ANNUAL REPORT **2022**

At the intersection of

NOW + *NEXT*

tyler technologies

Focused on the future.
Delivering on the present.

In an unpredictable world, people look to the public sector for the services, information, and leadership required to make our communities thrive.

In turn, the public sector looks to Tyler to address its technology needs of today while building towards tomorrow.

Our long-term perspective and investments continue to bring value as we help our public sector clients interconnect their communities. Thanks to our dependable solutions and dedicated team members, we help our clients build for the future while overcoming the present-day challenges of changing workforce dynamics, economic uncertainties, and the lingering impact of the pandemic.

A letter to our *shareholders*

Thanks to our balanced approach to running and growing our business, 2022 was one of Tyler's most successful years to date.

2022 at a glance

In addition to making significant advancements to our long-term cloud and payments strategies, our performance this year was notable for solid organic revenue growth and higher earnings, even in the face of economic uncertainty. GAAP revenue rose 16.2% to $1.85 billion, while non-GAAP revenue increased 16.0% to $1.85 billion. GAAP net income for the year was $164.2 million, or $3.87 per diluted share, a change of 1.7% from 2021. Non-GAAP net income for the year was $318.1 million, or $7.50 per diluted share, up 7.3%. Recurring revenues grew 17.6% and comprised 80% of our total revenues. Cash provided by operations grew 2.6% to $381.5 million, while free cash flow grew 4.8%, reaching a new high of $331.3 million. We finished the year with a backlog of $1.89 billion, up 5.2%.

H. Lynn Moore Jr.
President &
Chief Executive Officer

We spent the year continuing to strengthen our already-solid balance sheet by repaying $360 million of debt from our April 2021 NIC acquisition, ending the year with a total outstanding debt of $995 million and cash and investments of $229 million. Our net leverage at year-end was approximately 1.64 times trailing twelve-month pro forma EBITDA. $600 million of our debt is in the form of convertible debt with a fixed interest rate of 0.25%, which is extremely favorable, given current rates. The remaining $395 million in debt is in prepayable term debt due in 2024 and 2026, with interest at floating rates based on SOFR. We also have an undrawn $500 million revolving credit facility, which provides significant additional flexibility.

Expanding our footprint

The year was highlighted by our continued integration of NIC (now our Digital Solutions Division), our largest and most impactful acquisition to date. We've been hard at work integrating NIC's payment expertise, capabilities, and team members into our business, which in turn allows us to significantly accelerate our strategy to integrate payments across every facet of the public sector.

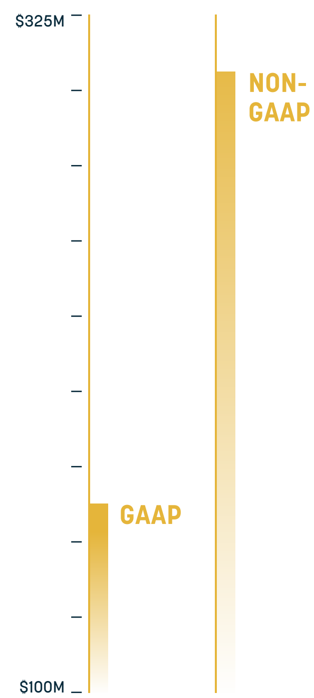
In addition, we're leveraging NIC's existing client relationships to expand our presence at the state and federal levels, leading to the formation of a new State & Federal Group to align our resources and pursue strategic market expansion opportunities.

While our current priority for capital allocation is to pay down debt, we continued to augment our portfolio with the acquisitions of U.S. eDirect, Quatred, and Rapid Financial Solutions, which will accelerate our ability to enter new markets and offer a broader range of capabilities.

17.6%

Recurring revenue growth

Net income



$164.2M

GAAP net income

$318.1M

Non-GAAP net income

Advancing our cloud journey

We continued to accelerate our progress on our cloud journey during 2022. We remain on track with our projects to have cloud-native or cloud-efficient versions of all our major solutions, along with our planned exit from our proprietary data centers over the next three years. We introduced several cloud-only products this year, and many of our core products are now solely available to new clients in the cloud.

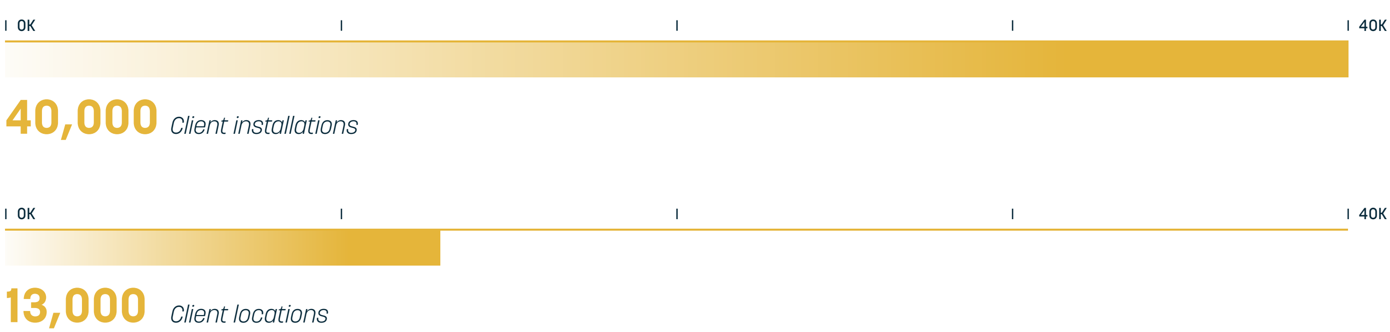
Our results reflect the ongoing success of our cloud transition. Recurring revenues comprised 80% of our 2022 revenue, in large part due to a 29% increase in subscription revenue for the year. 83% of our new software contract value was attributable to SaaS arrangements, up from 71% in 2021. In addition, 336 existing on premises clients chose to migrate to the cloud, compared to 239 in 2021.

To accelerate our cloud progress, we further strengthened our Corporate Cloud Services team that acts as a central point of service for engineering and support so all our teams can leverage a single, best-in-class cloud approach. We also added new chief information security officer and chief privacy officer roles to our executive team to ensure these key considerations are represented at the highest level.

Looking ahead

I've never entered a new year more confident about Tyler's long-term prospects, even in the face of economic uncertainty. Our management team is acutely focused on achieving operational efficiencies while accelerating revenue growth. 2023 will be a pivotal year in our cloud transition, with one-time license revenues being replaced by valuable long-term recurring SaaS revenue. We expect operating margins to trough in 2023 and are firmly committed to returning to a trajectory of consistent operating margin expansion beginning in 2024.

Thanks to our exclusive focus on the public sector, combined with our broad portfolio of solutions across functions at every level of government, our business remains resilient to headwinds compared to our peers. Public sector technology budgets are more stable and predictable than those of private sector enterprises. Our clients aren't at risk of going out of business or being acquired, and we have ensured the relationships we build today will remain strong for the long haul. Our greatest asset is our client base of more than 40,000 installations across nearly 13,000 locations, which creates a defensible moat that no other company comes near to replicating.



Our cloud-based solutions are well-positioned to replace mission-critical legacy systems approaching end of life that are essential to powering public sector services. We have a singular opportunity to capture a significant portion of those prospects, whom I believe will see the value of our Connected Communities vision. This will lead to even more opportunities for expanding relationships through the addition and integration of more of our solutions.

From streamlining product naming and solution portfolios to unifying our cloud resources to making significant progress toward delivering an integrated payments experience across all our products, we are moving in a singular direction unlike any time in the past. Considering how much we've already accomplished, the fact that we have unlocked new levels of collaboration across the business represents nothing less than a paradigm shift for what Tyler can achieve. By balancing today's demands with tomorrow's opportunities, we have never been better positioned to meet the expectations of the public sector, the communities they serve, our shareholders, and the entire Tyler team.

H. Lynn Moore Jr.
President & Chief Executive Officer

80%

Recurring revenues

29%

Growth in subscription revenue

17%

Growth in new software contract value from subscription arrangements

2022 financial *review*

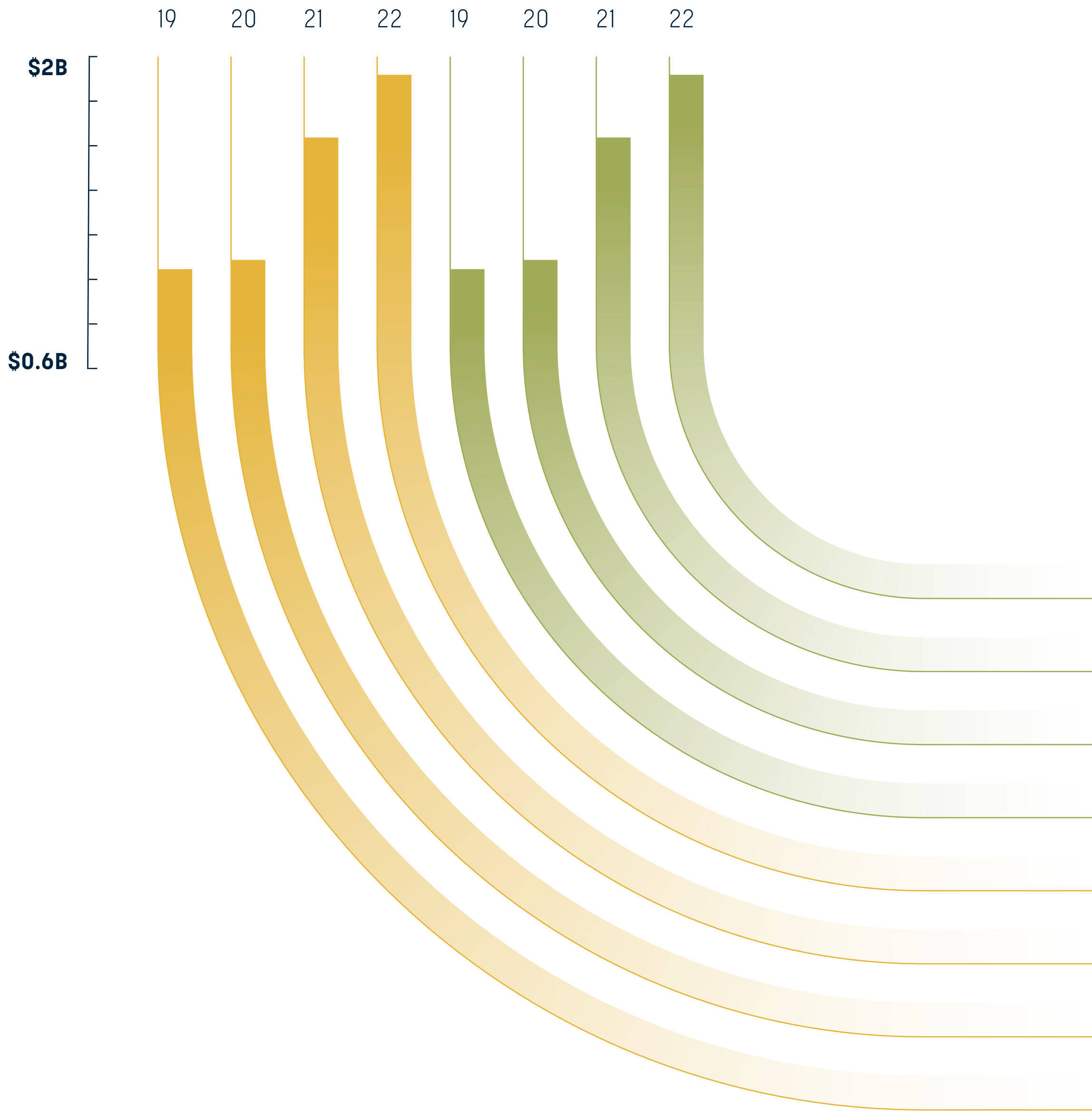
Annual revenue

GAAP

2019 — $1.086B
2020 — $1.117B
2021 — $1.592B
2022 — $1.850B

NON-GAAP

2019 — $1.091B
2020 — $1.117B
2021 — $1.595B
2022 — $1.850B



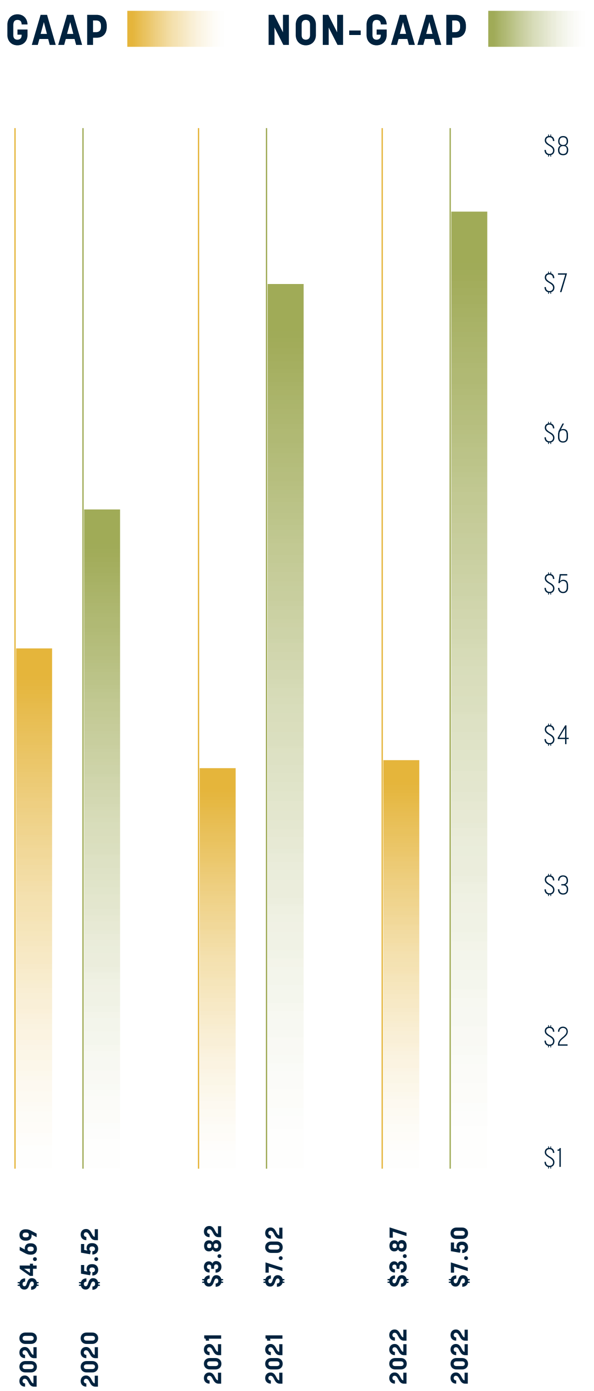
$1.01B

Subscription revenue, up 29%

54.7%

Revenue from subscriptions

Annual earnings per diluted share



GAAP operating margin

11.6%

NON-GAAP operating margin

23.6%

$1.89B

Backlog, up 5.2%

$1.90B

TTM bookings, up 9.5%

$381.5M

Cash flow from operations, up 2.6%

$475M

Adjusted EBITDA, up 9%

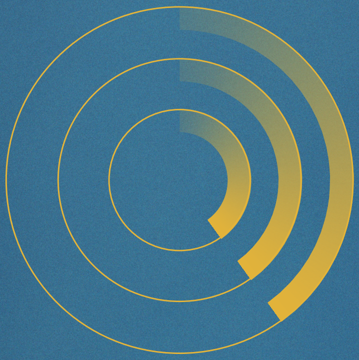
Positioned for today.
Prepared for tomorrow.

By balancing both the short-term and long-term needs of our clients, shareholders, and employees, this year we navigated the choppy waters of economic uncertainty to deliver on our vision of an empowered and transformed public sector.

Thanks to our work integrating NIC post-acquisition, accelerating our cloud initiatives, executing three strategic acquisitions, and reinforcing internal initiatives, we continued to address the ongoing needs of our clients while creating a solid foundation for the future of all stakeholders.

83%

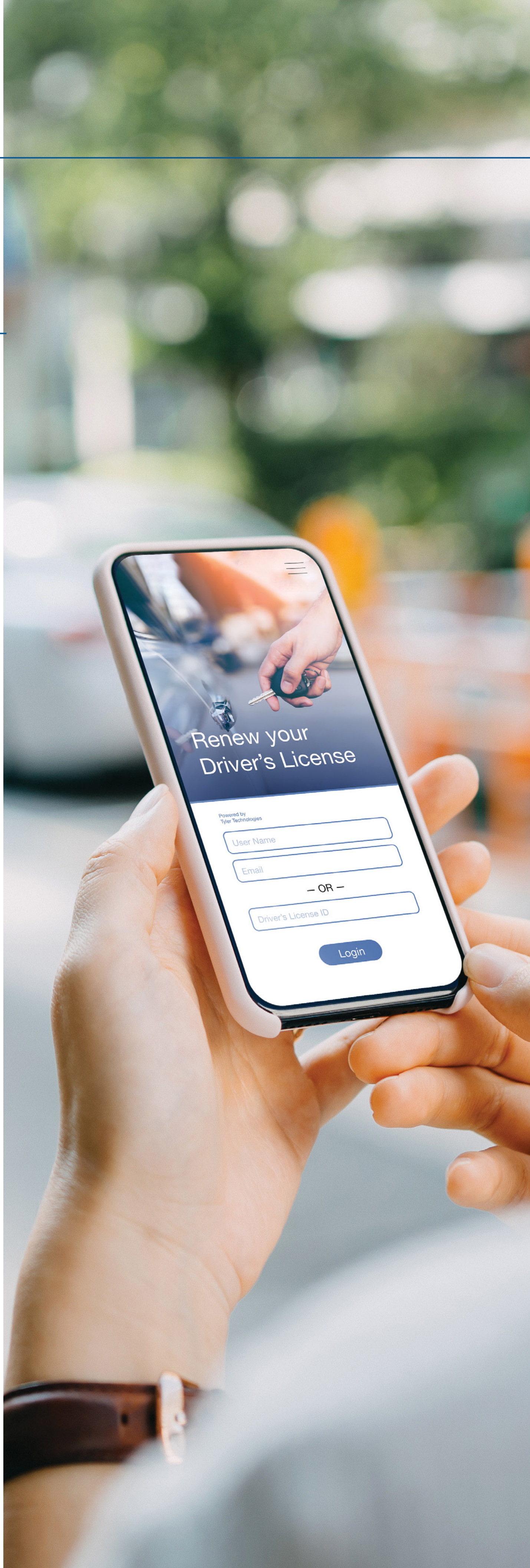
New software contract value from cloud solutions



41%

Increase in clients converting to the cloud (from an on-premises deployment)

Leveraging the payments *opportunity*



Key to our balanced approach of serving our public sector clients now and in the future is our 2021 acquisition of NIC, the largest in Tyler's history.

We made great strides in 2022 integrating NIC's payments expertise, capabilities, and team into our operations while leveraging their relationships to increase our footprint across local, state, and federal levels.

Our payments leadership played an integral role in creating a stronger competitive position while unlocking new cross-sell and upsell opportunities across our respective client bases.

571

New payments deals across Tyler

$53B

Government payments processed for our clients

Examples of our shared success include:

01 We've closed a total of 19 cross-sell deals across seven Tyler product lines through our Digital Solutions Division (formerly NIC), driving $9.5 million in total contract value while providing additional value for our clients. The acquisition of NIC also accelerated Tyler's payments capabilities, with 571 new payments deals signed Tyler-wide.

02 Cross-sell wins included a first-of-its-kind enterprise deal with the State of Kansas Department of Revenue under NIC's state enterprise contract that adds a powerful Data & Insights layer to elevate Tyler's Assessment Pro software used by Kansas counties and make property assessment data more actionable for the department.

03 The State of Texas relies on Tyler's payments services to process more than 70 million transactions totaling more than $5.7 billion in government payments on behalf of more than 300 government entities. As part of a three-year contract extension, the state added Tyler's Data & Insights platform so it can more easily digest information, conduct advanced analytics, and unlock insights from customer transactions.

04 Under our enterprise payments contract with the State of Florida, we completed implementation across 21 executive branch agencies while enabling local governments to utilize the contract to add Tyler's payment services. The Tyler team was also able to upsell new payment capabilities across the State of Florida, including our Payments Enterprise Portal, which allows public sector agencies to accept online or over-the-counter payments for bills, fees, tickets, and fines.

05 The Colorado Statewide Internet Portal Authority (SIPA) awarded Tyler a new five-year contract, building on the Digital Solutions Division's track record of providing similar services to SIPA and state and local agencies in Colorado since 2005. This new enterprise contract presents an excellent opportunity to connect state, city, county, and regional services across the state, with 83 state agencies, 233 municipal departments, 238 county departments, and 83 school districts across Colorado currently using Tyler products to support mission-critical programs. Tyler's extensive footprint in the state provided us with a significant competitive advantage.

Combined with our 2022 acquisition of Rapid Financial Solutions, which has worked with governments since 2005 to solve complex disbursement challenges, Tyler now provides the most comprehensive and trusted solutions for simplifying payments processes across all levels of the public sector.

With several Tyler applications serving the public sector payments market, we see a massive opportunity to unite our solutions across the divisions, particularly in the state and federal spaces where we have identified significant market expansion opportunities. Our new State & Federal Group will help us align our teams and resources to ensure greater collaboration so we can deliver a unified, consistent payments experience for our clients.

Looking ahead, Tyler remains committed to enhancing our position as the market leader in the government payments space. Powered by our acquisitions of NIC and Rapid, our solutions give the public sector everything it needs to manage the entire payments life cycle: billing, presentment, merchant onboarding, collections, reconciliation, and disbursements.

Accelerating our cloud *journey*

We've taken several high-impact steps to establish Tyler as a cloud-first company over the past three years, including entering into a strategic collaboration agreement with Amazon Web Services (AWS) and establishing our cross-vertical Corporate Cloud Services team.

These moves allowed us to make substantial progress with our product development initiatives in 2022, with all of our major products on track to be cloud-efficient or cloud-native.

Several of our major products, including Enterprise ERP and Enterprise Permitting & Licensing, are now exclusively offered to new clients as cloud solutions. We also introduced several cloud-only products in the past year, such as our Electronic Warrants solution that allows judicial officials to process electronic warrant requests 24/7.

Our embrace of a cloud-first approach is matched by the growing demand for cloud solutions from our public sector clients. For example, while we began the year estimating that approximately 75% of new Enterprise Permitting & Licensing software sales would be SaaS, we finished the year with 100% of new clients for that product selecting our cloud-based solution instead of the on-premises version.

Our new contract value for cloud solutions reached a record high of 83% of our total, while a record 336 clients switched from an on-premises solution to the cloud.

