic growth initiatives. We strive for the attraction, retention and development of skilled, engaged teams of diverse associates.

Learning and Leadership Development: Associate training is also an important component of our human capital management. We have programs designed specifically to support early career talent, as well as management development. The Company continues to explore solutions that provide training material and support to all levels in the organization.

Total Rewards: We believe Cerner offers a competitive portfolio of rewards offerings to our associates around the globe to attract, engage and retain our talented associates. We have a global job architecture which underpins our pay structure that includes a combination of base pay, cash incentives and equity awards. Compensation awards are based on performance, and determined by the results associates achieve, as well as how they achieve those results in a manner consistent with our associate behaviors.

Consistent with our strong commitment to associate well-being, our global rewards portfolio includes a full suite of healthcare and retirement benefits in addition to other well-being programs, many of which are also offered virtually, including: fitness classes, wellness coaching, mental health support, bariatric care, financial planning resources, musculoskeletal health coaching, as well as on-site child care, fitness centers, health clinics and pharmacies.

Associate Experience and Engagement: We strive to create an environment in which associates are fully engaged, feel safe, have a sense of belonging and are empowered to make a difference. We focus on an inclusive culture to retain talent. These ongoing efforts are shaped by the action planning from our annual employee engagement census survey.

Talent Management: Cerner has an ongoing approach to performance and career management that is grounded in behaviors embedded in every day experiences that encourage the continual development of associates. Associates work with their managers to align goals and ask for feedback to enable achievement of outcomes that we believe matter most to Cerner clients.

Organization Design and Effectiveness: This area focuses on organizational design consulting, the integration of new associates from our business acquisitions, and coaching.

Associate Relations and Employment Practices: This area focuses on compliance with applicable employment laws, associate relations and resolving associate employment-related disputes, as well as on managing the process for departing associates, including the provision of outplacement services. In addition, this area provides proactive performance coaching for our associates. Associates are encouraged to report ethics, safety, or grievances through multiple channels including a company provided confidential hotline.

Diversity, Equity and Inclusion ("DE&I"): This area focuses on education, embedding DE&I into our talent processes and programs, associate community building, market outreach, fostering a culture of inclusion and developing enterprise diversity strategies. We have an enterprise-wide DE&I strategy to achieve holistic transformation in collaboration with executives, leaders and associates. We focus on inclusive solutions and supporting diversity within all stakeholder groups.

Global Community and Philanthropy: This area focuses on philanthropy, associate volunteerism, community relations, corporate social responsibility and sustainability.

Information about our Executive Officers

The following table sets forth the names, ages, positions and certain other information regarding the Company's executive officers as of February 10, 2022. Officers are elected annually and serve at the discretion of the Board of Directors.

Name	Age	Positions
David T. Feinberg	59	President and Chief Executive Officer
Mark J. Erceg	52	Executive Vice President and Chief Financial Officer
Nasim Afsarmanesh	44	Executive Vice President and Chief Health Officer
Travis S. Dalton	51	Executive Vice President, Chief Client & Services Officer and President, Cerner Government Services
Daniel P. Devers	49	Executive Vice President, Chief Legal Officer and Secretary
Jerome Labat	56	Executive Vice President and Chief Technology Officer
Tracy L. Platt	48	Executive Vice President and Chief Human Resources Officer

David T. Feinberg, M.D., joined the Company in October 2021 as President and Chief Executive Officer and as a member of the Board of Directors. Dr. Feinberg joined Cerner after serving since 2019 as Vice President of Google Health, where he led Google's worldwide health efforts, bringing together groups from across Google and Alphabet that used artificial intelligence, product expertise and hardware to take on big healthcare challenges. In this role, he was responsible for organizing and innovating Google's various healthcare initiatives. Prior to joining Google, from 2015 to 2019, Dr. Feinberg served as the President and Chief Executive Officer of Geisinger Health System, a physician-led health system. At Geisinger, Dr. Feinberg led an operational turnaround and pushed the use of new platforms and tools including an IT system called a Unified Data Architecture, which allowed the company to integrate big data into their existing data analytics and management systems. Prior to Geisinger, Dr. Feinberg worked at UCLA for more than 20 years and served in a number of leadership roles, including President, CEO and Associate Vice Chancellor of UCLA Health Sciences, Vice Chancellor and CEO for the UCLA Hospital System, and CEO of UCLA's Ronald Reagan Medical Center. Dr. Feinberg serves as a member of the board of directors of Emmett Douglas, Inc. (NYSE: DEI).

Mark J. Erceg joined the Company in February 2021 as Executive Vice President and Chief Financial Officer. Mr. Erceg joined Cerner after serving as Chief Financial Officer of Tiffany & Co. ("Tiffany"), from October 2016 to January 2021. In that position, Mr. Erceg served as the principal financial officer for Tiffany. Prior to joining Tiffany, Mr. Erceg held the role of Executive Vice President and Chief Financial Officer for Canadian Pacific Railway Limited, a transcontinental railway, from 2015 to 2016, and Masonite International Corporation, a global manufacturer of commercial and residential doors, from 2010 to 2015. Previously, Mr. Erceg held finance, market strategy, general management and global investor relations positions at The Procter & Gamble Company during his tenure there from 1992 to 2010.

Nasim Afsarmanesh, M.D., M.B.A., joined the Company in January 2022 as Executive Vice President and Chief Health Officer. Prior to joining the Company, Dr. Afsar served as the Chief Operating Officer of UCI Health, Orange County, California's only academic health system, since October 2020, and as Executive for Population Health Management since March 2018. In these roles, she had oversight for more than 3,000 employees and oversaw inpatient and ambulatory operations, including ambulatory care, inpatient progression efforts, clinical support services, ancillary service, public safety, building and construction, and emergency management, and finance; was a key driver for advancing the future of healthcare through implementation of digital solutions; was a vital partner for institutional strategic growth and development; and established organizational population health strategy and operations. Dr. Afsar also served as Chief Operating Officer for Ambulatory Care at UCI Health from March 2018 until October 2020, where she managed a team of over 1,000 people and 80 cost centers, led organization and ambulatory strategy and ambulatory operations and finance, and established strategic direction for health plans, independent physician associates, Medicare and Medi-Cali; and as head of Health System Contracting from May 2018 to October 2020, where she also directed the health system's contracting. Prior to joining UCI Health, Dr. Afsar served as Chief Quality Officer for the Department of Medicine at UCLA Health, leading a large-scale population health initiative, from July 2014 until February 2018. In this role, Dr. Afsar developed and executed strategies for population health and value-based care in the Department of Medicine. Prior to that, Dr. Afsar also served as the Associate Chief Medical Officer at UCLA Health and Executive Director of Quality and Safety at UCLA Health Department of Neurosurgery.

Travis S. Dalton joined the Company in August 2001 as Practice Operations Manager and has held a variety of business and client senior leadership roles since that time, including Client Results Executive from February 2009 until he was promoted to Vice President and Client Results Executive, a title which he held from March 2011 to December 2012. Mr. Dalton's role was expanded in December 2012, and he served as the Vice President, Investor Owned and General Manager Federal from December 2012 until he was promoted to Senior Vice President, Investor Owned and General Manager Federal in March 2016 (which title was changed to Senior Vice President and General Manager, Federal Government in October 2017). His role was changed to Senior Vice President and President, Cerner Government Services in August 2018. He was promoted to Executive Vice President, Chief Client and Services Officer and President, Cerner Government Services in January 2021. In this role, Mr. Dalton oversees worldwide client relationship management, sales, services, consulting, support, hosting and client success. He also leads Cerner's work in implementing a new, interoperable electronic health record for the U.S. Departments of Defense (DOD) and Veterans Affairs (VA).

Daniel P. Devers was appointed as Executive Vice President, Chief Legal Officer and Secretary in January 2021 and prior to that had served as Senior Vice President and Chief Intellectual Property Officer since May 2013. As Cerner's Chief Legal Officer, Mr. Devers is responsible for overseeing Cerner's worldwide legal affairs including litigation, intellectual property and corporate matters. Prior to serving as Chief Legal Officer, Mr. Devers served as Senior Vice President – Cloud Strategy from February 2020 to January 2021, Senior Vice President and General Counsel from April 2018 to February 2020, Senior Corporate Counsel – Intellectual Property from 2003 to 2007 and Corporate Counsel – Intellectual Property from February 2002 to December 2003. He has been a member of the Cerner Executive Committee since March 2020. Mr. Devers was an equity partner at Shook, Hardy & Bacon LLP prior to joining Cerner. He taught patent law at the University of Missouri and served a three-year gubernatorial appointment to the Missouri Technology Corporation's Board of Directors.

Jerome Labat joined the Company in June 2020 as Executive Vice President and Chief Technology Officer (CTO). As CTO, Mr. Labat has executive responsibility for client-facing software products and technology development, including platform and product development, modernization and security. Prior to joining the company, Mr. Labat served as Senior Vice President and Chief Technology Officer at Micro Focus International plc, a British multinational, pure-play enterprise software and information technology company, from September 2017 until June 2020. In this role, Mr. Labat led an organization of about 500 people globally and, among other things was responsible for the company's product portfolio technology and strategy vision as to how Micro Focus' solutions would support its clients through their digital transformation, and developed and implemented technology and solution strategies to support Micro Focus' digital transformation. Prior to joining Micro Focus, Mr. Labat spent five years with Hewlett Packard Enterprise Corporation (HPE), his most recent title being CTO HPE-Software Division, which he held from December 2013 to August 2017. In this role, Mr. Labat led HPE's cloud automation business. Prior to serving as CTO HPW-Software Division, Mr. Labat served as Vice President and General Manager, Cloud Automation and Management for HPE and in various senior leadership positions with other companies, including Intuit Corporation and Oracle Corporation.

Tracy L. Platt joined the Company in July 2019 as Executive Vice President and Chief Human Resources Officer. Prior to joining the Company, Ms. Platt spent nearly 10 years in executive HR roles at Medtronic Plc, a global healthcare company that develops and distributes medical devices. More specifically, Ms. Platt was Vice President, Human Resources, Medtronic from September 2009 to July 2019. Ms. Platt brings healthcare experience from Medtronic and other key organizations, including Cardinal Health and GE Healthcare. Her most recent role at Medtronic included HR leadership for its global operations organization and driving an operating model transformation throughout the enterprise.

Market and Industry Data

This annual report on Form 10-K may contain market, industry and government data and forecasts that have been obtained from publicly available information, various industry publications and other published industry sources. We have not independently verified the information and cannot make any representation as to the accuracy or completeness of such information. None of the reports and other materials of third party sources referred to in this annual report on Form 10-K were prepared for use in, or in connection with, this annual report.

Item 1A. Risk Factors.

Risks Related to the Acquisition of Cerner by Oracle

The announcement and pendency of the Merger may result in disruptions to our business. On December 20, 2021, we entered into the Merger Agreement with an affiliate of Oracle, pursuant to which we will be acquired by Oracle. The Merger Agreement generally requires us to operate our business in the ordinary course pending completion of the Merger and restricts us, without Oracle's consent, from taking certain specified actions until the Merger is completed. These restrictions may affect our ability to execute our business strategies and attain financial and other goals and may impact our financial condition, results of operations and cash flows. Further, in connection with the pending Merger, our current and prospective employees may experience uncertainty about their future roles with us following the Merger, which may materially adversely affect our ability to attract and retain key personnel while the Merger is pending. Employees may depart because of issues relating to the uncertainty and difficulty of integration or a desire not to remain with us following the Merger and may depart prior to the completion of the Merger. Accordingly, no assurance can be given that we will be able to attract and retain employees to the same extent that we have been able to in the past. The proposed Merger further could cause disruptions to our business or business relationships, which could have an adverse impact on our results of operations. Parties with which we have business relationships may experience uncertainty as to the future of such relationships and may delay or defer certain business decisions, seek alternative relationships with third parties or seek to alter their present business relationships with us. Parties with whom we otherwise may have sought to establish business relationships may seek alternative relationships with third parties. The pursuit of the Merger may place a significant burden on management and internal resources. It may also divert management's time and attention from the day-to-day operation of our business and the execution of our other strategic initiatives. This could materially adversely affect our financial results. In addition, we have incurred and will continue to incur other significant costs, expenses and fees for professional services and other transaction costs in connection with the proposed Merger, and many of these fees and costs are payable regardless of whether or not the pending Merger is consummated. Any of the foregoing could adversely affect our business, our financial condition and our results of operations and prospects.

The Merger may not be completed within the expected timeframe, or at all, and the failure to complete the Merger could materially adversely affect our business, results of operations, financial condition, and the market price of our common stock. There can be no assurance that the Merger will be completed in the expected timeframe, or at all. The Merger Agreement contains conditions that must be satisfied or waived prior to the completion of the Merger, including, among others, the approval or clearance of the Merger under the antitrust and foreign investment laws of certain specified countries. There can be no assurance that all required approvals will be obtained, that the conditions to the completion of the Merger will otherwise be satisfied (or waived, if applicable) or that the Merger Agreement will not be terminated, and, even if all required approvals are obtained and conditions are satisfied (or waived, if applicable), we can provide no assurance as to the terms, conditions and timing of such approvals or that the Merger will be completed in a timely manner or at all. Certain conditions to completion of the Merger are not within our control, and we cannot predict when or if these conditions will be satisfied (or waived, as applicable). Even if required regulatory approvals are obtained, it is possible conditions will be imposed that could result in a material delay in, or the abandonment of, the Merger or otherwise have an adverse effect on us.

If the Merger is not completed within the expected timeframe or at all, we may be subject to a number of material risks. The price of our common stock may decline to the extent that current market prices reflect a market assumption that the Merger will be completed. In addition, some costs related to the Merger must be paid whether or not the Merger is completed, and we have incurred, and will continue to incur, significant costs, expenses and fees for professional services and other transaction costs in connection with the proposed transaction, as well as the diversion of management and resources towards the Merger, for which we will have received little or no benefit if completion of the Merger does not occur. We may also experience negative reactions from our investors, clients, suppliers, and associates. In addition, if the Merger Agreement is terminated under certain specified circumstances, we will be required to pay Parent a termination fee of $950 million. Additional information about the Offer and Merger and the Merger Agreement is set forth in our filings with the SEC.

Stockholder litigation could prevent or delay the closing of the Merger or otherwise negatively impact our business, operating results and financial condition. We may incur additional costs in connection with current or any future stockholder litigation in connection with the Merger. Such litigation may adversely affect our ability to complete the Merger. We could incur significant costs in connection with any such litigation, including attorneys' fees and costs associated with the indemnification obligations to our directors.

COVID-19 Risks

The COVID-19 pandemic has affected how we and our customers are operating our respective businesses, and the duration and extent to which this will impact our future results of operations remains uncertain. Continuing efforts to control the spread of the COVID-19 pandemic or the resurgence thereof have significantly curtailed the movement of people, goods and services worldwide, including in most or all of the regions in which we sell our software, healthcare devices, technology-enabled services or other services (collectively referred to as "Products and Services") and conduct our business operations. The COVID-19 pandemic has caused us to modify certain of our business practices, including prolonging the requirement that most of our associates work remotely; restricting associate travel; mandating vaccines for our associates; developing social distancing plans for our associates; and canceling or postponing in person participation in certain meetings, events and conferences, and we may take further actions as required by government authorities, our clients or as determined to be in the best interests of our associates, clients and business partners. These measures and our clients' focus on the pandemic have also resulted in delays in marketing, selling and implementing our Products and Services. There is no certainty that these measures will be sufficient to mitigate the risks posed by the virus and our ability to perform critical functions could be harmed. Further, there can be no assurances that our mitigation measures, such as mandating vaccines for our U.S.-based associates, will not have a negative impact on our business. The magnitude and duration of the disruption and potential ongoing impact on business activity is uncertain. In particular, we have experienced and may continue to experience a negative financial impact due to a number of factors, including without limitation:

- Cerner's efforts and investments in assisting its clients in their response to the pandemic;
- Reduced new business bookings as our clients focus on helping their patients during the crisis, rather than making new or expanded purchasing decisions, and longer-term declines in bookings for new Products and Services to the extent that the pandemic will continue to contribute to sustained global or U.S. economic downturns;
- Delays in implementing our Products and Services, including delays in the pace of completion of existing projects, while client resources are reallocated or dedicated to fighting the COVID-19 pandemic or the resurgence thereof, and supply chain interruptions;
- Financial pressures being put on our clients, which may in turn result in a delay in collections or non-payment from our clients; and
- Financial pressures being put on our strategic investments for which we hold an equity interest increases the risk of asset impairment.

Although we experienced some ongoing challenges in connection with the COVID-19 pandemic during 2021, at this time, we have not experienced a negative impact on our liquidity, access to capital or overall operations. While we generally expect continued impact from COVID-19 in 2022, we are unable to predict the ultimate impact of the COVID-19 pandemic, including the nature and timing of when full demand recovery may occur. Even after the COVID-19 pandemic has subsided, we may experience material adverse impacts to our business as a result of the global and U.S. economic impact and any recession that has occurred or may occur in the future. To the extent the COVID-19 pandemic or our measures taken in response thereto adversely affects our business and financial results, it may also have the effect of heightening many of the other risks described below.

Cybersecurity and Information Technology Risks

We may experience interruptions at our data centers or client support facilities, which could interrupt clients' access to their data, exposing us to significant costs and reputational harm. We perform data center and hosting services for certain clients, including the collection and storage of critical patient and administrative data and the provision of support services. We rely on the secure electronic transmission, processing and storage of sensitive information, including protected health information; personally identifiable information; financial information; and other sensitive information relating to our clients and their patients, our company and our third-party suppliers. We also use public cloud providers and other third parties in connection with hosting our own data. A catastrophic failure of our backup generators during a prolonged public utility power outage; an impairment of telecommunications lines; a successful concerted denial of service attack; a significant system, network or data breach; damage, injury or impairment to the buildings, equipment, personnel operating such facilities or the client data contained therein; or errors by the personnel operating such facilities could cause a disruption in operations and negatively impact our clients. System redundancy, disaster recovery and other continuity measures may be inadequate. Any interruption, damage or breach of our systems or with those of third parties on which we rely, such as our cloud service providers, could damage our reputation, cause us to lose existing clients, hurt our ability to obtain new clients, result in significant revenue loss, create potential liabilities, increase our operating costs and have a material adverse impact on our results of operations.

A security breach could subject us to increased expenses, legal exposure and regulatory actions, and clients and prospective clients could be deterred from using our Products and Services*.* Our Products and Services require us to store, retrieve, process and manage our clients' information and data (and that of their patients), as well as our own data. Persons with authorized access, both associates and third parties, may use such access to harm the Company. Persons outside of our organization may attempt to identify and exploit Product and Service vulnerabilities, penetrate or bypass our security measures, and gain unauthorized access to our software, hardware and cloud offerings, networks and systems, or those of our clients and suppliers, any of which could lead to disruptions in mission-critical systems or the unauthorized release or corruption of protected health information, personally identifiable information, financial information or other sensitive information, or the confidential information or data of Cerner, our clients or their patients, or our suppliers. We may be targeted by computer hackers because we are a prominent healthcare IT company and have high profile clients, including government clients. Additionally, our clients and their employees may be targeted by hackers who compromise their credentials and lead to unauthorized access to their systems hosted in our data centers or third-party cloud service providers. These risks may increase as we continue to grow our cloud offerings, collect, store and process increasingly large amounts of our clients' confidential data, including protected health information and sensitive personal data, and host or manage parts of our clients' businesses in cloud-based/multi-tenant IT environments. We also use third party public cloud providers in connection with certain client facing cloud-based offerings and to host our own data. There can be no assurance that our policies, procedures, and controls or those of third parties on which we rely will detect or prevent all of these threats and we cannot predict the full impact of any such past or future incident.

The costs we would incur to address and remediate these security incidents would increase our expenses. Our efforts to address these problems may not be successful and could result in interruptions, delays, cessation of service and loss of existing or potential clients that may impede our sales, development of solutions, provision of services or other critical functions. If a cyber-attack or other security incident were to allow unauthorized access to or modification of data or our IT systems, or if our Products or Services are perceived as having security vulnerabilities, we could suffer significant damage to our brand and reputation. This in turn could lead to fewer clients using our Products and Services and result in reduced revenue and earnings. These types of security incidents could also lead to lawsuits, regulatory investigations and claims and, in some cases, contractual costs related to notification and fraud monitoring. There can be no assurance that our cyber risk insurance will adequately cover all our losses from any future security breaches or remain available on acceptable terms, if at all.

Operating and Product Risks

We may be subject to claims for system errors and warranties or incur substantial costs related to product and service-related liabilities. Many of our Products and Services are intended for use in collecting, storing and displaying clinical and healthcare-related information used in the diagnosis and treatment of patients and in related healthcare settings such as registration, scheduling and billing. Our Products and Services, or the third-party software products or services incorporated therein, may contain design, coding or other errors, especially when first introduced. Similarly, errors in the implementation and configuration can occur and have occurred in the past. These errors could affect the ability of our Products and Services to properly function, integrate or operate with other offerings, scale to meet the needs of our clients, create vulnerabilities and adversely affect market acceptance. If the timely delivery of medical care or other customer business requirements are impaired by data access, network or systems problems, we could be exposed to legal liability and reputational harm. Healthcare professionals delivering patient care tend to have heightened sensitivity to system and software errors and impairments of reliability and stability of systems. If our Products and Services are alleged to have contributed to faulty clinical decisions, injury to patients based on failure to provide reliable and stable uptime, or negative financial impact to clients, we might be subject to claims or litigation by users of our Products and Services or their patients. Errors or failures might damage our reputation and negatively affect future sales. Any such problems might have a materially adverse impact on our business operations and our financial position or results of operations.

Our client agreements typically provide warranties concerning material errors and other matters. Our failure to meet these warranties could allow the client to terminate the agreement and possibly obtain a refund or damages or both, require us to incur additional expense to correct such failure, subject us to claims, damage our reputation and negatively affect future sales. We attempt to contractually limit our liability; however, these contractual limitations may not be enforceable or otherwise protect us from liability. We may also be subject to claims that are not covered by contract. There is no assurance that our liability insurance will adequately cover any claim or remain available on acceptable terms, if at all. If we are uninsured or under-insured for any such claim, our business, results of operations and financial condition could be materially harmed. Product and service-related claims, even if not successful, could damage our reputation, result in the loss of existing or potential clients, divert management's attention, result in significant revenue loss, create potential liabilities for our clients and us and increase our operational costs.

Our proprietary technology may be subject to claims for infringement or misappropriation of intellectual property rights of others, or our intellectual property rights may be infringed or misappropriated by others or our software may be subject to claims related to open source software licenses. We rely upon a combination of confidentiality practices and policies, contractual arrangements and technical security measures to maintain the confidentiality and trade secrecy of our proprietary information. We also rely on trademark, copyright and patent laws to protect our intellectual property rights. Despite these efforts, we may not be able to adequately protect against theft, copying, reverse engineering, misappropriation, infringement or unauthorized use or disclosure of our intellectual property, which could have an adverse effect on our competitive position. In addition, we are occasionally involved in intellectual property infringement or misappropriation claims. These claims, even if unmeritorious, are expensive to defend and are often incapable of prompt resolution. If we are unsuccessful in defending these claims, we could be required to pay a substantial damage award, develop alternative technology, obtain a license or cease using, selling, offering for sale, licensing, implementing or supporting the applicable Products and Services. We rely upon open source software in our Products and Services. We may encounter claims alleging unauthorized use of the software purported to be licensed under open source terms, demanding release of derivative works of open source software that could include our proprietary source code, or otherwise seeking to enforce the terms of the applicable open source licenses. These claims could result in litigation and, even if unmeritorious, could be expensive to defend and incapable of prompt resolution. We could also be required to make our software source code available under the applicable open source license, utilize or develop alternative technology, or cease using, selling or supporting the applicable Products and Services if we are unsuccessful in defending such claims.

We may become involved in legal proceedings that could have a material adverse impact on our business, results of operations and financial condition, and our inability or failure to effectively manage publicity related to such claims or legal proceedings could adversely impact our business. From time to time and in the ordinary course of our business, we may become involved in various legal proceedings and claims, including for example, those relating to employment practices, solution and implementation defects, personal injury, torts, intellectual property infringement, violations of law and breaches of contract and warranties. All disputes and legal proceedings are inherently unpredictable. And, regardless of the merits of the claims, litigation may lead to negative publicity and may be expensive, time-consuming and disruptive to our operations and distracting to management. If resolved against us, legal proceedings could result in excessive judgments, injunctive relief or other equitable relief that may affect how we operate our business. Any settlements of disputes or legal proceedings may also affect how we operate our business. There can be no assurance that our liability insurance will adequately cover any judgment or settlement or remain available on acceptable terms, if at all. If we incur liability that exceeds our insurance coverage or that is not within the scope of the coverage, it could have a material adverse effect on our business, results of operations and financial condition. Additionally, the dissemination of information via social media, including information about alleged harassment, discrimination or other claims, could harm our business, brand, reputation, financial condition, and results of operations, regardless of the information's accuracy.

We are subject to risks associated with our global operations. We market, sell and support our Products and Services globally. We periodically evaluate entering into new markets, whether organically or by acquisition, and adjusting our focus in certain existing markets. For example, in connection with the acquisition of the Kantar Health business, we acquired business in, among other countries, new markets such as China and Taiwan. Significant management attention and financial resources are required to address the risks noted below associated with new market entry into non-U.S. markets, including the noted markets above, and potential disruptions if we chose to adjust our focus in a given market. Non-U.S. operations are subject to inherent risks, and our business, results of operations and financial condition, including our revenue growth and profitability, could be adversely affected by a variety of uncontrollable and changing factors. These include, but are not limited to:

- Greater difficulty in collecting accounts receivable and longer collection periods;
- Difficulties and costs of staffing and managing non-U.S. operations and labor disruptions;
- Effects of sovereign debt conditions, including budgetary constraints, or health service provider or government spending patterns or government-imposed austerity measures;
- Legal compliance costs or business risks associated with our global operations, such as: i) local laws and customs differing from, or more stringent than those in the United States, such as those relating to data protection and data security, trade protection measures and intellectual property rights, ii) heightened risk with respect to

laws prohibiting improper payments and bribery, including without limitation the U.S. Foreign Corrupt Practices Act, the U.K. Anti-Bribery Act and similar laws and regulations in foreign jurisdictions, iii) export control regulations, iv) different or additional functionality requirements or preferences, or v) certification (e.g. CE marking for medical device software), licensing or regulatory requirements and unexpected changes to those requirements;

- The United Kingdom's withdrawal of its membership from the European Union ("EU") (Brexit) and associated uncertainty and disruptions relating thereto;
- Natural disasters, war, terrorist acts or political unrest which may impact sales or threaten the safety of associates or our continued presence in these countries and the related potential impact on global stability;
- Our ability to form relationships with local partners, which help us to offer our Products and Services at scale, and our reliance on these partners whose reputation may not be regarded as highly outside the United States; and
- The increased risks, especially with respect to perceived corruption, cybersecurity threats and IP protection rights, in certain new markets such as China and Taiwan.

We operate in intensely competitive and dynamic industries, and our ability to successfully compete depends on our ability to anticipate or respond quickly to market changes and to bring competitive new Products and Services and features to market in a timely fashion. The IT industry and the market for our Products and Services are intensely competitive, dynamically evolving and subject to rapid technological advances and innovative enhancements, changing delivery and pricing models, evolving standards in computer hardware and software development and communications infrastructure, and changing and increasingly sophisticated client needs. We compete on the basis of a number of factors, including breadth and depth of services, including our open architecture and the level of product integration across care settings; integrated platform; regulatory compliance; reputation; reliability, accuracy and security; client service; total cost of ownership; innovation; and industry acceptance, expertise and experience. Development of new proprietary Products or Services is complex, entails significant time and expense, may not be successful and often involves a long return on investment cycle. We cannot guarantee that the market for our Products and Services will continue to grow or that we will be able to successfully introduce new Products or Services. We provide solutions to clients via various deployment models, including client-server-based solutions and cloud-based offerings.

In addition, we expect that major software information systems companies, highly capitalized consumer technology companies, large information technology consulting service providers and system integrators, start-up companies and others operating in the healthcare industry may offer competitive Products and Services. As we continue to develop new Products and Services to address areas such as analytics, machine learning ("ML"), artificial intelligence ("AI"), value-based care, consumer solutions, population health management and other health network solutions, we expect to face new competitors, and these competitors may have more experience in these markets, better brand recognition or more established relationships with prospective clients. Moreover, we expect that competition will continue to increase as a result of consolidation in both the IT and healthcare industries. We face strong competition and often face downward price pressure, which could adversely affect our results of operations or liquidity. If we do not adapt our pricing models to reflect changes in use of our Products and Services or changes in client demand, our revenues could decrease.

Our success also depends on our ability to maintain and expand our business with our existing clients and effectively transition existing clients to current Products and Services, as well as attracting additional clients. Certain clients originally purchased one or a limited number of our Products and Services. These clients may choose not to expand their use of or purchase new Products and Services. Failure to retain and generate additional business from our current clients could materially and adversely impact our business, financial condition and operating results. In addition, there are a limited number of hospitals and other healthcare providers in the U.S. market, and the healthcare industry has been subject to increasing consolidation, which can cause fewer new footprint opportunities or lead to the replacement of our Products and Services in existing clients if the acquiror (or the group being acquired) has a relationship with a different Health Information Technology (HIT) provider. If we are unable to adapt to the impact of industry consolidation, falling costs and technological advancements in a timely manner, our prospects and financial results could be negatively affected.

We may continue complementary strategic business acquisitions and strategic investments to expand our Products and Services offerings and grow our market and client base. Acquisitions and strategic investments have inherent risks which may have a material adverse effect on our business, results of operations, financial condition or prospects, including, but not limited to: 1) diversion of our management's attention; 2) investment in or entry into markets in which we have little or no direct prior experience; 3) failure to achieve projected synergies; 4) failure to commercialize "go forward" Products and Services; 5) failure to successfully integrate the business; 6) loss of clients, key personnel, suppliers and other important relationships; 7) incurrence of debt or assumption of known and unknown liabilities; 8) write-off of software development costs, goodwill, client lists and amortization of expenses related to intangible assets; 9) dilutive issuances of equity securities; 10) accounting deficiencies relating to the acquisition of an acquired company, including issues related to internal control over financial reporting and the time and cost associated with remedying such deficiencies; and 11) litigation related to acquisition activity. Further, when we make a strategic investment, we have to rely on third party management teams to drive the portfolio company's success and at times infuse additional capital or provide bridge loans to protect our investment. If we fail to successfully integrate acquired businesses or fail to implement our business strategies with respect to our acquisitions or investments, we may not be able to achieve projected results or support the amount of consideration paid for such acquired businesses or invested into a portfolio company.

If we are unable to manage our growth in the new markets in which we offer Products and Services, our business, results of operations and financial condition could suffer. Our future financial results will depend on our ability to profitably manage our business in the new markets that we enter. We expect to pursue growth and expansion opportunities in the areas of analytics, ML, AI, value-based care, consumer solutions, population health and other health network solutions. To achieve success in those areas, we will need to, among other things, recruit, train, retain and effectively manage associates, manage changing business conditions and implement and improve our technical, administrative, financial control and reporting systems for offerings in those areas. Difficulties in managing future growth in new markets could have a material adverse impact on our business, results of operations and financial condition.

Long sales cycles for our Products and Services could have a material adverse impact on our future results of operations. Some of our Products and Services have long sales cycles, ranging from several months to eighteen months or more beginning at initial contact with the client through execution of a contract. Implementing, replacing, or expanding an information system, or modifying, adding or outsourcing business processes, are major decisions for healthcare organizations. Many of the Products and Services we provide require a substantial capital investment and time commitments by the client or prospective client. Any decision by our clients or prospective clients to delay a purchasing decision could have a material adverse impact on our results of operations.