Notable client adoptions of our cloud-based solutions include:

01 The U.S. Department of State's Diplomatic Security Service, a user of Tyler's on-premises solution since 2017, signed a five-year, $54 million agreement for Tyler's Case Management Development Platform.

02 The Arizona Supreme Court replaced an on-premises system it had developed in-house 20 years ago with Tyler's Enterprise Supervision solution. The new solution supports Arizona's 15 Adult Probation Departments, including the Superior Court in Maricopa County, the fourth-most populous county in the U.S.

03 The Jersey Village Police Department in Texas became Tyler's first AWS-hosted public safety client. The agency switched to a suite of cloud-based public safety solutions from Tyler, including Tyler's Enterprise Public Safety, Enterprise Computer Aided Dispatch, Enterprise Records, Enterprise Law Enforcement Field Mobile, and Enterprise Fire Field Mobile.

We reorganized our cloud-hosting team into a new Corporate Cloud Services team to meet client expectations while accelerating our transition to a cloud-first organization. By creating a central point of service for engineering and support, the Corporate Cloud Services team ensures that all our teams can access, enable, secure, and launch cloud services faster and with greater consistency.

Last but not least, we're accelerating the process of shifting our clients from our proprietary data centers to AWS. In the near term, we are incurring significant "bubble costs" associated with operating our proprietary data centers while transitioning clients to AWS. Once the transition is complete, we will be able to fully leverage the capabilities of the AWS solution, enhance our approach to data security, and reduce our hosting costs.

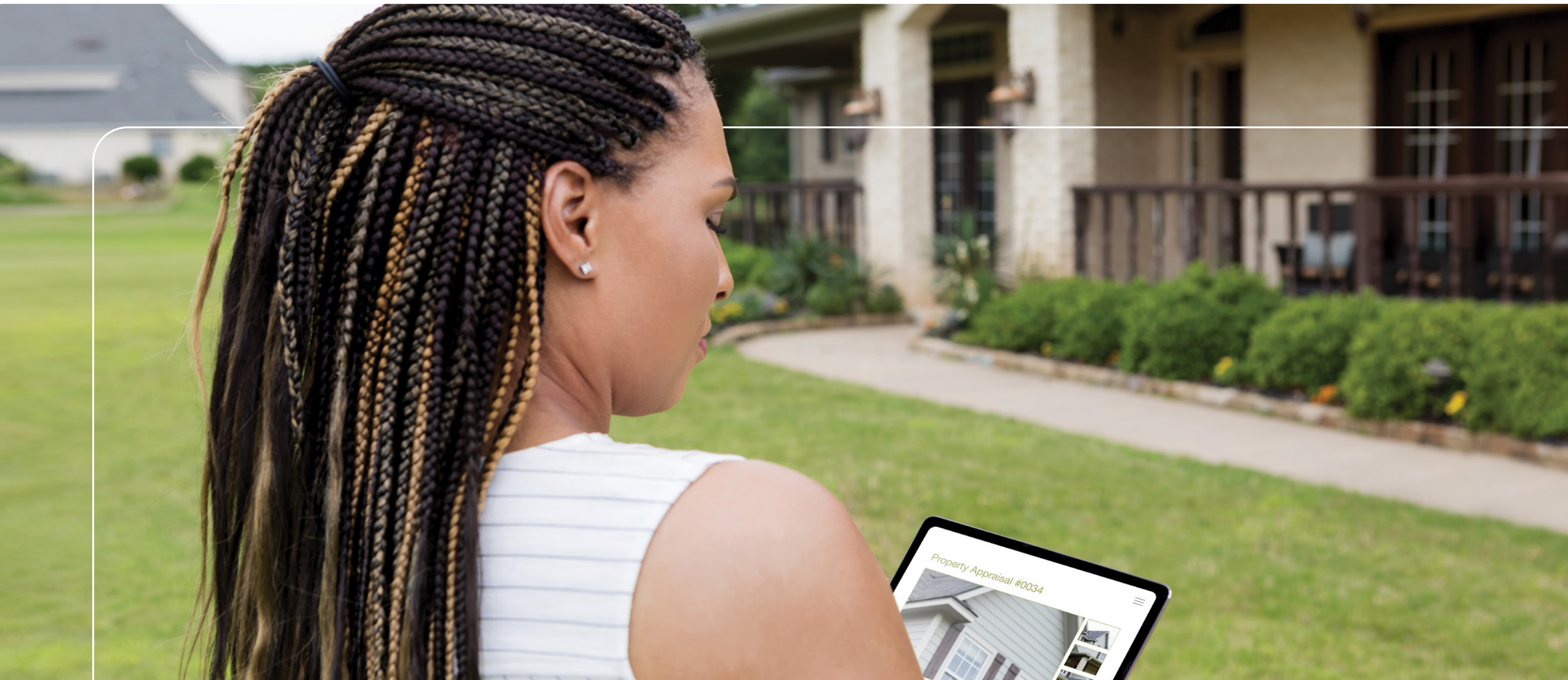
Expanding our *best-in-class portfolio*

While our primary focus was the successful integration of NIC and other recent acquisitions, we continued to take advantage of strategic opportunities throughout 2022 to expand our product portfolio and strengthen our competitive position:

01 In February, we acquired U.S. eDirect, a market-leading provider of technology solutions for campground and outdoor recreation management. Its solution provides a large-scale, enterprise-grade cloud transaction management system focused on the government recreation and tourism industry, enabling agencies to manage transactions for everything from campground accommodations to licenses and parking.

02 In May, we acquired Quatred, a systems integrator and solution provider of advanced touchless technologies, allowing us to integrate a single barcoding solution into all our platforms for a unified client experience.

03 In October, we acquired Rapid Financial Solutions, a leading provider of reliable, scalable, and secure payment solutions that offers best-in-class card issuance and digital disbursement capabilities. With this acquisition, we accelerated our ability to offer payments disbursements for local, state, and federal government clients, significantly increasing the total addressable market for our payments solutions.



While these long-term investments will take time to fully incorporate into our offerings, we are confident they will follow the same path as similar past investments and deliver on the potential we see with every acquisition.

In 2018, we acquired CaseloadPRO for approximately $9 million, which allowed us to integrate its comprehensive probation case management system (now Enterprise Supervision) into our suite of justice solutions. Since the acquisition, we significantly expanded our market share for Enterprise Supervision, leading to six key statewide contract wins, a 199% increase in average deal size, and a 480% increase in annual revenue over the past four years.

In August 2021, we acquired VendEngine for $84 million, adding a robust solution to help the corrections market better meet its obligations to incarcerated individuals and their families. In just one year since the acquisition, we generated approximately $3 million in new annual recurring revenue across 50 new clients for our Resident Resources solution. In late 2022, we broke ground on a new manufacturing facility that will eventually double the production of the specialized kiosks and equipment used to deliver services to incarcerated individuals, which will allow us to significantly expand our ability to sell the solution to clients in the coming years.

SOLUTION SNAPSHOT: **PUBLIC ADMINISTRATION**

Property appraisals without the wait

To appropriately value properties for property tax assessments, appraisers were required to drive to a specific location, take pictures, and then enter details into a system when they got back to the office. Thanks to the cloud, appraisers can do more of this work without leaving their desks.

Johnson County, Kansas, uses Tyler's Desktop Verification to analyze high-resolution, 360º street-level imagery automatically captured by camera-outfitted vehicles. Appraisers can then inspect and measure structures and assets down to sub-inch accuracy to ensure more accurate appraisals. All images are stored in the cloud, which allows employees to access imagery in the office or when working in the field. Additionally, the application helps the appraiser's office collaborate with other county departments like public works and public safety.

Unifying the *Tyler experience*

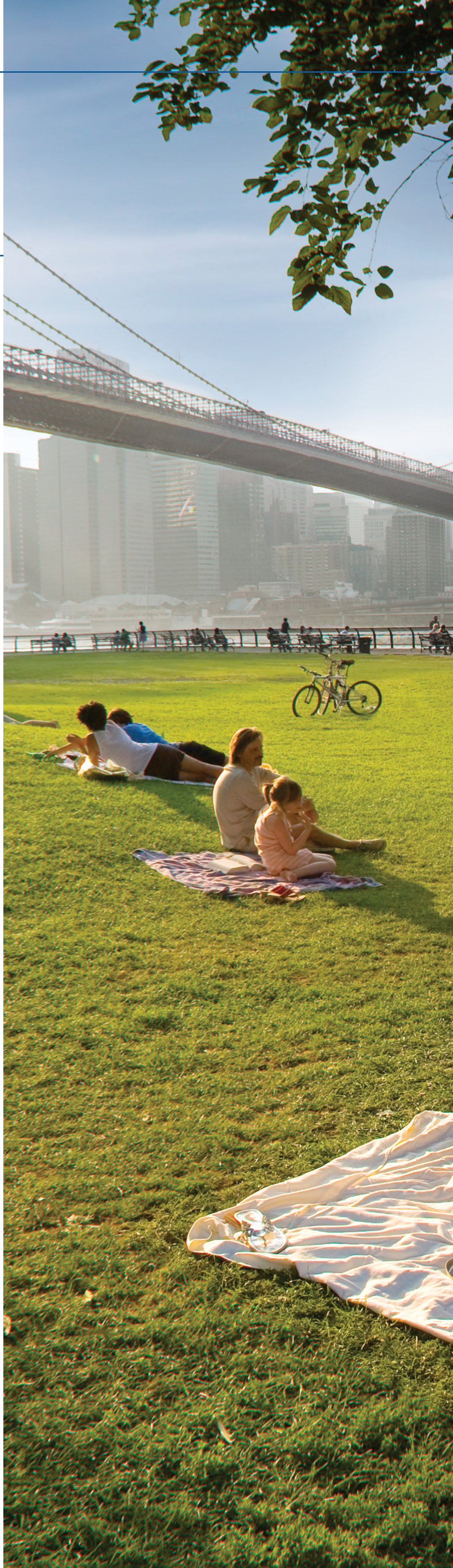
Our Connected Communities vision imagines a world where government services at local, regional, and state levels are connected within a healthy digital infrastructure. Connecting data, processes, and people makes communities safer, smarter, and more responsive to the needs of residents.

Many of our new clients, such as the City of Lima, Ohio, cite our Connected Communities vision as a key reason they selected Tyler. Seeking to leverage a comprehensive solution for all aspects of the city's police, court, and probation business, the city signed a single contract for Tyler's Enterprise Public Safety suite and Enterprise Justice suite, allowing it to replace legacy systems, improve workflows, and enable better coordination and communication across departments.

To continue to deliver on our vision, we launched several initiatives throughout 2022 to increase alignment and collaboration across the organization. For example, as Tyler makes progress toward delivering a single, unified payments experience across all our solutions, our clients can more easily enable payments and settlements for hundreds of applications from a single platform. At the same time, our Gov2Go platform provides a mobile-enabled solution that makes it easier for constituents to manage and pay for public sector interactions like vehicle tag renewals, property taxes, park permits, and professional licenses, all from a single account instead of separate services.

We now publish data to our Enterprise Data Platform from every flagship Tyler solution. By helping clients bring their data from across Tyler solutions into a single dashboard, we help the public sector uncover patterns and access insights that couldn't be seen or shared before. One success story is the San Diego Association of Governments in California, a consortium of the region's 19 local governments, which launched an Open Data portal to showcase the region's progress towards the United Nations' 17 Sustainable Development goals. Thanks to the portal, local leaders across the region can now make data-driven decisions when managing social issues while leveraging data as they evaluate grant applications for local projects.

Finally, we released Tyler Forge components for our software developers via GitHub, which enables developers to leverage a catalog of reusable controls and templates so they can focus on the functionality of their application instead of aesthetics. Forge components help ensure that every web application in the Tyler portfolio has a consistent look and feel, allowing us to deliver an enhanced user experience.



Using data to reduce homelessness

Homelessness is a crisis that no single agency can solve alone. Agencies spanning mental health, public safety, health care, and housing must work as one to get people the exact support they need to get off the streets for good.

Fulton County in Georgia leverages Tyler's Enterprise Data Platform to track housing, medical treatment, pre-arrest, court, and reentry data to better identify opportunities for connecting its homeless population with the right services. Because the data is in the cloud, it can be easily shared with county judges, department leaders, and nonprofits to give them unmatched insights into both local trends and an individual's treatment journey, resulting in more people being directed towards mental health support instead of jail.

Breaking the recidivism cycle

Few people in incarceration remain there for life. However, too many incarcerated individuals lack the skills or resources necessary to successfully integrate into society upon release, turning what might have been a one-time offense into a recurring cycle.

The Nashville-Davidson County Sheriff's Office in Tennessee implemented Tyler's Community Readiness solution to help easily connect the county's 1,700 jail residents with housing resources, job opportunities, and counseling services upon release. By using the solution to teach inmates valuable social skills and connect them with local community organizations after their sentence is completed, the county can work towards its goal of significantly reducing its recidivism rates while putting incarcerated residents on a path to a better life.

9%

Recidivism rate for formerly incarcerated people who found employment shortly after their release

Source: Prison to Employment Connection

Strengthening the *Tyler brand*

Tyler has added more than 90 new products through internal R&D and acquisitions since 2009, allowing us to deliver the market's most comprehensive product portfolio to our public sector clients.

But because each product was marketed as a stand-alone brand, extensive third-party market research showed that our clients and prospects found our product names to be confusing.

For our brand to continue to scale and grow its top-of-mind awareness, it became clear that we needed to create stronger affiliation for our Tyler corporate brand while simplifying how we market our portfolio of solutions. This led to a significant brand evolution process that included a new product-naming architecture.

The new architecture uses functional, descriptive product names instead of individual product logos to help our clients and prospects easily understand our breadth of offerings across all solutions. In addition, we organized all our solutions into five portfolios: Enterprise Resource Planning (ERP); Justice; Health & Human Services (HHS); Schools; and Tyler One. Thanks to our new brand architecture and solution portfolios, we'll be able to more effectively grow the Tyler brand as a singular identity, increasing our visibility in the market.

Increasing clarity *through consistent branding*

- > EnerGov — now: *Enterprise Permitting & Licensing*
- > iasWorld — now: *Enterprise Assessment & Tax*
- > Incode — now: *ERP Pro*
- > Munis — now: *Enterprise ERP*
- > New World Public Safety — now: *Enterprise Public Safety*
- > Odyssey — now: *Enterprise Justice*
- > Socrata — now: *Data & Insights*

Routing made smarter

School buses transport the most precious cargo imaginable – our children. The more that drivers, routers, and transportation managers can leverage technology, the more they can focus on getting kids to school and back safely and efficiently.

Dubuque Community Schools provides transportation for one of the largest districts in Iowa. A longtime user of Tyler's legacy route planning solution, they migrated to our cloud-based Student Transportation solution to unlock new capabilities and reduce costs. Drivers and route managers can now pull up and adjust routing plans on the fly, allowing them to adapt quickly to real-world conditions. Meanwhile, the solution makes it simple to manage fleet maintenance, activity trips, and parent communications in one dashboard, enabling users to consolidate more of their operations into one application.

Balancing togetherness ***with flexibility***

In January 2022, Tyler team members formally began working under new post-pandemic work arrangements.

For many, this meant a return to the office for three, four, or five days a week. Others continued to work remotely as they had before the pandemic.

We supported the transition by training managers how to design, assess, and manage hybrid work arrangements and distributed teams with a focus on bringing team members together when it is best for clients and the health of the team. Many teams took advantage of our new Volunteer Day in 2022 to gather in person and strengthen team connections while supporting our mission of building stronger, safer, and smarter communities.

To ensure all team members are welcomed and supported when they join Tyler, regardless of their work arrangement, we implemented consistent new team member orientation. We made a similar change to our Tyler Days onboarding program to ensure that employees across all divisions and work arrangements have an opportunity to meet senior leaders and gain a deeper understanding of our culture and values.

We expanded our internal engagement surveys as we transitioned back to the office to ensure that our team's concerns were understood and addressed. We also added or enhanced meals, snacks, and other amenities, such as providing breakfast and lunch at no cost to team members in our Yarmouth, Maine, office.

We modified some workspaces to better support new work arrangements while utilizing office space more effectively. Employees returning to our Lubbock, Texas, location were treated to a significant renovation, which provided a new state-of-the-art training classroom, vibrant cafe, open seating concept, sit-to-stand desks, and a game room, all in Lubbock's first LEED-certified sustainable building. We remain invested in providing welcoming, productive spaces where our people can come together to work and collaborate. At the same

time, we are rationalizing our office footprint to align with new flexible work arrangements by closing or consolidating underutilized facilities.

For the sixth year in a row, Tyler was included on the GovTech 100 list, which recognizes the top companies focused on making a difference in state and local government agencies in the U.S. To make critical employee information and processes more accessible, we implemented myTyler, a global employee platform that enables team members and managers to track everything from pay and benefits to time-off requests to the performance and merit process.

As Tyler grew in 2022, more than 1,500 new team members joined Tyler to fill new roles created to support our continued growth and open positions due to internal promotions and turnover. Turnover remained above pre-pandemic levels; however, it continued to remain below levels experienced by the technology industry overall and began to moderate by year-end.

We created a new chief information security officer role to ensure our approach to security is cohesive across our product lines. We also continued to build out a privacy program capable of meeting the stringent needs of state, federal, and global privacy legislation and regulations.

Our strong, caring culture and community at Tyler continues to be a strength in attracting and retaining team members. We celebrated this culture with a new ongoing "Value of the Month" series highlighting Tyler team members who exemplified our values, such as:

01 Ellen Reed, lead product manager for the Data Solutions team, displayed our core value of Growth by going the extra mile to help a client transform how data is used and analyzed across their entire jurisdiction.

02 Senior training specialist Andrew Bare modeled our core values of Inclusion and Community, serving as an active leader on the ERP Diversity, Equity, and Inclusion (DEI) Committee.

03 Mark Courtney and Levi Oswalt, senior implementation consultants in Tyler's Property & Recording Division, epitomized our core values of Accountability, Integrity, and Focus by uncovering an issue for a client that required a complete reconversion of data and then working overtime to complete the reconversion so the project would stay on schedule without sacrificing quality.

Reconnecting *in person*

After two years of virtual gatherings, we were thrilled to host more than 4,100 public sector leaders in Indianapolis at Connect 2022, our annual client conference.

At this year's conference, clients had the chance to engage in more than 850 classes, product demos, hands-on labs, workshops, and roundtable forums across every facet of the public sector. To help participants make the most of the in-person experience, we offered a mobile app that provided access to their personalized schedule, guest speaker information, and a list of attendees for enhanced networking.

Connect 2022 also featured a new centralized Connect Solution Hub that provided participants with a single location to meet with Tyler staff, ask questions, share ideas, and formulate goals for maximizing their use of Tyler solutions. In addition, this centralized location enabled clients to gain new exposure to other Tyler products outside of their respective areas. As a result, we generated a record number of more than 600 leads for our sales teams.

SOLUTION SNAPSHOT: **HEALTH & HUMAN SERVICES**

Ensuring every veteran is honored

Veterans Day and Memorial Day are two of the most important holidays on the calendar for the Veterans Service office. The cloud makes it easier for administrators to track living and deceased veterans to ensure no service member's contribution is forgotten.

As part of their services, the Juneau County Veterans Service Office in Wisconsin uses Tyler's Veterans' Benefits solution to track the burial sites of deceased veterans. Using this data, they know exactly how many flags are needed at each cemetery, along with where to place them, so that organizations like the American Legion and Veterans of Foreign Wars can honor each vet.

Living our *values*

We work every day to ensure that our values – accountability, integrity, focus, inclusion, community, and growth – are embedded in everything we do.

As part of our commitment to be a responsible partner to our stakeholders, we continually strive to improve on our key environmental, social, and governance (ESG) priorities. We are also committed to operating with the highest level of integrity and transparent disclosure in these areas to reflect our corporate values.

This year, we released our third annual corporate responsibility report, detailing our progress in addressing our sustainability, diversity, community, and sound corporate governance commitments.

As part of their work creating a more inclusive Tyler, our DEI Council formalized a new Tyler Military Veterans Employee Resource Group to connect Tyler's veterans with opportunities to support peers and engage in volunteer opportunities. The council also connected local DEI committees across Tyler's divisions to share best practices, collaborate on initiatives, and support our collective DEI efforts.

The 2022 S&P Global Corporate Sustainability Assessment benchmarked Tyler in the 96th percentile against industry peers, up from the 93rd percentile in 2021. Notable gains in IT security, risk analysis, privacy protection, and human capital development supported Tyler's improved score.

Additionally, Tyler's inclusion in the Dow Jones Sustainability Index (DJSI) continues to recognize us as being in the top 20% of sustainability performers among the 600 largest U.S. and Canadian companies in the S&P Global Broad Market Index.

The Tyler Foundation continued to deliver support to nonprofits across the many communities where our employees and clients live and work, contributing more than $376,000 to 85 organizations. Employees in our Lubbock, Texas, office also donated $3,000 to the UMC Foundation in support of the Children's Miracle Network. In addition, our Maine App Challenge in support of STEM education awarded $15,000 in college scholarships to three high school students. Now in its eighth year, the Maine App Challenge has awarded more than $70,000 in 529 college savings plans to students in Maine since its inception.

Tyler remains committed to closely partnering with nonprofit organization BEB to help it deliver its state-of-the-art Children First software, which creates digital profiles that help accelerate the journey to match orphans with loving families. In addition to our technical support and resources, our employees donated $154,000 to BEB during the Community Foundation of Texas' North Texas Giving Day, which the organization used to fund implementations of its software in governments and institutions around the world.

With the addition of a paid Volunteer Day, team members across Tyler took the opportunity to do good together, including:

01 The Marketing team worked with nonprofit Maggie's Sole Mission to donate and decorate 150 pairs of new sneakers for children in need at Fort Worth ISD in Texas.

02 The Corporate Finance team in Plano, Texas, worked with Feed My Starving Children to pack 108 cases equaling 22,000 meals for shipment to needy families in Chile, Haiti, and Kenya.

03 The Public Safety Education Services team volunteered at the Animal Shelter & Pet Adoption Center in Oakland County, Michigan, spending their day exercising and socializing the animals while decorating the center for the holidays.

150
Pairs of shoes donated

108
Cases packed

22K
Meals provided

Balancing performance with *potential*

As we look forward to 2023, we have never been better positioned to help the public sector unlock new value, optimize services, and improve engagement with constituents.

Thanks to our strategic acquisitions, commitment to the cloud, solid balance sheet, and diverse portfolio of solutions, Tyler is perfectly positioned to serve the needs of clients today while being ready for whatever the future holds.

Financial information
2022

Reconciliation of GAAP to NON-GAAP Financial Measures (Unaudited)

(In thousands, except per share data)	2022	2021	2020
RECONCILIATION OF NON-GAAP TOTAL REVENUES			
GAAP total revenues	$1,850,204	$1,592,287	$1,116,663
Non-GAAP adjustments:			
Add: Write-downs of acquisition-related deferred revenue	—	2,678	478
Add: Amortization of acquired leases	—	—	313
Non-GAAP total revenues	$1,850,204	$1,594,965	$1,117,454
RECONCILIATION OF NON-GAAP GROSS PROFIT AND MARGIN			
GAAP gross profit	$ 783,863	$ 709,644	$ 542,512
Non-GAAP adjustments:			
Add: Write-downs of acquisition-related deferred revenue	—	2,678	478
Add: Amortization of acquired leases	—	—	313
Add: Share-based compensation expense included in cost of revenues	27,486	23,705	18,125
Add: Amortization of acquired software	52,192	45,601	31,962
Non-GAAP gross profit	$ 863,541	$ 781,628	$ 593,390
GAAP gross margin	42.4%	44.6%	48.6%
Non-GAAP gross margin	46.7%	49.0%	53.1%
RECONCILIATION OF NON-GAAP OPERATING INCOME AND MARGIN			
GAAP operating income	$ 214,249	$ 180,735	$ 172,926
Non-GAAP adjustments:			
Add: Write-downs of acquisition-related deferred revenue	—	2,678	478
Add: Amortization of acquired leases	—	—	313
Add: Share-based compensation expense	102,985	104,726	67,365
Add: Employer portion of payroll tax related to employee stock transactions	1,571	3,437	3,294
Add: Acquisition-related costs	1,971	23,495	—
Add: COVID-19 incremental costs	—	—	1,537
Add: Lease restructuring costs and other asset write-offs	2,782	—	—
Add: Amortization of acquired software	52,192	45,601	31,962
Add: Amortization of customer and trade name intangibles	61,363	44,849	21,662
Non-GAAP adjustments subtotal	$ 222,864	$ 224,786	$ 126,611
Non-GAAP operating income	$ 437,113	$ 405,521	$ 299,537
GAAP operating margin	11.6%	11.4%	15.5%
Non-GAAP operating margin	23.6%	25.4%	26.8%
RECONCILIATION OF NON-GAAP NET INCOME AND EARNINGS PER SHARE			
GAAP net income	$ 164,240	$ 161,458	$ 194,820
Non-GAAP adjustments:			
Add: Total non-GAAP adjustments to operating income	222,864	224,786	126,611
Add: Acquisition-related costs in interest expense	—	6,407	—
Less: Tax impact related to non-GAAP adjustments	(68,999)	(96,119)	(92,175)
Non-GAAP net income	$ 318,105	$ 296,532	$ 229,256
GAAP earnings per diluted share	$ 3.87	$ 3.82	$ 4.69
Non-GAAP earnings per diluted share	$ 7.50	$ 7.02	$ 5.52
DETAIL OF SHARE-BASED COMPENSATION EXPENSE			
Subscriptions, maintenance and professional services	$ 27,486	$ 23,705	$ 18,125
Sales and marketing expense	8,800	8,834	7,904
General and administrative expense	66,699	72,187	41,336
Total share-based compensation expense	$ 102,985	$ 104,726	$ 67,365
RECONCILIATION OF FREE CASH FLOW			
Net cash provided by operating activities	$ 381,455	$ 371,753	$ 355,089
Less: additions to property and equipment	(22,529)	(33,919)	(22,690)
Less: investments in software development	(27,622)	(21,693)	(5,776)
Free cash flow	$ 331,304	$ 316,141	$ 326,623

Stock Market Data

Our common stock is traded on the New York Stock Exchange under the symbol "TYL". At December 31, 2022, we had approximately 1,065 stockholders of record. Most of our stockholders hold their shares in street name; therefore, there are substantially more than 1,065 beneficial owners of our common stock.

		High	Low
2021	First Quarter	$ 479.79	$372.80
	Second Quarter	457.30	384.38
	Third Quarter	498.98	450.20
	Fourth Quarter	557.55	452.26
2022	First Quarter	$538.96	$385.00
	Second Quarter	450.96	300.85
	Third Quarter	425.81	313.35
	Fourth Quarter	371.44	281.11

We did not pay any cash dividends in 2022 or 2021. Our bank credit agreement contains restrictions on the payment of cash dividends. We intend to retain earnings for use in the operation and expansion of our business and do not anticipate paying a cash dividend in the foreseeable future.

Selected Financial Data

	For the Years Ended December 31,		
	2022	2021	2020
(In thousands, except per share data)			
STATEMENT OF OPERATIONS DATA:			
Revenues	$1,850,204	$ 1,592,287	$1,116,663
Cost and expenses:			
Cost of revenues	1,066,341	882,643	574,151
Sales and marketing expense	135,743	118,624	98,466
General and administrative expense	267,324	271,955	161,095
Research and development expense	105,184	93,481	88,363
Amortization of other intangibles	61,363	44,849	21,662
Operating income	214,249	180,735	172,926
Interest expense	(28,379)	(23,298)	(1,013)
Other income, net	1,723	1,544	3,129
Income before income taxes	187,593	158,981	175,042
Income tax provision (benefit)	23,353	(2,477)	(19,778)
Net income	164,240	161,458	194,820
Net earnings per diluted share	$ 3.87	$ 3.82	$ 4.69
Weighted average diluted shares	42,399	42,244	41,526
STATEMENT OF CASH FLOWS DATA:			
Cash flows provided by operating activities	$ 381,455	$ 371,753	$ 355,089
Cash flows used by investing activities	(172,530)	(2,090,935)	(98,320)
Cash flows (used) provided by financing activities	(344,239)	1,424,730	114,172
BALANCE SHEET DATA:			
Total assets	$4,687,417	$ 4,732,161	$2,607,274
Revolving line of credit	—	—	—
Term loans, net	392,905	748,511	—
Convertible senior notes due 2026, net	594,484	592,765	—
Shareholders' equity	2,624,389	2,324,032	1,986,111

Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion and analysis should be read in conjunction with our consolidated financial statements and related notes included in this Annual Report. For a comparison of our Results of Operations for the years ended December 31, 2021, and 2020, and our Cash Flow discussion for the year ended December 2021, see Management's Discussion and Analysis of Financial Conditions and Results of Operations" of our Annual Report for the year ended December 31, 2021.

FORWARD-LOOKING STATEMENTS

In addition to historical information, this Annual Report contains forward-looking statements. The forward-looking statements are made in reliance upon safe harbor provisions of the Private Securities Litigation Reform Act of 1995. The forward-looking statements are subject to certain risks and uncertainties that could cause actual results to differ materially from those reflected in the forward-looking statements. Readers are cautioned not to place undue reliance on these forward-looking statements, which reflect management's opinion only as of the date hereof. We undertake no obligation to revise or publicly release the results of any revisions to these forward-looking statements. Readers should carefully review the risk factors described in documents we file from time to time with the Securities and Exchange Commission.

When used in this Annual Report, the words "believes," "expects," "anticipates," "foresees," "forecasts," "estimates," "plans," "intends," "continues," "may," "will," "should," "projects," "might," "could" or other similar words or phrases are intended to identify forward-looking statements. Similarly, statements that describe our business strategy, outlook, objectives, plans, intentions or goals also are forward-looking statements.

OVERVIEW

General

We provide integrated information management solutions and services for the public sector. We develop and market a broad line of software products and services to address the IT needs of public sector entities. We provide subscription-based services such as software as a service ("SaaS"), transaction-based fees primarily related to digital government services and online payment processing, and electronic document filing solutions ("e-filing"), which simplify the filing and management of court related documents. In addition, we provide professional IT services to our clients, including software and hardware installation, data conversion, training, and for certain clients, product modifications, along with continuing maintenance and support for clients using our systems. Additionally, we provide property appraisal outsourcing services for taxing jurisdictions.

We provide our software systems and related professional services and appraisal services through seven business units, which focus on the following products:

- financial management, education and planning, regulatory, and maintenance software solutions;
- financial management, municipal courts, planning, regulatory, and maintenance software solutions;
- courts and justice and public safety software solutions;
- data and insights solutions;
- appraisal and tax software solutions, land and vital records management software solutions, and property appraisal services;
- development platform solutions including case management and business process management; and
- digital government and payments solutions.

Management's Discussion and Analysis of Financial Condition and Results of Operations

In accordance with ASC 280-10, *Segment Reporting,* we report our results in two reportable segments. The Enterprise Software ("ES") reportable segment provides public sector entities with software systems and services to meet their information technology and automation needs for mission-critical "back-office" functions such as: financial management and education; planning, regulatory and maintenance; courts and justice; public safety; data and insights; appraisal and tax software solutions; land and vital records management software solutions; and property appraisal services. The Platform Technologies ("PT") reportable segment provides public sector entities with software solutions to perform transaction processing, streamline data processing, and improve operations and workflows such as digital government and payments solutions and development platform solutions.

We evaluate performance based on several factors, of which the primary financial measure is business segment operating income. We define segment operating income for our business units as income before non-cash amortization of intangible assets associated with their acquisitions, interest expense, and income taxes. Segment operating income includes intercompany transactions. The majority of intercompany transactions relate to contracts involving more than one unit and are valued based on the contractual arrangement. Corporate segment operating loss primarily consists of compensation costs for the executive management team, certain shared services staff, and share-based compensation expense for the entire company. Corporate segment operating income also includes revenues and expenses related to a company-wide user conference.

As of January 1, 2022, the appraisal and tax software solutions, land and vital records management software solutions, and property appraisal service business unit, which was previously reported in the Appraisal & Tax ("A&T") reportable segment, was moved to the ES reportable segment. The digital government and payments solutions, which was previously reported in the NIC reportable segment, and development platform solutions moved to the PT reportable segment to reflect changes in the way in which management makes operating decisions, allocates resources, and manages the growth and profitability of the Company. As a result of the changes in our reportable segments, the former A&T and NIC reportable segments are no longer considered separate segments. Prior period amounts for the ES and PT reportable segments have been adjusted to reflect the segment change. See Note 17, "Segment and Related Information," in the notes to the consolidated financial statements for additional information.

Certain amounts for previous years have been reclassified to conform to the current year presentation. We have elected to present amortization of software development, previously included in the cost of revenues software licenses and royalties line item, in a separate category line item on the consolidated statements of income for all reporting periods presented. Previously disclosed as selling, general and administrative expense is now disclosed in separate line items: sales and marketing expense and general and administrative expense on the consolidated statements of income for all reporting periods presented.

Recent Acquisitions

2022

On October 31, 2022, we acquired Rapid Financial Solutions, LLC, a principal provider of reliable, scalable, and secure payments with best-in-class card issuance and digital disbursement capabilities. The total purchase price, net of cash acquired of $2.2 million, was approximately $67.7 million, consisting of $51.2 million paid in cash, $18.2 million of common stock, and $500,000 related to working capital holdbacks, subject to certain post-closing adjustments.

On February 8, 2022, we acquired US eDirect Inc. (US eDirect), a leading provider of technology solutions for campground and outdoor recreation management. The total purchase price, net of cash acquired of $6.4 million, was approximately $116.5 million, consisting of $118.8 million paid in cash and approximately $4.1 million related to indemnity holdbacks.

2021

On September 9, 2021, we acquired all the equity interest of Ultimate Information Systems, Inc. (dba Arx). Arx is a cloud-based platform which creates accessible technology to enable a modern-day police force that is fully transparent, accountable, and a trusted resource to the community it serves. The total purchase price, net of cash acquired, was approximately $12.8 million.

On September 1, 2021, we acquired VendEngine, Inc (VendEngine), a cloud-based software provider focused on financial technology for the corrections market. The total purchase price, net of cash acquired of $1.7 million, was approximately $83.6 million, consisting of $81.6 million paid in cash, and approximately $3.8 million related to indemnity holdbacks.

Management's Discussion and Analysis of Financial Condition and Results of Operations

On April 21, 2021, we acquired NIC, a leading digital government solutions and payment company that primarily serves federal and state government agencies. The total purchase price, net of cash acquired of $331.8 million, was approximately $2.0 billion, consisting of cash paid of $2.3 billion and $1.9 million of purchase consideration related to the conversion of unvested restricted stock awards.

On March 31, 2021, we completed two acquisitions, Glass Arc, Inc. (dba ReadySub) and DataSpec, Inc. (DataSpec), for the combined purchase price of $12.1 million.

2022 Operating Results

For the twelve months ended December 31, 2022, total revenues increased 16% compared to the prior period. Excluding the 2022 impact of recent acquisitions[1], total revenues increased 4% compared to prior period. Revenues from acquisitions contributed 12.4% of growth for the twelve months ended December 31, 2022.

Subscriptions revenue grew 29.0% for the twelve months ended December 31, 2022, due to an ongoing shift toward a cloud-based, software as a service business model, as well as the inclusion of transaction-based revenue from NIC's digital government and payments processing businesses. Excluding the 2022 impact of recent acquisitions[1], subscriptions revenue increased 6.3% for the twelve months ended December 31, 2022.

The majority of our revenues are comprised of revenues from subscriptions and maintenance, which we consider to be recurring revenues. Annualized recurring revenues ("ARR") is calculated based on quarter-to-date end total recurring revenues multiplied by four. ARR was $1.50 billion and $1.39 billion as of December 31, 2022, and 2021, respectively. ARR increased 8% compared to the prior period, due to an increase in subscriptions revenue due to an ongoing shift toward SaaS arrangements.

For the twelve months ended December 31, 2022, total revenues include COVID-related subscriptions revenue of $10.8 million from NIC's Tour Health offering and professional services revenue of $40.2 million from pandemic unemployment and Virginia rent relief offerings. These programs all ended in 2022 and we do not expect to generate COVID-related subscriptions revenue and professional services revenue in future periods.

We monitor and analyze several key performance indicators in order to manage our business and evaluate our financial and operating performance. These indicators include the following:

Revenues – We derive our revenues from five primary sources: subscription-based arrangements; maintenance; professional services; sale of software licenses and royalties; and appraisal services. Subscriptions and maintenance are considered recurring revenue sources and comprised approximately 80% of our revenues in 2022. The number of new SaaS clients and the number of existing clients who convert from our traditional software arrangements to our SaaS model are a significant driver of our revenue growth, together with new software license sales and maintenance rate increases. We monitor ARR which is calculated based on quarter-to-date end total recurring revenues multiplied by four. As of December 31, 2022, ARR was $1.50 billion. In addition, we also monitor our customer base and turnover, which historically is very low. During 2022, based on our number of customers, turnover was approximately 2%.

Cost of Revenues and Gross Margins – Our primary cost component is personnel expenses in connection with providing software implementation, subscription-based services, maintenance and support, and appraisal services to our clients. We can improve gross margins by controlling headcount and related costs and by expanding our revenue base, especially from those products and services that produce incremental revenue with minimal incremental cost, such as software licenses and royalties, subscription-based services, and maintenance and support. Our appraisal projects are cyclical in nature, and we often employ appraisal personnel on a short-term basis to coincide with the life of a project. As of December 31, 2022, our total employee count included in cost of revenues increased to 5,021 from 4,746 at December 31, 2021, including 56 employees who joined us through acquisitions completed since December 31, 2021.

Sales and Marketing ("S&M") Expense – The primary components of S&M expense include sales personnel salaries and share-based compensation expense, sales commissions, travel-related expenses, advertising and marketing materials, and allocated depreciation, facilities, and IT support. Sales commissions typically fluctuate with revenues and share-based compensation expense generally increases based increased level of awards issues during the period and as the market price of our stock increases. Other administrative expenses tend to grow at a slower rate than revenues.

[1] Excludes the 2022 incremental impact as a result of not having the recent acquisition for a full fiscal year.

General and Administrative (“G&A”) Expense – The primary components of G&A expense include personnel salaries and share-based compensation expense for general corporate functions, including senior management, finance, accounting, legal, human resources and corporate development, third party professional fees, travel-related expenses, insurance, allocation of depreciation, facilities and IT support costs, acquisition-related expenses and other administrative expenses. Share-based compensation expense generally increases as the market price of our stock increases. Other administrative expenses tend to grow at a slower rate than revenues.

Liquidity and Cash Flows – The primary driver of our cash flows is net income. Uses of cash include acquisitions, capital investments in property and equipment and discretionary purchases of treasury stock. Our working capital needs are fairly stable throughout the year with the significant components of cash outflows being payment of personnel expenses offset by cash inflows representing collection of accounts receivable and cash receipts from clients in advance of revenue being earned. In recent years, we have also received significant amounts of cash from employees exercising stock options and contributing to our Employee Stock Purchase Plan.

Balance Sheet – Cash, accounts receivable and days sales outstanding and deferred revenue balances are important indicators of our business.

Outlook

The local government software market continues to be active with sales activity trending at or near pre-pandemic levels in most sectors of our business, and our backlog at December 31, 2022 reached $1.89 billion, a 5% increase from the prior period. We expect to continue to achieve solid growth in revenues and earnings. With our strong financial position and cash flow, we plan to continue to make significant investments in product development and accelerating our move to the cloud to better position us to continue to expand our addressable market and strengthen our competitive position over the long term. The expenses associated with the cloud transition are expected to pressure operating margins in 2023 and 2024.

CRITICAL ACCOUNTING ESTIMATES

Our discussion and analysis of financial condition and results of operations is based upon our financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States (“GAAP”). The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets and liabilities at the date of the financial statements, the reported amounts of revenues, cost of revenues and expenses during the reporting period, and related disclosure of contingencies. The Notes to the Financial Statements included as part of this Annual Report describe our significant accounting policies used in the preparation of the financial statements. Significant items subject to such estimates and assumptions include the application of the progress toward completion methods of revenue recognition, estimated standalone selling price (“SSP”) for distinct performance obligations, the fair value amount and estimated useful lives of intangible assets, determination of share-based compensation expense and allowance for losses and sales adjustments. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

We believe the following critical accounting policies require significant judgments and estimates used in the preparation of our financial statements.

Revenue Recognition. We earn revenues from software licenses, royalties, subscription-based services, professional services, post-contract customer support (“PCS” or “maintenance”), hardware, and appraisal services. Revenue is recognized upon transfer of control of promised products or services to customers in an amount that reflects the consideration we expect to receive in exchange for those products or services. We determine revenue recognition through the following steps:

- Identification of the contract, or contracts, with a customer
- Identification of the performance obligations in the contract
- Determination of the transaction price
- Allocation of the transaction price to the performance obligations in the contract

- Recognition of revenue when, or as, we satisfy a performance obligation

Our software arrangements with customers contain multiple performance obligations that range from software licenses and SaaS arrangements, installation, training, and consulting to software modification and customization to meet specific customer needs (services), hosting, and PCS. For these contracts, we account for individual performance obligations separately when they are distinct. We evaluate whether separate performance obligations can be distinct or should be accounted for as one performance obligation. Arrangements that include professional services, such as training or installation, are evaluated to determine whether the customer can benefit from the services either on their own or together with other resources readily available to the customer and whether the services are separately identifiable from other promises in the contract. Many of our software arrangements involve "off-the-shelf" software. We recognize the revenue allocable to "off-the-shelf" software licenses and specified upgrades at a point in time when control of the software license transfers to the customer, unless the software is not considered distinct. We consider off-the-shelf software to be distinct when it can be added to an arrangement with minor changes in the underlying code, it can be used by the customer for the customer's purpose upon installation, and remaining services such as training are not considered highly interdependent or highly interrelated to the product's functionality.

For arrangements that involve significant production, modification or customization of the software, or where professional services are otherwise not considered distinct, we recognize revenue over time by measuring progress-to-completion. We measure progress-to-completion primarily using labor hours incurred as it best depicts the transfer of control to the customer which occurs as we incur costs on our contracts. These arrangements are often implemented over an extended period and occasionally require us to revise total cost estimates. Amounts recognized in revenue are calculated using the progress-to-completion measurement after giving effect to any changes in our cost estimates. Changes to total estimated contract costs, if any, are recorded in the period they are determined. Estimated losses on uncompleted contracts are recorded in the period in which we first determine that a loss is apparent. When professional services are distinct, the fee allocable to the service element is recognized over the time we perform the services and is billed on a time and material or milestones basis.

Subscription-based services consist of revenues derived from SaaS arrangements, transaction and payment processing, electronic filing transactions, and digital government services. Revenue from subscription-based services is generally recognized over time on a ratable basis over the contract term, beginning on the date that our service is made available to the customer. For SaaS arrangements, we evaluate whether the customer has the contractual right to take possession of our software at any time during the hosting period without significant penalty and whether the customer can feasibly maintain the software on the customer's hardware or enter into another arrangement with a third-party to host the software. We allocate contract value to each performance obligation of the arrangement that qualifies for treatment as a distinct element based on estimated SSP. We recognize SaaS arrangements ratably over the terms of the arrangements, which range from one to ten years, but are typically for periods of three to five years. For professional services associated with certain SaaS arrangements, we have concluded that the services are not distinct, and we recognize the revenue ratably over the remaining contractual period once we have provided the customer access to the software. We record amounts that have been invoiced in accounts receivable and in deferred revenue or revenues, depending on whether the revenue recognition criteria have been met.

For transaction and payments revenue and e-filing transaction fees, we have the right to charge the customer an amount that directly corresponds with the value to the customer of our performance to date. Therefore, we recognize revenue for these services over time based on the amount billable to the customer in accordance with the 'as invoiced' practical expedient in ASC 606-10-55-18. In some cases, we are paid on a fixed fee basis and recognize the revenue ratably over the contractual period. Typically, the structure of our arrangements does not give rise to variable consideration. However, in those instances whereby variable consideration exists, we include in our estimates, additional revenue for variable consideration when we believe we have an enforceable right, the amount can be estimated reliably and its realization is probable.

The transaction price is allocated to the separate performance obligations on a relative SSP basis. We determine the SSP based on our overall pricing objectives, taking into consideration market conditions and other factors, including the value of our contracts, the applications sold, customer demographics, and the number and types of users within our contracts. We use a range of amounts to estimate SSP when we sell each of the products and services separately and need to determine whether there is a discount to be allocated based on the relative SSP of the various products and services. In instances where SSP is not directly observable, such as when we do not sell the product or service separately, we determine SSP using the expected cost-plus margin approach. Revenue is recognized net of allowances for sales adjustments and any taxes collected from customers, which are subsequently remitted to governmental authorities.