We depend on strategic relationships and third-party suppliers and our revenue and operating earnings could suffer if we fail to manage these relationships properly. To be successful, we must continue to maintain our existing strategic relationships and establish additional strategic relationships as necessary with leaders in the markets in which we operate. As we decide to partner rather than directly provide certain Products and Services, we will become more dependent on these strategic relationships to meet our clients' needs. We believe that these relationships contribute to our ability to further build our brand, extend the reach of our Products and Services, develop and deploy new products and services, and generate additional revenues and cash flows. The loss of a critical strategic relationship or failure to establish additional relationships, or the failure to realize anticipated synergies and benefits of these strategic relationships, including as a result of delays, shortages or increasing costs in our supply chain, could have a material adverse impact on our business, results of operations and financial condition.

We license or purchase certain intellectual property and technology (such as software, services, hardware and content) from third parties, including some competitors, and depend on such intellectual property and technology in the operation and delivery of our Products and Services. Additionally, we sell or license third party intellectual property and technology in conjunction with our Products and Services. Our remote hosting and cloud services businesses also rely on a limited number of software and services suppliers for certain functions of these businesses. Most of our third-party software license support contracts expire within one to five years, can be renewed only by mutual consent and may be terminated if we breach the terms of the license and fail to cure the breach within a specified period of time. Most of these third-party software licenses are non-exclusive; therefore, our competitors may obtain the right to use the technology covered by these licenses to compete directly with us. If our third party suppliers were to change product offerings, cease actively supporting the technologies, fail to update and enhance the technologies, encounter technical difficulties in developing these technologies, significantly increase prices, change delivery models, terminate our licenses or supply contracts or suffer significant capacity or supply chain constraints or disruptions, we may need to seek alternative suppliers and incur additional internal or external development costs to ensure continued performance of our Products and Services. Such alternatives may not be available on attractive terms or may not be as widely accepted or as effective as the intellectual property or technology provided by our existing suppliers. In addition, interruption in functionality of our Products and Services as a result of changes in third party suppliers could adversely affect our commitments to clients, future sales of Products and Services, and negatively affect our revenue and operating earnings.

Our success depends upon the recruitment and retention of key personnel. Members of our senior management team and other key personnel have departed the Company during the past few years for a variety of reasons, and we cannot guarantee that there will not be additional departures. To remain competitive, we must attract, motivate and retain highly skilled managerial, sales, marketing, consulting and technical personnel, including key personnel skilled in the industries and technical environments in which our Products and Services are offered. As we modernize our core platforms, it is important that we retain and attract experienced technical talent with cloud expertise to lead this transformation. Competition for such personnel in our industries is intense in both the United States and abroad. Our failure to attract additional qualified personnel and to retain and motivate existing personnel to meet our needs could have a material adverse effect on our prospects for long-term growth. We may also experience increased compensation costs that are not offset by either improved productivity or higher sales. The unexpected loss of key personnel, or the failure to successfully develop and execute effective succession planning to assure smooth transitions of those key associates and their knowledge, relationships and expertise, could disrupt our business and have a material adverse impact on our results of operations and financial condition, and could potentially inhibit development and delivery of our Products and Services and market share advances.

We might not be successful in achieving expected operating efficiencies and sustaining or improving operating expense reductions and might experience business disruptions and adverse tax consequences associated with restructuring, realignment and cost reduction activities. Cerner has implemented and plans to continue to implement several restructuring and realignment initiatives to reduce costs and increase operating efficiencies. There can be no assurance that we will realize, in full or in part, the anticipated benefits of these initiatives. If we are unable to deliver on these initiatives, while continuing to invest in business growth, or if the volume and nature of change overwhelms available resources, our business operations and financial results could be materially and adversely impacted. Our ability to successfully manage and execute these initiatives and realize expected savings and benefits in the amounts and at the times anticipated is important to our business success. Any failure to do so could have a material adverse effect on our businesses, financial condition and results of operations. Moreover, our ability to achieve our other strategic goals and business plans might be adversely affected and we could experience business disruptions with clients and elsewhere if our restructuring and realignment efforts and our cost reduction activities prove ineffective.

Regulatory Risks

The healthcare industry is subject to changing political, economic and regulatory influences, which could impact the purchasing practices and operations of our clients and increase our costs to deliver Products and Services that enable our clients to meet their compliance requirements. Many healthcare providers are consolidating to create integrated healthcare delivery systems with greater market power. These providers may try to use their market power to negotiate price reductions for our Products and Services. As the healthcare industry consolidates, our client base could be consolidated with fewer buyers, competition for clients could become more intense and the importance of maintaining and acquiring new client relationships becomes greater.

The last decade has been quite active legislatively with major statutes such as the Protecting Access to Medicare Act (PAMA) of 2014 establishing requirements for "Appropriate Use Criteria" in ordering high dollar diagnostic imaging services, the Medicare and CHIP Reauthorization Act of 2015 which reformed how physicians are paid under Medicare and which established the Merit-based Incentive Payment System (MIPS); the 21st Century Cures Act of 2016 (Cures Act), which laid the groundwork for a nationwide trusted health information exchange, established interoperability requirements for providers, payers and consumers, and set the framework for information blocking regulations; and most recently the Substance Use Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities (SUPPORT) Act of 2018 that includes significant policies for addressing the opioid crisis. These statutes are heavily laden with provisions that directly call for or describe roles for the use of health information technology to help providers comply with new federal requirements under Medicare and state Medicaid programs.

Reform of payment policies for Medicare and Medicaid continues to evolve. The Patient Protection and Affordable Care Act became law in 2010; this comprehensive healthcare reform legislation introduced value-based principles into federal health insurance payments systems, sought to improve healthcare quality, and expanded access to affordable health insurance. MACRA built upon the value based policies introduced by the ACA. These legislative initiatives accelerated the adoption of "Alternative Payment Models" (APMs) as bundled payment models based on episodes of care or per capita payment for defined populations as alternatives to traditional fee for service payments to providers. New APMs continue to be developed under the authorities of the Centers for Medicare and Medicaid Innovations, and value-based efforts such as the Medicare Shared Savings Program Accountable Care Organization (MSSP ACO) program have seen various iterations. APMs have evolved to usually require two-sided risk (shared saving and shared losses) and use of Certified EHR Technology (CEHRT) as a precondition for program participation. However, even after failed attempts to repeal the ACA, continuing challenges in the courts create uncertainty for the continued implementation of the ACA. Given a fractious and polarized legislative environment at the federal level, the near-term prospects for healthcare related legislation face uncertainty. Because of ongoing federal fiscal budgetary pressures yet to be resolved for federal health programs, we cannot predict the full effect of healthcare legislation on our business at this time. The direction and pace of healthcare reform initiatives may adversely impact either our operational results or the way we operate our business. We expect expanded surveillance by federal agencies of certified HIT and its use by our clients. We also anticipate newly expanded regulations under the federal Self-Referral and Anti-Kickback Laws that will contain expanded safe harbors for value based care, and that may promote expanded donation of certified HIT and of cybersecurity technologies in support of trusted health information exchange to support coordinated patient care within value based APMs. In response to this uncertainty, purchasers of HIT may elect to update HIT already in use and postpone investment decisions in new or replacement HIT, including investments in our Products and Services. Future legislation and regulation together with future judicial decisions may ultimately impact the fiscal stability and sustainability of HIT purchasers. Differences in demand related to new regulatory requirements and near-term compliance deadlines that contribute to demand for our Products and Services could impact our financial results. There can be no certainty that any legislation that may be adopted or judicial decisions will be favorable to our business. We cannot predict whether or when future healthcare reform initiatives at the federal or state level or other initiatives affecting our business will be proposed, enacted or implemented or what impact those initiatives may have on our business, results of operations and financial condition.

The healthcare industry is highly regulated, and thus, we are subject to several laws, regulations and industry initiatives, non-compliance with certain of which could materially adversely affect our operations or otherwise adversely affect our business, results of operations and financial condition. As a participant in the healthcare industry, our operations and relationships, and those of our clients, are regulated by several U.S. federal, state, local and foreign governmental entities. The impact of these regulations on us is both direct, to the extent that we are ourselves subject to these laws and regulations, and also indirect, in terms of government program requirements applicable to our clients for the use of HIT. Even though we may not be directly regulated by specific healthcare laws and regulations, our Products and Services must be capable of being used by our clients in a way that complies with those laws and regulations. There are a significant and wide-ranging number of regulations both within the United States and abroad, such as regulations in the areas of healthcare fraud, information sharing, e-prescribing, claims processing and transmission, healthcare devices, the security and privacy of patient data and interoperability standards, that may be directly or indirectly applicable to our operations and relationships or the business practices of our clients. Specific risks include, but are not limited to, the following:

Healthcare Fraud. U.S. federal and state governments continue to enhance regulation of and increase their scrutiny over practices involving healthcare fraud, waste and abuse perpetuated by healthcare providers and professionals whose services are reimbursed by Medicare, Medicaid and other government healthcare programs. Our healthcare provider clients, as well as our provision of Products and Services to government entities, subject our business to laws and regulations on fraud and abuse which, among other things, prohibit the direct or indirect payment or receipt of any remuneration for patient referrals, or arranging for or recommending referrals or other business paid for in whole or in part by these federal or state healthcare programs. U.S. federal enforcement personnel have substantial funding, powers and remedies to pursue suspected or perceived fraud and abuse. The effect of this government regulation on our clients is difficult to predict. Many of the regulations applicable to our clients and that may be applicable to us, including those relating to marketing incentives offered in connection with healthcare device sales and information blocking, are vague or indefinite and have not been interpreted by the courts. They may be interpreted or applied by prosecutorial, regulatory or judicial authorities in a manner that could broaden their applicability to us or require our clients to make changes in their operations or the way in which they deal with us. If we fail to comply with any applicable laws and regulations, we could be subject to civil and criminal penalties, sanctions or other liability, including exclusion from government health programs or from providing certain Products and Services to our clients who participate in such programs, which could have a material adverse effect on our business, results of operations and financial condition. Even an unsuccessful challenge by a regulatory or prosecutorial authority of our activities could result in adverse publicity, require a costly response from us and adversely affect our business, results of operations and financial condition.

Preparation, Transmission, Submission and Collection of Medical Claims for Reimbursement. Our Products and Services are capable of electronically transmitting claims for services and items rendered by a physician to many patients' payers for approval and reimbursement. Such claims are governed by U.S. federal and state laws. U.S. federal law provides civil liability to any persons that knowingly submit, or cause to be submitted, a claim to a payer, including Medicare, Medicaid and private health plans, seeking payment for any services or items that overbills or bills for services or items that have not been provided to the patient. U.S. federal law may also impose criminal penalties for intentionally submitting such false claims. In addition, federal and state law regulates the collection of debt and may impose monetary penalties for violating those regulations. We have policies and procedures in place that we believe result in the accurate and complete preparation, transmission, submission and collection of claims, provided that the information given to us by our clients is also accurate and complete. The Health Insurance Portability and Accountability Act of 1996 ("HIPAA") security, privacy and transaction standards, as discussed below, also have a potentially significant effect on our claims preparation, transmission and submission services, because those services must be structured and provided in a way that supports our clients' HIPAA compliance obligations. In connection with these laws, we may be subjected to U.S. federal or state government investigations and possible penalties may be imposed upon us; false claims actions may have to be defended; private payers may file claims against us; and we may be excluded from Medicare, Medicaid or other government-funded healthcare programs. Any investigation or proceeding related to these laws, even if unwarranted or without merit, may have a material adverse effect on our business, results of operations and financial condition.

Regulation of Healthcare Devices. The U.S. Food and Drug Administration ("FDA") has determined that certain of our Products and Services are covered medical devices that are actively regulated under the Federal Food, Drug and Cosmetic Act ("Act") and amendments to the Act. Other countries have similar regulations in place related to medical devices, that now or may in the future apply to certain of our Products and Services. The FDA has also expressed an intention to update its regulatory framework to address AI/ML-based Software as a Medical Device. If other of our Products and Services are deemed to be actively regulated medical devices by the FDA or similar regulatory agencies in countries where we do business, we could be subject to extensive requirements governing pre- and post-marketing activities including pre-market notification clearance. Complying with these medical device regulations globally is time consuming and expensive and could be subject to unanticipated and significant delays. Further, it is possible that these regulatory agencies may become more active in regulating software and devices that are used in healthcare. If we are unable to obtain the required regulatory approvals for any such Products and Services, our short- and long-term business plans for these Products and Services could be delayed or canceled. Our sites have been previously subject to FDA inspections, and we remain subject to periodic FDA inspections. We could be required to undertake additional actions to comply with the Act and any other applicable regulatory requirements. Our failure to comply with the Act and any other applicable regulatory requirements could have a material adverse effect on our ability to continue to manufacture, distribute and deliver our Products and Services.

Security and Privacy. U.S. federal, state and local laws and foreign legislation govern the confidentiality of personal information, how that information may be used, and the circumstances under which such information may be released. These regulations govern both the disclosure and use of confidential personal and patient medical record information and require the users of such information to implement specified security and privacy measures. U.S. regulations currently in place governing electronic health data transmissions continue to evolve and are often unclear and difficult to apply in light of the complexity of our client environments. Laws in non-U.S. jurisdictions are also evolving and often have stricter requirements related to the treatment of personal or patient information.

Data protection regulations impact how businesses, including both us and our clients, can collect and process the personal data of individuals. The costs of compliance with, and other burdens imposed by, such laws, regulations and policies, or modifications thereto, that are applicable to us may limit the use and adoption of our Products and Services and could have a material adverse impact on our business, results of operations and financial condition. Furthermore, we incur development, resource, and capital costs in delivering, updating, and supporting Products and Services to enable our U.S. and non-U.S. clients to comply with these varying and evolving standards. U.S. federal, state, and non-U.S. governmental enforcement personnel have substantial powers and remedies, particularly in the EU, to pursue suspected or perceived violations. If we fail to comply with any applicable laws or regulations or fail to deliver compliant Products and Services, we could be subject to civil penalties, sanctions and contract liability and could otherwise damage our reputation. Enforcement investigations, even if meritless, could have a negative impact on our reputation, cause us to lose existing clients or limit our ability to attract new clients.

In the U.S., HIPAA regulations apply national standards for some types of electronic health information transactions and the data elements used in those transactions to ensure the integrity, security and confidentiality of health information and standards to protect the privacy of individually identifiable health information. Covered entities under HIPAA, which include healthcare organizations such as our clients, and their business associates, many of our employer clinic business and our claims processing, transmission and submission services, are required to comply with HIPAA privacy standards, transaction regulations and security regulations. We and our U.S. clients are also subject to evolving state laws regarding the privacy and security of healthcare information and personal information generally.

In non-U.S. jurisdictions, we are subject to transnational, national and local data protection legislation, including, but not limited to, the EU General Data Protection Regulation ("GDPR"), UK GDPR, Canadian Personal Information Protection and Electronic Documents Act and Canadian Provincial legislation. In addition to EU and Canadian federal legislation, certain European member states and Canadian provinces have adopted more stringent data protection standards, particularly for health data. These regulations may impose restrictions on the processing of personal data (including health data) that, in some respects, are more stringent, and impose more significant burdens on subject businesses, than current privacy standards in the United States.

In non-U.S. jurisdictions, we also are subject to potential restrictions on cross-border transfers of personal data to the United States as well as other countries where Cerner has business operations. A recent EU court decision regarding the adequacy of U.S. law to protect EU personal data created additional uncertainty regarding the lawfulness of transfers of EU personal data to the United States and India. Cerner has addressed these requirements through the execution of Standard Contractual Clause Agreements and by designing our support services to minimize, to the extent feasible, transfers of our EU client's patient data to the United States. However, the adoption of data privacy laws and court decisions that restrict cross border transfers or otherwise require data localization could have a material impact on our business. Furthermore, the perception by non-U.S. clients that we cannot provide adequate assurance for transfers of personal information may limit the use and adoption of our Products and Services and could have a material adverse impact on our business, results of operations and financial condition.

Development and adoption of ML and AI technologies offer the potential to significantly improve the delivery of healthcare. The application of ML and AI technologies to personal and patient information may be regulated under some privacy laws (e.g. GDPR). Furthermore, the lack of standards for measuring the accuracy and effectiveness of ML and AI can raise new or exacerbate existing technological, legal or other challenges that could impact our reputation and have a material adverse impact on our results of operations.

Federal Requirements for Use of Interoperable and Certified Health Information Technology. Various U.S. federal, state and non-government agencies continue to generate requirements for the use of certified health information technology and interoperability standards. These requirements are expansions of the statutory ARRA HITECH program that began providing incentive payments in 2011 to hospitals and eligible providers for the "meaningful use of certified electronic health record technology ("CEHRT")." Although those incentive programs have expired, CEHRT continues to be a requirement of participation in federal healthcare programs in order to receive reimbursement for health items and services provided by our clients to Medicare and Medicaid beneficiaries. In the last several years, participation in Medicare's "alternative payment models" to replace traditional "fee for service" payments with quality and risk-sharing payment models has been conditioned on the adoption of CEHRT. The Cures Act has tied CEHRT to its policy goals of reducing barriers to the exchange of health information, encouraging nationwide interoperability, consumer access to health information and improving health information availability between consumers and their care teams. The regulations establishing the certification and interoperability standards for CEHRT will continue to be updated to support these policy goals with greater emphasis on interoperability, consumer engagement, patient safety and health information privacy and security.

Along with recent CMS actions taken for Medicare and Medicaid, these regulations will also mandate adoption of updated and expanded certified capabilities of CEHRT that our clients must adopt to remain able to participate in the federal programs mentioned earlier. In addition, the ONC has increased its surveillance activities concerning vendor compliance relative to CEHRT.

Cerner will be completing software development updates to its certified products and taking them through ONC's certification process in 2022 to meet the new certification requirements that will become mandatory for certain Federal programs under the Cures Act and various CMS regulations. Given recent CMS regulations, these updates must become certified and adopted by our clients by January 1, 2023. However, these standards and specifications are subject to interpretation by the entities designated to certify our electronic healthcare technology as CEHRT compliant. Additionally, the Cures Act requires us to comply with conditions of certification such that if our business practices or our Products and Services are not compliant with these evolving regulatory requirements, our market position and sales could be impaired, we may have to invest significantly in changes to our Products and Services, and our reputation could be damaged. Further, we bear potential financial risks where we are alleged to have not appropriately complied with these regulations. We also bear financial risk where we have entered into agreements with clients to warrant our ability to provide certified Products and Services. While a client's ability to meet future federal health program related attestation requirements may be dependent on the client's ability to adopt, rollout and attain sufficient use of our certified Products and Services on a timely basis, we may face risks that come from issues in full adoption of our certified Products and Services, which in turn could lead to a client missing its attestation targets. These risks are enhanced when we are under agreements to provide application management services to our clients that place responsibilities on us for application configuration and implementation as a prerequisite to attainment of quality measures ordinarily borne by the client.

The ONC has finalized additional regulations under the Cures Act to enforce the Act's policy directives relating to data sharing and interoperability. The ONC is charged under the Cures Act with developing a Trusted Exchange Framework that establishes governance requirements for trusted health information exchange in the United States. In addition, the ONC certification criteria updated under the Cures Act require that Cerner enable its clients to capture, store and exchange the types of health information defined within the ONC developed U.S. Common Data Set for Interoperability (USCDI) which represents the essential health information data for the U.S. healthcare system. The USCDI is designed to be maintained on an iterative basis to account for new requirements and priorities for health information that may emerge such through the COVID-19 pandemic. ONC continues to modify and refine these standards. We may incur increased software development and administrative expense and delays in delivering Products and Services if we need to update our Products and Services to conform to these varying and evolving requirements and standards. In addition, delays in interpreting these standards may result in postponement or cancellation of our clients' decisions to purchase our Products and Services. If our Products and Services are not compliant with these evolving standards, our market position and sales could be impaired, we may have to invest significantly in changes to our Products and Services, we may be subject to contractual liability and our reputation could be damaged. If our Products and Services are not consistent with those requirements, we could be forced to incur substantial additional development costs to conform.

Our work with government clients exposes us to additional risks inherent in the government contracting environment. Our clients include national, provincial, state, local and foreign governmental entities and their agencies. Our government work carries various risks inherent in contracting with government entities. These risks include, but are not limited to, the following:

- Government entities, particularly in the United States, often reserve the right to audit our contracts and conduct reviews, inquiries and investigations of our business practices and performance with respect to government contracts. If a government client discovers improper conduct during its audits or investigations, we may become subject to various civil and criminal penalties, including those under the civil U.S. False Claims Act, and administrative sanctions, which may include termination of contracts, suspension of payments, fines and civil money penalties, and suspensions or debarment from doing business with other government agencies.
- U.S. government contracting regulations impose strict compliance and disclosure obligations and our failure to comply with these obligations could be a basis for suspension or debarment, or both, from federal government contracting in addition to breach of the specific contract.
- Government contracts are subject to heightened reputational and contractual risks compared to contracts with commercial clients and often involve more extensive scrutiny and publicity. Negative publicity, including allegations of improper or illegal activity, poor contract performance, or information security breaches, regardless of accuracy, may adversely affect our reputation.
- Terms and conditions of government contracts also tend to be more onerous, are often more difficult to negotiate and involve additional costs. We must comply with specific procurement regulations and a variety of other socio-economic requirements, as well as various statutes, regulations and requirements related to employment practices, recordkeeping and accounting. Our failure to comply with a variety of complex procurement rules and regulations could result in our liability for penalties, including termination of our government contracts, disqualification from bidding on future government contracts and suspension or debarment from government contracting.
- Government entities typically fund projects through appropriated monies. Our VA Electronic Health Record Modernization and DOD MHS Genesis agreements are indefinite delivery, indefinite quantity contracts. The change in presidential administration may affect VA and DOD budget priorities for this ongoing work.
- Government entities reserve the right to change the scope of or terminate these projects at their convenience for lack of approved funding or other reasons, which could limit our recovery of reimbursable expenses or investments. In addition, government contracts may be protested, which could result in administrative procedures and litigation, result in delays in performance and payment, be expensive to defend and be incapable of prompt resolution.
- It is common in contracting with governments for there to be a prime contractor with privity of contract to the government client and one or more subcontractors. We serve in both capacities for different government clients. There are inherent risks in being a subcontractor, including without limitation, reliance on the performance of the prime contractor for the execution of the contract to the satisfaction of the client. Additionally, when we serve as the prime contractor, we rely on our subcontractors to fulfill certain contractual obligations under our agreements with government clients. A failure by the prime contractor to perform under an agreement under which we serve as a subcontractor, or a failure by a subcontractor to perform under an agreement under which we serve as a prime contractor, could have a material adverse impact on our business, results of operations and financial condition.

The occurrences or conditions described above could affect not only our business with the particular government entities involved, but also our business with other entities of the same or other governmental bodies or with certain commercial clients and could have a material adverse effect on our business, results of operations and financial condition.

Capital and Credit Risks

Volatility and disruption resulting from global economic or market conditions could negatively affect our business, results of operations and financial condition. Our business, results of operations, financial condition and outlook may be impacted by the health of the global economy. Our business and financial performance, including new business bookings and collection of our accounts receivable, may be adversely affected by current and future economic conditions that cause a slowdown or decline in client spending. Reduced purchases by our clients or changes in payment terms could adversely affect our revenue growth and cause a decrease in our cash flow from operations. Bankruptcies or similar events affecting clients may cause us to incur bad debt expense at levels higher than historically experienced. Further, volatility and disruption in global financial markets may also limit our ability to access the capital markets at a time when we would like, or need, to raise capital, which could have an impact on our ability to react to changing economic and business conditions. Accordingly, if global financial and economic volatility continues or worsens, particularly in light of the ongoing COVID-19 pandemic or the resurgence thereof, our business, results of operations and financial condition could be materially and adversely affected.

There are risks associated with our outstanding and future indebtedness. As of December 31, 2021, we had $1.84 billion of total outstanding indebtedness, and we may incur additional indebtedness in the future. We have customary restrictive covenants in our current debt agreements, which may limit our flexibility to operate our business. These covenants include limitations on priority debt, liens, mergers, asset dispositions, and transactions with affiliates, and require us to maintain certain leverage and interest coverage ratios. Failure to comply with these covenants could result in an event of default that, if not cured or waived, could have a material adverse effect on our business, results of operations and financial condition. Additionally, our ability to pay interest and repay the principal for our indebtedness is dependent upon our ability to manage our business operations, generate sufficient cash flows to service such debt and the other factors discussed in this section. There can be no assurance that we will be able to manage any of these risks successfully.

Our Fourth Amended and Restated Credit Agreement (as amended, the "Credit Agreement") bears interest at variable interest rates, primarily based on the London Interbank Offered Rate ("LIBOR"). LIBOR is currently in the process of being phased out. The Credit Agreement includes provisions intended to provide for the replacement of LIBOR with the Secured Overnight Financing Rate ("SOFR") or another widely-accepted alternative benchmark rate upon the cessation of LIBOR or the occurrence of other triggering events, with corresponding adjustments to the applicable interest rate margins. However, uncertainty as to the timing and nature of such modifications could cause the interest rate calculated for the Credit Agreement to be materially different than expected, and there is no guarantee that a transition from LIBOR to an alternative will not result in financial market disruptions, significant increases in benchmark rates, or borrowing costs to borrowers, any of which could have an adverse effect on our business, results of operations and financial condition. With respect to our Credit Agreement and the related interest rate swap, if the swap and the Credit Agreement replacement rates are not identical, our hedge could be less effective. Our failure to manage these risks effectively could adversely affect our financial condition and results of operations.

We cannot guarantee that our capital allocation strategy, which may include share repurchases and dividend payments, will be fully implemented or that it will enhance long-term shareholder value. As of December 31, 2021, $3.18 billion remains available for repurchase under our stock repurchase program, which expires on December 31, 2023. We are not obligated to repurchase a specified number or dollar value of shares and do not plan to repurchase shares in the near term. Additionally, while we expect to pay a cash dividend on a quarterly basis, future declarations of such dividends are subject to approval by the Board of Directors. Either or both of our repurchase or dividend programs may be suspended or terminated at any time and, even if fully implemented, may not enhance long-term shareholder value.

Tax, Finance and Accounting Related Risks

We are subject to tax legislation in numerous countries; changes in tax laws or challenges to our tax positions could adversely affect our business, results of operations and financial condition. We are a global corporation with a presence primarily in North America, Europe, the Middle East, Australia, and India. As such, we are subject to tax laws, regulations and policies of the U.S. federal, state and local governments and comparable taxing authorities in other country jurisdictions. Changes in tax laws could cause us to experience fluctuations in our tax obligations and effective tax rates in future periods and otherwise adversely affect our tax positions and our tax liabilities. Our effective tax rates, tax payments, tax credits or incentives could be adversely affected by changes in tax laws. In addition, U.S. federal, state and local, as well as other countries' tax laws and regulations, are extremely complex and subject to varying interpretations and require significant judgment in determining our worldwide provision for income taxes and other tax liabilities. As these and other tax laws and related regulations change, our financial results could be materially impacted. In the ordinary course of a global business, there are many intercompany transactions and calculations which could be subject to challenge by tax authorities. We are regularly under audit by tax authorities and those authorities often do not agree with positions taken by us on our tax returns. Our intercompany transfer pricing has been reviewed by the U.S. Internal Revenue Service ("IRS") and by foreign tax jurisdictions and will likely be subject to additional audits in the future. There can be no assurance that our tax positions will not be challenged by relevant tax authorities or that we would be successful in any such challenge, which could result in additional taxation, penalties and interest payments.

Our strategy to transition to a subscription based recurring revenue model and continued modernization of our technology may adversely affect our near-term revenue growth and results of operations. As we transition more of our offerings to leverage cloud technologies, we may incur disruption as we transition existing clients and be less competitive during the transition, which could impact revenue and profitability. We believe we must continue to dedicate a significant amount of resources to our research and development efforts to maintain our competitive position; and oftentimes, successful investments require several years before generating significant revenue. We expect our ongoing shift from a software license model to a subscription-based services revenue model to create a recurring revenue stream that is more predictable. The transition, however, creates changes related to the timing of revenue recognition compared to historical patterns. We also incur certain expenses associated with the infrastructures of our cloud-based offerings in advance of our ability to recognize the revenues associated with these offerings, which may adversely affect our near-term reported revenues, results of operations and cash flows. A decline in renewals of recurring revenue offerings in any period may not be immediately reflected in our results for that period but may result in a decline in our revenue and results of operations in future quarters.

Goodwill and other intangible assets represent approximately 21% of our total assets and we could suffer losses due to asset impairment charges. We assess our goodwill and other intangible assets for impairment periodically in accordance with applicable authoritative accounting guidance. Declines in business performance or other factors could result in a non-cash impairment charge. This could materially and negatively affect our results of operations and financial condition.

Our sales forecasts may vary from actual sales in a particular quarter. We use a "pipeline" system, a common industry practice, to forecast sales and trends in our business. Our sales associates monitor the status of all sales opportunities, such as the date when they estimate that a client will make a purchase decision and the potential dollar amount of the sale. These estimates are aggregated periodically to generate a sales pipeline. We compare this pipeline at various points in time to evaluate trends in our business. This analysis provides guidance in business planning and forecasting, but these pipeline estimates are by their nature speculative. Our pipeline estimates are not necessarily reliable predictors of revenues in a particular quarter or over a longer period of time, partially because of changes in the pipeline and in conversion rates of the pipeline into contracts that can be very difficult to estimate. A negative variation in the expected conversion rate or timing of the pipeline into contracts, or in the pipeline itself, could cause our plan or forecast to be inaccurate and thereby adversely affect business results.

Lower than expected revenue growth or shifts in our revenue mix could adversely affect our results of operations. Our revenue growth and mix could vary over time due to a number of factors, including timing of contracts signing, changes in the health of our end markets, unexpected client attrition, and the mix of software, hardware, devices, maintenance, support and services revenues, which carry different margin rates which can vary from period to period. Our operating results could be harmed by changes in revenue mix and costs, together with numerous other factors, including rapid growth in lower margin services business, declines in software, and growth in non-cash expenses, such as amortization and depreciation.

General Risk Factors

Our quarterly operating results may vary, which could adversely affect our stock price. Our quarterly operating results have varied in the past and may continue to vary in future periods, including variations from guidance, expectations or historical results or trends. Quarterly operating results may vary for a number of reasons including demand for our Products and Services, the financial condition of our current and potential clients, our long sales cycle, potentially long installation and implementation cycles for larger, more complex systems, accounting policy changes, our clients' abilities to meet project milestones, seasonality of revenue collection and other factors described in this section and elsewhere in this report. As a result of healthcare industry trends and the market for our Products and Services, a large percentage of our revenues are generated by the sale and installation of larger, more complex and higher-priced systems. The sales process for these systems is lengthy and involves a significant technical evaluation and commitment of capital and other resources by the client. Sales may be subject to delays due to changes in clients' internal budgets, procedures for approving large capital expenditures, competing needs for other capital expenditures, additions or amendments to applicable laws, availability of personnel resources or by actions taken by competitors. Revenue recognized in any quarter may also depend upon our clients' abilities to meet project milestones. Delays in the expected sale, installation or implementation of these large systems or in meeting project milestones may have a significant negative impact on our anticipated quarterly revenues and consequently our earnings, since a significant percentage of our expenses are relatively fixed. Because of the complexity and value of our contracts, the loss of even a small number of clients could have a significant negative effect on our financial results. We may also experience seasonality in revenues.

The trading price of our common stock may be volatile. The market for our common stock may experience significant price and volume fluctuations in response to a number of factors including actual or anticipated variations in operating results, articles or rumors about our performance or Products and Services, announcements of technological innovations or new services or products by our competitors or us, changes in expectations of future financial performance or estimates of securities analysts, governmental regulatory action, healthcare reform measures, client relationship developments, economic conditions, our pending acquisition by Oracle and its affiliates, and other factors, many of which are beyond our control. Furthermore, broad market and industry fluctuations may also adversely affect the trading price of our common stock, regardless of actual operating performance. As a matter of policy, we do not generally comment on our stock price or rumors.

Fluctuations in foreign currency exchange rates could materially affect our financial results. Our consolidated financial statements are presented in U.S. dollars. In general, the functional currency of our subsidiaries is the local currency where the subsidiary operates. For each subsidiary, assets and liabilities denominated in foreign currencies are translated into U.S. dollars at the exchange rates in effect at the balance sheet dates and revenues and expenses are translated at the average exchange rates prevailing during the month of the transaction. Therefore, future fluctuations in foreign currency exchange rates, particularly the strengthening of the U.S. dollar against major currencies, could materially affect our financial results.

Item 1B. Unresolved Staff Comments.

None

Item 2. Properties.

As of the end of 2021, we owned an aggregate of 6.5 million gross square feet of real estate located in the greater Kansas City metro area and Malvern, Pennsylvania. Such property primarily consists of office space, datacenter, and warehouse facilities used primarily by our Domestic segment. An aggregate of 1.2 million gross square feet of this space is currently designated as held for sale. Refer to Note (5) of the Notes for further information regarding our real estate held for sale.

As of the end of 2021, we leased an aggregate of 355 thousand gross square feet of office space in the United States used by our Domestic segment, and an aggregate of 1.4 million gross square feet of office and datacenter space outside the United States, primarily in Australia, Europe, India, and the Middle East, which is used by our International segment.

In general, we believe our facilities are suitable to meet our current and reasonably anticipated future needs.

Item 3. Legal Proceedings.

From time to time, we are involved in litigation which is incidental to our business. In our opinion, no litigation to which we are currently a party is likely to have a material adverse effect on our consolidated financial condition, results of operations, or cash flows.

The disclosure relating to our dispute with Steward Health Care System LLC contained in Note (19) is incorporated herein by reference.

Item 4. Mine Safety Disclosures.

Not applicable.

Part II.

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

Our common stock trades on the Nasdaq Global Select Market[SM] under the symbol CERN.

At February 10, 2022, there were approximately 920 owners of record.

Our Board of Directors declared cash dividends on our issued and outstanding common stock in 2021, 2020, and 2019. Subject to declaration by our Board of Directors, we expect to continue paying quarterly cash dividends as a part of our current capital allocation strategy. Future dividends will be subject to the determination, declaration and discretion of our Board of Directors and compliance with covenants under our outstanding debt agreements and the Merger Agreement. Refer to Note (16) of the Notes for further information regarding our dividend program.

The table below provides information with respect to common stock purchases by the Company during the fourth fiscal quarter of 2021:

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs (a)	Approximate Dollar Value of Shares That May Yet Be Purchased Under the Plans or Programs (a)
October 1, 2021 - October 31, 2021	2,866,152	$ 70.98	2,866,152	$ 3,348,677,338
November 1, 2021 - November 30, 2021	2,300,941	74.53	2,300,941	$ 3,177,186,928
December 1, 2021 - December 31, 2021	—	—	—	$ 3,177,186,928
Total	5,167,093	$ 72.56	5,167,093	

(a) Under our share repurchase program, which was initially approved by our Board of Directors on May 23, 2017 (and announced May 25, 2017) and most recently amended on December 12, 2019 (as announced on December 13, 2019) (the "2017 Share Repurchase Program"), the Company was authorized to repurchase up to $3.70 billion of shares of our common stock, excluding transaction costs. The repurchases were to be effectuated in the open market, by block purchase, in privately negotiated transactions, or through other transactions managed by broker-dealers, or any combination thereof. This program was completed in the third quarter of 2021.

On April 23, 2021, our Board of Directors approved (and announced on May 5, 2021) a new share repurchase program (the "2021 Share Repurchase Program"), which authorizes the Company to repurchase up to $3.75 billion in the aggregate of shares of our common stock, excluding transaction costs. The 2021 Share Repurchase Program was incremental to our 2017 Share Repurchase Program. The repurchases are to be effectuated in the open market, by block purchase, in privately negotiated transactions, or through other transactions managed by broker-dealers, or any combination thereof. The 2021 Share Repurchase Program will expire on December 31, 2023.

During 2021, we repurchased 20.0 million shares for total consideration of $1.50 billion under our share repurchase programs pursuant to Rule 10b5-1 plans. As of December 31, 2021, $3.18 billion remained available for repurchase under the 2021 Share Repurchase Program. The Merger Agreement prohibits us from repurchasing our shares without Parent's consent.

See Part III, Item 12 for information relating to securities authorized for issuance under our equity compensation plans.

Item 6. [Reserved]

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

The following Management Discussion and Analysis ("MD&A") is intended to help the reader understand our results of operations and financial condition. This MD&A is provided as a supplement to, and should be read in conjunction with, our financial statements and the accompanying Notes.

All references to years in this MD&A represent fiscal years unless otherwise noted. Refer to Note (1) of the Notes for information regarding our fiscal year end.

Information regarding our 2019 results of operations, including a year-to-year comparison against 2020, may be found in Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations in our annual report on Form 10-K for the period ended December 31, 2020, which was filed with the Securities and Exchange Commission on February 19, 2021.

Management Overview

Our revenues are primarily derived by selling, implementing, operating and supporting software solutions, clinical content, hardware, devices and services that give healthcare providers and other stakeholders secure access to clinical, administrative and financial data in real or near-real time, helping them to improve quality, safety and efficiency in the delivery of healthcare.

Our core strategy is to create organic growth by investing in research and development to create solutions and tech-enabled services for the healthcare industry. We expect to also supplement organic growth with acquisitions or strategic investments and collaborations.

Cerner's long history of growth has created an important strategic footprint in healthcare, with Cerner holding approximately 25 percent market share in the U.S. acute care electronic health record ("EHR") market and a leading market share in several non-U.S. regions. Foundational to our growth going forward is delivering value to this core client base, including executing effectively on our large U.S. federal contracts and cross-selling key solutions and services in areas such as revenue cycle. We are also investing in platform modernization, with a focus on delivering a software as a service platform that we expect to lower total cost of ownership, improve clinician experience and patient outcomes, and enable clients to accelerate adoption of new functionality and better leverage third-party innovations.

We also expect to continue driving growth by leveraging our *HealtheIntent* platform, which is the foundation for established and new offerings for both provider and non-provider markets. The EHR-agnostic *HealtheIntent* platform enables Cerner to become a strategic partner with healthcare stakeholders and help them improve performance under both fee-for-service and value-based contracting. The platform, along with our *CareAware* platform, also supports offerings in areas such as long-term care, home care and hospice, rehabilitation, behavioral health, community care, care team communications, health systems operations, consumer and employer, and data-as-a-service.

Beyond our strategy for driving revenue growth, we are also focused on earnings growth. After several years of margin compression related to slowing revenue growth, increased mix of low-margin services, and lower software demand due to the end of direct government incentives for EHR adoption, Cerner implemented a new operating structure and introduced other initiatives focused on cost optimization and process improvement. We have made good progress since we kicked off our transformation in 2019 and expect this progress to be reflected in improved profitability going forward. We are focused on ongoing identification of opportunities to operate more efficiently and on achieving the efficiencies without impacting the quality of our solutions and services and commitments to our clients.

We are also focused on delivering strong levels of cash flow which we expect to accomplish by continuing to grow earnings and prudently managing capital expenditures.

Oracle Merger Agreement

On December 20, 2021, we entered into the Merger Agreement with Oracle and certain of its wholly owned subsidiaries. Pursuant to the Merger Agreement, on January 19, 2022, Oracle commenced a cash tender offer to acquire all of the issued and outstanding shares of our common stock for a purchase price of $95.00 per share, net to the holders thereof in cash, without interest and subject to any required tax withholding. If the Offer is completed, Merger Subsidiary will merge with and into Cerner and we will become a wholly owned indirect subsidiary of Oracle. As a result of the Merger, the shares of our common stock will cease to be publicly held. We have agreed to various customary covenants and agreements in the Merger Agreement, including with respect to the operation of our business prior to the closing of the transaction, such as restrictions on making certain acquisitions and divestitures, entering into certain contracts, incurring certain indebtedness and making certain capital expenditures, paying dividends in excess of our regular quarterly dividend, issuing or repurchasing stock and taking other specified actions. We do not believe these restrictions will prevent us from meeting our debt service obligations, ongoing costs of operations, working capital needs, or capital expenditure requirements. If the Merger Agreement is terminated under certain specified circumstances, we will be required to pay Parent a termination fee of $950 million. The completion of the Merger remains subject to customary closing conditions, including receipt of certain regulatory approvals and other customary closing conditions. The Merger is currently expected to close in calendar year 2022.

For additional information related to the Merger Agreement, please refer to the Schedule 14D-9 previously filed with the SEC and other relevant materials in connection with the transaction that we will file with the SEC and that will contain important information about the Merger.

COVID-19

Our business and results of operations in both 2021 and 2020 were impacted by the ongoing COVID-19 pandemic. It has caused us to modify certain of our business practices, including prolonging the requirement that most of our associates work remotely; restricting associate travel; mandating vaccines for associates; developing social distancing plans for our associates; and canceling or postponing in person participation in certain meetings, events and conferences. It is not possible to quantify the full financial impact that the COVID-19 pandemic has had on our results of operations, cash flows, or financial condition, due to the uncertainty surrounding the pandemic, the difficulty inherent in identifying and measuring the various impacts that have or may stem from such an event and the fact that there are no comparable recent events that provide guidance as to how to measure or predict the ongoing effect the COVID-19 pandemic may have on our business. However, we believe COVID-19 has impacted, and could continue in the near-term to impact, our business results, primarily, but not limited to, in the following areas:

- Bookings, backlog and revenues – A decline in new business bookings as certain client purchasing decisions and projects are delayed to focus on treating patients, procuring necessary medical supplies, administering vaccines, and managing their own organizations through this crisis. A sustained decline in bookings could reduce backlog and lower subsequent revenues.

- Associate productivity – A decline in associate productivity, primarily for our services personnel, as a large amount of work is typically done at client sites, which is being impacted by travel restrictions, vaccine mandates and our clients' focus on the pandemic. Our clients' focus on the pandemic has also led to pauses on existing projects and postponed start dates for others, which translates into lower professional services revenues and a lower operating margin percentage. We are mitigating this by doing more work remotely than we have in the past, but we cannot fully offset the negative impact.

- Travel – Associate travel restrictions reduce client-related travel, which reduces reimbursed travel revenues and lowers our costs of revenue as a percent of revenues. Such restrictions also reduce non-reimbursable travel, which lowers operating expenses.

- Cash collections – A delay in client cash collections due to COVID-19's impact on national reimbursement processes, and client focus on managing their own organizations' liquidity during this time. This translates to lower cash flows from operating activities, and a higher days sales outstanding metric. Lower cash flows from operating activities may impact how we execute under our capital allocation strategy.

- Capital expenditures – A decline in capital spending as certain capital projects are delayed or strategies evolve.

We believe the impact of COVID-19 on our results of operations for the first quarter of 2020 was limited, due to the mid-March 2020 timing of when we implemented changes to our business practices in response to COVID-19, and the nature of the industry in which we operate. We believe the most significant impact of COVID-19 on our business was in the second quarter of 2020, with the impact beginning to moderate in subsequent periods but still persisting into 2021 due to some ongoing restrictive measures and certain regions dealing with resurgences of cases.

While we expect a negative financial impact to continue into 2022, we do not expect it to be as significant as either 2020 or 2021. The impact will continue to be difficult to quantify as there are many factors that continue to be outside of our control, so any forward looking statements that we make regarding our projections of future financial performance; new solutions and services; capital allocation plans; cost optimization and operational improvement initiatives; and the expected benefits of our acquisitions, divestitures or other collaborations are all subject to increased risks.

Operational Improvement Initiatives

The Company has continued to focus on leveraging the impact of our operating structure, that was implemented in the first quarter of 2019, and identifying additional efficiencies in our business. We are continuing our portfolio management, which includes ongoing evaluation of our offerings, exiting certain low-margin businesses, and being more selective as we consider new business opportunities. As part of our portfolio management, we closed on the sale of certain of our business operations, primarily conducted in Germany and Spain, in July 2020, and the sale of certain of our revenue cycle outsourcing business operations in August 2020. We have also made the decision to sell certain of our owned real estate. We expect to continue to evaluate and potentially complete divestiture transactions that are strategic to our operational improvement initiatives. We continue to be focused on reducing operating expenses and identifying opportunities that are expected to provide longer-term operating margin expansion and on achieving the efficiencies without impacting the quality of our solutions and services and commitments to our clients.

In the near term, we expect to incur expenses in connection with these efforts. Such expenses may include, but are not limited to, consultant and other professional services fees, employee separation costs, contract termination costs, asset impairment charges, and other such related expenses. Expenses recognized in 2021, 2020, and 2019 primarily related to professional services fees, employee separation costs, and asset impairment charges which are included in operating expenses in our consolidated statements of operations. We expect to incur additional expenses in connection with these initiatives in future periods, which may be material.

Results Overview

Bookings, which reflect the value of executed contracts for software, hardware, professional services and managed services, was $5.83 billion in 2021, which is an increase of 4% compared to $5.58 billion in 2020.

Revenues for 2021 increased 5% to $5.76 billion, compared to $5.51 billion in 2020.

Net earnings for 2021 decreased 29% to $556 million, compared to $780 million in 2020. Diluted earnings per share decreased 27% to $1.84 in 2021, compared to $2.52 in 2020.

We had cash collections of receivables of $6.13 billion in 2021, compared to $5.70 billion in 2020. Days sales outstanding was 73 days in the fourth quarter of 2021, compared to 76 days for both the third quarter of 2021 and fourth quarter of 2020. Operating cash flows for 2021 were $1.77 billion, compared to $1.44 billion in 2020.

Healthcare Information Technology Market Outlook

We have provided an assessment of the healthcare information technology market under "Healthcare and Healthcare IT Industry" in Part I, Item 1 "Business," which is incorporated herein by reference.

Results of Operations

Fiscal Year 2021 Compared to Fiscal Year 2020

(In thousands)	2021	*% of Revenue*	2020	*% of Revenue*	% Change
Revenues	$ 5,764,824	100 %	$ 5,505,788	100 %	5 %
Costs of revenue	1,001,017	17 %	932,941	17 %	7 %
Margin	4,763,807	83 %	4,572,847	83 %	4 %
Operating expenses					
Sales and client service	2,636,205	46 %	2,582,615	47 %	2 %
Software development	835,995	15 %	749,007	14 %	12 %
General and administrative	520,667	9 %	491,586	9 %	6 %
Amortization of acquisition-related intangibles	62,664	1 %	55,595	1 %	13 %
Total operating expenses	4,055,531	70 %	3,878,803	70 %	5 %
Total costs and expenses	5,056,548	88 %	4,811,744	87 %	5 %
Gain on sale of businesses	—	— %	220,523	4 %	
Operating earnings	708,276	12 %	914,567	17 %	(23)%
Other income (loss), net	(8,816)		76,906		
Income taxes	(143,864)		(211,385)		
Net earnings	$ 555,596		$ 780,088		(29)%

Revenues & Backlog

Revenues increased 5% to $5.76 billion in 2021, as compared to $5.51 billion in 2020. The following factors impacted the year-over-year change in revenues:

- Increased implementation activity during 2021 within our federal business, inclusive of ongoing projects with the U.S. Department of Defense and the U.S. Department of Veterans Affairs. In 2021, 20% of our total revenues were attributable to our relationships (as the prime contractor or a subcontractor) with U.S. government agencies, compared to 18% in 2020.

- The 2021 period includes a $148 million increase in revenues due to contributions from our April 1, 2021 acquisition of the Kantar Health business. Refer to Note (8) of the Notes for further information regarding the Kantar Health acquisition.

- The 2021 period includes a $47 million reduction in revenues due to the sale of certain of our revenue cycle outsourcing business operations, as further discussed in Note (9) of the Notes.

- The 2021 period includes a $40 million reduction in revenues due to the sale of certain of our business operations primarily conducted in Germany and Spain, as further discussed in Note (9) of the Notes.

Refer to Note (2) of the Notes for further information regarding revenues disaggregated by our business models.

Backlog, which reflects contracted revenue that has not yet been recognized as revenue, was $13.26 billion at the end of 2021, compared to $13.04 billion at the end of 2020. We expect to recognize 31% of our backlog as revenue over the next 12 months.

We believe that backlog may not necessarily be a comprehensive indicator of future revenue as certain of our arrangements may be canceled (or conversely renewed) at our clients' option; thus contract consideration related to such cancellable periods has been excluded from our calculation of backlog. However, historically our experience has been that such cancellation provisions are rarely exercised. We expect to recognize approximately $1.22 billion of revenue over the next 12 months under currently executed contracts related to such cancellable periods, which is not included in our calculation of backlog.

Costs of Revenue

Costs of revenue as a percent of revenues were 17% in both 2021 and 2020.

Costs of revenue include the cost of reimbursed travel expense, sales commissions, third-party consulting services and subscription content and computer hardware, devices and sublicensed software purchased from manufacturers for delivery to clients. It also includes the cost of hardware maintenance and sublicensed software support subcontracted to the manufacturers. Such costs, as a percent of revenues, typically have varied as the mix of revenue (software, hardware, devices, maintenance, support, and services) carrying different margin rates changes from period to period. Costs of revenue does not include the costs of our client service personnel who are responsible for delivering our service offerings. Such costs are included in sales and client service expense.

Operating Expenses

Total operating expenses increased 5% to $4.06 billion in 2021, compared to $3.88 billion in 2020.

- Sales and client service expenses as a percent of revenues were 46% in 2021, compared to 47% in 2020. These expenses increased 2% to $2.64 billion in 2021, from $2.58 billion in 2020. Sales and client service expenses include salaries and benefits of sales, marketing, support, and services personnel, depreciation and other expenses associated with our managed services business, communications expenses, unreimbursed travel expenses, expense for share-based payments, and trade show and advertising costs. The following factors impacted the year-over-year change in sales and client service expenses:

    - The 2021 period includes $78 million of pre-tax charges recorded in connection with the designation of certain real estate assets as held for sale, as further discussed in Note (5) of the Notes.

    - The 2021 period includes expense contributions from the Kantar Health business, which was acquired on April 1, 2021, as further discussed in Note (8) of the Notes.

    - The 2020 period includes $29 million of pre-tax charges incurred in connection with the termination of certain revenue cycle outsourcing contracts, as further discussed in Note (1) of the Notes.

    - The 2020 period includes a $21 million pre-tax charge to provide an allowance against certain non-current receivables from a former client. Refer to Note (3) of the Notes for further information regarding our provision for expected credit losses.

    - The 2020 period includes expense contributions from divested businesses, until their respective sale dates, as further discussed in Note (9) of the Notes.

- Software development expenses as a percent of revenues were 15% in 2021, compared to 14% in 2020. Expenditures for software development include ongoing development and enhancement of the *Cerner Millennium* and *HealtheIntent* platforms, as well as other key initiatives such as platform modernization, with a focus on development of a software as a service platform. A summary of our total software development expense in 2021 and 2020 is as follows:

	For the Years Ended	
(In thousands)	**2021**	**2020**
Software development costs	$ 828,502	$ 796,971
Capitalized software costs	(300,446)	(287,869)
Capitalized costs related to share-based payments	(7,580)	(7,408)
Amortization of capitalized software costs	261,798	247,313
Net realizable value charges (see Note (7) of the Notes)	53,721	—
Total software development expense	$ 835,995	$ 749,007

- General and administrative expenses as a percent of revenues were 9% in both 2021 and 2020. These expenses increased 6% to $521 million in 2021, from $492 million in 2020. General and administrative expenses include salaries and benefits for corporate, financial and administrative staffs, utilities, communications expenses, professional fees, depreciation and amortization, transaction gains or losses on foreign currency, expense for share-based payments, certain organizational restructuring and other expense. The increase in general and administrative expenses is primarily due to increased expense associated with share-based payment awards in connection with the departure, or planned departure, of certain executives. In 2021, general and administrative expenses include $139 million of expenses incurred in connection with our operational improvement initiatives, discussed above, compared to $137 million in 2020. We expect to incur additional expenses in connection with these efforts in future periods, which may be material.

- Amortization of acquisition-related intangibles as a percent of revenues was 1% in both 2021 and 2020. These expenses increased 13% to $63 million in 2021, from $56 million in 2020. Amortization of acquisition-related intangibles includes the amortization of customer relationships, acquired technology, trade names, and non-compete agreements recorded in connection with our business acquisitions. The increase in amortization of acquisition-related intangibles is primarily due to amortization of intangibles acquired in our April 1, 2021 acquisition of the Kantar Health business. Refer to Note (8) of the Notes for further information regarding the Kantar Health acquisition.

Gain on Sale of Businesses

In 2020, we recognized a $221 million gain on sale of businesses. Refer to Note (9) of the Notes for further information regarding divestiture transactions that closed during the third quarter of 2020. We expect to continue to evaluate and complete divestiture transactions that are strategic to our operational improvement initiatives discussed above.

Non-Operating Items

- Other income (loss), net was a net loss of $9 million in 2021, compared to $77 million of income in 2020. The 2020 period includes a $76 million gain recognized on the disposition of one of our equity investments. The remaining difference is primarily attributable to increased interest expense in 2021 from the $300 million of Series 2020-A Notes we issued in March 2020 and the $500 million of Series 2021 Senior Notes we issued in March 2021. Refer to Note (13) of the Notes for further information regarding the components of Other income (loss), net.

- Our effective tax rate was 21% in both 2021 and 2020. Refer to Note (14) of the Notes for further discussion regarding our effective tax rate. We do not expect significant changes to our overall effective tax rate in 2022, from what is reported for 2021.

Operations by Segment

We have two operating segments: Domestic and International. The Domestic segment includes revenue contributions and expenditures associated with business activity in the United States. The International segment includes revenue contributions and expenditures linked to business activity outside the United States, primarily from Australia, Canada, Europe, and the Middle East. Refer to Note (20) of the Notes for further information regarding our reportable segments.

The following table presents a summary of our operating segment information for 2021 and 2020:

(In thousands)	2021	% of Segment Revenue	2020	% of Segment Revenue	% Change
Domestic Segment					
Revenues	$ 5,044,629	100%	$ 4,879,769	100%	3%
Costs of revenue	887,343	18%	854,574	18%	4%
Operating expenses	2,358,897	47%	2,339,624	48%	1%
Total costs and expenses	3,246,240	64%	3,194,198	65%	2%
Domestic operating earnings	1,798,389	36%	1,685,571	35%	7%
International Segment					
Revenues	720,195	100%	626,019	100%	15%
Costs of revenue	113,674	16%	78,367	13%	45%
Operating expenses	277,308	39%	242,991	39%	14%
Total costs and expenses	390,982	54%	321,358	51%	22%
International operating earnings	329,213	46%	304,661	49%	8%
Other costs and expenses, net	(1,419,326)		(1,296,188)		10%
Gain on sale of businesses	—		220,523		
Consolidated operating earnings	$ 708,276		$ 914,567		(23)%

Domestic Segment

- Revenues increased 3% to $5.04 billion in 2021, from $4.88 billion in 2020. The following factors impacted the year-over-year change in Domestic revenues:
    - Increased implementation activity during 2021 within our federal business, inclusive of ongoing projects with the U.S. Department of Defense and the U.S. Department of Veterans Affairs.
    - The 2021 period includes a $68 million increase in revenues due to contributions from our April 1, 2021 acquisition of the Kantar Health business.
    - The 2021 period includes a $47 million reduction in revenues due to the sale of certain of our revenue cycle outsourcing business operations.

  Refer to Note (2) of the Notes for further information regarding revenues disaggregated by our business models.

- Costs of revenue as a percent of revenues were 18% in both 2021 and 2020.

- Operating expenses as a percent of revenues were 47% in 2021, compared to 48% in 2020. These expenses increased 1% to $2.36 billion in 2021, from $2.34 billion in 2020. The following factors impacted the year-over-year change in Domestic operating expenses:
    - The 2021 period includes $78 million of pre-tax charges recorded in connection with the designation of certain real estate assets as held for sale.

- The 2021 period includes expense contributions from the Kantar Health business, which was acquired on April 1, 2021.

- The 2020 period includes $29 million of pre-tax charges incurred in connection with the termination of certain revenue cycle outsourcing contracts.

- The 2020 period includes a $21 million pre-tax charge to provide an allowance against certain non-current receivables from a former client.

International Segment

- Revenues increased 15% to $720 million in 2021, from $626 million in 2020. The following factors impacted the year-over-year change in International revenues:

    - The 2021 period includes an $80 million increase in revenues due to contributions from our April 1, 2021 acquisition of the Kantar Health business.

    - The 2021 period includes a $40 million reduction in revenues due to the sale of certain of our business operations primarily conducted in Germany and Spain.

    - The remaining difference is attributable to 2021 revenue growth across the majority of our remaining International Segment operations.

  Refer to Note (2) of the Notes for further information regarding revenues disaggregated by our business models.

- Costs of revenue as a percent of revenues were 16% in 2021, compared to 13% in 2020. The higher costs of revenue as a percent of revenues was primarily driven by the impact of the Kantar Health business acquired on April 1, 2021.

- Operating expenses as a percent of revenues were 39% in both 2021 and 2020. These expenses increased 14% to $277 million in 2021, from $243 million in 2020. The increase in operating expenses is primarily due to the April 1, 2021 acquisition of the Kantar Health business.

Other Costs and Expenses, Net

Operating costs and expenses not attributed to an operating segment include expenses such as software development, general and administrative expenses, share-based compensation expense, certain amortization and depreciation, certain organizational restructuring and other expense. These expenses increased 10% to $1.42 billion in 2021, from $1.30 billion in 2020. This increase includes the impacts of $54 million of pre-tax charges recorded in 2021 to reduce the carrying amount of certain capitalized software development costs to estimated net realizable value; and increased expense associated with share-based payment awards in connection with the departure, or planned departure, of certain executives.

The effects of inflation on our business during 2021 and 2020 were not significant.

Liquidity and Capital Resources

Our liquidity is influenced by many factors, including the amount and timing of our revenues, our cash collections from our clients and the amount we invest in software development, acquisitions, collaborations, capital expenditures, and our share repurchase and dividend programs. We have agreed to various customary covenants and agreements in the Merger Agreement, including with respect to the operation of our business prior to the closing of the transaction, such as restrictions on making certain acquisitions and divestitures, entering into certain contracts, incurring certain indebtedness and making certain capital expenditures, paying dividends in excess of our regular quarterly dividend, issuing or repurchasing stock and taking other specified actions. We do not believe these restrictions will prevent us from meeting our debt service obligations, ongoing costs of operations, working capital needs, or capital expenditure requirements.

Our principal sources of liquidity are our cash, cash equivalents (which primarily consist of money market funds, time deposits and commercial paper with original maturities of less than 90 days), short-term investments, borrowings under our Credit Agreement and other sources of debt financing. At the end of 2021, we had cash and cash equivalents of $590 million and short-term investments of $253 million, as compared to cash and cash equivalents of $616 million and short-term investments of $442 million at the end of 2020.

We have entered into a Credit Agreement with a syndicate of lenders that provides for an unsecured $1.225 billion revolving credit loan facility, along with a letter of credit facility up to $200 million (which is a sub-facility of the $1.225 billion revolving credit loan facility). We have the ability to increase the maximum capacity to $1.725 billion at any time during the Credit Agreement's term, subject to lender participation and the satisfaction of specified conditions. The Credit Agreement expires in December 2026, with two one-year extension options that are subject to lender approval. At the end of 2021, we had outstanding revolving credit loans and letters of credit of $600 million and $18 million, respectively; which reduced our available borrowing capacity to $607 million under the Credit Agreement.

We have also entered into note purchase agreements pursuant to which we may issue and sell unsecured senior promissory notes to those purchasers electing to purchase. See Note (11) of the Notes for further information.

We believe that our present cash position, together with cash generated from operations, short-term investments and, as appropriate, remaining availability under our Credit Agreement and other sources of debt financing, will be sufficient to meet anticipated cash requirements for the next 12 months.

The following table summarizes our cash flows in 2021 and 2020:

	For the Years Ended	
(In thousands)	**2021**	**2020**
Cash flows from operating activities	$ 1,771,684	$ 1,436,705
Cash flows from investing activities	(729,834)	(801,237)
Cash flows from financing activities	(1,054,845)	(461,497)
Effect of exchange rate changes on cash	(12,773)	(199)
Total change in cash and cash equivalents	(25,768)	173,772
Cash and cash equivalents at beginning of period	615,615	441,843
Cash and cash equivalents at end of period	$ 589,847	$ 615,615
Free cash flow (non-GAAP)	$ 1,173,964	$ 857,447

Cash from Operating Activities

(In thousands)	For the Years Ended 2021	2020
Cash collections from clients	$ 6,128,808	$ 5,704,730
Cash paid to employees and suppliers and other	(4,185,012)	(4,082,664)
Cash paid for interest	(46,559)	(36,302)
Cash paid for taxes, net of refunds	(125,553)	(149,059)
Total cash from operations	$ 1,771,684	$ 1,436,705

Cash flows from operations increased $335 million in 2021 compared to 2020, due primarily to increased collections of client receivables. Days sales outstanding was 73 days in the fourth quarter of 2021, compared to 76 days for both the third quarter of 2021 and fourth quarter of 2020. Cash flows from operations in 2021 and 2020 include the impact of certain federal payroll taxes related to pay cycles in the second through fourth quarters of 2020, for which we deferred remittance to the taxing authority as permitted under the Coronavirus Aid, Relief, and Economic Security Act (the "CARES Act"). We remitted $38 million of such amounts to the taxing authority in December 2021 and expect to remit $38 million of remaining deferrals in December 2022, as permitted by the CARES Act.

Cash from Investing Activities

(In thousands)	For the Years Ended 2021	2020
Capital purchases	$ (289,694)	$ (283,981)
Capitalized software development costs	(308,026)	(295,277)
Sales and maturities of investments, net of purchases	243,602	(363,387)
Purchases of other intangibles	(29,561)	(38,243)
Acquisition of businesses, net of cash acquired	(355,504)	(49,820)
Sale of businesses	—	229,471
Disposition of assets held for sale	9,349	—
Total cash flows from investing activities	$ (729,834)	$ (801,237)

Cash flows from investing activities consist primarily of capital spending, investment, acquisition, and divestiture activities.

Our capital spending in 2021 was driven by capitalized equipment purchases primarily to support growth in our managed services business and capitalized spending to support our ongoing software development initiatives. In 2022, we expect the aggregate of capital purchases and capitalized software development costs to approximate $686 million.

Short-term investment activity historically consists of the investment of cash generated by our business in excess of what is necessary to fund operations. Both the 2021 and 2020 activity is impacted by excess cash primarily being used to execute on our capital allocation strategy, including the acquisition of businesses, share repurchases and cash dividends, as discussed below. The 2020 activity includes the investment of proceeds from the sale of certain business operations in the third quarter of 2020, as discussed below.

Investment activity also includes the sale of one of our equity investments in August 2020 for cash proceeds of $90 million. Refer to Note (4) of the Notes for further information regarding this investment.

In 2021, we paid $371 million of purchase price consideration in connection with our acquisition of Kantar Health. In 2020, we completed certain business acquisitions of entities providing solutions to clients in the healthcare industry. Refer to Note (8) of the Notes for further information regarding our business acquisitions. We expect to continue seeking and completing strategic business acquisitions, investments, and relationships that are complementary to our business.

On July 1, 2020, we sold certain of our business operations, primarily conducted in Germany and Spain, for cash proceeds of $224 million. We also sold certain of our revenue cycle outsourcing business operations on August 3, 2020.

Refer to Note (9) of the Notes for further information regarding these sales. We expect to continue to evaluate and complete divestiture transactions that are strategic to our operational improvement initiatives discussed above.

We received proceeds of $9 million in connection with the sale of our Oaks Campus in 2021. We expect future proceeds from the disposition of real estate held for sale; however, the amount and timing of such proceeds are dependent upon economic and market conditions which are not within our control. Refer to Note (5) of the Notes for further information regarding real estate held for sale.