We maintain allowances for losses and sales adjustments, which losses are recorded against revenues at the time the loss is incurred. Since most of our clients are domestic governmental entities, we rarely incur a credit loss resulting from the inability of a client to make required payments. Events or changes in circumstances that indicate the carrying amount for the allowances for losses and sales adjustments may require revision, include, but are not limited to, managing our client's expectations regarding the scope of the services to be delivered and defects or errors in new versions or enhancements of our software products. Our allowance for losses and sales adjustments of $14.8 million and $12.1 million at December 31, 2022, and December 31, 2021, respectively, does not include provisions for credit losses. As of January 1, 2020, we adopted ASU 2016-13, *Financial Instruments — Credit Losses,* and primarily evaluated our historical experience with credit losses related to trade and other receivables. Because we rarely experience credit losses with our clients, we have not recorded a material reserve for credit losses.

In connection with certain of our contracts, we have recorded retentions receivable or unbilled receivables consisting of costs and estimated profit in excess of billings as of the balance sheet date. Many of the contracts which give rise to unbilled receivables at a given balance sheet date are subject to billings in the subsequent accounting period. We review unbilled receivables and related contract provisions to ensure we are justified in recognizing revenue prior to billing the customer and that we have objective evidence which allows us to recognize such revenue. In addition, we have a sizable amount of deferred revenue, which represents billings in excess of revenue earned. The majority of this liability consists of subscriptions and maintenance billings for which payments are made in advance and the revenue is ratably earned over the subscription or maintenance billing period, generally one year. We also have deferred revenue for those contracts in which we receive a deposit and the conditions in which to record revenue for the service or product have not been met. On a periodic basis, we review by customer the detail components of our deferred revenue to ensure our accounting remains appropriate.

Business Combinations. Accounting for the acquisition of a business requires the allocation of the purchase price to the various assets acquired and liabilities assumed at their respective fair values. The determination of fair value requires the use of significant estimates and assumptions, and in making these determinations, management uses all available information.

For tangible and identifiable intangible assets acquired in a business combination, management estimates the fair value of assets acquired and liabilities assumed based on quoted market prices, the carrying value of the acquired assets and widely accepted valuation techniques, including discounted cash flows and market multiple analyses. The assumptions made in performing these valuations include, but are not limited to, discount rates, future revenues and operating costs, projections of capital costs, and other assumptions believed to be consistent with those used by principal market participants.

Due to the specialized nature of these calculations, we engage third-party specialists to assist management in evaluating our assumptions as well as appropriately measuring the fair value of assets acquired and liabilities assumed. We adjust the preliminary purchase price allocation, as necessary, up to one year after the acquisition closing date as we obtain new information about facts and circumstances that existed as of the closing date. If actual results are materially different than the assumptions we used to determine fair value of the assets acquired and liabilities assumed through a business combination as well as the estimated useful lives of the acquired intangible assets, it is possible that adjustments to the carrying values of such assets and liabilities will have a material impact on our financial position and results of operations.

Intangible Assets and Goodwill. Our business acquisitions typically result in the creation of goodwill and other intangible asset balances, and these balances affect the amount and timing of future period amortization expense, as well as expense we could possibly incur as a result of an impairment charge. The cost of acquired companies is allocated to identifiable tangible and intangible assets based on estimated fair value, with the excess allocated to goodwill. Accordingly, we have a significant balance of acquisition date intangible assets, including software, customer related intangibles, trade name, leases and goodwill. These intangible assets (other than goodwill) are amortized over their estimated useful lives. We currently have no intangible assets with indefinite lives other than goodwill.

We assess goodwill for impairment annually, or more frequently whenever events or changes in circumstances indicate its carrying value may not be recoverable. We begin with the qualitative assessment of whether it is more likely than not that a reporting unit's fair value is less than its carrying value before applying the quantitative assessment described below. When testing goodwill for impairment quantitatively, we first compare the fair value of each reporting unit with its carrying amount. If the carrying amount of reporting unit goodwill exceeds the implied fair value of that goodwill, an impairment loss is recognized. The fair values calculated in our impairment tests are determined using discounted cash flow models involving several assumptions (Level 3 inputs). The assumptions that are used are based upon what we believe a hypothetical marketplace participant would use in estimating fair value. We base our fair value estimates on assumptions we believe to be reasonable but that are unpredictable and inherently uncertain. We evaluate the reasonableness of the fair value calculations of our reporting units by comparing the total of the fair value of all of our reporting units to our total market capitalization.

During the fourth quarter, as part of our annual impairment test as of October 1, we performed qualitative assessments for the reporting units containing the recently acquired data and insights, digital government and payments solutions, and development platform solutions, and concluded no impairment existed as of our annual assessment date. Approximately $1.7 billion, or 70%, of total goodwill as of December 31, 2022, relates to these reporting units, which as a result of these recent acquisitions, do not have significant excess fair values over carrying values. We performed qualitative assessments for the remaining reporting units in which we determined that it not more likely than not that the fair value exceeded the carrying value; therefore, we did not perform a Step 1 quantitative impairment test. Our annual goodwill impairment analysis did not result in an impairment charge. During 2022, we have recorded no impairment to goodwill as no triggering events or change in circumstances indicating a potential impairment has occurred as of period-end.

Determining the fair value of our reporting units involves the use of significant estimates and assumptions and considerable management judgment. We base our fair value estimates on assumptions we believe to be reasonable at the time, but such assumptions are subject to inherent uncertainty. Changes in market conditions or other factors outside of our control, such as the COVID-19 pandemic, could cause us to change key assumptions and our judgment about a reporting unit's prospects. Similarly, in a specific period, a reporting unit could significantly underperform relative to its historical or projected future operating results. Either situation could result in a meaningfully different estimate of the fair value of our reporting units, and a consequent future impairment charge.

All intangible assets (other than goodwill) are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of other intangible assets is measured by comparison of the carrying amount to estimated undiscounted future cash flows. The assessment of recoverability or of the estimated useful life for amortization purposes will be affected if the timing or the amount of estimated future operating cash flows is not achieved. Such indicators may include, among others: a significant decline in expected future cash flows; a sustained, significant decline in stock price and market capitalization; a significant adverse change in legal factors or in the business climate; unanticipated competition; and reductions in growth rates. In addition, products, capabilities, or technologies developed by others may render our software products obsolete or non-competitive. Any adverse change in these factors could have a significant impact on the recoverability of goodwill or other intangible assets. During 2022, we did not identify any triggering events that would indicate that the carrying amount of our intangible assets may not be recoverable.

Recent adoption of new accounting pronouncements

In October 2021, the FASB issued ASU 2021-08 — *Accounting for Contract Assets and Contract Liabilities from Contracts with Customers* (ASC 805) ("ASU 2021-08"). ASU 2021-08 requires an acquirer in a business combination to recognize and measure contract assets and contract liabilities (deferred revenue) from acquired contracts using the revenue recognition guidance in Topic 606. Under this "Topic 606 approach," the acquirer applies the revenue model as if it had originated the contracts. This is a departure from the current requirement to measure contract assets and contract liabilities at fair value. ASU 2021-08 is effective for all public business entities in annual and interim periods starting after December 15, 2022, and early adoption is permitted. An entity that early adopts should apply the amendments (1) retrospectively to all business combinations for which the acquisition date occurs on or after the beginning of the fiscal year that includes the interim period of early application and (2) prospectively to all business combinations that occur on or after the date of initial application. We early adopted as of January 1, 2022. The adoption of ASU 2021-08 resulted in no adjustments to the fair value of the deferred revenue balances assumed in our 2022 acquisitions. See Note 2, "Acquisitions," to the consolidated financial statements for further discussion.

Recent Accounting Guidance not yet Adopted

There were no new not yet adopted accounting pronouncements currently issued that would affect the Company or have a material impact on its consolidated financial position or results of operations in future periods.

ANALYSIS OF RESULTS OF OPERATIONS AND OTHER

The following discussion compares the historical results of operations on a basis consistent with GAAP for the years ended December 31, 2022, 2021 and 2020.

	Percentage of Total Revenues		
Years Ended December 31,	2022	2021	2020
Revenues:			
Subscriptions	54.7%	49.3%	31.4%
Maintenance	25.3	29.8	41.9
Professional services	13.1	13.2	16.7
Software licenses and royalties	3.2	4.6	6.5
Appraisal services	1.9	1.7	1.9
Hardware and other	1.8	1.4	1.6
Total revenues	100.0	100.0	100.0
Cost of revenues:			
Subscriptions, maintenance, and professional services	51.6	50.3	45.8
Software licenses, royalties, and amortization of acquired software	3.1	3.1	3.2
Amortization of software development	0.4	0.1	—
Appraisal services	1.3	1.2	1.4
Hardware and other	1.3	0.8	1.1
Sales and marketing expense	7.3	7.4	8.8
General and administrative expense	14.4	17.1	14.4
Research and development expense	5.7	5.9	7.9
Amortization of customer and trade name intangibles	3.3	2.8	1.9
Operating income	11.6	11.3	15.5
Interest expense	(1.5)	(1.5)	(0.1)
Other income, net	0.1	0.1	0.3
Income before income taxes	10.2	9.9	15.7
Income tax provision (benefit)	1.3	(0.2)	(1.8)
Net income	8.9%	10.1%	17.5%

2022 Compared to 2021

Revenues

Recent Acquisitions

On October 31, 2022, we acquired Rapid Financial Solutions, LLC (Rapid), a provider of reliable, scalable, and secure payments with best-in-class card issuance and digital disbursement capabilities. On February 8, 2022, we acquired US eDirect Inc. (US eDirect), a leading provider of technology solutions for campground and outdoor recreation management. On April 21, 2021, we acquired NIC, Inc., a leading digital government solutions and payment company that serves federal, state and local government agencies. US eDirect and Rapid are operated as a part of the digital government and payment solutions business unit (also known as the NIC division) and the results of NIC, US eDirect, and Rapid from their respective dates of acquisition, are included with the operating results of the PT segment.

The following table details revenues for the NIC division for the period from acquisition through December 31, 2022 and 2021, which are presented in our consolidated statements of income from the date of acquisition and included in the operating results of the PT reportable segment (in thousands).

	2022	2021
Revenues:		
Subscriptions	$470,904	$344,692
Maintenance	810	560
Professional services	50,006	23,665
Software licenses and royalties	—	—
Appraisal services	—	—
Hardware and other	—	—
Total revenues	$521,720	$368,917

Subscriptions.

The following table sets forth a comparison of our subscriptions revenue for the years ended December 31 ($ in thousands):

	2022	2021	Change $	Change %
ES	$ 526,323	$425,078	$ 101,245	24%
PT	485,981	359,357	126,624	35
Total subscriptions revenue	$1,012,304	$784,435	$ 227,869	29%
Less: Revenue from recent acquisitions[2]	(178,363)	—	(178,363)	
Total subscriptions revenue excluding acquisitions	$ 833,941	$784,435	$ 49,506	6%

Subscriptions revenue consists of revenue derived from our SaaS arrangements and transaction-based fees primarily related to digital government services and payment processing. We also provide electronic document filing solutions ("e-filing") that simplify the filing and management of court related documents for courts and law offices. E-filing revenue is derived from transaction fees and fixed fee arrangements.

Subscriptions revenue grew 29% compared to 2021, primarily due to the inclusion of transaction-based revenues from NIC including Rapid and US eDirect from the respective dates of acquisition. Excluding the incremental impact of recent acquisitions, subscriptions revenue increased 6%. New SaaS clients as well as existing clients who converted to our SaaS model provided the majority of the subscriptions revenue increase. In 2022, we added 609 new SaaS clients and 336 existing clients elected to convert to our SaaS model. Our mix of new software contracts in 2022 was approximately 23% perpetual software license arrangements and approximately 77% subscription-based arrangements compared to total new client mix in 2021 of approximately 33% perpetual software license arrangements and approximately 67% subscription-based arrangements.

[2] Excludes the 2022 incremental impact as a result of not having the recent acquisition for a full fiscal year.

Total subscriptions revenue derived from transaction-based fees was $600.8 million and $454.8 million for the twelve months ended December 31, 2022, and 2021, respectively. The increase of $146.0 million or 32% is attributable to inclusion of the NIC division, including Rapid and US eDirect transaction-based revenues from the respective dates of acquisition. Transaction-based revenue from the NIC division was $470.9 million and $344.7 million for the twelve months ended December 31, 2022, and 2021, respectively. Excluding NIC, transaction-based fees contributed $19.8 million to the increase in subscriptions revenue due to the increased volumes of online payments and e-filing services in 2022.

Maintenance.

The following table sets forth a comparison of our maintenance revenue for the years ended December 31 ($ in thousands):

			Change	
	2022	2021	$	%
ES	$444,143	$439,589	$ 4,554	1%
PT	24,312	34,698	(10,386)	(30)
Total maintenance revenue	$468,455	$474,287	$ (5,832)	(1)%
Less: Revenue from recent acquisitions [2]	(689)	—	(689)	
Total maintenance revenue excluding acquisitions	$467,766	$474,287	$ (6,521)	(1)%

We provide maintenance and support services for our software products and certain third-party software. Maintenance revenue decreased 1% compared to the prior period. Maintenance revenue declined mainly due to attrition related to a legacy case management solution and clients converting from on-premises license arrangements to SaaS, partially offset by annual maintenance rate increases and maintenance associated with new software license sales.

Annualized Recurring Revenues

Subscriptions and maintenance are considered recurring revenue sources. Annualized recurring revenues ("ARR") is calculated based on quarter-end total recurring revenues multiplied by four. ARR was $1.50 billion and $1.39 billion as of December 31, 2022, and 2021, respectively. ARR increased 8% compared to the prior period due to an increase in subscriptions revenue resulting from an ongoing shift toward SaaS arrangements.

Professional services.

The following table sets forth a comparison of our professional services revenue for the years ended December 31 ($ in thousands):

			Change	
	2022	2021	$	%
ES	$170,462	$165,396	$ 5,066	3%
PT	72,655	43,995	28,660	65
Total professional services revenue	$243,117	$209,391	$ 33,726	16%
Less: Revenue from recent acquisitions [2]	(17,073)	—	(17,073)	
Total professional services revenue excluding acquisitions	$226,044	$209,391	$ 16,653	8%

Professional services revenue primarily consists of professional services billed in connection with implementing our software, converting client data, training client personnel, custom development activities and consulting. New clients who purchase our proprietary software licenses or subscriptions generally also contract with us to provide the related professional services. Existing clients also periodically purchase additional training, consulting and minor programming services.

[2] Excludes the 2022 incremental impact as a result of not having the recent acquisition for a full fiscal year.

Professional services revenue increased 16% compared to the prior year, primarily due to the inclusion of revenues from recent acquisitions from the date of acquisition. Excluding the incremental impact of recent acquisitions, professional services revenue increased 8%. The increase in professional services revenue is primarily attributed to higher revenues generated by the continued COVID pandemic-related rent relief services and the return of billable travel revenue as onsite services have increased since 2021. The increases are partially offset by more clients selecting our cloud solutions instead of our on-premises license arrangements which typically require more professional services.

Software licenses and royalties.

The following table sets forth a comparison of our software licenses and royalties revenue for the years ended December 31 ($ in thousands):

			Change	
	2022	2021	$	%
ES	$55,158	$66,816	$(11,658)	(17)%
PT	4,248	7,636	(3,388)	(44)
Total software licenses and royalties revenue	$59,406	$74,452	$(15,046)	(20)%
Less: Revenue from recent acquisitions [2]	—	—	—	
Total software licenses and royalties revenue excluding acquisitions	$59,406	$74,452	$(15,046)	(20)%

Software licenses and royalties revenue decreased 20% compared to the prior period. The decline is primarily attributed to the shift in the mix of new software contracts toward more subscription-based agreements compared to the prior period.

Although the mix of new contracts between subscription-based and perpetual license arrangements may vary from quarter to quarter and year to year, we expect the decline in software license revenues will accelerate as we continue to shift our model away from perpetual licenses to SaaS. Subscription-based arrangements result in lower software license revenue in the initial year as compared to perpetual software license arrangements but generate higher overall revenue over the term of the contract.

Appraisal services.

The following table sets forth a comparison of our appraisal services revenue for the years ended December 31 ($ in thousands):

			Change	
	2022	2021	$	%
ES	$34,508	$27,788	$6,720	24%
PT	—	—	—	—
Total appraisal services revenue	$34,508	$27,788	$6,720	24%
Less: Revenue from recent acquisitions [2]	—	—	—	
Total appraisal services revenue excluding acquisitions	$34,508	$27,788	$6,720	24%

In 2022, appraisal services revenue grew 24% compared to the prior period primarily due to relaxed travel restrictions allowing for the ramp-up of appraisal services for several new revaluation contracts which started in recent quarters. The appraisal services business is somewhat cyclical and driven in part by statutory revaluation cycles in various states.

[2] Excludes the 2022 incremental impact as a result of not having the recent acquisition for a full fiscal year.

Cost of revenues and gross margins

The following table sets forth a comparison of the key components of our cost of revenues for the years ended December 31 ($ in thousands):

	2022	2021	Change $	Change %
Subscriptions, maintenance, and professional services	$953,897	$799,158	$154,739	19%
Software licenses and royalties	6,083	3,552	2,531	71
Amortization of software development	6,507	2,325	4,182	180
Amortization of acquired software	52,192	45,601	6,591	14
Appraisal services	23,988	19,061	4,927	26
Hardware and other	23,674	12,946	10,728	83
Total cost of revenues	$1,066,341	$882,643	$183,698	21%

The following table sets forth a comparison of gross margin percentage by revenue type for the years ended December 31:

	2022	2021	Change
Subscriptions, maintenance, and professional services	44.7%	45.6%	(0.9)%
Software licenses, royalties, software development, and acquired software	(9.0)	30.9	(39.9)
Appraisal services	30.5	31.4	(0.9)
Hardware and other	27.0	41.0	(14.0)
Overall gross margin	42.4%	44.6%	(2.2)%

Gross margin percentage by revenue type, excluding the incremental impact of recent acquisitions[2], for the years ended December 31:

	2022	2021	Change
Subscriptions, maintenance, and professional services	45.8%	45.6%	0.2%
Software licenses, royalties, software development, and acquired software	7.1	30.9	(23.8)
Appraisal services	30.5	31.4	(0.9)
Hardware and other	27.9	41.0	(13.1)
Overall gross margin	43.8%	44.6%	(0.8)%

Subscriptions, maintenance, and professional services. Cost of subscriptions, maintenance and professional services primarily consists of personnel costs related to installation of our software, conversion of client data, training client personnel and support activities and various other services such as custom client development, on-going operation of SaaS, digital government, and other transaction-based services such as e-filing. Other costs included are interchange fees required to process credit/debit card transactions and bank fees to process automated clearinghouse transactions related to our payments business. In 2022, the subscriptions, maintenance and professional services gross margin declined 0.9% compared to the prior period primarily due to several factors, including lower maintenance revenue resulting from attrition related to a legacy case management solution; a post-COVID return of low-margin revenues such as billable travel; higher personnel costs related to inflation, as well as costs related to onboarding new professional services employees who are not yet billable; and higher hosting costs related to our accelerated shift to the cloud. Our implementation and support staff grew by 225 employees since December 31, 2021, as we increased hiring to ensure that we are well-positioned to deliver our current backlog and anticipated new business. Excluding the incremental impact from recent acquisitions of $70 million, gross margin was 45.8% in 2022, a slight increase of 0.2% which is attributable to an increase in SaaS arrangements and the decline in low margin COVID-related transaction-based revenues compared to the prior period.

Software licenses, royalties, software development, and acquired software. Amortization expense for acquired software comprises the majority of costs of software licenses, royalties, software development, and acquired software. We do not have any direct costs associated with royalties. The gross margin for software licenses, royalties, software development, and acquired software was negative 9.0% in 2022 and 30.9% in 2021. Excluding the impact of amortization expense of acquired software, the margin was 78.8% in 2022 and 92.1% in 2021. The decline in software licenses, royalties, software development, and acquired software gross margin compared to the prior period is due to lower revenue from software licenses.

Appraisal services. Appraisal services revenue comprised approximately 1.9% of total revenues. The appraisal services gross margin decrease of 0.9% compared to 2021 is primarily due to higher personnel costs related to inflation, as well as increased low margin billable travel revenue. The appraisal services business is somewhat cyclical and driven in part by statutory revaluation cycles in various states.

Overall gross margin. Our 2022 blended gross margin decreased 2.2% compared to 2021, principally due to the inclusion of NIC's revenues (including lower margin COVID related revenues), which historically have lower margins than Tyler's software-related revenues. Excluding the incremental impact from recent acquisitions of $60 million, overall gross margin was 43.8% in 2022. The decrease of 0.8% in overall gross margin compared to the prior period is due to lower revenue from software licenses and maintenance, higher hosting costs related to our accelerated shift to the cloud, and higher personnel costs. Excluding employees from recent acquisitions, our implementation and support, and appraisal staff grew by 219 employees since December 31, 2021, as we increased hiring to ensure that we are well-positioned to deliver our current backlog and anticipated new business.

Sales and marketing expense

Sales and Marketing expense ("S&M") consists primarily of salaries, employee benefits, travel, share-based compensation expense, commissions and related overhead costs for sales and marketing employees, as well as professional fees, trade show activities, advertising costs and other marketing costs. The following table sets forth a comparison of our S&M expenses for the years ended December 31 ($ in thousands):

			Change	
	2022	2021	$	%
Sales and marketing expense	$135,743	$118,624	$17,119	14%

S&M as a percentage of revenue was 7.3% in 2022 compared to 7.4% in 2021. S&M expense increased approximately 14% compared to the prior period, primarily due to the inclusion of recent acquisitions' S&M expense. Excluding the incremental impact of S&M expense from recent acquisitions of $5.6 million, S&M increased 10% compared to the prior period. Higher S&M expense is due to higher bonus and commission expense relating to improved operating results, increase in road show and user conference expenses, increase in travel-related expenses, and higher sales and marketing personnel costs from increased employee headcount.

General and administrative expense

General and administrative ("G&A") expense consists primarily of personnel salaries and share-based compensation expense for general corporate functions, including senior management, finance, accounting, legal, human resources and corporate development, third party professional fees, travel-related expenses, insurance, allocation of depreciation, facilities and IT support costs, acquisition-related expenses and other administrative expenses. The following table sets forth a comparison of our G&A expense for the years ended December 31 ($ in thousands):

			Change	
	2022	2021	$	%
General and administrative expense	$267,324	$271,955	$ (4,631)	(2)%

G&A as a percentage of revenue was 14.4% in 2022 compared to 17.1% in 2021. G&A expense decreased approximately 2% compared to the prior period. The decrease in G&A is primarily attributed to lower transaction costs related to recent acquisitions and lower share-based compensation expense. G&A includes $2.0 million of transaction expenses related to acquisitions completed in 2022 compared to $23.5 million of transaction expense related to acquisitions completed in 2021. During 2022, stock compensation expense declined $5.5 million compared to 2021, generally due to a lower fair value of each share-based award resulting from the decline in our stock price. The decreases are offset by inclusion of G&A expense from acquisitions of $21.5 million, higher bonus expense due to improved operating results, increases in amortization of software development for internal use, increases in travel-related expenses and other administrative costs, and higher personnel costs from increased employee headcount. In 2022, G&A expense also included $2.8 million related to lease restructuring and other asset write-offs.