Cash from Financing Activities

	For the Years Ended	
(In thousands)	2021	2020
Long-term debt issuance	$ 500,000	$ 300,000
Repayment of long-term debt	—	(2,500)
Cash from option exercises (net of taxes paid in connection with shares surrendered by associates)	232,241	229,933
Treasury stock purchases	(1,500,000)	(756,950)
Dividends paid	(267,478)	(221,461)
Other	(19,608)	(10,519)
Total cash flows from financing activities	$(1,054,845)	$ (461,497)

In March 2021, we issued $100 million aggregate principal amount of Series 2021-A Notes and $400 million aggregate principal amount of Series 2021-B Notes. In March 2020, we issued $300 million aggregate principal amount of Series 2020-A notes. Refer to Note (11) of the Notes for further information regarding these, as well as our other debt obligations. We do not expect to incur additional indebtedness in the near-term.

On February 15, 2022, we repaid our $225 million of Series 2015-A Notes due February 15, 2022, using cash on hand.

Cash inflows from stock option exercises are dependent on a number of factors, including the price of our common stock, grant activity under our stock option and equity plans, and overall market volatility. We expect net cash inflows from stock option exercises to continue in 2022 based on the number of exercisable options at the end of 2021 and our current stock price. Refer to Note (16) of the Notes for additional information regarding our stock option and equity plans.

During 2021 and 2020, we repurchased 20.0 million and 10.6 million shares of our common stock for total consideration of $1.50 billion and $757 million, respectively. As of December 31, 2021, $3.18 billion remains available for repurchase under our share repurchase program. We do not expect to repurchase additional shares in the near-term as the Merger Agreement prohibits us from repurchasing additional shares without Parent's consent. Refer to Note (16) of the Notes for further information regarding our share repurchase programs.

Refer to Note (16) of the Notes for a summary of cash dividend activity in 2021 and 2020. Subject to declaration by our Board of Directors, we expect to continue paying quarterly cash dividends as a part of our current capital allocation strategy. Future dividends will be subject to the determination, declaration and discretion of our Board of Directors and compliance with covenants under our outstanding debt agreements. The source of funds for such dividends may include cash generated from operations, liquidation of investment holdings and other dispositions of assets.

Free Cash Flow (Non-GAAP)

	For the Years Ended	
(In thousands)	2021	2020
Cash flows from operating activities (GAAP)	$ 1,771,684	$ 1,436,705
Capital purchases	(289,694)	(283,981)
Capitalized software development costs	(308,026)	(295,277)
Free cash flow (non-GAAP)	$ 1,173,964	$ 857,447

Free cash flow increased $317 million in 2021, compared to 2020, primarily due to increased cash from operations. Free cash flow is a non-GAAP financial measure used by management, along with GAAP results, to analyze our earnings quality and overall cash generation of the business, and for management compensation purposes. We define free cash flow as cash flows from operating activities reduced by capital purchases and capitalized software development costs. The table above sets forth a reconciliation of free cash flow to cash flows from operating activities, which we believe is the GAAP financial measure most directly comparable to free cash flow. The presentation of free cash flow is not meant to be considered in isolation, nor as a substitute for, or superior to, GAAP results, and investors should be aware that non-GAAP measures have inherent limitations and should be read only in conjunction with our consolidated financial statements prepared in accordance with GAAP. Free cash flow may also be different from similar non-GAAP financial measures used by other companies and may not be comparable to similarly titled captions of other companies due to potential inconsistencies in the method of calculation. We believe free cash flow is important to enable investors to better understand and evaluate our ongoing operating results and allows for greater transparency in the review and understanding of our overall financial, operational and economic performance, because free cash flow takes into account certain capital expenditures necessary to operate our business.

Contractual Obligations, Commitments and Off Balance Sheet Arrangements

The following table represents a summary of our contractual obligations and commercial commitments at the end of 2021, except short-term purchase order commitments arising in the ordinary course of business.

	Payments Due by Period						
(In thousands)	**2022**	**2023**	**2024**	**2025**	**2026**	**2027 and thereafter**	**Total**
Balance sheet obligations[a]:							
Long-term debt obligations	$ 225,000	$ —	$ —	$ 211,662	$ 700,000	$ 700,000	$ 1,836,662
Interest on long-term debt obligations	39,193	41,265	42,412	38,718	34,388	72,870	268,846
Other obligations:							
Operating lease obligations	27,694	20,826	13,824	8,884	5,978	32,031	109,237
Purchase obligations	54,308	54,308	40,933	45,819	52,054	368,882	616,304
Total	$ 346,195	$ 116,399	$ 97,169	$ 305,083	$ 792,420	$ 1,173,783	$ 2,831,049

(a) At the end of 2021, liabilities for unrecognized tax benefits were $34 million.

If the Merger Agreement is terminated under certain specified circumstances, we will be required to pay to Parent a termination fee of $950 million.

Off-Balance Sheet Arrangements

Refer to Note (11) of the Notes for information regarding our interest rate swap agreement, which is accounted for as a cash flow hedge in accordance with ASC Topic 815, *Derivatives and Hedging*. LIBOR is scheduled to be phased out beginning in 2022. When LIBOR ceases to exist, references to LIBOR in our Credit Agreement and interest rate swap agreement will be replaced with a different benchmark rate and a spread adjustment in accordance with the terms of those agreements. The new benchmark rate together with the spread adjustment may not be as favorable to us as those in effect prior to any LIBOR phase-out. If the replacement benchmark rates and spread adjustment in the interest rate swap and the Credit Agreement are not identical, our hedge could be less effective.

Recent Accounting Pronouncements

Refer to Note (1) of the Notes for information regarding recently issued accounting pronouncements.

Critical Accounting Estimates

We believe that there are several accounting policies that are critical to understanding our historical and future performance, as these policies affect the reported amount of revenue and other significant areas involving our judgments and estimates. These significant accounting policies relate to revenue recognition, software development, and income taxes. These accounting policies and our procedures related to these accounting policies are described in detail below and under specific areas within this MD&A. In addition, Note (2), Note (7), and Note (14) of the Notes expands upon discussion of our accounting policies for these areas.

Revenue Recognition

We recognize revenue in accordance with the guidance in ASU 2014-09*, Revenue from Contracts with Customers (Topic 606)*, which requires an entity to recognize the amount of revenue to which it expects to be entitled for the transfer of promised goods or services to customers. The standard contains a five-step process to be followed in determining the amount and timing of revenue recognition. Refer to Note (2) of the Notes for further discussion regarding significant judgments involved in our application of ASU 2014-09.

Software Development Costs

Costs incurred internally in creating computer software solutions and enhancements to those solutions are expensed until completion of a detailed program design, which is when we determine that technological feasibility has been established. Thereafter, all software development costs are capitalized until such time as the software solutions and enhancements are available for general release, and the capitalized costs subsequently are reported at the lower of amortized cost or net realizable value.

Net realizable value is computed as the estimated gross future revenues from each software solution less the amount of estimated future costs of completing and disposing of that product. Because the development of projected net future revenues related to our software solutions used in our net realizable value computation is based on estimates, a significant reduction in our future revenues could impact the recovery of our capitalized software development costs. If we missed our estimates of net future revenues by 10%, the amount of our capitalized software development costs would not be impaired.

Capitalized costs are amortized based on current and expected net future revenue for each software solution with minimum annual amortization equal to the straight-line amortization over the estimated economic life of the software solution. We are amortizing capitalized costs over five years. The five-year period over which capitalized software development costs are amortized is an estimate based upon our forecast of a reasonable useful life for the capitalized costs. Historically, use of our software programs by our clients has exceeded five years and is capable of being used a decade or more.

We expect that major software information systems companies, large information technology consulting service providers and systems integrators and others specializing in the healthcare industry may offer competitive products or services. The pace of change in the HCIT market is rapid and there are frequent new product introductions, product enhancements and evolving industry standards and requirements. As a result, the capitalized software solutions may become less valuable or obsolete and could be subject to impairment.

Income Taxes

We make a number of assumptions and estimates in determining the appropriate amount of expense to record for income taxes. These assumptions and estimates consider the taxing jurisdictions in which we operate as well as current tax regulations. Accruals are established for estimates of tax effects for certain transactions, business structures and future projected profitability of our businesses based on our interpretation of existing facts and circumstances. If these assumptions and estimates were to change as a result of new evidence or changes in circumstances, the change in estimate could result in a material adjustment to the consolidated financial statements.

We have discussed the development and selection of these critical accounting estimates with the Audit Committee of our Board of Directors and the Audit Committee has reviewed our disclosure contained herein.

Forward-Looking Statements

Statements made in this report, the annual report to shareholders of which this report is made a part, other reports and proxy statements filed with the SEC, communications to shareholders, press releases and oral statements made by representatives of the Company that are not historical in nature, or that state the Company's or management's intentions, hopes, beliefs, expectations, plans, goals or predictions of future events or performance, may constitute "forward-looking statements" within the meaning of Private Securities Litigation Reform Act of 1995. Forward-looking statements can often be identified by the use of forward-looking terminology, such as "could," "can," "should," "will," "intended," "continue," "believe," "may," "expect," "hope," "anticipate," "goal," "positioned", "forecast," "plan," "guidance," "opportunity," "prospects" or "estimate" or the negative of these words, variations thereof or similar expressions. Forward-looking statements are not guarantees of future performance or results. They involve risks, uncertainties and assumptions. It is important to note that any such performance and actual results, financial condition or business, could differ materially from those expressed in such forward-looking statements. Significant factors that could cause or contribute to such differences include, but are not limited to, those discussed in this Item 1A. Risk Factors and elsewhere herein or in other reports filed with the SEC. Other unforeseen factors not identified herein could also have such an effect. Any forward-looking statements made in this report speak only as of the date of this report. Except as required by law, we undertake no obligation to update or revise forward-looking statements to reflect changed assumptions, the occurrence of unanticipated events or changes in our business, results of operations, financial condition or business over time.

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

We are exposed to interest rate risk, primarily changes in LIBOR, related to outstanding revolving credit loans under our Credit Agreement. As of December 31, 2021, the interest rate on revolving credit loans outstanding was 0.90% based on LIBOR plus the applicable spread. In order to manage this exposure, we have entered into an interest rate swap agreement, to hedge the variability of cash flows associated with such interest obligations through May 2024. The interest rate swap effectively fixes the interest rate on the hedged indebtedness under our Credit Agreement at 3.06%. Refer to Note (11) of the Notes for further information regarding outstanding indebtedness and our interest rate swap agreement.

We have global operations, and as a result, we are exposed to market risk related to foreign currency exchange rate fluctuations. Foreign currency fluctuations through December 31, 2021 have not had a material impact on our financial position or operating results. We currently do not use currency hedging instruments, though we actively monitor our exposure to foreign currency fluctuations and may use hedging transactions in the future if management deems it appropriate. We believe most of our global operations are naturally hedged for foreign currency risk as our foreign subsidiaries invoice their clients and satisfy their obligations primarily in their local currencies. There can be no guarantee that the impact of foreign currency fluctuations in the future will not have a material impact on our financial position or operating results.

Item 8. Financial Statements and Supplementary Data.

The Financial Statements and notes to consolidated financial statements required by this Item are submitted as a separate part of this report.

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

N/A

Item 9A. Controls and Procedures.

a) Evaluation of Disclosure Controls and Procedures.

We carried out an evaluation, under the supervision and with the participation of our management, including our Chief Executive Officer ("CEO") and Chief Financial Officer ("CFO"), of the effectiveness of our disclosure controls and procedures (as defined in the Exchange Act Rules 13a-15(e) and 15d-15(e)) as of the end of the period covered by this annual report (the "Evaluation Date"). Based upon that evaluation, our CEO and CFO have concluded that, as of the Evaluation Date, our disclosure controls and procedures were designed, and were effective, to provide reasonable assurance that the information required to be disclosed by us in reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time period specified in SEC rules and forms and is accumulated and communicated to our management, including our CEO and CFO, to allow timely decisions regarding required disclosure.

b) Management's Report on Internal Control over Financial Reporting.

We are responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act). We assessed the effectiveness of our internal control over financial reporting as of December 31, 2021. In making this assessment, we used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") in its Internal Control-Integrated Framework (2013).

In accordance with guidance issued by the SEC, companies are permitted to exclude acquisitions from their final assessment of internal control over financial reporting for the first fiscal year in which the acquisition occurred. Our assessment of internal control over financial reporting excluded the internal control activities of Kantar Health, which we acquired on April 1, 2021 (as discussed in Note (8) of the Notes), which accounted for $148 million of consolidated revenues and $104 million of consolidated total assets as of and for the year ended December 31, 2021.

Based on the results of our assessment, we have concluded that, as of December 31, 2021, our internal control over financial reporting was effective based on these criteria. KPMG, LLP, our independent registered public accounting firm, has issued an audit report on the effectiveness of our internal control over financial reporting, which is included herein under "Report of Independent Registered Public Accounting Firm".

c) Changes in Internal Control over Financial Reporting.

There were no changes in our internal controls over financial reporting during the fiscal quarter ended December 31, 2021, that have materially affected, or are reasonably likely to materially affect, our internal controls over financial reporting.

d) Limitations on Controls.

We can provide no assurance that our disclosure controls and procedures or our internal control over financial reporting can prevent all errors and all fraud under all circumstances. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the Company have been or will be detected. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions; over time, controls may become inadequate because of changes in conditions, or the degree of compliance with policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

Item 9B. Other Information.

None.

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

Not applicable.

PART III.

Item 10. Directors, Executive Officers and Corporate Governance.

The information under "Information Concerning Directors and Nominees," "Meetings of the Board and Committees," "Corporate Governance and Board Matters," "Consideration of Director Nominees," and "Committees of the Board: Audit Committee" as set forth in the Company's definitive proxy statement related to its 2022 annual meeting of stockholders (the "Proxy Statement"), which will be filed with the SEC not later than 120 days after the end of the Company's fiscal year pursuant to Regulation 14A, is incorporated herein by reference.

There have been no material changes to the procedures by which security holders may recommend nominees to our Board of Directors since our last disclosure thereof in our 2021 proxy statement.

The information required by this Item 10 regarding our Executive Officers is set forth under the caption "Information about our Executive Officers" in Part I above.

Delinquent Section 16(a) Reports

To the Company's knowledge, no director, executive officer or other greater than 10% beneficial owner of our Common Stock failed to file on a timely basis reports required by Section 16(a) of the Exchange Act, with the exception of an inadvertent failure to file a Form 4 for Gerald Bisbee, Jr. concerning his acquisition of 137 shares on July 24, 2019 from the reinvestment of dividends paid on the Company's common stock at that time.

Item 11. Executive Compensation.

The information under "Director Compensation," "2021 Director Compensation Table," "Compensation Committee Report," "Compensation Discussion and Analysis," "Summary Compensation Table," "2021 Grants of Plan-Based Awards," "Outstanding Equity Awards at 2021 Fiscal Year-End," "2021 Option Exercises and Stock Vested," "Potential Payments Under Termination or Change in Control," "Pay Ratio," "Board Leadership Structure and Role in Risk Oversight: Relationship between Compensation and Risk Management" and "Compensation Committee Interlocks and Insider Participation" set forth in the Proxy Statement, which will be filed with the SEC not later than 120 days after the end of the Company's fiscal year pursuant to Regulation 14A, is incorporated herein by reference.

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

The following table provides information about our common stock that may be issued under our equity compensation plans as of December 31, 2021:

(In thousands, except per share data)

Plan category	Securities to be issued upon exercise of outstanding options and rights (1)	Weighted average exercise price per share (2)	Securities available for future issuance(3)
Equity compensation plans approved by security holders (4)	8,314	$ 59.61	12,497
Equity compensation plans not approved by security holders	—	—	—
Total	8,314		12,497

(1) Includes grants of stock options, restricted stock and restricted stock units.
(2) Includes weighted-average exercise price of outstanding stock options only.
(3) Excludes securities to be issued upon exercise of outstanding options and rights.
(4) Includes the Stock Option Plan E and 2011 Omnibus Equity Incentive Plan. All new grants are made under the 2011 Omnibus Equity Incentive Plan, as the previous plans are no longer active.

The information under "Security Ownership of Certain Beneficial Owners and Management" set forth in the Proxy Statement, which will be filed with the SEC not later than 120 days after the end of the Company's fiscal year pursuant to Regulation 14A, is incorporated herein by reference.

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

The information under "Certain Transactions," "Director Independence" and "Committees of the Board" set forth in the Proxy Statement, which will be filed with the SEC not later than 120 days after the end of the Company's fiscal year pursuant to Regulation 14A, is incorporated herein by reference.

Table of Content

Item 14. Principal Accountant Fees and Services.
Our independent registered public accounting firm is KPMG LLP, Kansas City, Missouri, Auditor Firm ID: 185.

The information under "Audit Related Matters" set forth in the Proxy Statement, which will be filed with the SEC not later than 120 days after the end of the Company's fiscal year pursuant to Regulation 14A, is incorporated herein by reference.

PART IV.

Item 15. Exhibits, Financial Statement Schedules.

a) Financial Statements and Exhibits

(i) Consolidated Financial Statements:

(ii) Financial Statement Schedules

All schedules are omitted because they are not required or the required information is shown in the financial statements or notes thereto.

b) Exhibits

Exhibit Number	Exhibit Description	Incorporated by Reference Form	Exhibit(s)	Filing Date	Filed Herewith
2.1	Agreement and Plan of Merger, dated as of December 20, 2021, by and among Cerner Corporation, OC Acquisition LLC, Cedar Acquisition Corporation and Oracle Corporation	8-K	2.1	12/22/2021	
3.1	Third Restated Certificate of Incorporation of Cerner Corporation	10-K	3(a)	2/11/2015	
3.2	Certificate of Amendment to the Third Restated Certificate of Incorporation of Cerner Corporation	8-K	3.1	5/28/2020	
3.3	Amended & Restated Bylaws of Cerner Corporation (effective May 27, 2020)	8-K	3.2	5/28/2020	
4.1	Specimen stock certificate	10-K	4(a)	2/28/2007	
4.2	Description of Company Securities	10-K	4.2	2/19/2021	
10.1*	2010 Form of Indemnification Agreement for use between the Registrant and its Directors and Section 16 Officers	8-K	99.1	6/3/2010	
10.2*	Executive Employment Agreement between Cerner Corporation and Brent Shafer	10-K	10.3	2/12/2018	
10.3*	Relocation Agreement between Cerner Corporation and Brent Shafer	10-Q	10.2	5/3/2018	
10.4*	Letter Agreement and Transition Agreement with Brent Shafer	10-Q	10.1	7/30/2021	
10.5*	Amended & Restated Aircraft Time Sharing Agreement between Cerner Corporation and Brent Shafer	10-Q	10.1	10/26/2018	
10.6*	Offer Letter - Jerome Labat	10-K	10.6	2/19/2021	
10.7*	Amended Employment Agreement between Cerner Corporation and Jerome Labat	10-K	10.7	2/19/2021	
10.8*	Waiver Agreement to the Amended Employment Agreement, dated January 14, 2022, between Cerner Corporation and Jerome Labat	8-K	10.2	1/19/2022	
10.9*	Letter Agreement between Cerner Corporation and Marc G. Naughton Regarding Departure	10-K	10.8	2/19/2021	
10.10*	Amended Employment Agreement between Cerner Corporation and Marc G. Naughton	8-K	10.4	9/11/2017	
10.11*	Amended Employment Agreement between Cerner Corporation and John Peterzalek	10-K	10.13	2/8/2019	
10.12*	Letter Agreement between Cerner and John Peterzalek Regarding Departure	10-K	10.11	2/19/2021	
10.13*	Amended Employment Agreement between Cerner Corporation and Donald D. Trigg	10-K	10.13	2/10/2020	
10.14*	Separation Agreement between Cerner Corporation and Donald Trigg	10-Q	10.3	10/29/2021	
10.15*	Amended Employment Agreement between Cerner Corporation and Mark Erceg	10-Q	10.3	5/05/2021	
10.16*	Offer Letter - Mark Erceg	10-Q	10.2	5/05/2021	

10.17*	Executive Employment Agreement between Cerner Corporation and David T. Feinberg	10-Q	10.1	10/29/2021	
10.18*	Time Sharing Agreement between Cerner Corporation and David T. Feinberg	10-Q	10.2	10/29/2021	
10.19*	Waiver Agreement to the Amended Employment agreement, dated December 20, 2021, between Cerner Corporation and David T. Feinberg	8-K	10.1	1/19/2022	
10.20*	Amended Employment Agreement between Cerner Corporation and Tracy Platt	SC 14D-9	(e)(16)	1/19/2022	
10.21*	Offer Letter - Tracy Platt				X
10.22*	Amended Employment Agreement between Cerner Corporation and Travis Dalton	SC 14D-9	(e)(18)	1/19/2022	
10.23*	Offer Letter - Travis Dalton				X
10.24*	Amended Employment Agreement between Cerner Corporation and Daniel P. Devers	SC 14D-9	(e)(17)	1/19/2022	
10.25*	Amended Employment Agreement between Cerner Corporation and Nasim Afsarmanesh	SC 14D-9	(e)(19)	1/19/2022	
10.26*	Cerner Corporation 2011 Omnibus Equity Incentive Plan (As Amended and Restated May 22, 2015)	8-K	10.2	5/27/2015	
10.27*	Cerner Corporation 2011 Omnibus Equity Incentive Plan (As amended and Restated May 30, 2019)	8-K	10.1	6/3/2019	
10.28*	Cerner Corporation 2011 Omnibus Equity Incentive Plan - Director Restricted Stock Agreement	10-Q	10.2	5/6/2016	
10.29*	2011 Omnibus Equity Incentive Plan - Form of Director Restricted Stock Agreement	10-Q	10.5	4/26/2019	
10.30*	Cerner Corporation 2011 Omnibus Equity Incentive Plan - Performance Based Restricted Stock Agreement	10-K	10(u)	2/8/2013	
10.31*	Cerner Corporation 2011 Omnibus Equity Incentive Plan - Performance Based Restricted Stock Agreement	10-Q	10.3	5/6/2016	
10.32*	Cerner Corporation 2011 Omnibus Equity Incentive Plan - Performance Based Restricted Stock Agreement	10-Q	10.4	10/27/2017	
10.33*	2011 Omnibus Equity Incentive Plan - Form of Performance Based Restricted Stock Agreement	10-Q	10.4	4/26/2019	
10.34*	Cerner Corporation 2011 Omnibus Equity Incentive Plan - Time Based Restricted Stock Agreement	10-Q	10.4	5/6/2016	
10.35*	Cerner Corporation 2011 Omnibus Equity Incentive Plan - Time Based Restricted Stock Agreement	10-Q	10.3	10/27/2017	
10.36*	2011 Omnibus Equity Incentive Plan - Form of Time Based Restricted Stock Agreement	10-Q	10.3	4/26/2019	
10.37*	Cerner Corporation 2011 Omnibus Equity Incentive Plan-Non-Qualified Stock Option Grant Certificate	10-K	10(v)	2/8/2013	
10.38*	Cerner Corporation 2011 Omnibus Equity Incentive Plan-Non-qualified Stock Option Grant Certificate	10-Q	10.5	5/6/2016	
10.39*	Cerner Corporation 2011 Omnibus Equity Incentive Plan - Non-Qualified Stock Option Grant Certificate	10-Q	10.2	8/3/2016	
10.40*	Cerner Corporation 2011 Omnibus Equity Incentive Plan - Non-Qualified Stock Option Grant Certificate	10-Q	10.2	10/27/2017	
10.41*	Cerner Corporation 2011 Omnibus Equity Incentive Plan - Time-Based Restricted Stock Unit Agreement	10-Q	10.2	4/28/2017	

10.42*	Cerner Corporation 2011 Omnibus Equity Incentive Plan - Time-Based Restricted Stock Unit Agreement	10-Q	10.5	10/27/2017	
10.43*	Cerner Corporation 2011 Omnibus Equity Incentive Plan - Performance-Based Restricted Stock Unit Agreement	10-Q	10.3	4/28/2017	
10.44*	Cerner Corporation 2011 Omnibus Equity Incentive Plan - Performance-Based Restricted Stock Unit Agreement	10-Q	10.6	10/27/2017	
10.45*	Cerner Corporation 2011 Omnibus Equity Incentive Plan - Time Based Restricted Stock Unit Agreement	10-K	10.32	2/19/2021	
10.46*	Cerner Corporation 2011 Omnibus Equity Incentive Plan - Performance Based Restricted Stock Unit Agreement	10-K	10.33	2/19/2021	
10.47*	Cerner Corporation 2001 Associate Stock Purchase Plan as Amended and Restated January 1, 2022				X
10.48*	Cerner Corporation 2018 Performance Compensation Plan (effective January 1, 2018)	8-K	10.1	3/6/2018	
10.49*	Form 2020 Executive Performance Agreement - Section 16 Officer	10-Q	10.1	4/29/2020	
10.50*	Form 2021 Executive Performance Agreement - Section 16 Officer	10-Q	10.1	5/5/2021	
10.51*	Form Amendment to Executive Severance Agreement	10-K	10.38	2/19/2021	
10.52*	Form Clawback re: Accelerated Vesting of Time-Based RSUs Letter Agreement				X
10.53	Master Note Purchase Agreement between Cerner Corporation and the Purchasers listed in Schedule A thereto dated December 4, 2014	8-K	10.1	12/5/2014	
10.54	Fourth Amended and Restated Credit Agreement, dated December 30, 2021, among Cerner Corporation, U.S. Bank National Association, Bank of America, N.A., PNC Bank, National Association, PNC Capital Markets LLC and Commerce Bank, N.A.	8-K	10.1	1/4/2022	
10.55	Master Note Agreement dated November 11, 2019, between Cerner Corporation and the Purchasers listed therein	8-K	10.4	11/12/2019	
10.56	First Amendment to Master Note Agreement dated October 8, 2020, between Cerner Corporation and the Purchasers listed therein	8-K	10.1	10/9/2020	
21	Subsidiaries of Registrant				X
23	Consent of Independent Registered Public Accounting Firm				X
31.1	Certification of David T. Feinberg pursuant to Section 302 of Sarbanes-Oxley Act of 2002				X
31.2	Certification of Mark J. Erceg pursuant to Section 302 of Sarbanes-Oxley Act of 2002				X
32.1	Certification of David T. Feinberg pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of Sarbanes-Oxley Act of 2002				X
32.2	Certification of Mark J. Erceg pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of Sarbanes-Oxley Act of 2002				X

101.INS	XBRL Instance Document - the instance document does not appear in the interactive data file because its XBRL tags are embedded within the inline XBRL document.	X
101.SCH	Inline XBRL Taxonomy Extension Schema Document	X
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document	X
101.LAB	Inline XBRL Taxonomy Extension Labels Linkbase Document	X
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document	X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document	X
104	Cover Page Interactive Data File - formatted in Inline XBRL and contained in Exhibit 101.	X

* Indicates a management contract or compensatory plan or arrangement required to be identified by Part IV, Item 15(a)(3).

PLEASE NOTE: Pursuant to the rules and regulations of the Securities and Exchange Commission, we have filed or incorporated by reference the agreements referenced above as exhibits to this annual report on Form 10-K. The agreements have been filed to provide investors with information regarding their respective terms. The agreements are not intended to provide any other factual information about the Company or its business or operations. In particular, the assertions embodied in any representations, warranties and covenants contained in the agreements may be subject to qualifications with respect to knowledge and materiality different from those applicable to investors and may be qualified by information in confidential disclosure schedules not included with the exhibits. These disclosure schedules may contain information that modifies, qualifies and creates exceptions to the representations, warranties and covenants set forth in the agreements. Moreover, certain representations, warranties and covenants in the agreements may have been used for the purpose of allocating risk between the parties, rather than establishing matters as facts. In addition, information concerning the subject matter of the representations, warranties and covenants may have changed after the date of the respective agreement, which subsequent information may or may not be fully reflected in the Company's public disclosures. Accordingly, investors should not rely on the representations, warranties and covenants in the agreements as characterizations of the actual state of facts about the Company or its business or operations on the date hereof.

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.

CERNER CORPORATION

Date: February 22, 2022

By: /s/ David T. Feinberg
David T. Feinberg
President and Chief Executive Officer

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

Signature and Title	Date
/s/ David T. Feinberg David T. Feinberg, President and Chief Executive Officer (Principal Executive Officer) and Director	February 22, 2022
/s/ Mark J. Erceg Mark J. Erceg, Executive Vice President and Chief Financial Officer (Principal Financial Officer)	February 22, 2022
/s/ Michael R. Battaglioli Michael R. Battaglioli, Senior Vice President and Chief Accounting Officer (Principal Accounting Officer)	February 22, 2022
/s/ Gerald E. Bisbee, Jr. Gerald E. Bisbee, Jr., Ph.D., Director	February 22, 2022
/s/ Mitchell E. Daniels Mitchell E. Daniels, Director	February 22, 2022
/s/ Julie L. Gerberding Julie L. Gerberding, M.D., Director	February 22, 2022
/s/ Elder Granger Elder Granger, M.D., Director	February 22, 2022
/s/ John J. Greisch John J. Greisch, Director	February 22, 2022
/s/ Melinda J. Mount Melinda J. Mount, Director	February 22, 2022
/s/ George A. Riedel George A. Riedel, Director	February 22, 2022
/s/ R. Halsey Wise R. Halsey Wise, Director	February 22, 2022
/s/ William D. Zollars William D. Zollars, Chairman of the Board	February 22, 2022

Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors
Cerner Corporation:

Opinion on Internal Control Over Financial Reporting

We have audited Cerner Corporation and subsidiaries' (the Company) internal control over financial reporting as of December 31, 2021, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2021, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2021 and 2020, the related consolidated statements of operations, comprehensive income, cash flows, and changes in shareholders' equity for each of the years in the three-year period ended December 31, 2021, and the related notes (collectively, the consolidated financial statements), and our report dated February 22, 2022 expressed an unqualified opinion on those consolidated financial statements.

The Company acquired Kantar Health during 2021, and management excluded from its assessment of the effectiveness of the Company's internal control over financial reporting as of December 31, 2021, Kantar Health's internal control over financial reporting associated with total assets of $104 million and total revenues of $148 million included in the consolidated financial statements of the Company as of and for the year ended December 31, 2021. Our audit of internal control over financial reporting of the Company also excluded an evaluation of the internal control over financial reporting of Kantar Health.

Basis for Opinion

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

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit 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 audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

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

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

/s/KPMG LLP
Kansas City, Missouri
February 22, 2022

Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors
Cerner Corporation:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Cerner Corporation and subsidiaries (the Company) as of December 31, 2021 and 2020, the related consolidated statements of operations, comprehensive income, cash flows, and changes in shareholders' equity for each of the years in the three-year period ended December 31, 2021, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2021 and 2020, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2021, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2021, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated February 22, 2022 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Basis for Opinion

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

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

Critical Audit Matter

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

Evaluation of contract modifications

As discussed in Note 2 to the consolidated financial statements, the Company executes modifications to existing arrangements with a significant customer, which may involve significant customization or development of software licenses. When a modification occurs, the Company evaluates the modification in order to determine if it should be accounted for (i) as a separate contract, (ii) as the termination of the original contract and creation of a new contract, (iii) through a cumulative catch up adjustment to the original contract, or a combination thereof. During 2021, the Company recognized $5.8 billion in total revenue, of which 20% related to this customer.

We identified the evaluation of contract modifications as a critical audit matter. Specifically, for certain contract modifications with the significant customer, determining whether the modification should be accounted for as a separate contract or part of the existing contract and whether promises in the contract modification represented separate or combined performance obligations required challenging auditor judgment. Certain of the existing arrangements and contract modifications involve customization and significant integration services. This evaluation required challenging auditor judgment due to the varying nature of the underlying promises and the number of contract modifications requiring assessment during the period.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of management's internal control related to the determination of whether contract modifications should be accounted for as a separate contract or part of the existing contract, and whether promises in these arrangements are distinct or combined performance obligations. For a selection of contract modifications involving the significant customer, we:

- obtained and read the agreements and evaluated the terms and conditions therein
- assessed whether the modification should be accounted for as a separate contract or part of the existing contract
- evaluated the identification of performance obligations in each arrangement by considering the nature of the promises within the contract and the interrelationship of the promised goods and services.