Research and development expense

Research and development expense consists primarily of salaries, employee benefits and related overhead costs associated with new product development. The following table sets forth a comparison of our research and development expense for the years ended December 31 ($ in thousands):

			Change	
	2022	2021	$	%
Research and development expense	$105,184	$93,481	$11,703	13%

Research and development expense consists mainly of costs associated with development of new products and technologies from which we do not currently generate significant revenue.

Research and development expense as a percent of total revenue was 5.7% in 2022 compared to 5.9% in 2021. Research and development expense increased 13% in 2022 compared to the prior period, mainly due to a number of new Tyler product development initiatives across our product suites, including increased investments in research and development at recently acquired businesses.

Amortization of other intangibles

Other intangibles are comprised of the excess of the purchase price over the fair value of net tangible assets acquired that are allocated to acquired software and customer related, trade name, and leases acquired intangibles. The remaining excess purchase price is allocated to goodwill that is not subject to amortization. Amortization expense related to acquired software is included with cost of revenues while amortization expense of customer and trade name intangibles is recorded as operating expense. The estimated useful lives of other intangibles range from one to 25 years. The following table sets forth a comparison of our amortization of other intangibles for the years ended December 31 ($ in thousands):

			Change	
	2022	2021	$	%
Amortization of other intangibles	$61,363	$44,849	$16,514	37%

Amortization of other intangibles increased due to the impact of intangibles added with several acquisitions completed in 2022 and 2021.

Estimated annual amortization expense relating to customer related, trade name, and acquired lease intangibles, excluding acquired software for which the amortization expense is recorded as cost of revenues, for the next five years and thereafter is as follows (in thousands):

2023	$ 70,233
2024	54,141
2025	53,404
2026	52,586
2027	52,143
Thereafter	524,162

Interest expense

The following table sets forth a comparison of our interest expense for the years ended December 31 ($ in thousands):

			Change	
	2022	2021	$	%
Interest expense	$(28,379)	$(23,298)	$ (5,081)	22%

Interest expense is comprised of interest expense and non-usage and other fees associated with our borrowings. The change in interest expense compared to the prior period is attributable to an increase in amortization expense related to debt issuance costs, resulting from our accelerated repayment of the term loans, coupled with an increase in interest rates compared to the prior period.

Other income, net

The following table sets forth a comparison of our other income, net for the years ended December 31 ($ in thousands):

			Change	
	2022	2021	$	%
Other income, net	$1,723	$1,544	$179	12%

Other income, net, is primarily comprised of interest income from invested cash. The change in other income, net, compared to the prior period is due to increased interest income generated from invested cash as a result of higher interest rates in 2022 compared to 2021.

Income tax provision

The following table sets forth a comparison of our income tax provision for the years ended December 31 ($ in thousands):

	2022	2021	Change $	Change %
Income tax provision (benefit)	$23,353	$(2,477)	$25,830	(1,043)%
Effective income tax rate	12.4%	(1.6)%		

The increase in the income tax provision and the effective income tax rate in 2022 compared to the prior period is principally driven by a decrease in excess tax benefits from share-based compensation and an increase in liabilities for uncertain tax positions, offset by an increase in research tax credit benefits. The share-based exercise and vesting activity in 2022 generated $7.8 million of excess tax benefits, while exercise and vesting activity in 2021 generated $47.7 million of excess tax benefits. The tax benefits related to research tax credits totaled $31.3 million in 2022 compared to $5.0 million in 2021, as a result of completing a multiyear research and development tax credit study during 2022.

The effective income tax rates for the periods presented were different from the statutory United States federal income tax rate of 21% primarily due to excess tax benefits from share-based compensation and the tax benefits of research tax credits, offset by an increase in liabilities for uncertain tax positions, state income taxes, and non-deductible business expenses. Excluding the impact of the excess tax benefits, uncertain tax positions and research credits, our income tax provision and effective tax rate in 2022 would have been $54.1 million and 28.8%, respectively, and in 2021, would have been $50.6 million and 31.8%, respectively.

FINANCIAL CONDITION AND LIQUIDITY

As of December 31, 2022, we had cash and cash equivalents of $173.9 million compared to $309.2 million at December 31, 2021. We also had $55.5 million invested in investment grade corporate bonds, municipal bonds and asset-backed securities as of December 31, 2022, compared to $98.7 million at December 31, 2021. These investments have varying maturity dates through 2027 and are held as available-for-sale. As of December 31, 2022, we had $395.0 million outstanding borrowings under our 2021 Credit Agreement and one outstanding letter of credit totaling $1.5 million in favor of a client contract. We believe our cash on hand, cash from operating activities, availability under our revolving line of credit, and access to the credit markets provide us with sufficient flexibility to meet our long-term financial needs.

The following table sets forth a summary of cash flows for the years ended December 31 (in thousands):

	2022	2021	Change
Cash flows provided (used) by:			
Operating activities	$ 381,455	$ 371,753	$355,089
Investing activities	(172,530)	(2,090,935)	(98,320)
Financing activities	(344,239)	1,424,730	114,172
Net (decrease) increase in cash and cash equivalents	$(135,314)	$ (294,452)	$370,941

Net cash provided by operating activities continues to be our primary source of funds to finance operating needs and capital expenditures. Other potential capital resources include cash on hand, public and private issuances of debt or equity securities, and bank borrowings. It is possible that our ability to access the capital and credit markets in the future may be limited by economic conditions or other factors. We currently believe that our cash on hand, cash provided by operating activities, and available credit are sufficient to fund our working capital requirements, capital expenditures, income tax obligations, and share repurchases for at least the next twelve months.

In 2022, operating activities provided cash of $381.5 million compared to $371.8 million in 2021. Operating activities that provided cash were primarily comprised of net income of $164.2 million, non-cash depreciation and amortization charges of $159.1 million, non-cash share-based compensation expense of $103.0 million and non-cash amortization of operating lease right-of-use assets of $13.0 million. Working capital, excluding cash, decreased approximately $60.6 million mainly due to timing of payments to and receipts from our government partners, timing of payments of payroll related taxes and vendor invoices, and deferred taxes associated with tax research credits and stock option activity during the period. These decreases were offset by the timing of tax payments, prepaid expenses, and increase in deferred revenue during the period. In general, changes in deferred revenue are cyclical and primarily driven by the timing of our maintenance renewal billings. Our renewal dates occur throughout the year, but our largest renewal billing cycles occur in the second and fourth quarters. Subscription renewals are billed throughout the year.

Days sales outstanding (DSO) in accounts receivable were 115 days at December 31, 2022, compared to 108 days at December 31, 2021. DSO is calculated based on quarter-end accounts receivable divided by the quotient of annualized quarterly revenues divided by 360 days. The increase in DSO compared to December 31, 2021, is attributed to slower payments from certain large clients and timing of receipts from our government partners.

Investing activities used cash of $172.5 million in 2022 compared to $2.1 billion in 2021. On October 31, 2022, we acquired Rapid Financial Solutions, LLC, for the total purchase price, net of cash acquired of $2.2 million, of approximately $67.7 million, consisting of $51.2 million paid in cash, $18.2 million of common stock, and $500,000 related to working capital holdbacks, subject to certain post-closing adjustments. On May 31, 2022, we completed the acquisition of Quatred, LLC for the total cash price of approximately $637,000. On February 8, 2022, we acquired US eDirect Inc, for the total purchase price, net of cash acquired of $6.4 million, of approximately $116.5 million, consisting of $118.8 million paid in cash and approximately $4.1 million related to indemnity holdbacks. During 2022, we also paid approximately $1.9 million in indemnity and working capital holdbacks related to acquisitions completed in late 2021. In addition, approximately $27.6 million of software development costs were capitalized. Approximately $22.5 million was invested in property and equipment, including $4.5 million related to real estate. The remaining additions were for computer equipment and furniture and fixtures in support of growth, particularly with respect to data centers supporting growth in our cloud-based offerings.

Investing activities used cash of $2.1 billion in 2021. We invested $77.5 million and received $131.4 million in proceeds from investment grade corporate bonds, municipal bonds and asset-backed securities with maturity dates ranging from 2022 through 2027. On March 31, 2021, we completed two acquisitions with the total purchase price, net of cash acquired, of $12.1 million paid in cash. On April 21, 2021, we completed the acquisition of NIC for the total purchase price of $2.0 billion, net of cash acquired of $331.8 million, including cash paid of $2.3 billion and $1.9 million of purchase consideration related to the conversion of unvested restricted stock awards. On September 1, 2021, we acquired VendEngine for the total purchase price, net of cash acquired of $1.7 million, of approximately $83.8 million consisting of $80.2 million paid in cash and approximately $5.4 million related to indemnity holdbacks, subject to certain post-closing adjustments. On September 9, 2021, we acquired all of the equity interest of Arx for the total purchase price, net of cash acquired, of approximately $12.8 million, of which $12.3 million was paid in cash and approximately $500,000 was accrued for indemnity holdbacks. Approximately $33.9 million was invested in property and equipment, including $12.8 million related to real estate. In addition, approximately $21.7 million of software development was capitalized in 2021. The remaining additions were for computer equipment and furniture and fixtures in support of internal growth, with the majority associated with our data centers supporting growth in our cloud-based offerings. These expenditures were funded from cash generated from operations.

Financing activities used cash of $344.2 million in 2022 compared to cash provided of $1.4 billion in 2021, primarily attributable to repayment of $360.0 million of term debt, partially offset by payments received from stock option exercises, net of withheld shares for taxes upon equity award and employee stock purchase plan activity.

Financing activities provided cash of $1.4 billion in 2021. Financing activities in 2021 were primarily comprised of proceeds from the issuance of the Convertible Senior Notes and the 2021 Credit Agreement. On March 9, 2021, we issued $600.0 million aggregate principal amount of Convertible Senior Notes. The net proceeds from the issuance of the Convertible Senior Notes were $591.4 million, net of initial purchasers' discounts of $6.0 million and debt issuance costs of $2.6 million. On April 21, 2021, in connection with the completion of the NIC acquisition, the Company, as borrower, entered into a new 2021 Credit Agreement with various lenders consisting of an unsecured revolving credit facility of up to $500.0 million and unsecured term loans totaling $900.0 million. The net proceeds from the borrowings under the 2021 Credit Agreement were $1.1 billion, net of debt discounts of $7.2 million and debt issuance costs of $4.9 million and $6.4 million of commitment fees paid related to the terminated $1.6 billion unsecured bridge loan facility. During the twelve months ended December 31, 2021, we repaid $250.0 million of the unsecured revolving credit facility and $145.0 million of the term debt. The remainder of the financing activities was comprised of receipts of $109.9 million from stock option exercises and employee stock purchase plan activity. We also purchased approximately 33,000 shares of our common stock for an aggregate purchase price of $13.0 million.

In February 2019, our board of directors authorized the repurchase of an additional 1.5 million shares of our common stock. The repurchase program, which was approved by our board of directors, was originally announced in October 2002 and was amended at various times from 2003 through 2019. As of February 22, 2023, we have authorization from our board of directors to repurchase up to 2.3 million additional shares of our common stock. Our share repurchase program allows us to repurchase shares at our discretion. Market conditions influence the timing of the buybacks and the number of shares repurchased, as well as the volume of employee stock option exercises. Share repurchases are generally funded using our existing cash balances and borrowings under our credit facility and may occur through open market purchases and transactions structured through investment banking institutions, privately negotiated transactions and/or other mechanisms. There is no expiration date specified for the authorization and we intend to repurchase stock under the plan from time to time.

As of December 31, 2022, we had $600 million in outstanding principal for the Convertible Senior Notes due 2026. Under our 2021 Credit Agreement, we had $395 million in outstanding principal for the Term Loans, no outstanding borrowings under the 2021 Revolving Credit Facility, and an available borrowing capacity of $500 million as of December 31, 2022. As of December 31, 2022, we had one outstanding letter of credit totaling $1.5 million. The letter of credit, which guarantees our performance under a client contract, renews automatically annually unless canceled in writing and expires in the third quarter of 2026. For the twelve months ended December 31, 2022, we repaid $360 million of the Term Loans under 2021 Credit Agreement.

We paid interest of $21.3 million in 2022, $17.7 million in 2021, including $6.4 million related to the senior unsecured bridge loan facility commitment fee in 2021, and $610,000 in 2020. See Note 6, "Debt," to the consolidated financial statements for discussions of the Convertible Senior Notes and the 2021 Credit Agreement.

We paid income taxes, net of refunds received, of $38.5 million in 2022, $2.2 million in 2021, and $3.3 million in 2020. In 2022, stock option exercise activity generated net tax benefits of $7.8 million and reduced tax payments accordingly, as compared to $47.7 million and $60.2 million in 2021 and 2020, respectively.

For tax years beginning on or after January 1, 2022, the Tax Cuts and Jobs Act of 2017 ("TCJA") eliminates the option to currently deduct research and development expenses and requires taxpayers to capitalize and amortize them over five years for research activities performed in the United States and 15 years for research activities performed outside the United States pursuant to IRC Section 174. Although Congress is considering legislation that would repeal or defer this capitalization and amortization requirement, it is not certain that this provision will be repealed or otherwise modified. If the requirement is not repealed or replaced, it will increase our U.S. federal and state cash tax payments and reduce cash flows in fiscal year 2023 and future years.

We anticipate that 2023 capital spending will be between $68 million and $70 million, including approximately $16 million related to real estate and approximately $37 million of software development. We expect the majority of the other capital spending will consist of computer equipment and software for infrastructure replacements and expansion. We also expect cash tax payments to be higher as a result of IRC Section 174. Capital spending and cash tax payments are expected to be funded from existing cash balances and cash flows from operations.

From time to time we engage in discussions with potential acquisition candidates. In order to pursue such opportunities, which could require significant commitments of capital, we may be required to incur debt or to issue additional potentially dilutive securities in the future. No assurance can be given as to our future acquisition opportunities and how such opportunities will be financed.

We lease office facilities for use in our operations, as well as transportation and other equipment. Most of our leases are non-cancelable operating lease agreements and they expire from one to 12 years. Some of these leases include options to extend for up to six years.

Our estimated future obligations consist of debt, uncertain tax positions, leases, and purchase commitments as of December 31, 2022. Refer to Note 6, "Debt," Note 10, "Income Tax," Note 14, "Leases," and Note 16, "Commitment and Contingencies," to the consolidated financial statements for related discussions.

CAPITALIZATION

At December 31, 2022, our capitalization consisted of $987.4 million of outstanding debt and $2.6 billion of shareholders' equity.

QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK.

Market risk represents the risk of loss that may affect us due to adverse changes in financial market prices and interest rates.

As of December 31, 2022, we had $395.0 million of outstanding borrowings under our 2021 Credit Agreement and available borrowing capacity under the 2021 Credit Agreement was $500.0 million.

Borrowings under the Revolving Credit Facility and the Term Loan A-1 bear interest, at the Company's option, at a per annum rate of either (1) the Administrative Agent's prime commercial lending rate (subject to certain higher rate determinations) (the "Base Rate") plus a margin of 0.125% to 0.75% or (2) the one-, three-, six-, or, subject to approval by all lenders, twelve-month LIBOR rate plus a margin of 1.125% to 1.75%. The Term Loan A-2 bears interest, at the Company's option, at a per annum rate of either (1) the Base Rate plus a margin of 0% to 0.5% or (2) the one-, three-, six-, or, subject to approval by all lenders, twelve-month LIBOR rate plus a margin of 0.875% to 1.5%.

During the twelve months ended December 31, 2022, the effective interest rate for our borrowings was 3.79%. Based on the aggregate outstanding principal balance under the 2021 Credit Agreement as of December 31, 2022, of $395.0 million, each quarter point change in interest rates would result in a $1.0 million change in annual interest expense.

In January 2023, we amended our 2021 Credit Agreement to replace the LIBOR reference rate with the SOFR reference rate. Assuming that SOFR replaces LIBOR and is appropriately adjusted to equate to one-month LIBOR, we expect that there should be minimal impact on our operations.

CONTROLS AND PROCEDURES.

Evaluation of Disclosure Controls and Procedures — We maintain disclosure controls and procedures (as defined in Rule 13a-15(e) of the Securities Exchange Act) designed to provide reasonable assurance that the information required to be disclosed by us in the reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. These include controls and procedures designed to ensure that this information is accumulated and communicated to our management, including our chief executive officer and chief financial officer, as appropriate to allow timely decisions regarding required disclosures. Management, with the participation of the chief executive officer and chief financial officer, evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2022. Based on this evaluation, the chief executive officer and chief financial officer have concluded that our disclosure controls and procedures were effective as of December 31, 2022.

Management's Report on Internal Control Over Financial Reporting — Tyler's management is responsible for establishing and maintaining effective internal control over financial reporting as defined in Securities Exchange Act Rule 13a-15(f). Tyler's internal control over financial reporting is designed to provide reasonable assurance to Tyler's management and board of directors regarding the preparation and fair presentation of published financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement preparation and presentation.

Management assessed the effectiveness of Tyler's internal control over financial reporting as of December 31, 2022. In making this assessment, management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). Based on our assessment, we concluded that, as of December 31, 2022, Tyler's internal control over financial reporting was effective based on those criteria.

Tyler's internal control over financial reporting as of December 31, 2022 has been audited by Ernst & Young LLP, the independent registered public accounting firm who also audited Tyler's financial statements. Ernst & Young's attestation report on Tyler's internal control over financial reporting appears on page 54 hereof.

Changes in Internal Control over Financial Reporting — During the quarter ended December 31, 2022, there were no changes in our internal control over financial reporting, as defined in Securities Exchange Act Rule 13a-15(f), that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of Tyler Technologies, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Tyler Technologies, Inc. (the Company) as of December 31, 2022 and 2021, the related consolidated statements of income, comprehensive income, shareholders' equity and cash flows for each of the three years in the period ended December 31, 2022, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022, in conformity with 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, 2022, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 22, 2023, expressed an unqualified opinion thereon.

Basis for Opinion

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

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

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the 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 financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of the 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 account or disclosure to which it relates.

Report of Independent Registered Public Accounting Firm

Goodwill impairment tests

Description of the Matter

As of December 31, 2022, the Company's goodwill balance of $2.5 billion was attributable to multiple reporting units. As disclosed in Note 1 to the consolidated financial statements, goodwill is assessed for impairment annually, or more frequently whenever events or changes in circumstances indicate its carrying value may not be recoverable. The Company begins with a qualitative assessment of whether it is more likely than not that a reporting unit's fair value is less than its carrying value before applying a quantitative assessment. During the fourth quarter of 2022, the Company performed a quantitative assessment for goodwill associated with reporting units comprised of more recently acquired businesses, which do not have significant excess fair values over carrying values.

Auditing management's quantitative analyses for goodwill impairment was complex and highly judgmental due to the significant judgement required to determine the fair value of these reporting units. In particular, the Company's fair value estimates for these reporting units were sensitive to significant assumptions, such as weighted average cost of capital and revenue growth rates which are forward looking and affected by expectations about future market or economic conditions.

How We Addressed the Matter in Our Audit

We obtained an understanding, evaluated the design, and tested the operating effectiveness of controls over the Company's review process for quantitative goodwill impairment assessments, including controls over management's review of the significant assumptions described above.

To test the estimated fair value of the applicable reporting units, we performed audit procedures that included, among others, assessing the methodologies and testing the significant assumptions discussed above and the underlying data used by the Company in its analyses. We evaluated management's forecasted revenue to identify, understand and evaluate changes as compared to historical results and performed sensitivity analyses of significant assumptions to evaluate the changes in the fair value of the reporting units that would result from changes in the assumptions. We also involved internal valuation specialists to assist in evaluating management's methodologies and significant assumptions applied in developing the fair value estimates.

Ernst & Young LLP

We have served as the Company's auditor since 1966.

Dallas, Texas
February 22, 2023

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of Tyler Technologies, Inc.

Opinion on Internal Control over Financial Reporting

We have audited Tyler Technologies, Inc.'s internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Tyler Technologies, Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on the COSO criteria.

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, 2022 and 2021, the related consolidated statements of comprehensive income, shareholders' equity and cash flows for each of the three years in the period ended December 31, 2022, and the related notes and our report dated February 22, 2023 expressed an unqualified opinion thereon.

Basis for Opinion

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

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

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

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

Ernst & Young LLP

Dallas, Texas
February 22, 2023

Consolidated Statements of Income

For the years ended December 31,	2022	2021	2020
(In thousands, except per share amounts)			
Revenues:			
Subscriptions	$1,012,304	$ 784,435	$ 350,648
Maintenance	468,455	474,287	467,513
Professional services	243,117	209,391	186,409
Software licenses and royalties	59,406	74,452	73,164
Appraisal services	34,508	27,788	21,127
Hardware and other	32,414	21,934	17,802
Total revenues	1,850,204	1,592,287	1,116,663
Cost of revenues:			
Subscriptions, maintenance and professional services	953,897	799,158	510,504
Software licenses and royalties	6,083	3,552	3,339
Amortization of software development	6,507	2,325	—
Amortization of acquired software	52,192	45,601	31,962
Appraisal services	23,988	19,061	15,945
Hardware and other	23,674	12,946	12,401
Total cost of revenues	1,066,341	882,643	574,151
Gross profit	783,863	709,644	542,512
Sales and marketing expense	135,743	118,624	98,466
General and administrative expense	267,324	271,955	161,095
Research and development expense	105,184	93,481	88,363
Amortization of other intangibles	61,363	44,849	21,662
Operating income	214,249	180,735	172,926
Interest expense	(28,379)	(23,298)	(1,013)
Other income, net	1,723	1,544	3,129
Income before income taxes	187,593	158,981	175,042
Income tax provision (benefit)	23,353	(2,477)	(19,778)
Net income	$ 164,240	$ 161,458	$ 194,820
Earnings per common share:			
Basic	$ 3.95	$ 3.95	$ 4.87
Diluted	$ 3.87	$ 3.82	$ 4.69

See accompanying notes.

Consolidated Statements of Comprehensive Income

For the years ended December 31,	2022	2021	2020
(In thousands)			
Net income	$164,240	$161,458	$194,820
Other comprehensive loss, net of tax:			
Securities available-for-sale and transferred securities:			
Change in net unrealized holding losses on available for sale securities during the period	(850)	—	—
Reclassification adjustment of unrealized losses on securities transferred from held-to-maturity	(27)	—	—
Reclassification adjustment for net loss on sale of available for sale securities, included in net income	79	—	—
Other comprehensive loss, net of tax	(798)	—	—
Comprehensive income	$163,442	$161,458	$194,820

See accompanying notes.