/s/KPMG LLP

We have served as the Company's auditor since 1983.

Kansas City, Missouri
February 22, 2022

CERNER CORPORATION AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
As of December 31, 2021 and December 31, 2020

(In thousands, except share data)	2021	2020
Assets		
Current assets:		
Cash and cash equivalents	$ 589,847	$ 615,615
Short-term investments	252,622	442,473
Receivables, net	1,161,361	1,168,712
Inventory	28,159	23,027
Prepaid expenses and other	417,465	401,160
Total current assets	2,449,454	2,650,987
Property and equipment, net	1,656,171	1,804,083
Right-of-use assets	82,940	104,536
Software development costs, net	1,000,357	1,009,349
Goodwill	1,131,121	914,520
Intangible assets, net	458,482	329,249
Long-term investments	461,984	510,220
Other assets	193,649	198,152
Total assets	$ 7,434,158	$ 7,521,096
Liabilities and Shareholders' Equity		
Current liabilities:		
Accounts payable	$ 329,582	$ 235,755
Current installments of long-term debt	225,000	—
Deferred revenue	531,234	393,293
Accrued payroll and tax withholdings	317,092	309,814
Other current liabilities	223,350	229,764
Total current liabilities	1,626,258	1,168,626
Long-term debt	1,611,256	1,336,069
Deferred income taxes	395,177	376,035
Other liabilities	121,005	157,799
Total liabilities	3,753,696	3,038,529
Shareholders' Equity:		
Common stock, $0.01 par value, 500,000,000 shares authorized, 380,232,975 shares issued at December 31, 2021 and 373,224,832 shares issued at December 31, 2020	3,802	3,732
Additional paid-in capital	2,717,244	2,288,806
Retained earnings	6,751,692	6,475,551
Treasury stock, 87,383,166 shares at December 31, 2021 and 67,371,686 shares at December 31, 2020	(5,664,718)	(4,164,718)
Accumulated other comprehensive loss, net	(127,558)	(120,804)
Total shareholders' equity	3,680,462	4,482,567
Total liabilities and shareholders' equity	$ 7,434,158	$ 7,521,096

See notes to consolidated financial statements.

CERNER CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS
For the years ended December 31, 2021, December 31, 2020 and December 28, 2019

(In thousands, except per share data)	For the Years Ended 2021	2020	2019
Revenues	$ 5,764,824	$ 5,505,788	$ 5,692,598
Costs and expenses:			
Costs of revenue	1,001,017	932,941	1,071,041
Sales and client service	2,636,205	2,582,615	2,675,337
Software development (Includes amortization of $261,798, $247,313 and $227,414, respectively)	835,995	749,007	737,136
General and administrative	520,667	491,586	520,598
Amortization of acquisition-related intangibles	62,664	55,595	87,817
Total costs and expenses	5,056,548	4,811,744	5,091,929
Gain on sale of businesses	—	220,523	—
Operating earnings	708,276	914,567	600,669
Other income (loss), net	(8,816)	76,906	53,843
Earnings before income taxes	699,460	991,473	654,512
Income taxes	(143,864)	(211,385)	(125,058)
Net earnings	$ 555,596	$ 780,088	$ 529,454
Basic earnings per share	$ 1.86	$ 2.54	$ 1.66
Diluted earnings per share	$ 1.84	$ 2.52	$ 1.65
Basic weighted average shares outstanding	298,725	306,669	318,229
Diluted weighted average shares outstanding	301,273	309,136	321,235

See notes to consolidated financial statements.

CERNER CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
For the years ended December 31, 2021, December 31, 2020 and December 28, 2019

	For the Years Ended		
(In thousands)	**2021**	**2020**	**2019**
Net earnings	$ 555,596	$ 780,088	$ 529,454
Foreign currency translation adjustment and other (net of taxes (benefit) of $(4,104), $3,250 and $(1,288), respectively)	(21,180)	12,897	(3,408)
Unrealized gain (loss) on cash flow hedge (net of taxes (benefit) of $4,945, $(5,003) and $(4,137), respectively)	14,827	(15,210)	(12,578)
Unrealized holding gain (loss) on available-for-sale investments (net of taxes (benefit) of $(137), $56 and $290, respectively)	(401)	169	878
Comprehensive income	$ 548,842	$ 777,944	$ 514,346

See notes to consolidated financial statements.

CERNER CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
For the years ended December 31, 2021, December 31, 2020 and December 28, 2019

(In thousands)	For the Years Ended 2021	2020	2019
CASH FLOWS FROM OPERATING ACTIVITIES:			
Net earnings	$ 555,596	$ 780,088	$ 529,454
Adjustments to reconcile net earnings to net cash provided by operating activities:			
Depreciation and amortization	718,854	697,423	687,966
Share-based compensation expense	195,654	153,449	103,641
Provision for deferred income taxes	7,351	1,502	51,125
Gain on sale of businesses	—	(220,523)	—
Investment gains	—	(75,834)	(29,621)
Asset impairments	133,851	—	—
Changes in assets and liabilities (net of businesses acquired):			
Receivables, net	26,000	3,686	58,113
Inventory	(5,131)	960	1,855
Prepaid expenses and other	(4,560)	(51,442)	(76,748)
Accounts payable	42,485	(62,663)	(8,734)
Accrued income taxes	(4,431)	19,995	(4,599)
Deferred revenue	104,226	34,500	(39,245)
Other accrued liabilities	1,789	155,564	39,892
Net cash provided by operating activities	1,771,684	1,436,705	1,313,099
CASH FLOWS FROM INVESTING ACTIVITIES:			
Capital purchases	(289,694)	(283,981)	(471,518)
Capitalized software development costs	(308,026)	(295,277)	(273,871)
Purchases of investments	(615,330)	(696,548)	(364,648)
Sales and maturities of investments	858,932	333,161	579,755
Purchase of other intangibles	(29,561)	(38,243)	(35,587)
Acquisition of businesses, net of cash acquired	(355,504)	(49,820)	(74,539)
Sale of businesses	—	229,471	—
Disposition of assets held for sale	9,349	—	—
Net cash used in investing activities	(729,834)	(801,237)	(640,408)
CASH FLOWS FROM FINANCING ACTIVITIES:			
Long-term debt issuance	500,000	300,000	600,000
Repayment of long-term debt	—	(2,500)	—
Proceeds from exercise of stock options	304,078	253,605	258,036
Payments to taxing authorities in connection with shares directly withheld from associates	(71,837)	(23,672)	(16,601)
Treasury stock purchases	(1,500,000)	(756,950)	(1,320,542)
Dividends paid	(267,478)	(221,461)	(113,823)
Other	(19,608)	(10,519)	(8,450)
Net cash used in financing activities	(1,054,845)	(461,497)	(601,380)
Effect of exchange rate changes on cash and cash equivalents	(12,773)	(199)	(3,594)
Net increase (decrease) in cash and cash equivalents	(25,768)	173,772	67,717
Cash and cash equivalents at beginning of period	615,615	441,843	374,126
Cash and cash equivalents at end of period	$ 589,847	$ 615,615	$ 441,843

See notes to consolidated financial statements.

CERNER CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY
For the years ended December 31, 2021, December 31, 2020 and December 28, 2019

(In thousands)	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Loss, Net
Balance at December 29, 2018	**362,213**	**$ 3,622**	**$ 1,559,562**	**$ 5,576,525**	**$ (2,107,768)**	**$ (103,552)**
Exercise of stock options and vests of restricted shares and share units	5,422	54	241,968	—	—	—
Employee share-based compensation expense	—	—	103,641	—	—	—
Other comprehensive income (loss)	—	—	—	—	—	(15,108)
Treasury stock purchases	—	—	—	—	(1,300,000)	—
Cash dividends declared	—	—	—	(171,070)	—	—
Net earnings	—	—	—	529,454	—	—
Balance at December 28, 2019	**367,635**	**3,676**	**1,905,171**	**5,934,909**	**(3,407,768)**	**(118,660)**
Exercise of stock options and vests of restricted shares and share units	5,590	56	230,186	—	—	—
Employee share-based compensation expense	—	—	153,449	—	—	—
Cumulative effect of accounting change (ASU 2016-13)	—	—	—	(4,606)	—	—
Other comprehensive income (loss)	—	—	—	—	—	(2,144)
Treasury stock purchases	—	—	—	—	(756,950)	—
Cash dividends declared	—	—	—	(234,840)	—	—
Net earnings	—	—	—	780,088	—	—
Balance at December 31, 2020	**373,225**	**3,732**	**2,288,806**	**6,475,551**	**(4,164,718)**	**(120,804)**
Exercise of stock options and vests of restricted shares and share units	7,008	70	232,784	—	—	—
Employee share-based compensation expense	—	—	195,654	—	—	—
Other comprehensive income (loss)	—	—	—	—	—	(6,754)
Treasury stock purchases	—	—	—	—	(1,500,000)	—
Cash dividends declared	—	—	—	(279,455)	—	—
Net earnings	—	—	—	555,596	—	—
Balance at December 31, 2021	**380,233**	**$ 3,802**	**$ 2,717,244**	**$ 6,751,692**	**$ (5,664,718)**	**$ (127,558)**

See notes to consolidated financial statements.

CERNER CORPORATION AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(1) Basis of Presentation, Nature of Operations and Summary of Significant Accounting Policies

Basis of Presentation

The consolidated financial statements include all the accounts of Cerner Corporation ("Cerner," the "Company," "we," "us" or "our") and its subsidiaries. All significant intercompany transactions have been eliminated in consolidation.

The consolidated financial statements were prepared using accounting principles generally accepted in the United States of America ("GAAP"). These principles require us to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities and the reported amounts of revenues and expenses. Actual results could differ from those estimates.

Nature of Operations

We design, develop, market, install, host and support healthcare information technology, healthcare devices, hardware and content solutions for healthcare organizations and consumers. We also provide a wide range of value-added services, including implementation and training, remote hosting, operational management services, revenue cycle services, support and maintenance, healthcare data analysis, clinical process optimization, transaction processing, employer health centers, and data-driven services that help life sciences companies with the discovery, development and deployment of therapies.

Oracle Merger Agreement

On December 20, 2021, we entered into an Agreement and Plan of Merger (as it may be amended or supplemented from time to time, the "Merger Agreement") with Cedar Acquisition Corporation ("Merger Subsidiary"), which is a wholly owned subsidiary of OC Acquisition LLC ("Parent"), Parent, which is a wholly owned subsidiary of Oracle Corporation ("Oracle"), and (solely with respect to performance of its obligations set forth in certain specified sections thereof) Oracle. Pursuant to the Merger Agreement, on January 19, 2022, Oracle commenced a cash tender offer (the "Offer") to acquire all of the issued and outstanding shares of our common stock for a purchase price of $95.00 per share, net to the holders thereof in cash, without interest and subject to any required tax withholding. If the Offer is completed, Merger Subsidiary will merge with and into Cerner (the "Merger") and we will become a wholly owned indirect subsidiary of Oracle. As a result of the Merger, the shares of our common stock will cease to be publicly held. Completion of the Merger is subject to certain conditions, including but not limited to, a) shareholders holding a majority of the outstanding shares of our common stock tendering their shares in the Offer, and b) receipt of certain regulatory approvals, including the expiration or termination of the waiting periods or the obtaining of the required affirmative approvals applicable to the transaction under the Hart-Scott-Rodino Antitrust Improvements Act of 1976 and certain foreign antitrust and foreign direct investment laws. We have agreed to various customary covenants and agreements in the Merger Agreement, including with respect to the operation of our business prior to the closing of the transaction, such as restrictions on making certain acquisitions and divestitures, entering into certain contracts, incurring certain indebtedness and making certain capital expenditures, paying dividends in excess of our regular quarterly dividend, issuing or repurchasing stock and taking other specified actions.

Fiscal Period End

Prior to fiscal year 2020, our fiscal year ended on the Saturday closest to December 31. Fiscal year 2019 consisted of 364 days and ended on December 28, 2019.

In December 2019, our Board of Directors approved the change of our fiscal year to a calendar year, commencing with fiscal year 2020. Accordingly, our 2020 fiscal year presented herein consisted of 369 days and ended on December 31, 2020. Fiscal years subsequent to 2020 begin on January 1 and end on December 31 of each year.

All references to years in these notes to consolidated financial statements ("Notes") represent the respective periods described above, unless otherwise noted.

Supplemental Disclosures of Cash Flow Information

(In thousands)	For the Years Ended 2021	2020	2019
Cash paid during the year for:			
Interest (including amounts capitalized of $10,954, $14,855, and $17,190, respectively)	$ 46,559	$ 36,302	$ 25,639
Income taxes, net of refunds	125,553	149,059	100,004
Non-cash items:			
Lease liabilities recorded upon the commencement of operating leases	9,678	26,352	29,542
Financed capital purchases	7,255	22,218	12,673

CARES Act

Cash flows from operating activities in 2021 and 2020 include the impact of certain federal payroll taxes related to pay cycles in the second through fourth quarters of 2020, for which we deferred remittance to the taxing authority as permitted under the CARES Act. We remitted $38 million of such amounts to the taxing authority in December 2021 and expect to remit $38 million of remaining deferrals in December 2022, as permitted by the CARES Act. At both December 31, 2021 and December 31, 2020, $38 million of these deferred remittances were included in "Accrued payroll and tax withholdings" in our consolidated balance sheets. At December 31, 2020, an additional $38 million of deferred remittances were included in "Other liabilities" in our consolidated balance sheets.

Summary of Significant Accounting Policies

(a) Cash Equivalents - Cash equivalents consist of short-term debt securities with original maturities of less than 90 days.

(b) Investments in Debt Securities – We account for our investments in debt securities as available-for-sale investments in accordance with Accounting Standards Codification Topic ("ASC") 320, *Investments-Debt Securities*. Short-term available-for-sale investments are primarily invested in time deposits, commercial paper, government and corporate bonds, with maturities of less than one year. Long-term available-for-sale investments are primarily invested in government and corporate bonds with maturities of less than two years.

Available-for-sale investments are recorded at fair value with the unrealized gains and losses reflected in accumulated other comprehensive loss until realized. Realized gains and losses from the sale of available-for-sale investments, if any, are determined on a specific identification basis.

Generally, premiums are amortized and discounts are accreted over the life of the security as adjustments to interest income for our investments. For investments in callable debt securities, any premiums are amortized to the earliest call date. Interest income is recognized when earned.

Refer to Note (4) and Note (12) for further description of these assets and their fair value.

(c) Investments in Equity Securities - We account for our investments in equity securities that give us the ability to exercise significant influence over the operating and financial policies of an investee under the equity method in accordance with ASC 323, *Investments-Equity Method and Joint Ventures*. Under the equity method, we recognize our share of the earnings or losses of an investee, generally on a three-month lag. Such share of the investee's earnings or losses are presented in "Other income (loss), net" in our consolidated statements of operations.

We account for our investments in equity securities that do not qualify for equity method accounting in accordance with ASC 321, *Investments-Equity Securities* ("ASC 321"). We measure these investments at fair value with changes in fair value recognized in "Other income (loss), net" in our consolidated statements of operations for such investments with readily determinable fair values. For these investments that do not have readily determinable fair values, we measure such investments at cost minus impairment, if any, plus or minus changes resulting from observable price changes in orderly transactions for the identical or similar investment of the same issuer.

(d) Concentrations - The majority of our cash and cash equivalents are held at three major financial institutions. Deposits held with banks may exceed the amount of insurance provided on such deposits. Generally these deposits may be redeemed upon demand.

(e) Inventory - Inventory consists primarily of computer hardware and sublicensed software, held for resale. Inventory is recorded at the lower of cost (first-in, first-out) or net realizable value.

(f) Property and Equipment - We account for property and equipment in accordance with ASC 360, *Property, Plant, and Equipment*. Property, equipment and leasehold improvements are stated at cost. Depreciation of property and equipment is computed using the straight-line method over periods of one to 50 years. Amortization of leasehold improvements is computed using a straight-line method over the shorter of the lease terms or the useful lives, which range from periods of one to 15 years.

(g) Goodwill - We account for goodwill under the provisions of ASC 350, *Intangibles – Goodwill and Other*. Goodwill is not amortized but is evaluated for impairment annually or whenever there is an impairment indicator. All goodwill is assigned to a reporting unit, where it is subject to an annual impairment assessment. Based on these evaluations, there was no impairment of goodwill in 2021, 2020 or 2019. Refer to Note (10) for more information on goodwill and other intangible assets.

(h) Intangible Assets - We account for intangible assets in accordance with ASC 350, *Intangibles – Goodwill and Other*. Amortization of finite-lived intangible assets is computed using the straight-line method over periods of three to 30 years.

(i) Income Taxes - Income taxes are accounted for in accordance with ASC 740, *Income Taxes*. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. Refer to Note (14) for additional information regarding income taxes.

(j) Earnings per Common Share - Basic earnings per share ("EPS") excludes dilution and is computed, in accordance with ASC 260, *Earnings Per Share*, by dividing income available to common shareholders by the weighted-average number of common shares outstanding for the period. Diluted EPS reflects the potential dilution that could occur if securities or other contracts to issue stock were exercised or converted into common stock or resulted in the issuance of common stock that then shared in our earnings. Refer to Note (15) for additional details of our earnings per share computations.

(k) Accounting for Share-based Payments - We recognize all share-based payments to associates, directors and consultants, including grants of stock options, restricted stock, restricted stock units and performance shares, in the financial statements as compensation cost based on their fair value on the date of grant, in accordance with ASC 718, *Compensation-Stock Compensation*. This compensation cost is recognized over the vesting period on a straight-line basis for the fair value of awards that actually vest. Refer to Note (16) for a detailed discussion of share-based payments.

(l) Voluntary Separation Benefits - We account for voluntary separation benefits in accordance with the provisions of ASC 712, *Compensation-Nonretirement Postemployment Benefits*. Voluntary separation benefits are recorded to expense when an associate irrevocably accepts the offer and the amount of the termination liability is reasonably estimable.

In 2021, 2020 and 2019, we recognized $53 million, $20 million and $52 million, respectively, of expenses in connection with voluntary separation benefits, which are included in "General and administrative" expense in our consolidated statements of operations.

(m) Exit or Disposal Cost Obligations - We account for involuntary employee separation benefits pursuant to one-time benefit arrangements and contract termination costs in accordance with ASC 420, *Exit or Disposal Cost Obligations*.

In 2021, 2020 and 2019, we recognized $56 million, $22 million and $34 million, respectively, of expenses in connection with involuntary associate termination events, which are included in "General and administrative" expense in our consolidated statements of operations.

In 2020 and 2019, we recognized $29 million and $66 million, respectively, of pre-tax charges within our Domestic segment in connection with the termination of certain contracts prior to the end of their stated terms. Such charges are included in "Sales and client service" expense in our consolidated statements of operations.

(n) Foreign Currency - In accordance with ASC 830, *Foreign Currency Matters*, assets and liabilities of non-U.S. subsidiaries whose functional currency is the local currency are translated into U.S. dollars at exchange rates prevailing at the balance sheet date. Revenues and expenses are translated at average exchange rates during the year. The net exchange differences resulting from these translations are reported in accumulated other comprehensive loss. Gains and losses resulting from foreign currency transactions are included in the consolidated statements of operations.

(o) Recently Issued Accounting Pronouncements

Reference Rate Reform. The Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2020-04, *Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting* in March 2020 and ASU 2021-01, *Reference Rate Reform (Topic 848): Scope* in January 2021. Such guidance provides optional financial reporting alternatives to reduce the cost and complexity associated with the accounting for contracts and hedging relationships affected by reference rate reform, such as the upcoming discontinuance of the London Interbank Offered Rate ("LIBOR"). The accommodations within this guidance may be applied prospectively from the beginning of our 2020 first quarter through December 31, 2022. We are currently evaluating the effect that this guidance may have on our contracts that reference LIBOR, specifically, our Fourth Amended and Restated Credit Agreement and related interest rate swap. As of the date of this filing, we have not elected to apply any of the provisions of this guidance.

Business Combinations. The FASB issued ASU 2021-08, *Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customers* in October 2021. Such guidance amends the recognition and measurement principles that apply to business combinations to require that an entity recognize and measure contract assets and contract liabilities acquired in a business combination in accordance with Topic 606. ASU 2021-08 is effective for the Company in the first quarter of 2023, with early adoption permitted. The standard requires prospective application to business combinations occurring on or after the date of adoption. As of the date of this filing, we have not determined if we will early adopt.

(2) Revenue Recognition

Revenue Recognition Policy

We recognize revenue in accordance with the guidance in ASU 2014-09*, Revenue from Contracts with Customers (Topic 606)*, which requires an entity to recognize the amount of revenue to which it expects to be entitled for the transfer of promised goods or services to customers. The standard contains a five-step process to be followed in determining the amount and timing of revenue recognition.

We enter into contracts with customers that may include various combinations of our software solutions and related services, which are generally capable of being distinct and accounted for as separate performance obligations. Performance obligations that are not distinct at contract inception are combined. Contracts that include software customization may result in the combination of the customization services with the software license as one distinct performance obligation.

The predominant model of customer procurement involves multiple deliverables and includes a software license agreement, project-related implementation and consulting services, software support, hosting services, and computer hardware. We allocate revenues to each performance obligation within an arrangement based on estimated relative stand-alone selling price. Revenue is then recognized for each performance obligation upon transfer of control of the software solution or services to the customer in an amount that reflects the consideration we expect to receive.

Generally, we recognize revenue under Topic 606 for each of our performance obligations as follows:

- Perpetual software licenses - We recognize perpetual software license revenues when control of such licenses are transferred to the client ("point in time"). We determine the amount of consideration allocated to this performance obligation using the residual approach.

- Software as a service - We recognize software as a service ratably over the related hosting period ("over time").
- Time-based software and content license fees - We recognize a license component of time-based software and content license fees upon delivery to the client ("point in time") and a non-license component (i.e. support) ratably over the respective contract term ("over time").
- Hosting - Remote hosting recurring services are recognized ratably over the hosting service period ("over time"). Certain of our hosting arrangements contain fees deemed to be a "material right" under Topic 606. We recognize such fees over the term that will likely affect the client's decision about whether to renew the related hosting service ("over time").
- Services - We recognize revenue for fixed fee services arrangements over time, utilizing a labor hours input method. For fee-for-service arrangements, we recognize revenue over time as hours are worked at the rates clients are invoiced, utilizing the "as invoiced" practical expedient available in Topic 606. For stand-ready services arrangements, we recognize revenue ratably over the related service period.
- Support and maintenance - We recognize support and maintenance fees ratably over the related contract period ("over time").
- Hardware - We recognize hardware revenues when control of such hardware/devices is transferred to the client ("point in time").
- Transaction processing - We recognize transaction processing revenues ratably as we provide such services ("over time").

Certain customer contracts require significant customization of the software to meet the particular requirements specified by each customer. The contract pricing is stated as a fixed amount and generally results in the transfer of control of the applicable performance obligation over time. We recognize revenue for such contracts based on the proportion of labor hours expended to the total hours expected to complete the performance obligation. The impact to revenues for changes in estimates of total hours expected to complete performance obligations are recognized in the period in which they occur, and were not material for the periods presented herein.

Revenues are recognized net of any taxes collected from customers and subsequently remitted to governmental authorities.

Disaggregation of Revenue

The following table presents revenues disaggregated by our business models:

	For the Years Ended								
	2021			2020			2019		
(In thousands)	Domestic Segment	International Segment	Total	Domestic Segment	International Segment	Total	Domestic Segment	International Segment	Total
Licensed software	$ 671,926	$ 53,730	$ 725,656	$ 604,707	$ 51,512	$ 656,219	$ 628,958	$ 51,627	$ 680,585
Technology resale	163,280	21,392	184,672	173,264	23,327	196,591	225,076	21,809	246,885
Subscriptions	365,936	16,922	382,858	354,023	24,185	378,208	333,298	25,417	358,715
Professional services	1,817,213	299,278	2,116,491	1,717,873	212,572	1,930,445	1,760,532	231,946	1,992,478
Managed services	1,143,188	145,265	1,288,453	1,120,939	124,488	1,245,427	1,098,695	115,205	1,213,900
Support and maintenance	849,428	183,479	1,032,907	881,778	189,001	1,070,779	904,204	200,434	1,104,638
Reimbursed travel	33,658	129	33,787	27,185	934	28,119	87,364	8,033	95,397
Total revenues	$ 5,044,629	$ 720,195	$ 5,764,824	$ 4,879,769	$ 626,019	$ 5,505,788	$ 5,038,127	$ 654,471	$ 5,692,598

The following table presents our revenues disaggregated by timing of revenue recognition:

	For the Years Ended								
	2021			2020			2019		
(In thousands)	**Domestic Segment**	**International Segment**	**Total**	**Domestic Segment**	**International Segment**	**Total**	**Domestic Segment**	**International Segment**	**Total**
Revenue recognized over time	$ 4,736,395	$ 680,557	$ 5,416,952	$ 4,557,358	$ 585,316	$ 5,142,674	$ 4,565,172	$ 600,953	$ 5,166,125
Revenue recognized at a point in time	308,234	39,638	347,872	322,411	40,703	363,114	472,955	53,518	526,473
Total revenues	$ 5,044,629	$ 720,195	$ 5,764,824	$ 4,879,769	$ 626,019	$ 5,505,788	$ 5,038,127	$ 654,471	$ 5,692,598

Significant Customers

Revenues attributable to our relationships (as the prime contractor or a subcontractor) with U.S. government agencies, within our Domestic segment, comprised 20%, 18% and 13% of our consolidated revenues for 2021, 2020 and 2019, respectively. Amounts due in connection with these relationships comprised 15% and 13% of client receivables as of December 31, 2021 and December 31, 2020, respectively.

Transaction Price Allocated to Remaining Performance Obligations

As of December 31, 2021, the aggregate amount of transaction price allocated to performance obligations that are unsatisfied (or partially unsatisfied) for executed contracts approximates $13.26 billion, of which we expect to recognize approximately 31% of the revenue over the next 12 months and the remainder thereafter. As of December 31, 2020, the aggregate amount of transaction price allocated to performance obligations that were unsatisfied (or partially unsatisfied) for executed contracts approximated $13.04 billion.

Contract Liabilities

Our payment arrangements with clients typically include an initial payment due upon contract signing and date-based licensed software payment terms and payments based upon delivery for services, hardware and sublicensed software. Customer payments received in advance of satisfaction of the related performance obligations are deferred as contract liabilities. Such amounts are classified in our consolidated balance sheets as "Deferred revenue". During 2021 and 2020, substantially all of our contract liability balance at the beginning of each respective year was recognized in revenues during that year.

Costs to Obtain or Fulfill a Contract

We have determined the only significant incremental costs incurred to obtain contracts with clients within the scope of Topic 606 are sales commissions paid to our associates. We record sales commissions as an asset, and amortize to expense ratably over the remaining performance periods of the related contracts with remaining performance obligations. As of December 31, 2021 and December 31, 2020, our consolidated balance sheets included assets of $91 million and $88 million, respectively, related to sales commissions to be expensed in future periods, which are included in "Other assets".

We recognized $39 million, $38 million and $41 million of amortization related to these sales commissions assets in 2021, 2020 and 2019, respectively, which is included in "Costs of revenue" in our consolidated statements of operations.

Significant Judgments when Applying Topic 606

Our contracts with clients typically include various combinations of our software solutions and related services. Determining whether such software solutions and services are considered distinct performance obligations that should be accounted for separately versus together may require significant judgment.

Contract transaction price is allocated to distinct performance obligations using estimated stand-alone selling price. We determine stand-alone selling price maximizing observable inputs such as stand-alone sales when they exist or substantive renewal prices charged to clients. In instances where stand-alone selling price is not observable, we utilize an estimate of stand-alone selling price. Such estimates are derived from various methods that include: cost plus margin, historical pricing practices, and the residual approach. Judgment may be required to determine standalone selling prices for each performance obligation and whether it depicts the amount we expect to receive in exchange for the related good or service.

Contract modifications occur when we and our customers agree to modify existing customer contracts to change the scope or price (or both) of the contract or when a customer terminates some, or all, of the existing services provided by us. When a contract modification occurs, it requires us to exercise judgment to determine if the modification should be accounted for as (i) a separate contract, (ii) the termination of the original contract and creation of a new contract, (iii) a cumulative catch up adjustment to the original contract, or a combination thereof.

The labor hours input method used for our fixed fee services performance obligation is dependent on our ability to reliably estimate the direct labor hours to complete a project, which may span several years. We utilize our historical project experience and detailed planning process as a basis for our future estimates to complete current projects.

Certain of our arrangements contain variable consideration. We do not believe our estimates of variable consideration to be significant to our determination of revenue recognition.

(3) Receivables

Client receivables primarily represent recorded revenues that have either been billed, or for which we have an unconditional right to invoice and receive payment in the future. We periodically provide long-term financing options to creditworthy clients through extended payment terms. Generally, these extended payment terms provide for date-based payments over a fixed period, not to exceed the term of the overall arrangement. Thus, our portfolio of client contracts contains a financing component, which is recognized over time as a component of "Other income (loss), net" in our consolidated statements of operations. We perform ongoing credit evaluations of our clients and generally do not require collateral from our clients.

A summary of net receivables is as follows:

(In thousands)	**2021**	**2020**
Client receivables	$ 1,307,167	$ 1,322,278
Less: Provision for expected credit losses	145,806	153,566
Total receivables, net	$ 1,161,361	$ 1,168,712

In addition to the client receivables presented above, at December 31, 2021 and December 31, 2020, we had $16 million and $17 million, respectively, of non-current net client receivables, which are presented in "Other assets" in our consolidated balance sheets.

A reconciliation of the beginning and ending amount of our provision for expected credit losses is as follows:

(In thousands)	Current	Non-current	Total
Provision for expected credit losses - balance at December 29, 2018	$ 64,561	$ 63,849	$ 128,410
Additions charged to costs and expenses	57,167	—	57,167
Deductions, foreign currency and other	(15,653)	1,490	(14,163)
Provision for expected credit losses - balance at December 28, 2019	106,075	65,339	171,414
Cumulative effect of accounting change (ASU 2016-13)	4,606	—	4,606
Additions charged to costs and expenses	65,099	20,703	85,802
Deductions, foreign currency and other	(22,214)	(47,478)	(69,692)
Provision for expected credit losses - balance at December 31, 2020	153,566	38,564	192,130
Additions charged to costs and expenses	39,791	—	39,791
Reclassifications to non-current	(26,480)	26,480	—
Deductions, foreign currency and other	(21,071)	(3,938)	(25,009)
Provision for expected credit losses - balance at December 31, 2021	$ 145,806	$ 61,106	$ 206,912

During 2021 and 2020, we received total client cash collections of $6.13 billion and $5.70 billion, respectively.

Expected Credit Losses

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*, which provides a new impairment model for certain financial assets that is based on expected losses rather than incurred losses. Such guidance impacts how we determine our allowance for estimated uncollectible client receivables. The standard requires use of the modified retrospective (cumulative effect) transition approach as of the beginning of the first reporting period in which the guidance was effective, which for the Company was the first quarter of 2020. Under this transition method, the cumulative effect from prior periods upon applying this new guidance was recognized in our consolidated balance sheets as of December 29, 2019. We did not recast comparative periods.

A summary of such cumulative effect adjustment is as follows:

(In thousands)	Increase/(Decrease)
Receivables, net	$ (4,606)
Retained earnings	(4,606)

The cumulative effect adjustment is the result of providing an allowance on unbilled client receivables, for which we have an unconditional right to invoice and receive payment in the future.