Consolidated Balance Sheets

December 31,	2022	2021
(In thousands, except par value and share amounts)		
ASSETS		
Current assets:		
Cash and cash equivalents	$ 173,857	$ 309,171
Accounts receivable (less allowance for losses and sales adjustments of $14,761 in 2022 and $12,086 in 2021)	577,257	521,059
Short-term investments	37,030	52,300
Prepaid expenses	50,859	55,513
Income tax receivable	—	18,137
Other current assets	8,239	8,151
Total current assets	847,242	964,331
Accounts receivable, long-term	8,271	13,937
Operating lease right-of-use assets	50,989	39,720
Property and equipment, net	172,786	181,193
Other assets:		
Software development costs, net	48,189	28,489
Goodwill	2,489,308	2,359,674
Other intangibles, net	1,002,164	1,052,493
Non-current investments	18,508	46,353
Other non-current assets	49,960	45,971
	$4,687,417	$4,732,161
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 104,813	$ 119,988
Accrued liabilities	131,941	158,424
Operating lease liabilities	10,736	10,560
Income tax payable	43,667	—
Deferred revenue	568,538	510,529
Current portion of term loans	30,000	30,000
Total current liabilities	889,695	829,501
Revolving line of credit	—	—
Term loans, net	362,905	718,511
Convertible senior notes due 2026, net	594,484	592,765
Deferred revenue, long-term	2,037	38
Deferred income taxes	148,891	228,085
Operating lease liabilities, long-term	48,049	36,336
Other long-term liabilities	16,967	2,893
Total liabilities	2,063,028	2,408,129
Commitments and contingencies	—	—
Shareholders' equity:		
Preferred stock, $10.00 par value; 1,000,000 shares authorized; none issued	—	—
Common stock, $0.01 par value; 100,000,000 shares authorized; 48,147,969 shares issued in 2022 and 2021	481	481
Additional paid-in capital	1,209,725	1,075,650
Accumulated other comprehensive loss, net of tax	(844)	(46)
Retained earnings	1,437,854	1,273,614
Treasury stock, at cost; 6,364,991 and 6,832,640 shares in 2022 and 2021, respectively	(22,827)	(25,667)
Total shareholders' equity	2,624,389	2,324,032
	$4,687,417	$4,732,161

See accompanying notes

Consolidated Statements of Cash Flows

For the years ended December 31,	2022	2021	2020
(In thousands)			
Cash flows from operating activities:			
Net income	$ 164,240	$ 161,458	$ 194,820
Adjustments to reconcile net income to cash provided by operating activities:			
Depreciation and amortization	159,072	135,624	81,657
Losses from sale of investments	45	—	—
Share-based compensation expense	102,985	104,726	67,365
Provision for losses and sales adjustments – accounts receivable	2,781	2,831	3,517
Amortization of operating lease right-of-use assets	12,969	10,216	5,782
Deferred income tax benefit	(87,192)	(13,271)	(7,936)
Changes in operating assets and liabilities, exclusive of effects of acquired companies:			
Accounts receivable	(51,410)	17,608	(10,733)
Income tax receivable	61,940	10,258	(15,117)
Prepaid expenses and other current assets	910	(23,863)	(8,304)
Accounts payable	(17,537)	(44,947)	(967)
Operating lease liabilities	(12,396)	(6,952)	(6,549)
Accrued liabilities	(24,344)	(24,822)	2,870
Deferred revenue	59,460	44,874	48,684
Other long-term liabilities	9,932	(1,987)	—
Net cash provided by operating activities	381,455	371,753	355,089
Cash flows from investing activities:			
Additions to property and equipment	(22,529)	(33,919)	(22,690)
Purchase of marketable security investments	(29,935)	(77,450)	(156,618)
Proceeds and maturities from marketable security investments	71,034	131,449	82,742
Purchase of investment in common shares	—	—	(10,000)
Proceeds from the sale of investment in preferred shares	—	—	15,000
Investment in software development	(27,622)	(21,693)	(5,776)
Cost of acquisitions, net of cash acquired	(163,921)	(2,089,706)	(1,292)
Other	443	384	314
Net cash used by investing activities	(172,530)	(2,090,935)	(98,320)
Cash flows from financing activities:			
Net borrowings on revolving credit facility	—	—	—
Payment on term loans	(360,000)	(145,000)	—
Proceeds from term loans	—	900,000	—
Proceeds from issuance of convertible senior notes	—	600,000	—
Payment of debt issuance costs	—	(27,165)	—
Purchase of treasury shares	—	(12,977)	(15,484)
Payment of contingent consideration	—	—	(5,619)
Proceeds from exercise of stock options, net of withheld shares for taxes upon equity award	(890)	96,714	124,363
Contributions from employee stock purchase plan	16,651	13,158	10,912
Net cash (used) provided by financing activities	(344,239)	1,424,730	114,172
Net (decrease) increase in cash and cash equivalents	(135,314)	(294,452)	370,941
Cash and cash equivalents at beginning of period	309,171	603,623	232,682
Cash and cash equivalents at end of period	$ 173,857	$ 309,171	$ 603,623

See accompanying notes.

Consolidated Statements of Cash Flows

For the years ended December 31,	2022	2021	2020
(In thousands)			
Supplemental cash flow information:			
Cash paid for interest	$21,256	$17,728	$ 610
Cash paid for income taxes, net	38,490	2,212	3,263
Non-cash investing and financing activities:			
Non-cash additions to property and equipment	$ 169	$ 233	$ 189
Issuance of shares for acquisitions	18,169	—	—
Purchase consideration for conversion of unvested restricted stock awards	—	1,872	—

See accompanying notes.

Consolidated Statements of Shareholders' Equity

For the years ended December 31, 2022, 2021, and 2020

	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Retained Earnings	Treasury Stock		Total Shareholders' Equity
	Shares	Amount				Shares	Amount	
(In thousands)								
Balance at December 31, 2019	48,148	$481	$ 739,478	$ (46)	$ 917,336	(8,839)	$(40,191)	$1,617,058
Net income	—	—	—	—	194,820	—	—	194,820
Issuance of shares pursuant to stock compensation plan	—	—	90,636	—	—	1,283	33,727	124,363
Employee taxes paid for withheld shares upon equity award settlement	—	—	—	—	—	(34)	(12,923)	(12,923)
Stock compensation	—	—	67,365	—	—	—	—	67,365
Issuance of shares pursuant to employee stock purchase plan	—	—	7,853	—	—	40	3,059	10,912
Treasury stock purchases	—	—	—	—	—	(59)	(15,484)	(15,484)
Balance at December 31, 2020	48,148	481	905,332	(46)	1,112,156	(7,609)	(31,812)	1,986,111
Net income	—	—	—	—	161,458	—	—	161,458
Exercise of stock options and vesting of restricted stock units	—	—	50,831	—	—	832	45,883	96,714
Employee taxes paid for withheld shares upon equity award settlement	—	—	—	—	—	(58)	(27,030)	(27,030)
Stock compensation	—	—	104,726	—	—	—	—	104,726
Issuance of shares pursuant to employee stock purchase plan	—	—	12,889	—	—	35	269	13,158
Treasury stock purchases	—	—	—	—	—	(33)	(12,977)	(12,977)
Purchase consideration for conversion of unvested restricted stock awards	—	—	1,872	—	—	—	—	1,872
Balance at December 31, 2021	48,148	481	1,075,650	(46)	1,273,614	(6,833)	(25,667)	2,324,032
Net income	—	—	—	—	164,240	—	—	164,240
Other comprehensive loss, net of tax	—	—	—	(798)	—	—	—	(798)
Exercise of stock options and vesting of restricted stock units	—	—	(3,218)	—	—	433	29,547	26,329
Employee taxes paid for withheld shares upon equity award settlement	—	—	—	—	—	(70)	(27,219)	(27,219)
Stock compensation	—	—	102,985	—	—	—	—	102,985
Issuance of shares pursuant to employee stock purchase plan	—	—	16,365	—	—	49	286	16,651
Treasury stock purchases	—	—	—	—	—	—	—	—
Issuance of shares for acquisitions	—	—	17,943	—	—	56	226	18,169
Balance at December 31, 2022	48,148	$481	$1,209,725	$(844)	$1,437,854	(6,365)	$(22,827)	$2,624,389

See accompanying notes.

Notes to Consolidated Financial Statements

(Tables in thousands, except per share data)

(1) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

DESCRIPTION OF BUSINESS

We provide integrated software systems and related services for the public sector. We develop and market a broad line of software solutions and services to address the information technology ("IT") needs primarily of cities, counties, states, schools, federal agencies, and other government entities. We provide subscription-based services such as software as a service ("SaaS"), transaction-based fees primarily related to digital government services and online payment processing, and electronic document filing solutions ("e-filing"), which simplify the filing and management of court related documents. In addition, we provide professional IT services, including software and hardware installation, data conversion, training, and for certain customers, product modifications, along with continuing maintenance and support for customers using our systems. Additionally, we provide property appraisal outsourcing services for taxing jurisdictions.

PRINCIPLES OF CONSOLIDATION

The consolidated financial statements include our parent company and 62 subsidiaries, which are wholly-owned. All significant intercompany balances and transactions have been eliminated in consolidation. Comprehensive income (loss) is defined as the change in equity of a business enterprise during a period from transactions and other events and circumstances from non-owner sources and includes all components of net income (loss) and other comprehensive income (loss). During the twelve months ended December 31, 2022, we had approximately $798,000 of other comprehensive loss, net of taxes, from our available-for-sale investment holdings. We did not have material items of other comprehensive income during the years ended December 31, 2021, and 2020.

RECLASSIFICATIONS

Certain amounts for previous years have been reclassified to conform to the current year presentation. We have elected to present amortization of software development, previously included in the cost of revenues software licenses and royalties line item, in a separate category line item on the consolidated statements of income for all reporting periods presented. We also have elected to present sales and marketing expense and general and administrative expense, previously disclosed as selling, general, and administrative expense, as separate category line items on the consolidated statements of income for all reporting periods presented.

CASH AND CASH EQUIVALENTS

Cash in excess of that necessary for operating requirements is invested in short-term, highly liquid, income-producing investments. Investments with original maturities of three months or less are classified as cash and cash equivalents, which primarily consist of cash on deposit with several banks and money market funds. Cash and cash equivalents are stated at cost, which approximates market value.

REVENUE RECOGNITION

Nature of Products and Services

We earn revenues from subscription-based services, post-contract customer support ("PCS" or "maintenance"), professional services, software licenses and royalties, appraisal services, and hardware and other. Revenue is recognized upon transfer of control of promised products or services to customers in an amount that reflects the consideration we expect to receive in exchange for those products or services. We determine revenue recognition through the following steps:

- Identification of the contract, or contracts, with a customer
- Identification of the performance obligations in the contract
- Determination of the transaction price
- Allocation of the transaction price to the performance obligations in the contract
- Recognition of revenue when, or as, we satisfy a performance obligation

Our software arrangements with customers contain multiple performance obligations that range from software licenses, installation, training, and consulting to software modification and customization to meet specific customer needs (services), hosting, and PCS. For these contracts, we account for individual performance obligations separately when they are distinct. We evaluate whether separate performance obligations can be distinct or should be accounted for as one performance obligation. Arrangements that include professional services, such as training or installation, are evaluated to determine whether those services are highly interdependent or interrelated to the product's functionality. The transaction price is allocated to the distinct performance obligations on a relative standalone selling price ("SSP") basis. We determine the SSP based on our overall pricing objectives, taking into consideration market conditions and other factors, including the value of our contracts, the applications sold, customer demographics, and the number and types of users within our contracts. Revenue is recognized net of allowances for sales adjustments and any taxes collected from customers, which are subsequently remitted to governmental authorities.

Subscription-Based Services:

Subscription-based services consist primarily of revenue derived from SaaS arrangements, digital government services, payment processing, and e-filing. For SaaS arrangements, we evaluate whether the customer has the contractual right to take possession of our software at any time during the hosting period without significant penalty and whether the customer can feasibly maintain the software on the customer's hardware or enter into another arrangement with a third-party to host the software. We allocate contract value to each performance obligation of the arrangement that qualifies for treatment as a distinct element based on estimated SSP. We recognize SaaS services ratably over the term of the arrangement, which range from one to 10 years, but are typically for a period of three to five years. For professional services associated with certain SaaS arrangements, we have concluded that the services are not distinct, and we recognize the revenue ratably over the remaining contractual period once we have provided the customer access to the software. We record amounts that have been invoiced in accounts receivable and in deferred revenue or revenues, depending on whether the revenue recognition criteria have been met.

Transaction-based fees primarily relate to digital government services and online payment services, which are sometimes offered with the assistance of third-party vendors. In general, when we are the principal in a transaction, we record the revenue and related costs on a gross basis. Otherwise, we net the cost of revenue associated with the service against the gross revenue (amount billed to the customer) and record the net amount as revenue.

E-filing transaction fees primarily pertain to documents filed with the courts by attorneys and other third-parties via our e-filing services and retrieval of filed documents via our access services. For each document filed with a court, the filer generally pays a transaction fee and a court filing fee to us and we remit a portion of the transaction fee and the filing fee to the court. We record as revenue the transaction fee, while the portion of the transaction fee remitted to the courts is recorded as cost of revenues as we are acting as an agent in the arrangement. Court filing fees collected on behalf of the courts and remitted to the courts are recorded on a net basis and thus do not affect our consolidated statements of income.

For e-filing transaction fees and transaction-based revenues from digital government services and online payments, we have the right to charge the customer an amount that directly corresponds with the value to the customer of our performance to date. Therefore, we recognize revenues for these services over time based on the amount billable to the customer. In some cases, we are paid on a fixed fee basis and recognize the revenue ratably over the contractual period. Typically, the structure of our arrangements does not give rise to variable consideration. However, in those instances whereby variable consideration exists, we include in our estimates, additional revenues for variable consideration when we believe we have an enforceable right, the amount can be estimated reliably and its realization is probable.

Costs of performing services under subscription-based arrangements are expensed as incurred, except for certain direct and incremental contract origination and set-up costs associated with SaaS arrangements. Such direct and incremental costs are capitalized and amortized ratably over the period of benefit.

Software Arrangements:

Software Licenses and Royalties

Many of our software arrangements involve “off-the-shelf” software. We recognize the revenue allocable to “off-the-shelf” software licenses and specified upgrades at a point in time when control of the software license transfers to the customer, unless the software is not considered distinct. We consider “off-the-shelf” software to be distinct when it can be added to an arrangement with minor changes in the underlying code, it can be used by the customer for the customer’s purpose upon installation, and remaining services such as training are not considered highly interdependent or interrelated to the product’s functionality.

For arrangements that involve significant production, modification or customization of the software, or where professional services are otherwise not considered distinct, we recognize revenue over time by measuring progress-to-completion. We measure progress-to-completion primarily using labor hours incurred as it best depicts the transfer of control to the customer which occurs as we incur costs on our contracts. These arrangements are often implemented over an extended period and occasionally require us to revise total cost estimates. Amounts recognized in revenue are calculated using the progress-to-completion measurement after giving effect to any changes in our cost estimates. Changes to total estimated contract costs, if any, are recorded in the period they are determined. Estimated losses on uncompleted contracts are recorded in the period in which we first determine that a loss is apparent.

Software license fees are billed in accordance with the contract terms. Typically, a majority of the fee is due when access to the software license is made available to the customer and the remainder of the fee due over a passage of time stipulated by the contract. We record amounts that have been invoiced in accounts receivable and in deferred revenue or revenues, depending on whether the revenue recognition criteria have been met.

We recognize royalty revenue when the sale occurs under the terms of our third-party royalty arrangements. Currently, our third-party royalties are recognized on an estimated basis and adjusted if needed, when we receive notice of amounts we are entitled to receive. We typically receive notice of royalty revenue we are entitled to and amounts are billed on a quarterly basis in the quarter immediately following the royalty reporting period, and adjustments have not been significant.

Professional Services

As noted above, some of our software arrangements include services considered highly interdependent or highly interrelated or require significant customization to meet the customer’s desired functionality. For these software arrangements, both the software licenses and related professional services revenue are not distinct and are recognized over time using the progress-to-completion method. We measure progress-to-completion primarily using labor hours incurred as it best depicts the transfer of control to the customer which occurs as we incur costs on our contracts. Contract fees are typically billed on a milestone basis as defined within contract terms. We record amounts that have been invoiced in accounts receivable and in deferred revenue or revenues, depending on whether the revenue recognition criteria have been met. When professional services are distinct, the fee allocable to the service element is recognized over the time we perform the services and is billed on a time and material basis.

Post-Contract Customer Support

Our customers generally enter into PCS agreements when they purchase our software licenses. PCS includes telephone support, bug fixes, and rights to upgrades on a when-and-if available basis. PCS is considered distinct when purchased with our software licenses. Our PCS agreements are typically renewable annually. PCS is recognized over time on a straight-line basis over the period the PCS is provided. All significant costs and expenses associated with PCS are expensed as incurred.

Computer Hardware Equipment

Revenue allocable to computer hardware equipment is recognized at a point in time when control of the equipment is transferred to the customer.

Appraisal Services:

For our property appraisal projects, we recognize revenue using the progress-to-completion method since many of these projects are executed over one to three-year periods and consist of various unique activities. Appraisal services require a significant level of integration and interdependency with various individual service components; therefore, the service components are not considered distinct. Appraisal services are recognized over time by measuring progress-to-completion primarily using labor hours incurred as it best depicts the transfer of control to the customer which occurs as we incur costs on our contracts. These arrangements are often executed over an extended period and occasionally require us to revise total cost estimates. Amounts recognized in revenue are calculated using the progress-to-completion measurement after giving effect to any changes in our cost estimates. Changes to total estimated contract costs, if any, are recorded in the period they are determined. Estimated losses on uncompleted contracts are recorded in the period in which we first determine that a loss is apparent. Contract fees are typically billed on a milestone basis as defined within contract terms. We record amounts that have been invoiced in accounts receivable and in deferred revenue or revenues, depending on whether the revenue recognition criteria have been met.

Significant Judgments:

Our contracts with customers often include multiple performance obligations to a customer. When a software arrangement (license or subscription) includes both software licenses and professional services, judgment is required to determine whether the software license is considered distinct and accounted for separately, or not distinct and accounted for together with the professional services and recognized over time.

The transaction price is allocated to the separate performance obligations on a relative SSP basis. We determine the SSP based on our overall pricing objectives, taking into consideration market conditions and other factors, including the value of our contracts, the applications sold, customer demographics, and the number and types of users within our contracts. We use a range of amounts to estimate SSP when we sell each of the products and services separately and need to determine whether there is a discount to be allocated based on the relative SSP of the various products and services. In instances where SSP is not directly observable, such as when we do not sell the product or service separately, we determine SSP using the expected cost-plus margin approach.

For arrangements that involve significant production, modification, or customization of the software, or where professional services otherwise cannot be considered distinct, we recognize revenue as control is transferred to the customer over time using progress-to-completion methods. Depending on the contract, we measure progress-to-completion primarily using labor hours incurred, or value added. The progress-to-completion method generally results in the recognition of reasonably consistent profit margins over the life of a contract because we can provide reasonably dependable estimates of contract billings and contract costs. These arrangements are often implemented over an extended time period and occasionally require us to revise total cost estimates. Amounts recognized in revenue are calculated using the progress-to-completion measurement after giving effect to any changes in our cost estimates. Changes to total estimated contract costs, if any, are recorded in the period they are determined. Estimated losses on uncompleted contracts are recorded in the period in which we first determine that a loss is apparent.

Refer to Note 18, "Disaggregation of Revenue," for further information, including the economic factors that affect the nature, amount, timing, and uncertainty of revenues and cash flows of our various revenue categories.

Contract Balances:

Accounts receivable and allowance for losses and sales adjustments

Timing of revenue recognition may differ from the timing of invoicing to customers. We record an unbilled receivable when revenue is recognized prior to invoicing, or deferred revenue when invoicing occurs prior to revenue recognition. For multi-year agreements, we generally invoice customers annually at the beginning of each annual coverage period. We record an unbilled receivable related to revenue recognized for on-premises licenses as we have an unconditional right to invoice and receive payment in the future related to those licenses.

In connection with our appraisal services contracts and certain professional services contracts, we may perform work prior to when the software and services are billable and/or payable pursuant to the contract. Unbilled revenue is not billable at the balance sheet date but is recoverable over the remaining life of the contract through billings made in accordance with contractual agreements. The termination clauses in most of our contracts provide for the payment for the value of products delivered or services performed in the event of early termination. We have historically recorded such unbilled receivables (costs and estimated profit in excess of billings) in connection with (1) property appraisal services contracts accounted for using progress-to-completion method of revenue recognition using labor hours as a measure of progress towards completion in which the services are performed in one accounting period but the billing normally occurs subsequently and may span another accounting period; (2) professional services contracts accounted for using progress-to-completion method of revenue recognition using labor hours as a measure of progress towards completion in which the services are performed in one accounting period but the billing for the software element of the arrangement may be based upon the specific phase of the implementation; (3) software revenue for which we have recognized revenue at the point in time when the software is made available to the customer but the billing has not yet been submitted to the customer; (4) some of our contracts which provide for an amount to be withheld from a progress billing (generally between 5% and 15% retention) until final and satisfactory project completion is achieved; and (5) in a limited number of cases, extended payment terms, which may be granted to customers with whom we generally have a long-term relationship and favorable collection history.

As of December 31, 2022, and December 31, 2021, total current and long-term accounts receivable, net of allowance for losses and sales adjustments, was $585.5 million and $535.0 million, respectively. We have recorded unbilled receivables of $135.4 million and $140.3 million at December 31, 2022, and December 31, 2021, respectively. Included in unbilled receivables are retention receivables of $8.6 million and $7.7 million at December 31, 2022, and December 31, 2021, respectively, which become payable upon the completion of the contract or completion of our fieldwork and formal hearings. Unbilled receivables expected to be collected within one year have been included with accounts receivable, current portion in the accompanying consolidated balance sheets. Unbilled receivables and retention receivables expected to be collected past one year have been included with accounts receivable, long-term portion in the accompanying consolidated balance sheets.

Payment terms and conditions vary by contract type, although terms generally include a requirement of payment within 30 to 90 days. In instances where the timing of revenue recognition differs from the timing of invoicing, we have determined our contracts generally do not include a significant financing component. The primary purpose of our invoicing terms is to provide customers with simplified and predictable ways of purchasing our products and services, not to receive financing from our customers or to provide customers with financing. Examples include invoicing at the beginning of a subscription term with revenue recognized ratably over the contract period, and multi-year on-premises term licenses that are invoiced annually with revenue recognized upfront.