Our estimates of expected credit losses for client receivables at both December 31, 2021 and December 31, 2020, were primarily based on historical credit loss experience and adjustments for certain asset-specific risk characteristics (i.e. known client financial hardship or bankruptcy). Exposure to credit losses may increase if our clients are adversely affected by changes in healthcare laws; changes in reimbursement or payor models; economic pressures or uncertainty associated with local or global economic recessions; disruption associated with the COVID-19 pandemic; or other client-specific factors. Although we have historically not experienced significant credit losses, it is possible that there could be an adverse impact from potential adjustments to the carrying amount of client receivables as clients' cash flows are impacted by the COVID-19 pandemic and related economic uncertainty, which may be material.

Table of Content

(4) Investments

Available-for-sale investments at the end of 2021 were as follows:

(In thousands)	Adjusted Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Cash equivalents:				
Money market funds	$ 149,429	$ —	$ —	$ 149,429
Time deposits	35,342	—	—	35,342
Commercial paper	77,850	—	—	77,850
Government and corporate bonds	5,000	—	—	5,000
Total cash equivalents	267,621	—	—	267,621
Short-term investments:				
Time deposits	25,598	—	—	25,598
Commercial paper	57,000	—	(14)	56,986
Government and corporate bonds	170,123	18	(103)	170,038
Total short-term investments	252,721	18	(117)	252,622
Long-term investments:				
Government and corporate bonds	31,167	—	(149)	31,018
Total available-for-sale investments	$ 551,509	$ 18	$ (266)	$ 551,261

Available-for-sale investments at the end of 2020 were as follows:

(In thousands)	Adjusted Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Cash equivalents:				
Money market funds	$ 40,027	$ —	$ —	$ 40,027
Time deposits	36,756	—	—	36,756
Commercial Paper	61,000	—	—	61,000
Total cash equivalents	137,783	—	—	137,783
Short-term investments:				
Time deposits	28,302	—	—	28,302
Commercial Paper	264,000	12	(19)	263,993
Government and corporate bonds	149,975	247	(44)	150,178
Total short-term investments	442,277	259	(63)	442,473
Long-term investments:				
Government and corporate bonds	136,983	152	(57)	137,078
Total available-for-sale investments	$ 717,043	$ 411	$ (120)	$ 717,334

We sold available-for-sale investments for proceeds of $420 million, $71 million and $233 million in 2021, 2020 and 2019, respectively, resulting in insignificant gains/losses in each period.

Other Investments

At December 31, 2021 and December 31, 2020, we had investments in equity securities that do not have readily determinable fair values of $406 million and $361 million, respectively, accounted for in accordance with ASC 321, *Investments-Equity Securities*. Such investments are included in "Long-term investments" in our consolidated balance sheets. We did not record any changes in the measurement of such investments in 2021, 2020, or 2019, respectively.

At December 28, 2019, we had investments in equity securities with readily determinable fair values of $14 million, accounted for in accordance with ASC 321. Such investments were included in "Short-term investments" in our consolidated balance sheets. Changes in the measurement of such investments favorably impacted "Other income (loss), net" by $76 million and $14 million in 2020 and 2019, respectively. In August 2020, we sold these investments for cash proceeds of $90 million.

At December 31, 2021 and December 31, 2020, we had investments in equity securities reported under the equity method of accounting of $25 million and $12 million, respectively. Such investments are included in "Long-term investments" in our consolidated balance sheets.

Impairment Assessment

We adopted ASU 2016-13 in the first quarter of 2020, which made certain amendments to the model used to assess available-for-sale debt securities for impairment. Such guidance provides that an available-for-sale debt security is impaired if the fair value of the security is less than its amortized cost basis. A determination is made whether the decline in fair value below the amortized cost basis has resulted from a credit loss or other factors, such as market liquidity or changes in interest rates. Impairment related to credit losses is recognized in net earnings, whereas impairment related to other factors is recognized as a component of accumulated other comprehensive loss, net. We did not recognize any impairment on our available-for-sale debt securities through net earnings in 2021 or 2020.

(5) Property and Equipment

A summary of property, equipment and leasehold improvements stated at cost, less accumulated depreciation and amortization, is as follows:

(In thousands)	Depreciable Lives (Yrs)	2021	2020
Held and used:			
Computer and communications equipment	1 — 5	$ 1,981,488	$ 1,939,517
Land, buildings and improvements	12 — 50	1,180,042	1,403,835
Leasehold improvements	1 — 15	202,283	208,496
Furniture and fixtures	5 — 12	116,236	146,351
Other equipment	3 — 20	20,444	1,025
		3,500,493	3,699,224
Less accumulated depreciation and leasehold amortization		1,933,623	1,895,141
Property and equipment held and used		1,566,870	1,804,083
Assets held for sale		89,301	—
Property and equipment, net		$ 1,656,171	$ 1,804,083

Depreciation Expense

Depreciation and leasehold amortization expense for 2021, 2020 and 2019 was $362 million, $365 million and $347 million, respectively.

Real Estate Held For Sale

In connection with our operational improvement initiatives, during 2021, we made certain decisions regarding the continued use of certain of our owned real estate. As a result of those decisions, on July 9, 2021, we sold office space located in Kansas City, Missouri (known as our Oaks Campus), in April 2021 began the process of marketing office space located in Kansas City, Missouri (known as our Riverport Campus), in June 2021 began the process of marketing office space located in Kansas City, Kansas (known as our Continuous Campus), and in September 2021 began the process of marketing a portion of our office space located in Malvern, Pennsylvania. At December 31, 2021, these long-lived assets aggregating $89 million were held for sale and presented within our consolidated balance sheets in "Property and equipment, net." In connection with the designation as held for sale, during 2021, we recorded pre-tax charges of $80 million to reduce the amount of such long-lived assets to fair value, less estimated costs to sell. Such charges are included in our consolidated statements of operations in "Sales and client service" expense and "General and administrative" expense at $78 million and $2 million, respectively.

(6) Leases

In February 2016, the FASB issued ASU 2016-02, *Leases (Topic 842)*, which introduced a new accounting model that requires most leases to be reported on the balance sheet. It also established disclosure requirements, which are more extensive than those required under prior U.S. GAAP. The standard required use of the modified retrospective (cumulative effect) transition approach and was effective for the Company in the first quarter of 2019. We selected the effective date of ASU 2016-02 as the date of initial application on transition, as permitted by ASU 2016-02, as amended ("Topic 842"). Under this transition method, the cumulative effect from prior periods upon applying the new guidance to arrangements containing leases was recognized in our consolidated balance sheets as of December 30, 2018. We did not recast comparative periods.

A summary of such cumulative effect adjustment is as follows:

(In thousands)	**Increase / (Decrease)**
Right-of-use asset	$ 129,652
Prepaid expenses and other	3,968
Other current liabilities	22,767
Other liabilities	110,853

Arrangements Containing Leases

The cumulative effect adjustment above, is primarily comprised of arrangements where we are the lessee under operating leases for real estate (office, data center, and warehouse space) and certain dedicated fiber optic lines within our infrastructure. The duration of these agreements ranges from several months to in excess of 20 years. Generally, variable lease payments under these operating lease agreements relate to amounts based on changes to an index or rate (i.e. percentage change in the consumer price index). We do not have any arrangements where we are the lessee, classified as finance leases in our consolidated financial statements.

In addition to the items described above, we also procure hotel stays and rental cars in connection with associate business travel, and the use of certain equipment for trade shows, client presentations, conferences, and internal meetings. We have made the policy election to classify such arrangements as short-term leases, as defined in Topic 842. As such, we have not recognized lease liabilities and right-of-use assets for such arrangements in our consolidated financial statements. The duration of these arrangements is less than one month. Therefore, we do not disclose any short-term lease expense, as permitted by Topic 842. Expense for such items is recognized on a straight-line basis over the term of such arrangements.

Arrangements in which we are the lessor are not significant to our consolidated financial statements.

Amounts Included in the Consolidated Financial Statements

The following table presents a summary of lease liability and right-of-use asset amounts included in our consolidated balance sheets at the end of 2021 and 2020, under operating lease arrangements where we are the lessee:

(In thousands) **Description**	**Balance Sheet Classification**	**2021**	**2020**
Right-of-use asset	Right-of-use assets	$ 82,940	$ 104,536
Lease liability - current	Other current liabilities	27,694	29,913
Lease liability - non-current	Other liabilities	67,160	90,106

Operating lease cost for 2021, 2020 and 2019 was $31 million, $37 million, and $37 million, respectively. Variable lease cost was less than $1 million in each of 2021, 2020 and 2019.

Maturity Analysis

Aggregate future payments under operating lease arrangements where we are the lessee (by fiscal year) are as follows:

(In thousands)	**Operating Lease Obligations**
2022	$ 27,694
2023	20,826
2024	13,824
2025	8,884
2026	5,978
2027 and thereafter	32,031
Aggregate future payments	109,237
Impact of discounting	(14,383)
Aggregate lease liability at December 31, 2021	$ 94,854

At December 31, 2021, the weighted-average remaining lease term and weighted-average discount rate for our operating lease arrangements where we are the lessee were 6.97 years and 3.3%, respectively.

(7) Software Development

Our software solutions are offered to our clients both through traditional licenses as well as software as a service delivery models. Development costs associated with the certain solutions offered exclusively through a software as a service model are accounted for in accordance with ASC 350-40, *Internal-Use Software*. All other client solution development costs, which represent a significant majority of development costs, are accounted for in accordance with ASC 985-20, *Costs of Software to be Sold, Leased or Marketed*.

Under ASC 985-20, software development costs incurred in creating computer software solutions are expensed until technological feasibility has been established upon completion of a detailed program design. Thereafter, all software development costs incurred through the software's general release date are capitalized and subsequently recorded at the lower of amortized cost or net realizable value. Capitalized costs are amortized based on current and expected future revenue for each software solution with minimum annual amortization equal to the straight-line amortization over the estimated economic life of the solution. We amortize capitalized costs over five years.

Under ASC 350-40, software development costs related to preliminary project activities and post-implementation and maintenance activities are expensed as incurred. We capitalize direct costs related to application development activities that are probable to result in additional functionality. Capitalized costs are amortized on a straight-line basis over five years. We test for impairment whenever events or changes in circumstances that could impact recoverability occur.

A summary of software development costs, net is as follows:

(In thousands)	2021 Gross Carrying Amount	2021 Accumulated Amortization	2020 Gross Carrying Amount	2020 Accumulated Amortization
Software to be sold, leased or marketed	$ 2,751,960	$ 1,985,051	$ 2,610,476	$ 1,788,019
Software delivered exclusively as a service	474,712	241,264	385,168	198,276
Total	$ 3,226,672	$ 2,226,315	$ 2,995,644	$ 1,986,295
Software development costs, net		$ 1,000,357		$ 1,009,349

Estimated aggregate amortization expense for each of the next five years is as follows:

(In thousands)	
2022	$ 280,626
2023	247,172
2024	201,507
2025	146,610
2026	90,212

Information regarding our software development costs is included in the following table:

(In thousands)	For the Years Ended 2021	2020	2019
Software development costs	$ 828,502	$ 796,971	$ 783,593
Capitalized software development costs	(308,026)	(295,277)	(273,871)
Amortization of capitalized software development costs	261,798	247,313	227,414
Net realizable value charges	53,721	—	—
Total software development expense	$ 835,995	$ 749,007	$ 737,136

In 2021, we recorded pre-tax charges of $54 million to reduce the carrying amount of certain capitalized software development costs to estimated net realizable value.

(8) Business Acquisitions

2021 Acquisition

On April 1, 2021, we acquired Kantar Health, a division of Kantar Group. Kantar Health provides data, analytics, commercial research, and consulting services to the life sciences industry. We believe this acquisition complements our existing Data-as-a-Service efforts as it provides a meaningful entry into the pharmaceutical market through Kantar Health's existing clients and their leadership team with important industry experience and relationships. These factors, combined with the synergies and economies of scale expected, are the basis for the acquisition and comprise the resulting goodwill recorded.

Consideration for the acquisition was a base cash purchase price of $375 million. The base purchase price was subject to post-closing adjustments for working capital and certain other adjustments, as specified in the Securities Purchase Agreement dated December 16, 2020, as amended.

Our acquisition of Kantar Health was treated as a purchase in accordance with ASC 805, *Business Combinations* ("ASC 805"), which requires allocation of the purchase price to the estimated fair values of the assets acquired and liabilities assumed in the transaction.

The final allocation of purchase price was as follows:

(In thousands)	Allocation Amount
Cash and cash equivalents	$ 15,311
Receivables, net	32,616
Prepaid expenses and other	8,881
Property and equipment, net	1,198
Right-of-use assets	1,939
Goodwill	226,232
Intangible assets, net:	
Customer relationships	143,100
Existing technologies	39,700
Trade names	10,200
Other assets	428
Accounts payable	(36,748)
Deferred revenue	(35,698)
Accrued payroll and tax withholdings	(11,172)
Other current liabilities	(3,189)
Deferred income taxes	(11,733)
Other liabilities	(10,250)
Total purchase price	$ 370,815

The fair values of the acquired intangible assets were estimated by applying the income approach. Such estimations required the use of inputs that were unobservable in the marketplace (Level 3), including a discount rate that we estimated would be used by a market participant in valuing these assets, projections of revenues and cash flows, and client attrition rates, among others. The acquired intangible assets are being amortized over a weighted-average period of 13 years. Refer to Note (12) for further information about the fair value level hierarchy.

The goodwill of $226 million was allocated among our Domestic and International operating segments, as shown in Note (10), with approximately $170 million of such goodwill expected to be deductible for tax purposes.

Our consolidated statement of operations for the year ended December 31, 2021 includes revenues of $148 million attributable to the acquired business since the April 1, 2021 acquisition date. The earnings contribution from the acquired business for the year ended December 31, 2021 was not material to our consolidated financial statements. Pro forma results of operations, assuming the acquisition was made at the beginning of the earliest period presented, have not been presented because the effect of this acquisition was not material to our results.

2020 Acquisitions

On April 1, 2020, we acquired a consulting company specializing in providing cybersecurity solutions to clients in the healthcare industry, for cash consideration of $34 million. We believe this acquisition enhanced our resource capabilities and growth opportunities for our cybersecurity solution offerings. These factors, combined with the synergies and economies of scale expected, are the basis for the acquisition and comprise the resulting goodwill recorded.

On October 19, 2020, we acquired a software company that offered a patient referral management solution to clients within the healthcare industry, for cash consideration of $15 million. We believe this acquisition enhanced our portfolio of offerings on our *HealtheIntent* platform. This factor, combined with the synergies and economies of scale expected, are the basis for the acquisition and comprise the resulting goodwill recorded.

These acquisitions were treated as purchases in accordance with ASC 805, which requires allocation of the purchase price to the estimated fair values of assets and liabilities acquired in the transactions.

The aggregate final allocation of purchase price for our 2020 acquisitions was as follows:

(In thousands)	**Allocation Amount**
Receivables, net	$ 2,313
Inventory	863
Prepaid expenses and other	331
Property and equipment, net	114
Right-of-use assets	683
Goodwill	33,709
Intangible assets, net	16,510
Other assets	179
Accounts payable	(880)
Deferred revenue	(3,158)
Accrued payroll and tax withholdings	(501)
Other current liabilities	(713)
Deferred income taxes	(374)
Total purchase price	$ 49,076

The goodwill was allocated to our Domestic operating segment, with $4 million of such goodwill expected to be deductible for tax purposes. Identifiable intangible assets primarily consist of acquired technology intangible assets and are being amortized over a weighted-average period of 8 years. The operating results from of our 2020 acquisitions were combined with our operating results subsequent to the respective purchase dates. Pro-forma results of operations, assuming these acquisitions were made at the beginning of the earliest period presented, have not been presented because the effect of these acquisitions, both individually and in the aggregate, were not material to our results.

2019 Acquisition

On October 25, 2019, we acquired all of the issued and outstanding membership interests of AbleVets, LLC, a Virginia limited liability company ("AbleVets"), for cash consideration of $76 million. AbleVets is a health IT engineering and consulting company specializing in cybersecurity, cloud and system development solutions for federal organizations. We believe this acquisition enhanced our resource capabilities and growth opportunities within our federal business. These factors, combined with the synergies and economies of scale expected from combining the operations of AbleVets with Cerner, are the basis for the acquisition and comprise the resulting goodwill recorded.

The acquisition of AbleVets was treated as a purchase in accordance with ASC 805, which requires allocation of the purchase price to the estimated fair values of assets and liabilities acquired in the transaction.

The final allocation of purchase price was as follows:

(In thousands)	Allocation Amount
Cash and cash equivalents	$ 471
Receivables, net	11,690
Prepaid expenses and other	911
Property and equipment, net	1,240
Right-of-use assets	8,448
Goodwill	37,815
Intangible assets, net	37,402
Accounts payable	(5,244)
Deferred revenue	(157)
Accrued payroll and tax withholdings	(5,812)
Other current liabilities	(2,994)
Other liabilities	(8,016)
Total purchase price	$ 75,754

The fair values of the acquired intangible assets were estimated by applying the income approach. Such estimations required the use of inputs that were unobservable in the marketplace (Level 3), including a discount rate that we estimated would be used by a market participant in valuing these assets, projections of revenues and cash flows, and client attrition rates, among others. Refer to Note (12) for further information about the fair value level hierarchy.

The goodwill was allocated to our Domestic operating segment and is expected to be deductible for tax purposes. Identifiable intangible assets primarily consist of customer relationship intangible assets and are being amortized over a weighted-average period of 8 years. The operating results of AbleVets were combined with our operating results subsequent to the purchase date of October 25, 2019. Pro-forma results of operations, assuming this acquisition was made at the beginning of the earliest period presented, have not been presented because the effect of this acquisition was not material to our results.

(9) Gain on Sale of Businesses

Germany and Spain

On July 1, 2020, we sold certain of our business operations, primarily conducted in Germany and Spain, to affiliates of CompuGroup Medical SE & Co. KGaA ("CGM"), as a part of our portfolio management strategy. Such operations included the associates, intellectual property, client contracts, other assets, and liabilities related to our medico®, Selene®, Soarian Health Archive®, and Soarian® Integrated Care solution offerings. We received a sale price of $230 million, which was subject to post-closing adjustments for working capital and certain other adjustments.

The following table presents a reconciliation of the sale price to the net gain recognized on the disposed business operations which is included in "Gain on sale of businesses" in our consolidated statements of operations:

(In thousands)	
Sale price	$ 230,316
Net assets/liabilities removed	(7,934)
Transaction expenses	(5,583)
Foreign currency	1,550
Gain on sale of businesses	$ 218,349

The following table presents a reconciliation of the sale price to the cash proceeds received from CGM which are included in "Sale of businesses" in our consolidated statements of cash flows:

(In thousands)	
Sale price	$ 230,316
Receivable due from CGM	(4,049)
VAT and other transaction taxes, net	(2,142)
Foreign currency	356
Cash received from sale of businesses	$ 224,481

Amounts included in our consolidated balance sheets related to the disposed business operations immediately prior to the sale on July 1, 2020 were as follows:

(In thousands)	**Asset/(Liability)**
Receivables, net	$ 8,646
Inventory	65
Prepaid expenses and other	5,993
Property and equipment, net	340
Right-of-use assets	554
Software development costs, net	5,532
Goodwill	7,692
Intangible assets, net	3,687
Accounts payable	(2,763)
Deferred revenue	(16,756)
Accrued payroll and tax withholdings	(4,545)
Other current liabilities	(511)
Net assets/(liabilities)	$ 7,934

Revenue Cycle Outsourcing

On August 3, 2020, we sold certain of our revenue cycle outsourcing business operations to affiliates of R1 RCM Inc., as a part of our portfolio management strategy. Such operations included the associates, client contracts, certain other assets, and certain liabilities related to our commercial revenue cycle outsourcing services business. A net gain of $2 million was recognized on the disposed business operations and is included in "Gain on sale of businesses" in our consolidated statements of operations. Amounts included in our consolidated balance sheets related to the disposed business operations immediately prior to the sale on August 3, 2020 were not material to our consolidated financial statements.

(10) Goodwill and Other Intangible Assets

The changes in the carrying amounts of goodwill by segment were as follows:

(In thousands)	Domestic	International	Total
Balance at the end of 2019	$ 819,735	$ 63,423	$ 883,158
Purchase price allocation adjustments for the AbleVets acquisition	744	—	744
Goodwill recorded in connection with 2020 business acquisitions	33,709	—	33,709
Goodwill reduction in connection with divestiture transactions	—	(7,692)	(7,692)
Foreign currency translation adjustment and other	—	4,601	4,601
Balance at the end of 2020	854,188	60,332	914,520
Goodwill recorded in connection with the Kantar Health acquisition	119,709	106,523	226,232
Foreign currency translation adjustment and other	—	(9,631)	(9,631)
Balance at the end of 2021	$ 973,897	$ 157,224	$ 1,131,121

A summary of net intangible assets is as follows:

	2021		2020	
(In thousands)	Gross Carrying Amount	Accumulated Amortization	Gross Carrying Amount	Accumulated Amortization
Customer lists	$ 636,410	$ 360,598	$ 494,615	$ 312,044
Purchased software	396,508	346,381	354,228	337,811
Internal use software	233,438	150,356	207,696	123,280
Trade names	52,883	33,719	42,951	28,961
Other	52,179	21,882	50,535	18,680
Total	$ 1,371,418	$ 912,936	$ 1,150,025	$ 820,776
Intangible assets, net		$ 458,482		$ 329,249

Amortization expense for 2021, 2020 and 2019 was $95 million, $85 million and $114 million, respectively.

Estimated aggregate amortization expense for each of the next five years is as follows:

(In thousands)	
2022	$ 96,281
2023	86,863
2024	79,985
2025	38,916
2026	20,769

(11) Long-term Debt

The following is a summary of indebtedness outstanding:

(In thousands)	2021	2020
Credit agreement loans due December 30, 2026	$ 600,000	$ 600,000
Senior notes:		
Series 2021-A due March 24, 2026	100,000	—
Series 2021-B due March 24, 2031	400,000	—
Series 2020-A due March 11, 2030	300,000	300,000
Series 2015-A due February 15, 2022	225,000	225,000
Series 2015-B due February 14, 2025	200,000	200,000
Other	11,662	11,662
Total indebtedness	1,836,662	1,336,662
Less: debt issuance costs	(406)	(593)
Indebtedness, net	1,836,256	1,336,069
Less: current installments of long-term debt	(225,000)	—
Long-term debt	$ 1,611,256	$ 1,336,069

Credit Agreement

On December 30, 2021, we amended and restated our revolving credit facility by entering into a Fourth Amended and Restated Credit Agreement (the "Credit Agreement") with a syndicate of lenders. The Credit Agreement is a five-year revolving credit facility expiring on December 30, 2026, with two one-year extension options that are subject to lender approval. The Credit Agreement includes: (a) a revolving credit loan facility of up to $1.225 billion at any time outstanding, and (b) a letter of credit facility of up to $200 million at any time outstanding (which is a sub-facility of the $1.225 billion revolving credit loan facility). The Credit Agreement also includes an accordion feature allowing an increase of the credit facility of up to an additional $500 million ($1.725 billion in the aggregate) at any time outstanding, subject to lender participation and the satisfaction of specified conditions. Prepayment of borrowings outstanding under the Credit Agreement is permitted at any time. Proceeds may be used for working capital and general corporate purposes, including but not limited to certain business acquisitions and purchases under our share repurchase programs. The Credit Agreement provides certain restrictions on our ability to borrow, incur liens, sell assets and pay dividends, and contains certain leverage and interest coverage covenants.

Generally, interest on revolving credit loans is payable at a variable rate based on LIBOR, prime, or the U.S. federal funds rate, plus a spread that varies depending on leverage ratios maintained. Unused commitment, letter of credit, and other fees are also payable under the Credit Agreement. At December 31, 2021 and December 31, 2020, the interest rate on revolving credit loans outstanding was 0.90% and 0.95%, respectively, based on LIBOR plus the applicable spread.

As of December 31, 2021, we had outstanding revolving credit loans and letters of credit of $600 million and $18 million, respectively; which reduced our available borrowing capacity to $607 million under the Credit Agreement.

Interest Rate Swap

We are exposed to market risk from fluctuations in the variable interest rates on outstanding indebtedness under our Credit Agreement. In order to manage this exposure, we have entered into an interest rate swap agreement, with an initial notional amount of $600 million, to hedge the variability of cash flows associated with such interest obligations through May 2024. The interest rate swap has an effective start date of May 13, 2019, and is designated as a cash flow hedge, which effectively fixes the interest rate on the hedged indebtedness under our Credit Agreement at 3.06% through May 2024. At December 31, 2021 and December 31, 2020, this swap was in a net liability position with an aggregate fair value of $17 million and $37 million, respectively; which is presented in our consolidated balance sheets in "Other current liabilities". We classify fair value measurements of our interest rate swap as Level 2, as further described in Note (12).

Our interest rate swap agreement is accounted for in accordance with ASC Topic 815, *Derivatives and Hedging*. Such agreement is designated as a cash flow hedge and considered to be highly effective under hedge accounting principles. Therefore, the swap agreement is recognized in our consolidated balance sheets as either an asset or liability, measured at fair value. Changes in the fair value of the swap agreement are initially recorded in accumulated other comprehensive loss, net and then subsequently recognized in our consolidated statements of operations in the periods in which earnings are affected by the hedged item. All cash flows associated with the swap agreement are classified as operating activities in our consolidated statements of cash flows.

Series 2021 Senior Notes

We entered into a Master Note Agreement on November 11, 2019, and subsequently amended on October 8, 2020 (collectively and as amended, the "2019 Shelf Agreement"), pursuant to which we may issue and sell up to an aggregate principal amount of $1.80 billion of unsecured senior promissory notes. In March 2021, we issued $500 million aggregate principal amount of unsecured senior notes (the "Series 2021 Senior Notes"), pursuant to the 2019 Shelf Agreement. The issuance consisted of $100 million of 2.00% Series 2021-A Notes due March 24, 2026 and $400 million of 2.59% Series 2021-B Notes due March 24, 2031. Interest on the Series 2021 Senior Notes is payable semiannually on each March 24 and September 24, commencing September 24, 2021, and the principal balance is due at maturity. The Company may prepay at any time all, or any part of, the outstanding principal amount of the Series 2021 Senior Notes, subject to the payment of a make-whole amount.

2020 Senior Notes

In March 2020, we issued $300 million aggregate principal amount of 2.50% senior unsecured Series 2020-A notes (the "Series 2020-A Notes") due March 11, 2030, pursuant to the 2019 Shelf Agreement. Interest on the Series 2020-A Notes is payable semiannually on each March 11 and September 11, commencing September 11, 2020, and the principal balance is due at maturity. The Company may prepay at any time all, or any part of, the outstanding principal amount of the Series 2020-A Notes, subject to the payment of a make-whole amount.

The Series 2021 Senior Notes and Series 2020-A Notes are subject to the terms of the 2019 Shelf Agreement, which contains customary events of default and covenants related to limitations on indebtedness and transactions with affiliates and the maintenance of certain financial ratios. As of the date of this filing, $1.00 billion remains available for sale under the 2019 Shelf Agreement, which is uncommitted and subject to participation by the purchasers.

2015 Senior Notes

On December 4, 2014, we entered into a Master Note Purchase Agreement (the "Master Note Purchase Agreement") with the Purchasers listed therein, pursuant to which we may issue and sell up to an aggregate principal amount of $1.50 billion of unsecured senior promissory notes to those Purchasers electing to purchase. In January 2015, we issued $500 million aggregate principal amount of unsecured Senior Notes ("Senior Notes"), pursuant to the Master Note Purchase Agreement. The issuance consisted of $225 million of 3.18% Series 2015-A Notes due February 15, 2022, $200 million of 3.58% Series 2015-B Notes due February 14, 2025, and $75 million in floating rate Series 2015-C Notes due February 15, 2022. Interest is payable semiannually on February 15th and August 15th in each year, commencing on August 15, 2015 for the Series 2015-A Notes and Series 2015-B Notes. The Master Note Purchase Agreement contains certain leverage and interest coverage ratio covenants and provides certain restrictions on our ability to borrow, incur liens, sell assets, and other customary terms. Proceeds from the Senior Notes are available for general corporate purposes. As of the date of this filing, the remaining $1.00 billion available for sale is uncommitted and subject to participation by the Purchasers under the Master Note Purchase Agreement.

On February 15, 2022, we repaid our $225 million of Series 2015-A Notes due February 15, 2022.

In March 2018, we repaid our $75 million floating rate Series 2015-C Notes due February 15, 2022.

Other

Other indebtedness includes estimated amounts payable through September 1, 2025, under an agreement entered into in September 2015.

Covenant Compliance

As of December 31, 2021, we were in compliance with all debt covenants.

Maturities

Maturities of indebtedness outstanding at the end of 2021 are as follows:

(In thousands)	Credit Agreement Loans	Senior Notes	Other	Total
2022	$ —	$ 225,000	$ —	$ 225,000
2023	—	—	—	—
2024	—	—	—	—
2025	—	200,000	11,662	211,662
2026	600,000	100,000	—	700,000
2027 and thereafter	—	700,000	—	700,000
Total	$ 600,000	$ 1,225,000	$ 11,662	$ 1,836,662

(12) Fair Value Measurements

We determine fair value measurements used in our consolidated financial statements based upon the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value hierarchy distinguishes between (1) market participant assumptions developed based on market data obtained from independent sources (observable inputs) and (2) an entity's own assumptions about market participant assumptions developed based on the best information available in the circumstances (unobservable inputs). The fair value hierarchy consists of three broad levels, which gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). The three levels of the fair value hierarchy are described below:

- Level 1 – Valuations based on quoted prices in active markets for identical assets or liabilities that the entity has the ability to access.
- Level 2 – Valuations based on quoted prices for similar assets or liabilities, quoted prices in markets that are not active, or other inputs that are observable or can be corroborated by observable data for substantially the full term of the assets or liabilities.
- Level 3 – Valuations based on inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

The following table details our investments in available-for-sale debt securities measured and recorded at fair value on a recurring basis at the end of 2021:

(In thousands)

		Fair Value Measurements Using		
Description	**Balance Sheet Classification**	**Level 1**	**Level 2**	**Level 3**
Money market funds	Cash equivalents	$ 149,429	$ —	$ —
Time deposits	Cash equivalents	—	35,342	—
Commercial paper	Cash equivalents	—	77,850	—
Government and corporate bonds	Cash equivalents	—	5,000	—
Time deposits	Short-term investments	—	25,598	—
Commercial paper	Short-term investments	—	56,986	—
Government and corporate bonds	Short-term investments	—	170,038	—
Government and corporate bonds	Long-term investments	—	31,018	—

The following table details our investments in available-for-sale debt securities measured and recorded at fair value on a recurring basis at the end of 2020:

(In thousands)

Description	Balance Sheet Classification	Fair Value Measurements Using Level 1	Level 2	Level 3
Money market funds	Cash equivalents	$ 40,027	$ —	$ —
Time deposits	Cash equivalents	—	36,756	—
Commercial paper	Cash equivalents	—	61,000	—
Time deposits	Short-term investments	—	28,302	—
Commercial paper	Short-term investments	—	263,993	—
Government and corporate bonds	Short-term investments	—	150,178	—
Government and corporate bonds	Long-term investments	—	137,078	—

Our investments in equity securities with readily determinable fair values accounted for in accordance with ASC 321 were measured and recorded at fair value on a recurring basis using a Level 2 valuation. The fair value of such arrangements was based on quoted prices in active markets, reduced by a percentage reflecting a discount for lack of marketability.

Our interest rate swap agreement is measured and recorded at fair value on a recurring basis using a Level 2 valuation. The fair value of such agreement is based on the market standard methodology of netting the discounted expected future variable cash receipts and the discounted future fixed cash payments. The variable cash receipts are based on an expectation of future interest rates derived from observed market interest rate forward curves. Since these inputs are observable in active markets over the terms that the instrument is held, the derivative is classified as Level 2 in the hierarchy.