We maintain allowances for losses and sales adjustments, which losses are recorded against revenue at the time the loss is incurred. Since most of our clients are domestic governmental entities, we rarely incur a credit loss resulting from the inability of a client to make required payments. Events or changes in circumstances that indicate the carrying amount for the allowances for losses and sales adjustments may require revision, include, but are not limited to, managing our client's expectations regarding the scope of the services to be delivered and defects or errors in new versions or enhancements of our software products. Our allowance for losses and sales adjustments of $14.8 million and $12.1 million at December 31, 2022, and December 31, 2021, respectively. Because we rarely experience credit losses with our clients, we have not recorded a material reserve for credit losses.

Notes to Consolidated Financial Statements

The following table summarizes the changes in the allowance for losses and sales adjustments:

Years Ended December 31,	2022	2021
Balance at beginning of year	$12,086	$ 9,255
Provisions for losses and sales adjustments – accounts receivable	2,781	2,831
Collections of accounts previously written off	(106)	—
Balance at end of year	$14,761	$12,086

Deferred Revenue

The majority of deferred revenue consists of deferred subscription-based services revenue that has been billed based on contractual terms in the underlying arrangement, with the remaining balance consisting of payments received in advance of revenue being earned under maintenance, software licensing, software and appraisal services, and hardware installation. Refer to Note 19, Deferred Revenue and Performance Obligations, for further information, including deferred revenue by segment and changes in deferred revenue during the period.

Deferred Commissions

Sales commissions earned by our sales force are considered incremental and recoverable costs of obtaining a contract with a customer. Sales commissions for initial contracts are deferred and then amortized commensurate with the recognition of associated revenue over a period of benefit that we have determined to be three to seven years. We utilized the "portfolio approach" practical expedient, which allows entities to apply the guidance to a portfolio of contracts with similar characteristics because the effects on the financial statements of this approach would not differ materially from applying the guidance to individual contracts. Using the "portfolio approach", we determined the period of benefit by taking into consideration our customer contracts, our technology life-cycle and other factors. Sales commissions for renewal contracts are generally not paid in connection with the renewal of a contract. In the small number of instances where a commission is paid on a renewal, it is not commensurate with the commission paid on the initial sale and is recognized over the term of renewal, which is generally one year. Amortization expense related to deferred commissions is included in sales and marketing expense in the accompanying consolidated statements of income. Refer to Note 20, "Deferred Commissions," for further information.

Prepaid expenses and other current assets include direct and incremental costs such as commissions associated with arrangements for which revenue recognition has been deferred. Such costs are expensed at the time the related revenue is recognized.

USE OF ESTIMATES

The preparation of our financial statements in conformity with accounting principles generally accepted in the United States ("GAAP") requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Significant items subject to such estimates and assumptions include revenue recognition, determining the nature and timing of satisfaction of performance obligations, determining the SSP of performance obligations, variable consideration, and other obligations such as returns and refunds; loss contingencies; the estimated useful life of deferred commissions; the fair value amount and estimated useful lives of intangible assets; the carrying amount of operating lease right-of-use assets and operating lease liabilities; determining share-based compensation expense; the allowance for losses and sales adjustments; and determining the potential outcome of future tax consequences of events that have been recognized on our consolidated financial statements or tax returns. Actual results could differ from estimates.

PROPERTY AND EQUIPMENT, NET

Property, equipment and purchased software are recorded at original cost and increased by the cost of any significant improvements after purchase. We expense maintenance and repairs when incurred. Depreciation and amortization is calculated using the straight-line method over the shorter of the asset's estimated useful life or the term of the lease in the case of leasehold improvements. For income tax purposes, we use accelerated depreciation methods as allowed by tax laws.

RESEARCH AND DEVELOPMENT COSTS

We expensed research and development expense of $105.2 million in 2022, $93.5 million in 2021, and $88.4 million in 2020.

INCOME TAXES

Income taxes are accounted for under the asset and liability method. Deferred taxes arise because of different treatment between financial statement accounting and tax accounting, known as "temporary differences". We record the tax effect of these temporary differences as "deferred tax assets" (generally items that can be used as a tax deduction or credit in the future periods) and "deferred tax liabilities" (generally items that we received a tax deduction for, which have not yet been recorded in the income statement). The deferred tax assets and liabilities are measured using enacted tax rules and laws that are expected to be in effect when the temporary differences are expected to be recovered or settled. A valuation allowance is established to reduce deferred tax assets if it is more likely than not that a deferred tax asset will not be "realized."

We do not recognize a tax benefit for uncertain tax positions unless management's assessment concludes that it is "more likely than not" that the position is sustainable based on its technical merits. If the recognition threshold is met, we recognize a tax benefit based upon the largest amount of the tax benefit that is more likely than not probable, determined by cumulative probability, of being realized upon settlement with the taxing authority. We recognize interest and penalties, if any, related to unrecognized tax benefits in income tax expense in the consolidated statements of income.

Internal Revenue Code ("IRC") Section 174

For the tax years beginning on or after January 1, 2022, the Tax Cuts and Jobs Act of 2017 ("TCJA") eliminates the option to currently deduct research and development expenses and requires taxpayers to capitalize and amortize them over five years for research activities performed in the United States and 15 years for research activities performed outside the United States pursuant to IRC Section 174. Although Congress is considering legislation that would repeal or defer this capitalization and amortization requirement, it is not certain that this provision will be repealed or otherwise modified. If the requirement is not repealed or replaced, it will increase our U.S. federal and state cash tax payments and reduce cash flows in fiscal year 2023 and future years.

SHARE-BASED COMPENSATION

We have a share-based award plan that provides for the grant of stock options, restricted stock units, and performance share units to key employees, directors and non-employee consultants. Stock options generally vest after three to six years of continuous service from the date of grant and have a contractual term of 10 years. Restricted stock unit grants generally vest ratably over three to five years of continuous service from the date of grant. Each performance share unit represents the right to receive one share of our common stock based on our achievement of certain financial performance targets during applicable performance periods, which generally cliff vest in one or three years. We account for share-based compensation utilizing the fair value recognition pursuant to ASC 718, *Stock Compensation.* See Note 12, "Share-Based Compensation," for further information.

BUSINESS COMBINATIONS

Accounting for the acquisition of a business requires the allocation of the purchase price to the various assets acquired and liabilities assumed at their respective fair values. The determination of fair value requires the use of significant estimates and assumptions, and in making these determinations, management uses all available information.

For tangible and identifiable intangible assets acquired in a business combination, management estimates the fair value of assets acquired and liabilities assumed based on quoted market prices, the carrying value of the acquired assets and widely accepted valuation techniques, including discounted cash flows and market multiple analyses. The assumptions made in performing these valuations include, but are not limited to, discount rates, future revenues and operating costs, projections of capital costs, and other assumptions believed to be consistent with those used by principal market participants.

Due to the specialized nature of these calculations, we engage third-party specialists to assist management in evaluating our assumptions as well as appropriately measuring the fair value of assets acquired and liabilities assumed. We adjust the preliminary purchase price allocation, as necessary, up to one year after the acquisition closing date as we obtain new information about facts and circumstances that existed as of the closing date. If actual results are materially different than the assumptions we used to determine fair value of the assets acquired and liabilities assumed through a business combination as well as the estimated useful lives of the acquired intangible assets, it is possible that adjustments to the carrying values of such assets and liabilities will have a material impact on our financial position and results of operations. See Note 2, "Acquisitions," for further information.

GOODWILL AND OTHER INTANGIBLE ASSETS

Goodwill

We assess goodwill for impairment annually, or more frequently whenever events or changes in circumstances indicate its carrying value may not be recoverable. We begin with the qualitative assessment of whether it is more likely than not that a reporting unit's fair value is less than its carrying value before applying the quantitative assessment described below. When testing goodwill for impairment quantitatively, we first compare the fair value of each reporting unit with its carrying amount. If the carrying amount of reporting unit goodwill exceeds the implied fair value of that goodwill, an impairment loss is recognized. The fair values calculated in our impairment tests are determined using discounted cash flow models involving several assumptions (Level 3 inputs). The assumptions that are used are based upon what we believe a hypothetical marketplace participant would use in estimating fair value. We base our fair value estimates on assumptions we believe to be reasonable but that are unpredictable and inherently uncertain. We evaluate the reasonableness of the fair value calculations of our reporting units by comparing the total of the fair value of all of our reporting units to our total market capitalization.

During the fourth quarter, as part of our annual impairment test as of October 1, we performed qualitative assessments for the reporting units containing the recently acquired data and insights, digital government and payments solutions, and development platform solutions, and concluded no impairment existed as of our annual assessment date. Approximately $1.7 billion, or 70%, of total goodwill as of December 31, 2022, relates to these reporting units, which as a result of these recent acquisitions, do not have significant excess fair values over carrying values. We performed qualitative assessments for the remaining reporting units in which we determined that it not more likely than not that the fair value exceeded the carrying value; therefore, we did not perform a Step 1 quantitative impairment test. Our annual goodwill impairment analysis did not result in an impairment charge. During 2022, we have recorded no impairment to goodwill as no triggering events or change in circumstances indicating a potential impairment has occurred as of period-end.

Determining the fair value of our reporting units involves the use of significant estimates and assumptions and considerable management judgment. We base our fair value estimates on assumptions we believe to be reasonable at the time, but such assumptions are subject to inherent uncertainty. Changes in market conditions or other factors outside of our control could cause us to change key assumptions and our judgment about a reporting unit's prospects. Similarly, in a specific period, a reporting unit could significantly underperform relative to its historical or projected future operating results. Either situation could result in a meaningfully different estimate of the fair value of our reporting units, and a consequent future impairment charge.

There have been no impairments to goodwill in any of the periods presented. See Note 4, "Goodwill and Other Intangible Assets," for additional information.

Other Intangible Assets

We make judgments about the recoverability of purchased intangible assets other than goodwill whenever events or changes in circumstances indicate that an impairment may exist. Customer base and acquired software each comprise approximately half of our purchased intangible assets other than goodwill. We review our customer turnover each year for indications of impairment. Our customer turnover has historically been very low. If indications of impairment are determined to exist, we measure the recoverability of assets by a comparison of the carrying amount of the asset to the estimated undiscounted future cash flows expected to be generated by the asset. If the carrying amount of the assets exceeds their estimated future cash flows, an impairment charge is recognized for the amount by which the carrying amount of the assets exceeds the fair value of the assets. There have been no impairments of intangible assets in any of the periods presented.

IMPAIRMENT OF LONG-LIVED ASSETS

We periodically evaluate whether current facts or circumstances indicate that the carrying value of our property and equipment or other long-lived assets to be held and used may not be recoverable. If such circumstances are determined to exist, we measure the recoverability of assets to be held and used by a comparison of the carrying amount of the asset or appropriate grouping of assets and the estimated undiscounted future cash flows expected to be generated by the assets. If the carrying amount of the assets exceeds their estimated future cash flows, an impairment charge is recognized for the amount by which the carrying amount of the assets exceeds the fair value of the assets. There was no impairment of long-lived assets in any of the periods presented.

COSTS OF COMPUTER SOFTWARE

We capitalize software development costs upon the establishment of technological feasibility and prior to the availability of the product for general release to customers for software sold to third parties and for application development costs of software developed for internal use. Software development costs primarily consist of personnel costs. During the twelve months period ended December 31, 2022, and 2021, respectively, we capitalized approximately $27.6 million and $21.7 million of software development costs. We begin to amortize capitalized costs when a product is available for general release to customers and internal use software is ready for its intended use. Amortization expense is determined on a product-by-product basis at a rate not less than straight-line basis over the software’s remaining estimated economic life of, generally, three to five years.

CONTINGENT PURCHASE CONSIDERATION

Contingent future cash payments related to acquisitions are recognized at fair value as of the acquisition date and included in the determination of the acquisition date purchase price. Subsequent changes in the fair value of the contingent future cash payments are recognized in earnings in the period that the change occurs. We have no contingent consideration outstanding as of December 31, 2022.

CONCENTRATIONS OF CREDIT RISK

Financial instruments that potentially subject us to significant concentrations of credit risk consist principally of cash and cash equivalents, accounts receivable from trade customers, and investments in marketable securities. Our cash and cash equivalents primarily consist of operating account balances and money market funds, which are maintained at several major domestic financial institutions and the balances often exceed insured amounts. As of December 31, 2022, we had cash and cash equivalents of $173.9 million. We perform periodic evaluations of the credit standing of these financial institutions.

Concentrations of credit risk with respect to receivables are limited due to the size and geographical diversity of our customer base. As a result, we do not believe we have any significant concentrations of credit risk as of December 31, 2022.

We maintain allowances for losses and sales adjustments, which losses are recorded against revenues at the time the loss is incurred. Since most of our customers are domestic governmental entities, we rarely incur a loss resulting from the inability of a customer to make required payments. Events or changes in circumstances that indicate the carrying amount for the allowances for losses and sales adjustments may require revision include, but are not limited to, failure to manage our customer’s expectations regarding the scope of the services to be delivered, and defects or errors in new versions or enhancements of our software products. Historically, our credit losses have not been significant.

LEASES

We determine if an arrangement is a lease at inception. Operating leases are included in operating lease right-of-use ("ROU") assets, and operating lease liabilities, current and long-term, on our consolidated balance sheets. We currently do not have any finance lease arrangements.

Operating lease ROU assets and operating lease liabilities are recognized based on the present value of the future minimum lease payments over the lease term at commencement date. As most of our leases do not provide an implicit rate, we use our incremental borrowing rate based on the information available at commencement date of the lease in determining the present value of future payments. The operating lease ROU asset also includes any lease payments made and excludes lease incentives and initial direct costs incurred. Our lease terms may include options to extend or terminate the lease when it is reasonably certain that we will exercise that option. Lease expense for minimum lease payments is recognized on a straight-line basis over the lease term. Leases with an initial term of 12 months or less are not recorded on the balance sheet; we recognize lease expense for these leases on a straight-line basis over the lease term. We have lease agreements with lease and non-lease components, which are generally accounted for as a single lease component.

INDEMNIFICATION

Most of our software license agreements indemnify our customers in the event that the software sold infringes upon the intellectual property rights of a third-party. These agreements typically provide that in such event we will either modify or replace the software so that it becomes non-infringing or procure for the customer the right to use the software. We have not recorded a liability associated with these indemnifications, as we are not aware of any pending or threatened infringement actions that are possible losses. We believe the estimated fair value of these intellectual property indemnification clauses is minimal.

We have also agreed to indemnify certain officers and our board members if they are named or threatened to be named as a party to any proceeding by reason of the fact that they acted in such capacity. We maintain directors' and officers' liability insurance coverage to protect against any such losses. We have not recorded a liability associated with these indemnifications. Because of our insurance coverage, we believe the estimated fair value of these indemnification agreements is minimal.

RECENTLY ADOPTED ACCOUNTING PRONOUNCEMENTS

In October 2021, the FASB issued ASU 2021-08 — *Accounting for Contract Assets and Contract Liabilities from Contracts with Customers* (ASC 805) ("ASU 2021-08"). ASU 2021-08 requires an acquirer in a business combination to recognize and measure contract assets and contract liabilities (deferred revenue) from acquired contracts using the revenue recognition guidance in Topic 606. Under this "Topic 606 approach," the acquirer applies the revenue model as if it had originated the contracts. This is a departure from the current requirement to measure contract assets and contract liabilities at fair value. ASU 2021-08 is effective for all public business entities in annual and interim periods starting after December 15, 2022, and early adoption is permitted. An entity that early adopts should apply the amendments (1) retrospectively to all business combinations for which the acquisition date occurs on or after the beginning of the fiscal year that includes the interim period of early application and (2) prospectively to all business combinations that occur on or after the date of initial application. We early adopted as of January 1, 2022. The adoption of ASU 2021-08 did not result in an adjustment to the fair value of the deferred revenue balances assumed in our 2022 acquisitions. See Note 2, "Acquisitions," for further discussion.

NEW ACCOUNTING PRONOUNCEMENTS

There were no new not yet adopted accounting pronouncements currently issued that would affect the Company or have a material impact on its consolidated financial position or results of operations in future periods.

Notes to Consolidated Financial Statements

(2) ACQUISITIONS

2022

On October 31, 2022, we acquired Rapid Financial Solutions, LLC (Rapid), a provider of reliable, scalable, and secure payments with best-in-class card issuance and digital disbursement capabilities. The total purchase price, net of cash acquired of $2.2 million, was approximately $67.7 million, consisting of $51.2 million paid in cash, $18.2 million of common stock, and $500,000 related to working capital holdbacks, subject to certain post-closing adjustments.

We have performed a preliminary valuation analysis of the fair market value of Rapid's assets and liabilities. In connection with this transaction, we acquired total tangible assets of $2.9 million and assumed liabilities of approximately $635,000. We recorded goodwill of approximately $40.0 million, all of which is expected to be deductible for tax purposes, and other identifiable intangible assets of approximately $27.6 million. The goodwill arising from this acquisition is primarily attributed to our ability to generate increased revenues, earnings and cash flow by expanding our addressable market and client base. The $27.6 million of intangible assets are attributable to customer relationships, acquired software, and trade name and will be amortized over a weighted average period of approximately 10 years.

On May 31, 2022, we completed the acquisition of Quatred, LLC (Quatred), a systems integrator and barcode technology solutions provider. The total cash price was approximately $637,000.

On February 8, 2022, we acquired US eDirect Inc. (US eDirect), a leading provider of technology solutions for campground and outdoor recreation management. The total purchase price, net of cash acquired of $6.4 million, was approximately $116.5 million, consisting of $118.8 million paid in cash and approximately $4.1 million related to indemnity holdbacks.

We have performed a valuation analysis of the fair market value of US eDirect's assets and liabilities. The following table summarizes the preliminary allocation of the purchase price as of the acquisition date:

Cash	$ 6,361
Accounts receivable	1,730
Other current assets	594
Other noncurrent assets	698
Goodwill and identifiable intangible assets	125,541
Accounts payable	(1,881)
Accrued expenses	(357)
Other noncurrent liabilities	(742)
Deferred revenue	(688)
Deferred tax liabilities, net	(8,326)
Total consideration	$122,930

In connection with this transaction, we acquired total tangible assets of $9.4 million and assumed liabilities of approximately $3.7 million. We recorded goodwill of approximately $91.4 million, none of which is expected to be deductible for tax purposes, and other identifiable intangible assets of approximately $34.1 million. The goodwill arising from this acquisition is primarily attributed to our ability to generate increased revenues, earnings, and cash flow by expanding our addressable market and client base. The identifiable intangible assets are attributable to customer relationships, acquired software, and trade name and will be amortized over a weighted average period of approximately 13 years. We recorded net deferred tax liabilities of $8.3 million related to the tax effect of our estimated fair value allocations. Since the acquisition date, we recorded adjustments to the preliminary opening balance sheet attributed to decreases in other current assets, other noncurrent assets, identifiable intangible assets, accrued expenses, and deferred revenue, and increases in accounts receivable, accounts payable, and deferred tax liabilities, resulting in a net increase to goodwill of approximately $10.3 million.

As of December 31, 2022, the purchase price allocations for US eDirect and Quatred are complete, while the purchase price allocation for Rapid is not final; therefore, certain preliminary valuation estimates of fair value assumed at the acquisition date for intangible assets, receivables, and related deferred taxes are subject to change as valuations are finalized. Our balance sheet as of December 31, 2022, reflects the allocation of the purchase price to the net assets acquired based on their estimated fair value at the date of the acquisition. The fair value of the assets and liabilities acquired are based on valuations using Level 3 unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

Rapid and US eDirect are operated as a part of the digital government and payments solutions business unit (also known as the NIC division), therefore the following unaudited pro forma consolidated operating results information has been prepared as if the acquisitions of Rapid and US eDirect had occurred on January 1, 2021, and NIC had occurred on January 1, 2020, after giving effect to certain adjustments, including amortization of intangibles, transaction costs, and tax effects.

Years Ended December 31,	2022	2021	2020
Revenues	$1,867,011	$1,785,623	$1,577,117
Net income	147,028	157,765	183,994
Basic earnings per share	$ 3.54	$ 3.86	$ 4.60
Diluted earnings per share	$ 3.47	$ 3.73	$ 4.43

The pro forma information above does not include acquisitions that are not considered material to our results of operations. The pro forma information does not purport to represent what our results of operations actually would have been had such transaction occurred on the date specified or to project our results of operations for any future period.

The actual operating results of Rapid, US eDirect, and NIC from their respective dates of acquisition are included with the operating results of the Platform Technologies segment. The operating results of Quatred are included in the operating results of the Enterprise Software segment since the date of acquisition. The impact of the 2022 acquisitions on our operating results, assets, and liabilities is not material. In the twelve months ended December 31, 2022, we incurred fees of approximately $2.0 million for financial advisory, legal, accounting, due diligence, valuation, and other various services necessary to complete acquisitions. These costs were expensed in 2022 and are included in general and administrative expense in the accompanying consolidated statements of income.

2021

On September 9, 2021, we acquired all the equity interest of Ultimate Information Systems, Inc. (dba Arx). Arx is a cloud-based platform which creates accessible technology to enable a modern-day police force that is fully transparent, accountable, and a trusted resource to the community it serves. The total purchase price, net of cash acquired, was approximately $12.8 million.

On September 1, 2021, we acquired VendEngine, Inc., a cloud-based software provider focused on financial technology for the corrections market. The total purchase price, net of cash acquired of $1.7 million, was approximately $83.6 million, consisting of $81.6 million paid in cash, and approximately $3.8 million related to indemnity holdbacks.

In connection with this transaction, we acquired total tangible assets of $5.8 million and assumed liabilities of approximately $3.0 million. We recorded goodwill of approximately $54.3 million, none of which is expected to be deductible for tax purposes, and other identifiable intangible assets of approximately $37.9 million. The $37.9 million of intangible assets are attributable to customer relationships, acquired software, and trade name and will be amortized over a weighted average period of approximately 13 years. We recorded net deferred tax liabilities of $9.6 million related to the tax effect of our estimated fair value allocations. In the twelve months ended December 31, we recorded adjustments to the preliminary opening balance sheet attributed to a decrease to accounts receivable, accounts payable, deferred income taxes, and an adjustment to the accrual for indemnity holdbacks and increases in identifiable intangible assets and accrued expenses resulting in a net decrease to goodwill of approximately $4.4 million.