We estimate the fair value of our long-term, fixed rate debt using a Level 3 discounted cash flow analysis based on current borrowing rates for debt with similar maturities. We estimate the fair value of our long-term, variable rate debt using a Level 3 discounted cash flow analysis based on LIBOR rate forward curves. The fair value of our long-term debt, including current maturities, at the end of 2021 and 2020 was approximately $1.87 billion and $1.36 billion, respectively. The carrying amount of such debt at the end of 2021 and 2020 was $1.83 billion and $1.33 billion, respectively.

(13) Other Income (Loss)

A summary of non-operating income and expense is as follows:

(In thousands)	For the Years Ended 2021	2020	2019
Interest income	$ 25,975	$ 28,901	$ 38,227
Interest expense	(43,474)	(29,080)	(14,469)
Gain on sale of equity investment	—	75,834	15,509
Unrealized gain on equity investment	—	—	14,112
Other	8,683	1,251	464
Other income (loss), net	$ (8,816)	$ 76,906	$ 53,843

(14) Income Taxes

Income tax expense (benefit) for 2021, 2020 and 2019 consists of the following:

(In thousands)	For the Years Ended 2021	2020	2019
Current:			
Federal	$ 95,526	$ 131,741	$ 45,575
State	20,968	30,565	13,429
Foreign	20,019	47,577	14,929
Total current expense	136,513	209,883	73,933
Deferred:			
Federal	(2,646)	(4,469)	30,353
State	7,568	(96)	11,747
Foreign	2,429	6,067	9,025
Total deferred expense	7,351	1,502	51,125
Total income tax expense	$ 143,864	$ 211,385	$ 125,058

Temporary differences between the financial statement carrying amounts and tax basis of assets and liabilities that give rise to significant portions of deferred income taxes at the end of 2021 and 2020 relate to the following:

(In thousands)	2021	2020
Deferred tax assets:		
Accrued expenses	$ 56,913	$ 63,080
Tax credits and separate return net operating losses	12,939	17,976
Contract and service revenues and costs	28,001	9,383
Share-based compensation	30,216	49,650
Lease liability	21,548	23,928
Other	15,070	17,554
Gross deferred tax assets	164,687	181,571
Less: Valuation Allowance	(9,575)	(3,384)
Total deferred tax assets	155,112	178,187
Deferred tax liabilities:		
Software development costs	(265,384)	(270,041)
Property and equipment	(204,203)	(204,568)
Prepaid expenses	(39,499)	(37,547)
Lease right-of-use assets	(17,900)	(20,639)
Other	(11,253)	(9,260)
Total deferred tax liabilities	(538,239)	(542,055)
Net deferred tax liability	$ (383,127)	$ (363,868)

At the end of 2021, we had net operating loss carry-forwards from foreign jurisdictions of $19 million that are available to offset future taxable income with no expiration. In addition, we had a state income tax credit carry-forward of $8 million available to offset income tax liabilities through December 31, 2030. During 2020, we recorded a valuation allowance of $3 million against the net operating loss carry-forward in a foreign jurisdiction due to a change in circumstances. During 2021, we recorded a valuation allowance of $6 million against the state income tax credit carry-forward due to a change in circumstances.

At the end of 2021, we had not provided tax on the cumulative undistributed earnings of certain foreign subsidiaries of approximately $115 million, because it is our intention to reinvest these earnings indefinitely. The unrecognized deferred tax liability relating to these earnings is approximately $6 million.

The effective income tax rates for 2021, 2020, and 2019 were 21%, 21%, and 19%, respectively. A reconciliation of the effective income tax rates to the U.S. federal statutory rate of 21% is follows:

	For the Years Ended		
(In thousands)	**2021**	**2020**	**2019**
Tax expense at statutory rates	$ 146,887	$ 208,209	$ 137,447
State income tax, net of federal benefit	15,938	24,234	18,561
Tax credits	(19,739)	(21,254)	(22,750)
Foreign rate differential	(8,940)	1,973	(6,328)
Share-based compensation	7,351	(1,303)	(8,090)
Permanent differences	1,053	(6,534)	3,278
Other, net	1,314	6,060	2,940
Total income tax expense	$ 143,864	$ 211,385	$ 125,058

A reconciliation of the beginning and ending amount of unrecognized tax benefit is presented below:

(In thousands)	**2021**	**2020**	**2019**
Unrecognized tax benefit - beginning balance	$ 22,204	$ 19,125	$ 18,688
Gross decreases - tax positions in prior periods	(7,252)	(3,964)	(2,383)
Gross increases - tax positions in prior periods	8,235	312	1,220
Gross increases - tax positions in current year	6,479	6,595	1,607
Gross increases - acquisition of businesses	5,112	—	—
Currency translation	(439)	136	(7)
Unrecognized tax benefit - ending balance	$ 34,339	$ 22,204	$ 19,125

If recognized, $29 million of the unrecognized tax benefit will favorably impact our effective tax rate. It is reasonably possible that our unrecognized tax benefits may decrease by up to $12 million within the next twelve months. Our federal returns have been examined by the Internal Revenue Service through 2016. Our federal returns are open for examination for 2017 and thereafter. We have various state and foreign returns under examination.

The ending amounts of accrued interest and penalties related to unrecognized tax benefits were $6 million in 2021 and $5 million in 2020. We classify interest and penalties as income tax expense in our consolidated statement of operations, and our income tax expense for 2021, 2020, and 2019 each included $1 million of interest and penalties.

The foreign portion of our earnings before income taxes was $136 million, $208 million, and $109 million in 2021, 2020, and 2019 respectively, and the remaining portion was domestic.

(15) Earnings Per Share

A reconciliation of the numerators and the denominators of the basic and diluted per share computations are as follows:

	2021			2020			2019		
(In thousands, except per share data)	Earnings (Numerator)	Shares (Denominator)	Per-Share Amount	Earnings (Numerator)	Shares (Denominator)	Per-Share Amount	Earnings (Numerator)	Shares (Denominator)	Per-Share Amount
Basic earnings per share:									
Income available to common shareholders	$ 555,596	298,725	$ 1.86	$ 780,088	306,669	$ 2.54	$ 529,454	318,229	$ 1.66
Effect of dilutive securities:									
Stock options, non-vested shares and share units	—	2,548		—	2,467		—	3,006	
Diluted earnings per share:									
Income available to common shareholders including assumed conversions	$ 555,596	301,273	$ 1.84	$ 780,088	309,136	$ 2.52	$ 529,454	321,235	$ 1.65

Options to purchase 0.4 million, 4.1 million and 9.6 million shares of common stock at per share prices ranging from $52.32 to $76.49, $52.32 to $76.49 and $52.32 to $75.83, were outstanding at the end of 2021, 2020 and 2019, respectively, but were not included in the computation of diluted earnings per share because they were anti-dilutive.

(16) Share-Based Compensation and Equity

Stock Option and Equity Plans

At the end of 2021, we had two fixed stock option and equity plans in effect for associates and directors. This includes one plan from which we could issue grants, the Cerner Corporation 2011 Omnibus Equity Incentive Plan (the "Omnibus Plan"); and one plan from which no new grants are permitted, but some awards remain outstanding (Plan E).

Awards under the Omnibus Plan may consist of stock options, stock appreciation rights, restricted stock, restricted stock units, performance shares, performance units, performance grants and bonus shares. At the end of 2021, 12.5 million shares remain available for awards. Stock options granted under the Omnibus Plan are exercisable at a price not less than fair market value on the date of grant. Stock options under the Omnibus Plan typically vest over a period of 4 or 5 years and are exercisable for periods of up to 10 years.

Stock Options

The fair market value of each stock option award granted in 2020 and 2019 was estimated on the date of grant using the Black-Scholes-Merton ("BSM") pricing model. The pricing model requires the use of the following estimates and assumptions:

- Expected volatilities under the BSM model are based on an equal weighting of implied volatilities from traded options on our common shares and historical volatility.
- The expected term of stock options granted is the period of time for which an option is expected to be outstanding beginning on the grant date. Our calculation of expected term takes into account the contractual term of the option, as well as the effects of employees' historical exercise patterns; groups of associates (executives and non-executives) that have similar historical behavior are considered separately for valuation purposes.
- The risk-free rate is based on the zero-coupon U.S. Treasury bond with a term consistent with the expected term of the awards.

The weighted-average assumptions used to estimate the fair market value of stock options were as follows:

	For the Years Ended	
	2020	2019
Expected volatility (%)	24.5 %	25.0 %
Expected dividend rate (%)	1 %	1 %
Expected term (yrs)	6	7
Risk-free rate (%)	1.1 %	2.4 %

Stock option activity for 2021 was as follows:

(In thousands, except per share and term data)	Number of Shares	Weighted-Average Exercise Price (Per Share)	Aggregate Intrinsic Value	Weighted-Average Remaining Contractual Term (Yrs)
Outstanding at beginning of year	10,204	$ 58.59		
Granted	—	—		
Exercised	(5,276)	57.75		
Forfeited and expired	(258)	57.32		
Outstanding at end of year	4,670	59.61	$ 155,331	4.64
Exercisable at end of year	3,365	$ 58.85	$ 114,503	4.02

(In thousands, except for grant date fair values)	For the Years Ended		
	2021	2020	2019
Weighted-average grant date fair values	$ —	$ 16.64	$ 17.51
Total intrinsic value of options exercised	$ 110,916	$ 115,607	$ 155,202
Cash received from exercise of stock options	304,078	253,605	258,036
Tax benefit realized upon exercise of stock options	24,791	27,103	36,629

At the end of 2021, there was $14 million of total unrecognized compensation cost related to stock options granted under all plans. That cost is expected to be recognized over a weighted-average period of 1.20 years.

Non-vested Shares and Share Units

Non-vested shares and share units are valued at fair market value on the date of grant and will vest provided the recipient, if a member of the Board of Directors, has continuously served on the Board of Directors through such vesting date or, in the case of an associate, provided that service and/or performance measures are attained. The expense associated with these grants is recognized over the period from the date of grant to the vesting date.

Non-vested share and share unit activity for 2021 was as follows:

(In thousands, except per share data)	Number of Shares	Weighted-Average Grant Date Fair Value Per Share
Outstanding at beginning of year	4,131	$ 68.05
Granted	2,872	76.01
Vested	(2,681)	68.24
Forfeited	(678)	72.53
Outstanding at end of year	3,644	$ 73.35

(In thousands, except for grant date fair values)	For the Years Ended 2021	2020	2019
Weighted average grant date fair values for shares granted during the year	$ 76.01	$ 70.12	$ 66.49
Total fair value of shares vested during the year	$ 202,543	$ 70,355	$ 30,558

At the end of 2021, there was $195 million of total unrecognized compensation cost related to non-vested share and share unit awards granted under all plans. That cost is expected to be recognized over a weighted-average period of 1.99 years.

Associate Stock Purchase Plan

We maintain an associate stock purchase plan ("ASPP"), which qualifies under Section 423 of the Internal Revenue Code. Generally, the ASPP provides our U.S. based associates the opportunity to purchase shares of our common stock at a 15% discount. Purchases of shares are made on the open market and subsequently reissued to participants of the ASPP. The difference between the open market purchase price and the cost to the participants is recognized as compensation expense, as such difference is paid by Cerner, in cash.

Share-Based Compensation Cost

Our stock option and non-vested share and share unit awards qualify for equity classification. The costs of our ASPP, along with participant contributions, are recorded as a liability until open market purchases are completed. The amounts recognized in the consolidated statements of operations with respect to stock options, non-vested shares and share units and ASPP are as follows:

(In thousands)	For the Years Ended 2021	2020	2019
Stock option and non-vested share and share unit compensation expense	$ 195,654	$ 153,449	$ 103,641
Associate stock purchase plan expense	5,786	5,478	6,053
Amounts capitalized in software development costs, net of amortization	(4,199)	(4,867)	(410)
Amounts charged against earnings, before income tax benefit	$ 197,241	$ 154,060	$ 109,284
Amount of related income tax benefit recognized in earnings	$ 38,623	$ 30,775	$ 20,967

Preferred Stock

At the end of 2021 and 2020, we had 1.0 million shares of authorized but unissued preferred stock, $0.01 par value.

Treasury Stock

Under one of our share repurchase programs, which was initially approved by our Board of Directors on May 23, 2017, and most recently amended on December 12, 2019 (the "2017 Share Repurchase Program"), the Company was authorized to repurchase up to $3.70 billion of shares of our common stock, excluding transaction costs. The repurchases were to be effectuated in the open market, by block purchase, in privately negotiated transactions, or through other transactions managed by broker-dealers, or any combination thereof. This program was completed in the third quarter of 2021.

On April 23, 2021, our Board of Directors approved a new share repurchase program (the "2021 Share Repurchase Program"), which authorizes the Company to repurchase up to $3.75 billion in the aggregate of shares of our common stock, excluding transaction costs. The 2021 Share Repurchase Program was incremental to our 2017 Share Repurchase Program. The repurchases are to be effectuated in the open market, by block purchase, in privately negotiated transactions, or through other transactions managed by broker-dealers, or any combination thereof. The 2021 Share Repurchase Program will expire on December 31, 2023.

During 2021, 2020, and 2019, we repurchased 20.0 million, 10.6 million, and 18.8 million shares for total consideration of $1.50 billion, $757 million, and $1.30 billion, respectively, under our share repurchase programs. The shares were recorded as treasury stock and accounted for under the cost method. No repurchased shares have been retired. As of December 31, 2021, $3.18 billion remains available for repurchase under the 2021 Share Repurchase Program.

Dividends

Cash dividend activity in 2021, 2020, and 2019 was as follows:

Date Declared	Date of Record	Payment Date	Amount per Share
May 29, 2019	June 18, 2019	July 26, 2019	$0.18
September 10, 2019	September 25, 2019	October 9, 2019	$0.18
December 12, 2019	December 27, 2019	January 9, 2020	$0.18
March 19, 2020	April 3, 2020	April 17, 2020	$0.18
May 21, 2020	June 5, 2020	July 17, 2020	$0.18
September 10, 2020	September 25, 2020	October 13, 2020	$0.18
December 10, 2020	December 28, 2020	January 12, 2021	$0.22
March 25, 2021	April 6, 2021	April 20, 2021	$0.22
May 19, 2021	June 28, 2021	July 13, 2021	$0.22
September 9, 2021	September 27, 2021	October 12, 2021	$0.22
December 9, 2021	December 27, 2021	January 11, 2022	$0.27

In connection with the declaration of such dividends, our non-vested shares and share units are entitled to dividend equivalents, which will be payable to the holder subject to, and upon vesting of, the underlying awards. Our outstanding stock options are not entitled to dividend or dividend equivalents. At December 31, 2021 and December 31, 2020, our consolidated balance sheets included liabilities for dividends payable of $81 million and $69 million, respectively, which are included in "Other current liabilities".

Accumulated Other Comprehensive Loss, Net (AOCI)

The components of AOCI, net of tax, were as follows:

(In thousands)	Foreign currency translation adjustment and other	Unrealized loss on cash flow hedge	Unrealized holding gain (loss) on available-for-sale investments	Total
Balance at December 29, 2018	$ (102,939)	$ —	$ (613)	$ (103,552)
Other comprehensive income (loss) before reclassifications	(3,408)	(13,078)	901	(15,585)
Amounts reclassified from AOCI	—	500	(23)	477
Balance at December 28, 2019	(106,347)	(12,578)	265	(118,660)
Other comprehensive income (loss) before reclassifications	12,897	(23,687)	194	(10,596)
Amounts reclassified from AOCI	—	8,477	(25)	8,452
Balance at December 31, 2020	(93,450)	(27,788)	434	(120,804)
Other comprehensive income (loss) before reclassifications	(21,180)	4,241	(440)	(17,379)
Amounts reclassified from AOCI	—	10,586	39	10,625
Balance at December 31, 2021	$ (114,630)	$ (12,961)	$ 33	$ (127,558)

The effects on net earnings of amounts reclassified from AOCI were as follows:

(In thousands)		Years Ended		
AOCI Component	**Location**	**2021**	**2020**	**2019**
Unrealized loss on cash flow hedge	Other income, net	$ (13,150)	$ (10,622)	$ (624)
	Income taxes	2,564	2,145	124
	Net of tax	(10,586)	(8,477)	(500)
Unrealized holding gain (loss) on available-for-sale investments	Other income, net	(48)	31	29
	Income taxes	9	(6)	(6)
	Net of tax	(39)	25	23
Total amount reclassified, net of tax		$ (10,625)	$ (8,452)	$ (477)

(17) Defined Contribution Retirement Plans

We maintain certain defined contribution retirement plans (the "Plans"), which qualify under Section 401(k) of the Internal Revenue Code. Generally, the Plans allow our U.S. associates to make salary contributions to the Plans, subject to annual limitations determined by the Internal Revenue Service. The Plans provide for certain discretionary matches on behalf of the participants for which we recognized expenses of $38 million, $61 million and $59 million in 2021, 2020 and 2019, respectively.

(18) Purchase Obligations

We have purchase commitments with various vendors, under agreements through 2030. Aggregate future payments under these commitments are as follows:

(In thousands)	Purchase Obligations
2022	$ 54,308
2023	54,308
2024	40,933
2025	45,819
2026	52,054
2027 and thereafter	368,882
	$ 616,304

(19) Contingencies

We accrue estimates for resolution of any legal and other contingencies when losses are probable and reasonably estimable in accordance with ASC 450, *Contingencies* ("ASC 450"). No less than quarterly, and as facts and circumstances change, we review the status of each significant matter underlying a legal proceeding or claim and assess our potential financial exposure. We accrue a liability for an estimated loss if the potential loss from any legal proceeding or claim is considered probable and the amount can be reasonably estimated. Significant judgment is required in both the determination of probability and the determination as to whether the amount of an exposure is reasonably estimable, and accruals are based only on the information available to our management at the time the judgment is made, which may prove to be incomplete or inaccurate or unanticipated events and circumstances may occur that might cause us to change those estimates and assumptions. Furthermore, the outcome of legal proceedings is inherently uncertain, and we may incur substantial defense costs and expenses defending any of these matters. Should any one or a combination of more than one of these proceedings be successful, or should we determine to settle any one or a combination of these matters, we may be required to pay substantial sums, become subject to the entry of an injunction or be forced to change the manner in which we operate our business, which could have a material adverse impact on our business, results of operations, cash flows or financial condition.
On May 16, 2019, Steward Health Care System LLC ("Steward") filed a lawsuit in the Chancery Court for Davidson County, Tennessee against the Company. The Company believes Steward's allegations arise out of Steward's disinterest in following the contract between the Company and Steward's predecessor for clinical and financial software and services after Steward closed on its acquisition of the predecessor. The Company has filed a counterclaim against Steward seeking recovery of more than $42 million in unpaid invoices owed to the Company. The Company believes the dispute is in the ordinary course of business and the damages Steward asserts lack both factual and causal support. Steward has recently asserted that its damages are $300 million and advised the Company that it will seek to treble the damages. We have not concluded that a material loss related to the Steward allegations is probable, nor have we accrued a liability related to these claims. Although we believe a loss could be reasonably possible (as defined in ASC 450), we do not have sufficient information to determine the amount or range of reasonably possible loss with respect to the potential damages given that the dispute is in the discovery process. We will continue to vigorously defend against these claims, and we continue to believe that we have valid grounds for recovery of the disputed client receivables. However, there can be no assurances as to the outcome of the dispute.

On March 22, 2021, Astria Health ("Astria") filed an adversary proceeding in the United States Bankruptcy Court, Eastern District of Washington against the Company. Astria's allegations largely arise out of the Company's provision of revenue cycle services in 2018 and 2019. The Company believes the dispute is in the ordinary course of business and the factual allegations and the damages asserted lack both factual and causal support. Astria has recently claimed damages of $96 million. We have not concluded that a material loss related to the Astria allegations is probable, nor have we accrued a liability related to these claims beyond reserving certain bankruptcy-related outstanding invoices. Although we believe a loss could be reasonably possible (as defined in ASC 450), we do not have sufficient information to determine the amount or range of reasonably possible loss with respect to the potential damages given that expert discovery is not yet complete. We will continue to vigorously defend against this claim. However, there can be no assurances as to the outcome of the dispute.

The terms of our agreements with our clients generally provide for limited indemnification of such clients against losses, expenses and liabilities arising from third party or other claims based on, among other things, alleged infringement by our solutions of an intellectual property right of third parties or damages caused by data privacy breaches or system interruptions. The terms of such indemnification often limit the scope of and remedies for such indemnification obligations and generally include, as applicable, a right to replace or modify an infringing solution. For several reasons, including the lack of a sufficient number of prior indemnification claims relating to intellectual property infringement, data privacy breaches or system interruptions, the inherent uncertainty stemming from such claims, and the lack of a monetary liability limit for such claims under the terms of the corresponding agreements with our clients, we cannot determine the maximum amount of potential future payments, if any, related to such indemnification provisions.

In addition to commitments and obligations in the ordinary course of business, we are involved in various other legal proceedings and claims that arise in the ordinary course of business, including for example, employment and client disputes and litigation alleging solution and implementation defects, personal injury, intellectual property infringement, violations of law, breaches of contract and warranties, and compliance audits by various government agencies. Many of these proceedings are at preliminary stages and many seek an indeterminate amount of damages. At this time, we do not believe the range of potential losses under any claims to be material to our consolidated financial statements.

(20) Segment Reporting

We have two operating segments, Domestic and International. Revenues are derived primarily from the sale of clinical, financial and administrative information solutions and services. The cost of revenues includes the cost of third-party consulting services, computer hardware, devices and sublicensed software purchased from manufacturers for delivery to clients. It also includes the cost of hardware maintenance and sublicensed software support subcontracted to the manufacturers. Operating expenses incurred by the geographic business segments consist of sales and client service expenses including salaries of sales and client service personnel, expenses associated with our managed services business, marketing expenses, communications expenses and unreimbursed travel expenses. "Other" includes expenses that have not been allocated to the operating segments, such as software development, general and administrative expenses, certain organizational restructuring and other expense, share-based compensation expense, and certain amortization and depreciation. "Other" also includes gains or losses recognized on the divestiture of businesses. Performance of the segments is assessed at the operating earnings level by our chief operating decision maker, who is our Chief Executive Officer. Items such as interest, income taxes, capital expenditures and total assets are managed at the consolidated level and thus are not included in our operating segment disclosures. Accounting policies for each of the reportable segments are the same as those used on a consolidated basis.

The following table presents a summary of our operating segments and other expense for 2021, 2020 and 2019:

(In thousands)	Domestic	International	Other	Total
2021				
Revenues	$ 5,044,629	$ 720,195	$ —	$ 5,764,824
Costs of revenue	887,343	113,674	—	1,001,017
Operating expenses	2,358,897	277,308	1,419,326	4,055,531
Total costs and expenses	3,246,240	390,982	1,419,326	5,056,548
Operating earnings (loss)	$ 1,798,389	$ 329,213	$(1,419,326)	$ 708,276

(In thousands)	Domestic	International	Other	Total
2020				
Revenues	$ 4,879,769	$ 626,019	$ —	$ 5,505,788
Costs of revenue	854,574	78,367	—	932,941
Operating expenses	2,339,624	242,991	1,296,188	3,878,803
Total costs and expenses	3,194,198	321,358	1,296,188	4,811,744
Gain on sale of businesses	—	—	220,523	220,523
Operating earnings (loss)	$ 1,685,571	$ 304,661	$(1,075,665)	$ 914,567

(In thousands)	Domestic	International	Other	Total
2019				
Revenues	$ 5,038,127	$ 654,471	$ —	$ 5,692,598
Costs of revenue	967,035	104,006	—	1,071,041
Operating expenses	2,398,422	276,914	1,345,552	4,020,888
Total costs and expenses	3,365,457	380,920	1,345,552	5,091,929
Operating earnings (loss)	$ 1,672,670	$ 273,551	$(1,345,552)	$ 600,669

Cerner Corporation
World Headquarters
2800 Rockcreek Parkway
Kansas City, MO 64117
816.201.1024

June 10, 2019

VIA EMAIL (mtplatt@comcast.com)

Dear Tracy:

On behalf of Cerner Corporation, I am pleased to offer you the position of Executive Vice President and Chief Human Resources Officer. In this position, you will report directly to Cerner's Chief Executive Officer.

The starting salary we are offering is $475,000 per year. You will also receive a one-time cash bonus of $250,000, contingent upon your acceptance of this offer. This bonus will be paid to you after your employment commences.

Your position at Cerner is a professional, exempt position that requires a significant level of responsibility, discretion, independent judgment or the performance of other exempt duties. As a result, it carries no additional compensation for overtime worked.

As Executive Vice President and Chief Human Resources Officer, you will be eligible to participate in the Cerner Performance Plan (CPP). CPP provides additional, performance-based, compensation opportunities tied to the attainment of group and/or individual performance goals. The amount of CPP compensation available is based on the associate's responsibility level and the associate's and/or Cerner's overall performance for the year. Your annual Target Bonus Level will be $400,000. You will be eligible to participate in the plan effective the first full quarter following your start date or as determined by your Plan Document, as applicable.

Equity

You will receive a grant (part of your annual compensation package) of time-based restricted stock units (RSUs) with a grant date value of $1,000,000 upon commencement of employment with Cerner. These RSUs will vest evenly at 33.33% per year over three years. You will also receive a one-time hire grant of RSUs with a grant date value of $1,200,000 to replace the potential equity value you might have earned if you remained with your current employer. These RSUs will also vest evenly at 33.33% per year over three years. A more detailed description of the terms related to the restricted stock grants will be provided in a separate document, which will be provided to you as soon as practicable after the grant date.

Assuming you continue to successfully fulfill your role, you will be considered for additional equity grants on an annual basis to the same extent as other senior executives. These grants will be based on your individual and organization's performance as well as Cerner's overall performance.

Relocation

Cerner will provide relocation assistance for your upcoming move to Kansas City in accordance with Cerner's Platinum Relocation Guideline. Details about the Relocation Guideline will be provided to you under separate cover.

Associate Benefits

Cerner offers a comprehensive set of benefits to address your physical, financial, and emotional health. At Cerner, we believe the foundation for a successful career starts with a variety of options that meet your needs while supporting a healthy lifestyle. Please access the benefits brochure for additional details.

Cerner associates holding positions at your level within the organization do not accrue personal time off and instead are encouraged to take time off on an as-needed basis while meeting business responsibilities.

Authorization to Work

Under the Immigration Reform and Control Act of 1986 and regulations of the United States Citizenship and Immigration Services, Cerner is required to verify that each new associate is authorized to be employed in the United States. You will be asked to complete Form I-9 to verify your identity and employment eligibility. You must fully comply with all I-9 requirements and present the required documentation within three (3) business days from the date that employment begins in order to continue employment with Cerner. Failure to comply with these regulations will result in termination of your employment. Continued employment at Cerner is contingent upon obtaining, transferring, and/or maintaining valid U.S. work authorization. We will be happy to further explain the documentation requirements for compliance with these regulations.

Please note that Cerner participates in E-Verify and will provide the Social Security Administration (SSA) and, if necessary, the Department of Homeland Security (DHS), with information from each new associate's Form I-9 to confirm work authorization.

Employment Agreement and Mutual Arbitration Agreement

Cerner has established significant momentum in the development of client relationships, professional staff, systems development methodology, and proprietary software solutions. We regard these areas as the most important assets owned by Cerner. It is our intent to guard these assets closely. Therefore, every associate of Cerner is required to execute an Employment Agreement on or before the first day of employment. This Agreement includes the terms of your employment relationship with Cerner, including without limitation, a covenant not to disclose confidential client and internal information, a covenant not to compete against Cerner in certain markets, a covenant not to solicit our associates, and establishes that, during the term of your employment, the benefits of your endeavors accrue to Cerner. Every Cerner associate is also required to execute a Mutual Arbitration Agreement on or before the first day of employment. Sample copies of the Employment Agreement and the Mutual Arbitration Agreement are attached with this letter for your review.

Executive Severance Agreement

You will also receive the benefit of our Executive Severance Agreement, which provides certain benefits in the event of your termination without cause or constructive discharge. A sample copy of such Executive Severance Agreement is attached.

Work Environment

Cerner is committed to providing a safe work environment and promoting the health and well-being of our associates. Cerner desires to provide a drug-free and tobacco-free workplace, and it is our policy to prohibit the use of all forms of drugs and tobacco products on any Cerner-owned or leased property (“Cerner Property”). Therefore, all associates are required to pass a post-offer drug screen and may be subject to periodic random screening, reasonable suspicion screening and/or post-incident screening.

Offer of Employment

The purpose of this Offer Letter is to put in writing the specifics of our offer of employment. This offer is contingent upon:

- Execution of a Cerner Mutual Arbitration Agreement
- Execution of a Cerner Employment Agreement
- Receipt of a satisfactory outcome of a background check and drug screen

Positive screening results, refusal to be screened or to take the screening within the designated timeframe, or any attempt to affect the screening results or screening sample will result in withdrawal of this provisional offer of employment or termination of employment, depending on when the results are received.

Your Decision

We are excited for you to join the Cerner team. I look forward to hearing from you regarding your decision by June 12, 2019 at which time your offer will expire. If you need more time to consider your options, simply let me know. Once you have accepted, please sign this Offer Letter below and return to my attention.

Start Date

We understand and respect your need and desire to provide appropriate notice to your current employer. Nevertheless, it is our desire that, should you accept this offer, that you are able to start your employment with Cerner as soon as possible. Given some scheduled senior executive meetings that we would like you to attend, our strong preference is that you will be able to commence employment on July 15, if not earlier. Of course, we will be flexible in providing freedom and time off even after your start date for you to move and get settled.

Sincerely,

/s/ *Randy D. Sims*

Randy D. Sims
Executive Vice President & Chief Legal Officer

Acceptance

By acknowledging this Offer Letter and reviewing the sample Mutual Arbitration Agreement, Employment Agreement and Executive Severance Agreement, you agree to and accept the terms and conditions of employment with Cerner Corporation. You will receive an official copy of the Mutual Arbitration Agreement, Employment Agreement and Executive Severance Agreement with your new hire paperwork, which must be signed on or before your first day with Cerner.

By: /s/ Tracy Platt   Date: 6-12-19
Tracy Platt

Cerner Corporation
World Headquarters
2800 Rockcreek Parkway
Kansas City, MO 64117
816.201.1024

January 11, 2021

Travis Dalton
Cerner Corporation
2800 Rockcreek Parkway
North Kansas City, MO 64117

Dear Travis:

On behalf of Cerner Corporation, I am pleased to offer you the position of Executive Vice President and Chief Client and Services Officer. In this position, you will report directly to Cerner's Chief Executive Officer.

Your base salary will be increased to $550,000 per year, effective January 15, 2021.

Your position at Cerner is a professional, exempt position that requires a significant level of responsibility, discretion, independent judgment or the performance of other exempt duties. As a result, it carries no additional compensation for overtime worked.

As Executive Vice President and Chief Client and Services Officer, you will be eligible to participate in the Cerner Corporation 2018 Performance Compensation Plan, as amended ("CPP"). CPP provides additional, performance-based, compensation opportunities tied to the attainment of group and/or individual performance goals. The amount of CPP compensation available is based on an associate's responsibility level and an associate's and/or Cerner's overall performance for the year. The specifics of your plan and metrics will be defined and approved by the Compensation Committee ("Committee") of the Cerner Board of Directors annually. Your annual Target Bonus Level for the 2021 plan year will be $600,000.

Equity

During the 2021 annual equity award cycle, you will receive an equity grant with an aggregate grant date value of $2,850,000. This grant will be made 50% as time-based restricted stock units ("RSUs") that will vest ratably over three years and 50% as performance-based restricted stock units ("PSUs") which vest 100% after three years, subject to achieving performance metrics that will be approved by the Committee prior to the grant date. The Committee has not yet set the grant date for annual equity awards, but it is anticipated to be on or around May 3, 2021.

In recognition of your promotion, you will also be granted RSUs with an aggregate grant date value of $500,000. These RSUs will be granted on February 12, 2021, following the current blackout period and will vest evenly at 50% per year over 2 years.

All awards are subject to and governed by the terms and conditions outlined in their respective award agreements which will be provided to you as soon as practicable after the grant date.

Assuming you continue to successfully fulfill your role, you will be considered for additional equity grants on an annual basis to the same extent as other senior executives. These grants will be based on your individual and organization's performance, as well as Cerner's overall performance.

Associate Benefits

You will continue to participate in Cerner's comprehensive set of benefits designed to address your physical, financial, and emotional health. At Cerner, we believe the foundation for a successful career starts with a variety of options that meet your needs while supporting a healthy lifestyle.

Cerner associates holding positions at your level within the organization do not accrue personal time off and instead are encouraged to take time off on an as-needed basis while meeting business responsibilities.

Employment Agreement, Executive Severance Agreement and Mutual Arbitration Agreement

Your Employment Agreement dated August 6, 2001, as amended by your Executive Severance Agreement dated December 14, 2017 ("ESA"), as amended (discussed below), and Mutual Arbitration Agreement with Cerner dated November 23, 2015 govern the terms of your employment relationship with Cerner and remain in full force and effect.

Executive Severance Agreement Amendment

Your ESA provides you with the right to receive severance benefits in the event of your termination without cause or constructive discharge. As you know, your ESA currently provides for accelerated vesting of 50% of any outstanding and unvested equity upon a change in control. The remaining 50% of any unvested equity would become fully vested upon the effective date of a termination or resignation for good reason.

The Committee directed management to implement only double-trigger vesting acceleration upon a change in control for all equity awards granted after January 1, 2021. In consideration for equity described herein to be granted to you, an amendment to your ESA is enclosed for your execution. The enclosed letter agreement will update your ESA to avoid any potential conflict between your ESA and the Committee's directive with respect to equity awards granted after January 1, 2021.

Your ESA will further be amended to align with all other EVPs by providing a two year severance benefit in lieu of the 18 months in your current agreement. The reporting structure triggers under the definitions of Constructive Termination and Good Reason will also be amended to reflect that you will be reporting to the CEO.

Start Date

Should you accept this offer, your new role, title and base salary will become effective on January 15, 2021.

Sincerely,

/s/ Tracy L. Platt

Tracy Platt
Executive Vice President & Chief Human Resources Officer

Acceptance

By signing this Offer Letter and amendment to your current Executive Severance Agreement, you agree to and accept the terms and conditions of employment with Cerner Corporation as outlined in this Offer Letter.

By: /s/ Travis Dalton

Travis Dalton

1.13.21

Date

Exhibit 10.47

CERNER CORPORATION
2001 ASSOCIATE STOCK PURCHASE PLAN
(AMENDED AND RESTATED JANUARY 1, 2022)

SECTION 1. PURPOSE OF PLAN

The Cerner Corporation 2001 Associate Stock Purchase Plan (the “Plan”) is designed to encourage and assist associates of Cerner Corporation (“Cerner”) and Cerner's U.S. based subsidiaries (collectively with Cerner, the "Company"), to acquire an equity interest in Cerner through the purchase of shares of Cerner common stock, par value $.01 per share (“Common Stock”). This Plan is intended to constitute an “employee stock purchase plan” within the meaning of Section 423 of the Internal Revenue Code (the “Code”).

SECTION 2. ADMINISTRATION OF THE PLAN

The Plan shall be administered by Cerner’s Board of Directors (the “Board”) or by a committee of the Board (the “Committee”) appointed by the Board and serving at its pleasure (the Board or any such Committee being herein referred to as the “Administrator”). Until such time as the Board shall determine otherwise, the Compensation Committee of the Board shall serve as Administrator. The Administrator shall have full power and authority, not inconsistent with the express provisions of the Plan, to administer and interpret the Plan, including the authority to:

(i) grant options and authorize the issuance of shares;

(ii) make and amend all rules, regulations, guidelines, procedures and policies for administering the Plan;

(iii) decide all questions and settle all disputes that may arise in connection with the Plan;

(iv) appoint persons and entities to act as designated representatives on the Administrator’s behalf in administering the Plan pursuant to its provisions (in which case the term “Administrator” as used herein shall include such persons or entities to the extent of such appointment);

(v) establish accounts with a person or entity appointed pursuant to (iv) above (“Custodian”) to hold Common Stock purchased under the Plan (“Stock Account”);

(vi) cause Cerner to enter into a written agreement with the Custodian setting forth the terms and conditions upon which Stock Accounts shall be governed (“Custodial Agreement”); and

(vii) require Participants to hold shares of Common Stock under the Plan in Stock Accounts (in which case each Participant’s decision to participate in the Plan shall constitute the appointment of such Custodian as custodial agent for the purpose of holding such shares) until such time as shall be specified in the Custodial Agreement.

All interpretations, decisions and determinations made by the Administrator shall be binding on all persons concerned.

SECTION 3. NATURE AND NUMBER OF SHARES

The Common Stock subject to issuance under the terms of the Plan shall be authorized but unissued shares or previously issued shares reacquired and held by Cerner. The aggregate number of shares that may be issued under the Plan shall not exceed 16,000,000 shares (which takes into account Cerner's two 2-for-1 stock splits in 2011 and 2013) of Common Stock. The number of shares of Common Stock which a Participant may purchase in an offering under the Plan may be reduced if the offering is over-subscribed. No Option granted under the Plan shall permit a Participant to purchase shares of Common Stock which, if added together with the total number of shares of Common Stock purchased by all other Participants in such offering would exceed the total number of shares of Common Stock remaining available under the Plan. If the Committee determines that, on a particular Purchase Date, the number of shares of Common Stock with respect to which Options are to be exercised exceeds the number of shares of Common Stock then available under the Plan, the Participants shall receive a pro rata allocation of the shares of Common Stock remaining available for purchase in as uniform a manner as possible and as the Committee determines to be equitable.

In the event of any reorganization, recapitalization, stock split, reverse stock split, stock dividend, combination of shares, exchange of shares, merger, consolidation, offering of rights or other similar change in the capital structure of Cerner, the Board or the Committee may make such adjustment, if any, as it deems appropriate in the number, kind and purchase price of the shares available for purchase under the Plan and in the maximum number of shares which may be issued under the Plan.

SECTION 4. ELIGIBILITY

Each individual employed the Company, including associates employed by its U.S. based subsidiaries (“Associate”), except as provided below, shall be eligible to participate in the Plan. The following individuals shall be excluded from participation:

(a) Persons who, as of the date of grant of an Option, have been continuously employed by Cerner for less than two (2) weeks;

(b) Persons who, immediately upon the grant of an Option, own directly or indirectly, or hold options or rights to acquire under any agreement or Company plan, an aggregate of five percent (5%) or more of the total combined voting power or value of all outstanding shares of all classes of Common Stock; and

(c) Persons who are customarily employed by the Company for less than twenty (20) hours per week or for not more than five (5) months in any calendar year.

SECTION 5. ENROLLMENT AND WITHDRAWAL

Each eligible Associate may enroll or re-enroll in the Plan as of the first day of any Option Period (as hereinafter defined) after the Associate first becomes eligible to participate. To enroll, an Associate must properly complete an enrollment form (including a payroll deduction authorization) in a form and manner acceptable to the Administrator and submit it to the Company, or use such other means to enroll as is authorized by the Administrator, within the time period before the commencement of such Option Period as the Administrator may prescribe. Participation in the Plan is voluntary. A “Participant” shall be an Associate enrolled in the Plan.

A Participant will automatically be enrolled in all future Option Periods unless the Participant withdraws from the Plan. If a Participant withdraws from the Plan, he or she will cease to be a Participant and may only participate in future Option Periods if he or she re-enrolls in the Plan. Any Participant may withdraw from the Plan by notifying the Company in writing, via electronic designation on the third-party administrator's website, or any other manner permitted by the Administrator during the Option Period provided that such notification is at least three (3) business days prior to the Purchase Date (as defined below). Upon such a withdrawal, the entire amount contributed to the Plan by the Participant (and not yet used to purchase Common Stock) will be refunded without interest as soon as administratively practicable. In the event that a Participant notifies the Company within the three (3) day period prior to the Purchase Date, the Participant will be withdrawn from participating in the next following Option Period. The Participant's election to withdraw from an Option Period will not have any effect upon his or her eligibility to participate in succeeding Option Periods that commence following the completion of the Option Period from which the Participant withdraws.

SECTION 6. <u>GRANT OF OPTIONS</u>

Unless changed by the Board or the Committee, the Plan will be implemented by four (4) annual offerings of the Company’s Common Stock each calendar year (the “Option Periods”). In each year that the Plan is in effect, the first Option Period will begin on January 1 and end on March 31, the second Option Period will begin on April 1 and end on June 30, the third Option Period will begin on July 1 and end on September 30, and the fourth Option Period will begin on October 1 and end on December 31.

Each person who is a Participant on the first day of an Option Period (the “Grant Date”) will as of such day be granted an option for the Option Period (the “Option”). Such Option will be for the purchase of a maximum number of shares of Common Stock to be determined by dividing (i) the balance credited to the Participant’s Payment Account (as defined in Section 7(b)) during such Option Period by means of payroll deduction (or such other means deemed acceptable by the Administrator) as of the Purchase Date (as determined under Section 8 below), by (ii) the purchase price per share of the Common Stock as determined under Section 8.

In no event shall a Participant be entitled to purchase, for any Option Period, more than the lesser of (i) the number of shares obtained by dividing $25,000 by the fair market value of a share of Common Stock on the Grant Date for such Option Period, or (ii) the maximum number of shares permitted to be purchased under Section 7(c) below.

The Administrator will reduce, on a substantially proportionate basis, the number of shares of Common Stock receivable by each Participant upon exercise of his or her Option for an Option Period in the event that the number of shares then available under the Plan is otherwise insufficient, and will return to Participant without interest any remaining unused balance in the Participant’s Payment Account as soon as administratively practicable.

SECTION 7. <u>METHOD OF PAYMENT</u>

(a) <u>Form of Payment</u>. Payment for shares shall be made in installments through after-tax payroll deductions during the Option Period, with such deductions taken from pay periods paid during the Option Period, or in such other form of payment deemed acceptable by the Administrator.

Subject to the limits below and in Section 8, each Participant may elect through payroll withholding during the Option Period (or such other means deemed acceptable by the Company) to have credited to his or her Payment Account an amount not less than one percent (1%) and not greater than twenty percent (20%) of Compensation (as defined below); provided that the Administrator from time to time before an enrollment date may establish limits other than those herein described for all purchases to occur during the relevant Option Period.

For purposes of the Plan, “Compensation” shall mean all compensation paid to the Participant by the Company and currently includible in his or her income, including variable compensation (such as commissions, bonuses or other short-term incentive payments), overtime, and other amounts includible in the general definition of compensation provided in Treasury Regulation §1.415(c)-2(a), plus any amount that would be so included but for the fact that it was contributed to (a) a qualified plan pursuant to an elective deferral under Section 401(k) of the Code, (b) a nonqualified deferred compensation plan, and/or (c) a cafeteria plan on a before-tax basis pursuant to an election under Section 125 of the Code, but not including (i) payments under stock option plans (including any amount of income recognized upon the exercise of a stock option) and other employee benefit plans or other amounts excluded from the definition of compensation provided in the Treasury Regulations under Section 415 of the Code, and (ii) reimbursements or other expense allowances, fringe benefits (cash and noncash), moving expenses, payments of benefits under nonqualified deferred compensation plans, and welfare benefits.

A Participant may decrease the rate of withholding on a prospective basis effective as to future pay periods within an Option Period by giving written or electronic notice (in a form acceptable to the Administrator) to the Company not less than two (2) weeks prior to the desired effective date of such decrease. During the applicable enrollment period before an upcoming Option Period, a Participant may increase the rate of withholding by giving written or electronic notice (in a form acceptable to the Administrator) to the Company during such enrollment period; provided, however, that such an increase in withholding shall be effective for the upcoming future Option Period(s) only.

(b) Accounts. A "Payment Account" means the book entry account maintained by the Company or Administrator to record the amount of a Participant's payments made pursuant to Section 7(a) and any cash amount carried forward from an Option Period to the Grant Date for the next Option Period pursuant to Section 9. All payments by each Participant shall be credited to such Participant's Payment Account pending the purchase of Common Stock in accordance with the provisions of the Plan. All such amounts in the Payment Account shall be assets of the Company and may be used by the Company for any corporate purpose. No interest will be paid on amounts credited to a Participant's Payment Account.

(c) Limits on Purchase. In no event shall the rights of any Participant to purchase shares (under this Plan and under any other stock purchase plans of Cerner which are intended to qualify under Section 423 of the Code) accrue at a rate that exceeds $25,000 per calendar year as measured by the fair market value of such shares (determined in the case of each such share as of the Grant Date of the related Option). For purposes of administering this accrual limitation, the Administrator shall limit purchases under the Plan as follows:

(i) The number of shares which may be purchasable by a Participant during his or her first Option Period during a calendar year may not exceed a number of shares determined by dividing $25,000 by the Fair Market Value of a Share on the Grant Date for that Option Period.

(ii) The number of shares which may be purchasable by a Participant during any subsequent Option Period during the same calendar year (if any) shall not exceed the number of Shares determined by performing the calculation below:

(A) First, for each previous Option Period during the same calendar year, the number of Shares purchased by the Participant during such previous Option Period shall be multiplied by the Fair Market Value of a Share on the respective Grant Date for such same previous Option Period.

(B) Second, the sum of all amounts calculated under (A) above (for all Option Periods) shall be calculated.

(C) Third, the amount determined under (B) above shall be subtracted from $25,000.

(D) Fourth, the amount determined under (C) above shall be divided by the Fair Market Value of a Share on the Grant Date for such subsequent Option Period (for which the maximum number of Shares purchasable is being determined by this calculation) occurs. The quotient thus obtained shall be the maximum number of Shares which may be purchased by any Participant for such subsequent Option Period.

SECTION 8. <u>PURCHASE PRICE</u>

The purchase price of Common Stock issued pursuant to the exercise of an Option shall be eighty-five (85%) of the fair market value of Common Stock on the last trading day of the Option Period (the “Purchase Date”).

Fair market value shall mean the closing price of Common Stock as reported on the Nasdaq or other national securities exchange on which the Common Stock is then principally traded or, if that measure of price is not available, on a composite index of such exchanges or, if that measure of price is not available, in a national market system for securities. In the event that there are no sales of Common Stock on any such exchange or market on the Purchase Date, the fair market value of the Common Stock shall be deemed to be the closing sales price on the next preceding day on which Common Stock is sold on any such exchange or market. In the event that the Common Stock is not listed on any such market or exchange on the Purchase Date, a reasonable valuation of the fair market value of the Common Stock on such dates shall be made by the Administrator.

SECTION 9. <u>AUTOMATIC EXERCISE OF OPTIONS; STOCK TRANSFER RESTRICTIONS</u>

If an Associate is a Participant in the Plan on a Purchase Date, he or she will be deemed to have exercised the Option granted to him or her for the period ending on that Purchase Date. Upon such exercise, Cerner will apply the balance of the Participant’s Payment Account to the purchase of the number of whole shares of Common Stock determined under Section 6 and, as soon as practicable thereafter, will issue and deliver said whole shares to the Participant (unless Stock Accounts are established by the Administrator pursuant to Section 2 of the Plan). Any cash remaining in the Participant’s Payment Account shall either be carried forward to the next Grant Date (without interest) and become a part of the Payment Account for the Option Period to which such next Grant Date applies, or, upon written request of the Participant to the Administrator, be paid to Participant without interest (unless Stock Accounts are established by the Administrator pursuant to Section 2 of the Plan).

Notwithstanding anything herein to the contrary, Cerner’s obligation to issue and deliver whole shares of Common Stock under the Plan will be subject to the approval required by any governmental authority in connection with the authorization, issuance, sale or transfer of said shares, to any requirements of any national securities exchange applicable thereto, and to compliance by Cerner with other applicable legal requirements in effect from time to time.

This Plan is intended to satisfy the requirements of Section 423 of the Code. A Participant will not obtain the benefits of this provision of the Code if such Participant disposes of shares of Common Stock acquired pursuant to the Plan within two (2) years from the Grant Date or within one (1) year from the date such Common Stock is purchased by the Participant, whichever is later.

Additionally, any shares of Common Stock issued under the Plan may not be transferred or assigned (unless such transfer is for consideration (e.g., a sale of the shares)) until the earlier of (i) the first anniversary of the date the shares of Common Stock are issued to the Participant or (ii) the date the Participant's employment with the Company and any participating subsidiary thereof ends. Certificates representing, or electronic book entries on a direct representation system recording ownership of, such shares of Common Stock issued under this Plan during such one (1) year period may bear a legend or other electronic notation reflecting such transfer restriction. Any shares of Common Stock issued under the Plan may be freely sold by the Participant at any time following receipt of the shares.

SECTION 10. TERMINATION OF EMPLOYMENT

Subject to Section 11, upon the termination of a Participant's employment with the Company for any reason, the Participant's Payment Account balance shall be frozen to future accruals and the Participant shall be withdrawn from Plan participation and cease to be a Participant. Unless there are three (3) or fewer business days between the Participant's termination of employment and the Purchase Date, in which case it may not be administratively practicable to stop a pending purchase, upon the cessation of participation, all amounts then credited to the Participant's Payment Account will be refunded to the Participant and no shares will be purchased on the next upcoming Purchase Date. In the case of death of the Participant, the Participant's Payment Account shall be refunded in accordance with Section 11, without interest, as soon as administratively practicable and the Participant will have no further rights under the Plan.

SECTION 11. DEATH OF A PARTICIPANT

As soon as administratively feasible after the death of a Participant, any Common Stock and/or cash credited to the Participant under the Plan shall be delivered to the Participant's executor, administrator or other legal representative of the Participant's estate. Such delivery and payment shall relieve the Company of further liability to the deceased Participant or his/her estate with respect to the Plan.

SECTION 12. ASSIGNMENT

Except as provided in Section 11 above, a Participant's Option, funds, securities, rights or other property held for the account of a Participant shall not be sold, pledged, assigned, transferred, or hypothecated in any way (whether by operation of law or otherwise) and shall not be subject to sale under execution, attachment, or similar process. Any attempted sale, pledge, assignment, transfer, hypothecation or other disposition of an Option, or levy of attachment or similar process upon the Option not specifically permitted herein shall be null and void and without effect. A Participant's right to purchase shares under the Plan shall be exercisable during the Participant's lifetime only by the Participant. If this provision is violated, the Participant's election to purchase Common Stock shall terminate and the only obligation of the Company remaining under the Plan will be to refund to the Participant the amount then credited to his or her Payment Account and deliver to Participant any whole shares of Common Stock credited to him or her under any Stock Account.

SECTION 13. DISSOLUTION, MERGER AND CONSOLIDATION

Upon the dissolution or liquidation of Cerner, or upon a merger or consolidation of Cerner in which Cerner is not the surviving corporation, each Option granted hereunder shall expire as of the effective date of such transaction; provided, however, that the Administrator shall give at least 30 days' written notice of such event to each Participant during which time he or she shall have a right to exercise his or her wholly or partially unexercised Option and, subject to earlier exercise pursuant to Section 9, each Option shall be exercisable after receipt of such written notice and prior to the effective date of such transaction.

SECTION 14. EQUAL RIGHTS AND PRIVILEGES

All eligible Associates shall have equal rights and privileges with respect to the Plan so that the Plan qualifies as an "employee stock purchase plan" within the meaning of Section 423 or any successor provisions of the Code and related regulations. Any provision of the Plan that is inconsistent with Section 423 or any successor provision of the Code shall without further act of amendment by Cerner be reformed to comply with the requirements of Section 423. This Section 14 shall take precedence over all other provisions of the Plan.

SECTION 15. RIGHTS AS STOCKHOLDER

A Participant shall have no rights as a stockholder under an Option until he or she becomes a stockholder as herein provided. A Participant will become a stockholder with respect to shares for which payment has been completed as provided in Section 8 as of the close of business on the Purchase Date for the Option Period.

SECTION 16. MODIFICATION AND TERMINATION OF THE PLAN

The Board or the Committee may terminate the Plan at any time. The Board, the Committee or one of its appointed delegates may at any time and from time to time amend the Plan in any manner permitted by law. No amendment shall be effective unless within one (1) year after it is adopted, the amendment is approved by Cerner's shareholders in the manner prescribed under the Treasury Regulations under Section 423 of the Code, if such amendment would:

(i) increase the number of shares reserved for purchase under the Plan, unless such increase is by reason of any change in the capital structure of Cerner referred to in Section 3 hereof;

(ii) change the designation of corporations or other entities whose employees may be offered Options under the Plan, except as permitted under Treasury Regulations §1.423-2(c)(4);

(iii) materially modify the requirements as to eligibility for participation in the Plan; or

(iv) materially increase the benefits accruing to Participants under the Plan.

In the event the Plan is terminated, the Board or Committee may elect to terminate all outstanding Options either immediately or upon completion of the purchase of shares on the next Purchase Date, unless the Board has determined that the right to make all such purchases shall expire on some other designated date occurring prior to the next Purchase Date. If Options are terminated prior to expiration, all funds contributed to the Plan that have not been used to purchase shares shall be returned without interest to the Participants.

SECTION 17. BOARD AND SHAREHOLDER APPROVAL; EFFECTIVE DATE

This Plan was initially adopted by the Board on March 9, 2001. The Effective Date of this restated Plan is January 1, 2022 and the provisions set forth herein shall apply as of such date. Without limiting the generality of the foregoing, as of the Effective Date, the provisions set forth herein apply with respect to the ownership and disposition of shares of Common Stock acquired by Associates under the Plan prior to the Effective Date and with respect to the purchase, ownership and disposition of shares of Common Stock under the Plan on or after the Effective Date, except and only to the extent the Plan is subsequently amended in accordance with Section 16.

SECTION 18. OTHER PROVISIONS

Options and other documentation under the Plan shall contain such other provisions as the Administrator shall deem advisable, provided that no such provision shall conflict with the express terms of the Plan.

SECTION 19. USE OF FUNDS

All payroll deductions received or held by the Company under the Plan may be used by the Company for any corporate purpose. The Company shall not be obligated to segregate such payroll deductions.

SECTION 20. ERISA

This Plan is not subject to the provisions of the Employee Retirement Income Security Act of 1974.

SECTION 21. EFFECT OF PLAN

The provisions of the Plan shall, in accordance with its terms, be binding upon, and inure to the benefit of, all successors of each Associate participating in the Plan, including, without limitation, such Associate's estate and the executors, administrators or trustees thereof, heirs and legatees, and any receiver, trustee in bankruptcy or representative of creditors of such Associate.

SECTION 22. WITHHOLDING TAXES

Upon the exercise of any Option under the Plan, the Company shall have the right to require the Associate to remit to the Company an amount sufficient to satisfy all federal, state and local withholding tax requirements prior to the delivery of any certificate or certificates for shares of Common Stock.

SECTION 23. EMPLOYMENT RIGHTS

Nothing contained in the provisions of the Plan shall be construed to give to any individual the right to be retained in the employ of the Company or to interfere with the right of the Company to discharge any Associate at any time.

SECTION 24. COMPLIANCE WITH LAW

The obligations of the Company with respect to payments under the Plan are subject to compliance with all applicable laws and regulations. Common Stock shall not be issued with respect to an Option granted under the Plan unless the exercise of such Option and the issuance and delivery of the shares of Common Stock pursuant thereto shall comply with all applicable provisions of law, including, without limitation, the Securities Act, the Exchange Act, and the requirements of any stock exchange upon which the shares may then be listed.

SECTION 25. GOVERNING LAW

The Law of the State of Missouri will govern all matters relating to this Plan except to the extent superseded by the federal laws of the United States.

SECTION 26. EQUAL RIGHTS AND PRIVILEGES

Notwithstanding any provision of the Plan to the contrary and in accordance with Section 423 of the Code, all Participants who are granted Option under this Plan shall have the same rights and privileges.

SECTION 27. ENTIRE PLAN

This Plan constitutes the entire Plan with respect to the subject matter hereof and, immediately as of the Effective Date, supersedes all prior plans with respect to the subject matter hereof.

SECTION 28. SEVERABILITY

If any provision of the Plan shall for any reason be held to be invalid or unenforceable, such invalidity or unenforceability shall not affect any other provision hereof, and the Plan shall be construed as if such invalid or unenforceable provision were omitted.

SECTION 29. HEADINGS

The headings of sections herein are included solely for convenience and shall not affect the meaning of any of the provisions of the Plan.

Exhibit 10.52

[CERNER CORPORATION LETTERHEAD]

December __, 2021

Re: Clawback re: Accelerated Vesting of Time-Based RSUs

Dear [_______]:

As you know, Cerner Corporation (the "Company") has decided to accelerate the vesting of [___] shares subject to your time-based Restricted Stock Unit awards (the "RSUs"), effective December [20 / 29], 2021 (the "Acceleration Date").

You and the Company acknowledge and agree that if you terminate your employment or the Company terminates your employment, in either case, for any reason prior to the originally scheduled vesting date of the applicable RSU, you will forfeit and return to the Company on your termination date, without payment, a number of shares of the Company's common stock subject to the RSUs that would not otherwise have vested (i.e., because your employment terminated before the applicable vesting date). If you sell or otherwise dispose of shares underlying such RSUs prior to the original vesting date, then you agree and acknowledge that you shall pay to the Company an amount equal to the value of the share on the settlement date of the applicable RSU plus any gain that you realize in connection with such sale other disposition. Notwithstanding the generality of the foregoing, the treatment described herein shall not apply to any RSUs (and the underlying shares of the Company's common stock) to the extent the vesting of such RSUs would accelerate, in connection with your termination, pursuant to their terms as in effect on the Acceleration Date (including with respect to any accelerated vesting treatment set forth in an employment or severance agreement with the Company).

This letter may be delivered electronically and may be executed in counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same document. This letter shall be governed by and construed and enforced in accordance with Delaware law without regard to the conflict of laws provisions thereof.

Please indicate your acceptance and acknowledgement of, and agreement to, the foregoing by signing below.

Sincerely,

____
By: [______]
Its: [______]

Agreed and Acknowledged:

____
Name: [_______]

Exhibit 21

SUBSIDIARIES OF REGISTRANT

Name	State/Country of Incorporation
1. Cerner Belgium	Belgium
2. Cerner Campus Redevelopment Corporation	Missouri
3. Cerner Canada Limited LLC	Delaware
4. Cerner Canada ULC	Canada
5. Cerner Capital, Inc.	Delaware
6. Cerner Chile Limitada	Chile
7. Cerner Chouteau Data Center, Inc.	Delaware
8. Cerner Corporation PTY Limited	New South Wales (Australia)
9. Cerner Deutschland GmbH	Germany
10. Cerner Egypt L.L.C	Egypt
11. Cerner Enterprise, LLC	Delaware
12. Cerner Enviza France SAS	France
13. Cerner Enviza Italia S.r.l	Italy
14. Cerner Enviza LLC	Delaware
15. Cerner Federal Solutions LLC	Virginia
16. Cerner Finland Oy	Finland
17. Cerner France SAS	France
18. Cerner Global Holdings B.V.	Netherlands
19. Cerner Government Services, Inc.	Delaware
20. Cerner Healthcare Sales India Private Limited	India
21. Cerner Healthcare Solutions, Inc.	Delaware
22. Cerner Healthcare Solutions India Private Limited	India
23. Cerner Health Connections, Inc.	Delaware
24. Cerner Health Services Deutschland GmbH	Germany
25. Cerner Iberia, S.L.U.	Spain
26. Cerner Innovation, Inc.	Delaware
27. Cerner International, Inc.	Delaware
28. Cerner Ireland Limited	Ireland
29. Cerner Limited	United Kingdom
30. Cerner (Malaysia) SDN BHD	Malaysia
31. Cerner México, S. de R. L. de C.V.	Mexico
32. Cerner Middle East FZ-LLC	Emirate of Dubai, UAE
33. Cerner Middle East, Ltd.	Cayman Islands
34. Cerner Multum LLC	Delaware
35. Cerner Nederland B.V.	Netherlands
36. Cerner Norge AS	Norway
37. Cerner Österreich GmbH	Austria
38. Cerner Portugal Unipessoal, Lda.	Portugal
39. Cerner Properties, Inc.	Delaware
40. Cerner Property Development, Inc.	Delaware
41. Cerner Revenue Cycle, LLC	Delaware
42. Cerner România S.R.L.	Romania
43. Cerner Singapore Limited LLC	Delaware
44. Cerner Soluções para a Saúde Ltda.	Brazil
45. Cerner State & Local Government Services, Inc.	Delaware
46. Cerner Strategy Corporation	Delaware
47. Cerner Strategy, LLC	Delaware
48. Cerner Sverige AB	Sweden
49. Cerner Universal Revenue Cycle Management, LLC	Delaware
50. Diamond (KH) China AssetCo	China
51. Diamond (KH) Germany HoldCo GmbH	Germany
52. Diamond (KH) Israel Employerco Ltd	Israel

53. Diamond (KH) Singapore AssetCo Private Limited	Singapore
54. Diamond (KH) Spain LocalCo, S.L	Spain
55. Diamond (KH) Taiwan HoldCo Limited	China
56. Diamond (KH) UK AssetCo Limited	United Kingdom
57. Diamond Korea AssetCo Ltd	Korea
58. Egis Systems, LLC	Tennessee
59. Fortified Health Solutions, Inc.	Delaware
60. The Health Exchange, Inc.	Missouri
61. ZEG-Zentrum für Epidemiologie und Gesundheitsforschung Berlin GmbH	Germany

Exhibit 23

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the registration statements (No. 333-232827, No. 333-206272, No. 333-180016, No. 333-174568, No. 333-125492, No. 333-75308, No. 333-70170, No. 333-40156, No. 333-93379, No. 333-77029, No. 33-56868, No. 33-20155, No. 333-24909, No. 333-24899, No. 33-55082, No. 33-39777, No. 33-63226, No. 33-41580, No. 33-39776, and No. 33-15156) on Form S-8 and (No. 333-72024 and No. 333-40156) on Form S-4 of our reports dated February 22, 2022, with respect to the consolidated financial statements of Cerner Corporation and subsidiaries and the effectiveness of internal control over financial reporting.

/s/ KPMG LLP
Kansas City, Missouri
February 22, 2022

Exhibit 31.1

CERTIFICATION

I, David T. Feinberg, certify that:

1. I have reviewed this annual report on Form 10-K for the year ended December 31, 2021 of Cerner Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 22, 2022

/s/ David T. Feinberg
David T. Feinberg
Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION

I, Mark J. Erceg, certify that:

1. I have reviewed this annual report on Form 10-K for the year ended December 31, 2021 of Cerner Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 22, 2022

/s/ Mark J. Erceg
Mark J. Erceg
Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

**CERTIFICATION FURNISHED PURSUANT TO
18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the filing of the Annual Report on Form 10-K for the fiscal year ended December 31, 2021 (the "Report") by Cerner Corporation (the "Company"), the undersigned Chief Executive Officer of the Company hereby certifies pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

1. The Report fully complies with the requirements of Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934; and

2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ David T. Feinberg
David T. Feinberg, President
and Chief Executive Officer
(Principal Executive Officer)
Date: February 22, 2022

Exhibit 32.2

**CERTIFICATION FURNISHED PURSUANT TO
18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the filing of the Annual Report on Form 10-K for the fiscal year ended December 31, 2021 (the "Report") by Cerner Corporation (the "Company"), the undersigned Chief Financial Officer of the Company hereby certifies pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

1. The Report fully complies with the requirements of Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934; and

2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Mark J. Erceg
Mark J. Erceg, Executive Vice President
and Chief Financial Officer
(Principal Financial Officer)
Date: February 22, 2022