On April 21, 2021, we acquired NIC, Inc., a leading digital government solutions and payment company that primarily serves federal and state government agencies. The total purchase price, net of cash acquired of $331.8 million, was approximately $2.0 billion, consisting of cash paid of $2.3 billion and $1.9 million of purchase consideration related to the conversion of unvested restricted stock awards.

We have performed the valuation analysis of the fair market value of NIC's assets and liabilities. The following table summarizes the allocation of the purchase price as of the acquisition date:

Cash	$ 331,783
Accounts receivable	149,515
Other current assets	12,988
Other noncurrent assets	20,974
Identifiable intangible assets	777,000
Goodwill	1,446,868
Accounts payable	(150,099)
Accrued expenses	(63,154)
Other noncurrent liabilities	(11,493)
Deferred revenue	(3,294)
Deferred tax liabilities, net	(190,596)
Total consideration	$2,320,492

In connection with this transaction, we acquired total tangible assets of $515.3 million and assumed liabilities of approximately $228.0 million. We recorded goodwill of approximately $1.4 billion, none of which is expected to be deductible for tax purposes, and other identifiable intangible assets of approximately $777.0 million. The $777.0 million of intangible assets are attributable to customer relationships, acquired software, and trade name and will be amortized over a weighted average period of approximately 17 years. We recorded net deferred tax liabilities of $190.6 million related to the tax effect of our estimated fair value allocations. In the twelve months ended December 31, 2021, we recorded adjustments to the preliminary opening balance sheet attributed to a decrease to accounts receivable and increases in identifiable intangible assets, deferred revenue and related deferred taxes resulting in a net decrease to goodwill of approximately $17.2 million.

NIC delivers user-friendly digital services that make it easier and more efficient for citizens and businesses to interact with government-providing valuable conveniences like applying for unemployment insurance, submitting business filings, renewing licenses, accessing information and making secure payments without visiting a government office. In addition, NIC has extensive expertise and scale in the government payments arena which will accelerate our strategic payments initiatives. Therefore, the goodwill of approximately $1.4 billion arising from this acquisition is primarily attributed to our ability to generate increased revenues, earnings and cash flow by expanding our addressable market and client base.

On March 31, 2021, we acquired all the equity interest of Glass Arc, Inc. (dba ReadySub), a cloud-based platform that assists school districts with absence tracking, filling substitute teacher assignments, and automating essential payroll processes. The total cash price was approximately $6.2 million, net of cash acquired.

On March 31, 2021, we acquired substantially all assets of DataSpec, Inc. (DataSpec), a provider of a SaaS solution that allows for secure electronic claims submission to the federal Department of Veterans Affairs and reporting capabilities, in addition to scheduling, calendaring, and payments. The total cash purchase price was approximately $5.8 million.

The operating results of Arx, DataSpec, ReadySub, and VendEngine are included with the operating results of the Enterprise Software segment since their date of acquisition. The impact of the Arx, DataSpec, ReadySub, and VendEngine acquisitions, individually and in the aggregate, on our operating results, assets and liabilities is not material. The operating results of NIC are included in the Platform Technologies Segment. Revenues from NIC included in Tyler's results of operations totaled approximately $368.9 million and net income was approximately $37.2 million from the date of acquisition through December 31, 2021. In 2021, we incurred fees of approximately $23.5 million for financial advisory, legal, accounting, due diligence, valuation and other various services necessary to complete these acquisitions. The Company also incurred $1.6 million of expense related to a separation agreement with NIC's former Chief Executive Officer. These costs were expensed in 2021 and are included in general and administrative expense in the accompanying consolidated statements of income. As of December 31, 2022, the purchase price allocations for 2021 acquisitions are complete.

(3) PROPERTY AND EQUIPMENT, NET AND SOFTWARE DEVELOPMENT COSTS, NET

Property and equipment, net consists of the following at December 31:

	Useful Lives (years)	2022	2021
Land	—	$ 22,908	$ 22,523
Building and leasehold improvements	5-39	159,059	154,222
Computer equipment and purchased software	3-5	121,968	109,691
Furniture and fixtures	5	39,373	35,932
Transportation equipment	5	200	207
		343,508	322,575
Accumulated depreciation and amortization		(170,722)	(141,382)
Property and equipment, net		$ 172,786	$ 181,193

Depreciation expense was $29.5 million in 2022, $29.4 million in 2021, and $25.5 million in 2020.

We paid $4.5 million and $12.8 million for real estate and the expansion of existing facilities in 2022 and 2021, respectively.

Software development costs, net consists of the following at December 31:

	Useful Lives (years)	2022	2021
Software development costs	3-5	$ 59,904	$32,274
Accumulated amortization		(11,715)	(3,785)
Software development costs, net		$ 48,189	$28,489

Amortization expense for software development costs is recorded to cost of revenues and general and administrative expense. Amortization expense for software development costs recorded to cost of revenues was $6.5 million in 2022, $2.3 million in 2021, and no expense in 2020. Amortization expense for software development costs recorded to general and administrative expense was $1.4 million in 2022, no expense in 2021, and $1.2 million in 2020.

Estimated annual amortization expense related to software development costs:

2023	$11,038
2024	12,440
2025	11,236
2026	8,247
2027	3,924
Thereafter	1,304
	$48,189

(4) GOODWILL AND OTHER INTANGIBLE ASSETS

The changes in the carrying amount of goodwill for the two years ended December 31, 2022 are as follows:

	Enterprise Software	Platform Technologies	Total
Balance as of 12/31/2020	$762,127	$ 76,301	$ 838,428
Goodwill acquired related to the purchase of NIC	—	1,446,868	1,446,868
Goodwill acquired related to the purchase of VendEngine	54,456	—	54,456
Goodwill acquired related to the purchase of other acquisitions	19,922	—	19,922
Balance as of 12/31/2021	836,505	1,523,169	2,359,674
Goodwill acquired related to the purchase of US eDirect	—	91,441	91,441
Goodwill acquired related to the purchase of Rapid	—	40,005	40,005
Purchase price adjustments related to the purchase of VendEngine	(204)	—	(204)
Purchase price adjustments related to the purchase of other acquisitions	(1,608)	—	(1,608)
Balance as of 12/31/2022	$834,693	$1,654,615	$2,489,308

Other intangible assets and related accumulated amortization consists of the following at December 31:

	2022	2021
Gross carrying amount of other intangibles:		
Customer related intangibles	$ 990,545	$ 949,844
Acquired software	456,137	433,800
Trade names	45,293	45,353
Leases acquired	5,037	5,037
	1,497,012	1,434,034
Accumulated amortization	(494,848)	(381,541)
Total other intangibles, net	$1,002,164	$1,052,493

Amortization expense for acquired software is recorded to cost of revenues. Amortization expense for customer related intangibles, trade names and leases acquired is recorded to amortization of other intangibles. Total amortization expense for other intangibles was $113.9 million in 2022, $90.8 million in 2021, and $53.9 million in 2020.

The amortization periods of other intangible assets are summarized in the following table:

	December 31, 2022			December 31, 2021		
	Gross Carrying Amount	Weighted Average Amortization Period	Accumulated Amortization	Gross Carrying Amount	Weighted Average Amortization Period	Accumulated Amortization
Non-amortizable intangibles:						
Goodwill	$2,489,308	—	$ —	$2,359,674	—	$ —
Amortizable intangibles:						
Customer related intangibles	$ 990,545	20 years	$209,501	$ 949,844	21 years	$157,077
Acquired software	456,137	5 years	260,642	433,800	7 years	208,451
Trade names	45,293	5 years	21,059	45,353	10 years	13,064
Leases acquired	5,037	9 years	3,646	5,037	9 years	2,949

Estimated annual amortization expense related to other intangibles:

2023	$ 105,284
2024	89,192
2025	88,423
2026	80,722
2027	78,626
Thereafter	559,917
	$1,002,164

(5) ACCRUED LIABILITIES

Accrued liabilities consist of the following at December 31:

	2022	2021
Accrued wages, bonuses and commissions	$ 73,745	$ 88,696
Other accrued liabilities	58,196	69,728
	$131,941	$158,424

(6) DEBT

The following table summarizes our total outstanding borrowings related to the 2021 Credit Agreement and Convertible Senior Notes:

	Rate	Maturity Date	December 31, 2022	December 31, 2021
2021 Credit Agreement				
Revolving credit facility	L + 1.50%	April 2026	$ —	$ —
Term Loan A-1	L + 1.50%	April 2026	290,000	585,000
Term Loan A-2	L + 1.25%	April 2024	105,000	170,000
Convertible Senior Notes due 2026	0.25%	March 2026	600,000	600,000
Total borrowings			995,000	1,355,000
Less: unamortized debt discount and debt issuance costs			(7,611)	(13,724)
Total borrowings, net			987,389	1,341,276
Less: current portion of debt			(30,000)	(30,000)
Carrying value			$957,389	$1,311,276

2021 CREDIT AGREEMENT

In connection with the completion of the acquisition of NIC on April 21, 2021, we, as borrower, entered into a new $1.4 billion Credit Agreement (the "2021 Credit Agreement") with the various lenders party thereto and Wells Fargo Bank, National Association, as Administrative Agent, Swingline Lender, and Issuing Lender. The 2021 Credit Agreement provides for (1) a senior unsecured revolving credit facility in an aggregate principal amount of up to $500 million, including sub-facilities for standby letters of credit and swingline loans (the "Revolving Credit Facility"), (2) an amortizing five-year term loan in the aggregate amount of $600 million (the "Term Loan A-1"), and (3) a non-amortizing three-year term loan in the aggregate amount of $300 million (the "Term Loan A-2") and, together (the "Term Loans"). The 2021 Credit Agreement matures on April 20, 2026, and the loans may be prepaid at any time, without premium or penalty, subject to certain minimum amounts and payment of any LIBOR breakage costs. In addition to the required amortization payments on the Term Loan A-1 of 5% annually, certain mandatory quarterly prepayments of the Term Loans and the Revolving Credit Facility will be required (i) upon the issuance or incurrence of additional debt not otherwise permitted under the 2021 Credit Agreement and (ii) upon the occurrence of certain asset sales and insurance and condemnation recoveries, subject to certain thresholds, baskets, and reinvestment provisions as provided in the 2021 Credit Agreement.

Borrowings under the Revolving Credit Facility and the Term Loan A-1 bear interest, at the Company's option, at a per annum rate of either (1) the Administrative Agent's prime commercial lending rate (subject to certain higher rate determinations) (the "Base Rate") plus a margin of 0.125% to 0.75% or (2) the one-, three-, six-, or, subject to approval by all lenders, twelve-month LIBOR rate plus a margin of 1.125% to 1.75%. The Term Loan A-2 bears interest, at the Company's option, at a per annum rate of either (1) the Base Rate plus a margin of 0% to 0.5% or (2) the one-, three-, six-, or, subject to approval by all lenders, twelve-month LIBOR rate plus a margin of 0.875% to 1.5%. The margin in each case is based upon the Company's total net leverage ratio, as determined pursuant to the 2021 Credit Agreement. The 2021 Credit Agreement has customary benchmark replacement language with respect to the replacement of LIBOR once LIBOR becomes unavailable. In addition to paying interest on the outstanding principal of loans under the Revolving Credit Facility, the Company is required to pay a commitment fee on the average daily unused portion of the Revolving Credit Facility, currently 0.25% per annum, ranging from 0.15% to 0.3% based upon the Company's total net leverage ratio.

LIBOR, the London Inter-Bank Offered Rate, is currently anticipated to be phased out in June 2023 and is expected to transition to a new standard rate, the Secured Overnight Financing Rate ("SOFR"), which will incorporate certain overnight repo market data collected from multiple data sets. In January 2023, we amended[3] our 2021 Credit Agreement to replace the LIBOR reference rate with the SOFR reference rate. Assuming that SOFR replaces LIBOR and is appropriately adjusted to equate to one-month LIBOR, we expect that there should be minimal impact on our operations.

The net proceeds from the borrowings under the 2021 Credit Agreement were $1.1 billion, net of debt discounts of $7.2 million and debt issuance costs of $4.9 million and $6.4 million of commitment fees paid related to the terminated $1.6 billion unsecured bridge loan facility. On the Closing Date, the Company paid approximately $2.3 billion in cash for the purchase of NIC. The Term Loans of $900 million and a portion of the proceeds of the Revolving Credit Facility, in the amount of $250 million, together with cash available to the Company of $609 million and the net proceeds of its Convertible Senior Notes of $594 million, were used to complete the acquisition and pay fees and expenses in connection with the acquisition and the 2021 Credit Agreement. The remaining portion of the Revolving Credit Facility may be used for working capital requirements, acquisitions, and capital expenditures of the Company and its subsidiaries.

The 2021 Credit Agreement requires us to maintain certain financial ratios and other financial conditions and prohibits us from making certain investments, advances, cash dividends or loans, and limits incurrence of additional indebtedness and liens. As of December 31, 2022, we were in compliance with those covenants.

The carrying amount is the par value of the Revolving Credit Facility and Term Loans less the debt discount and debt issuance costs that are amortized to interest expense using the effective interest method over the terms of the Term Loans. Interest expense is included in the accompanying consolidated statements of income.

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[3] The foregoing is a summary of the amended terms and conditions of the 2021 Credit Agreement and not a complete description of the Third Amendment to Credit Agreement, dated January 27,2023. Accordingly, the foregoing is qualified in its entirety by reference to the full text of the Third Amendment to Credit Agreement attached to this Current Report on Form 10-K as Exhibit 4.2, which is incorporated by reference.

Convertible Senior Notes due 2026

On March 9, 2021, we issued 0.25% Convertible Senior Notes due 2026 in the aggregate principal amount of $600.0 million ("the Convertible Senior Notes" or "the Notes"). The Convertible Senior Notes were issued pursuant to, and are governed by, an indenture (the "Indenture"), dated as of March 9, 2021, with U.S. Bank National Association, as trustee. The net proceeds from the issuance of the Convertible Senior Notes were $591.4 million, net of initial purchasers' discounts of $6.0 million and debt issuance costs of $2.6 million.

The Convertible Senior Notes are senior, unsecured obligations and are (i) equal in right of payment with our future senior, unsecured indebtedness; (ii) senior in right of payment to our future indebtedness that is expressly subordinated to the Notes; (iii) effectively subordinated to our future secured indebtedness, to the extent of the value of the collateral securing that indebtedness; and (iv) structurally subordinated to all future indebtedness and other liabilities, including trade payables, and (to the extent we are not a holder thereof) preferred equity, if any, of our subsidiaries.

The Convertible Senior Notes accrue interest at a rate of 0.25% per annum, payable semi-annually in arrears on March 15 and September 15 of each year, beginning on September 15, 2021. The Convertible Senior Notes mature on March 15, 2026, unless earlier repurchased, redeemed, or converted.

Before September 15, 2025, holders of the Convertible Senior Notes have the right to convert their Convertible Senior Notes only upon the occurrence of certain events. Under the terms of the Indenture, the Convertible Senior Notes are convertible into common stock of Tyler Technologies, Inc. (referred to as "our common stock" herein) at the following times or circumstances:

- during any calendar quarter commencing after the calendar quarter ended June 30, 2021, if the last reported sale price per share of our common stock exceeds 130% of the conversion price for each of at least 20 trading days (whether or not consecutive) during the 30 consecutive trading days ending on, and including, the last trading day of the immediately preceding calendar quarter;
- during the five consecutive business days immediately after any five consecutive trading day period (such five consecutive trading day period, the "Measurement Period") if the trading price per $1,000 principal amount of Convertible Senior Notes, as determined following a request by their holder in accordance with the procedures in the Indenture, for each trading day of the Measurement Period was less than 98% of the product of the last reported sale price per share of our common stock on such trading day and the conversion rate on such trading day;
- upon the occurrence of certain corporate events or distributions on our common stock, including but not limited to a "Fundamental Change" (as defined in the Indenture);
- upon the occurrence of specified corporate events; or
- on or after September 15, 2025, until the close of business on the second scheduled trading day immediately preceding the maturity date, March 15, 2026.

With certain exceptions, upon a change of control or other fundamental change (both as defined in the Indenture governing the Convertible Senior Notes), the holders of the Convertible Senior Notes may require us to repurchase all or part of the principal amount of the Convertible Senior Notes at a repurchase price equal to 100% of the principal amount of the Convertible Senior Notes, plus any accrued and unpaid interest to, but excluding, the redemption date.

As of December 31, 2022, none of the conditions allowing holders of the Convertible Senior Notes to convert have been met.

From and including September 15, 2025, holders of the Convertible Senior Notes may convert their Convertible Senior Notes at any time at their election until the close of business on the second scheduled trading day immediately before the maturity date. We will settle any conversions of the Convertible Senior Notes either entirely in cash or in a combination of cash and shares of our common stock, at our election. However, upon conversion of any Convertible Senior Notes, the conversion value, which will be determined over an "Observation Period" (as defined in the Indenture) consisting of 30 trading days, will be paid in cash up to at least the principal amount of the Notes being converted.

The initial conversion rate is 2.0266 shares of common stock per $1,000 principal amount of Convertible Senior Notes, which represents an initial conversion price of approximately $493.44 per share of common stock. The conversion rate and conversion price will be subject to adjustment upon the occurrence of certain events. In addition, if certain corporate events that constitute a "Make-Whole Fundamental Change" (as defined in the Indenture) occur, then the conversion rate will, in certain circumstances, be increased for a specified period of time.

The Convertible Senior Notes are redeemable, in whole or in part, at our option at any time, and from time to time, on or after March 15, 2024 and on or before the 30th scheduled trading day immediately before the maturity date, at a cash redemption price equal to the principal amount of the Notes to be redeemed, plus accrued and unpaid interest, if any, up to, but excluding, the redemption date, but only if the last reported sale price per share of our common stock exceeds 130% of the conversion price of the Notes on (i) each of at least 20 trading days, whether or not consecutive, during the 30 consecutive trading days ending on, and including, the trading day immediately before the date we send the related redemption notice; and (ii) the trading day immediately before the date we send such notice. In addition, calling any Note for redemption constitutes a Make-Whole Fundamental Change with respect to that Note, in which case the conversion rate applicable to the conversion of that Note will be increased in certain circumstances if it is converted after it is called for redemption.

Effective Interest

The weighted average interest rates for the borrowings under the 2021 Credit Agreement and Convertible Senior Notes due 2026 were 5.82% and 0.25%, as of December 31, 2022, respectively. During the twelve months ended December 31, 2022, the effective interest rates for our borrowings were 3.79% and 0.54% for the 2021 Credit Agreement and the Convertible Senior Notes, respectively. The following sets forth the interest expense recognized related to the borrowings under the 2021 Credit Agreement and Convertible Senior Notes and is included in interest expense in the accompanying consolidated statements of income:

Years Ended December 31,	2022	2021	2020
Contractual interest expense – Revolving Credit Facility	$ (1,267)	$ (1,244)	$ —
Contractual interest expense – Term Loans	(18,583)	(9,341)	—
Contractual interest expense – Convertible Senior Notes	(1,500)	(1,213)	—
Amortization of debt discount and debt issuance costs	(7,029)	(3,297)	—
Interest expense and amortization of debt issuance costs – terminated 2019 Credit Agreement and Senior Unsecured Bridge loan facility	—	(8,203)	(1,013)
Total	$(28,379)	$(23,298)	$(1,013)

As of December 31, 2022, we had one outstanding standalone letter of credit totaling $1.5 million. The letter of credit, which guarantees our performance under a client contract, renews automatically annually unless canceled in writing, and expires in the third quarter of 2026. For the twelve months ended December 31, 2022, we repaid $360 million of the Term Loans under the 2021 Credit Agreement.

As of December 31, 2022, the required annual maturities related to the 2021 Credit Agreement and the Convertible Senior Notes due 2026 were as follows:

Year ending December 31,	Annual Maturities
2023	$ 30,000
2024	135,000
2025	30,000
2026	800,000
2027	—
Total required maturities	$995,000

(7) FINANCIAL INSTRUMENTS

The following table presents our financial instruments:

December 31,	2022	2021
Cash and cash equivalents	$173,857	$309,171
Held-to-maturity investments	—	98,653
Available-for-sale investments	55,538	—
Equity investments	10,000	10,000
Total	$239,395	$417,824

Cash and cash equivalents consist primarily of money market funds with original maturity dates of three months or less, for which we determine fair value through quoted market prices.

Our available-for-sale securities were historically classified as held-to-maturity. Management determined that our investment portfolio would be transferred from held-to-maturity to available-for-sale, in order to have the flexibility to buy and sell investments and maximize cash liquidity for potential acquisitions or for debt repayments. Accordingly, our investment portfolio is now classified as available-for-sale as of December 31, 2022. Our available-for-sale investments primarily consist of investment grade corporate bonds, municipal bonds, and asset-backed securities with maturity dates through 2027. These investments are presented at fair value and are included in short-term investments and non-current investments in the accompanying consolidated balance sheets. Unrealized gains or losses associated with the investments are included in accumulated other comprehensive loss, net of tax in the accompanying consolidated balance sheets and statements of comprehensive income. For our available-for-sale investments, we do not have the intent to sell, nor is it more likely than not that we would be required to sell before recovery of their cost basis.

As of December 31, 2022, we have an accrued interest receivable balance of approximately $200,000 which is included in accounts receivable, net. We do not measure an allowance for credit losses for accrued interest receivables. We record any losses within the maturity period or at the time of sale of the investment and any write-offs to accrued interest receivables are recorded as a reduction to interest income in the period of the loss. During the twelve months ended December 31, 2022, we have recorded no credit losses for accrued interest receivables. Interest income and amortization of discounts and premiums are included in other income, net in the accompanying consolidated statements of income.

The following table presents the components of our available-for-sale investments:

December 31,	2022	2021
Amortized cost	$56,670	$ —
Unrealized gains	16	—
Unrealized losses	(1,148)	—
Estimated fair value	$55,538	$ —

As of December 31, 2022, we have $37.0 million of available-for-sale debt securities with contractual maturities of one year or less and $18.5 million with contractual maturities great than one year. As of December 31, 2022, 24 available-for-sale debt securities with a fair value of $25.8 million have been in a loss position for one year or less and 28 securities with a fair value of $23.1 million have been in a loss position for greater than one year.

The following table presents the activity on our available-for-sale or held-to-maturity investments:

Years Ended December 31,	2022	2021	2020
Proceeds from sales and maturities	$71,034	$131,449	$82,742
Realized losses on sales, net of tax	(79)	—	—

Our equity investments consist of an 18% interest in BFTR, LLC., a wholly owned subsidiary of Bison Capital Partners V L.P. BFTR, LLC, a privately held Australian company specializing in digitizing the spoken word in court and legal proceedings. The investment in common stock is accounted for under the equity method because we do not have the ability to exercise significant influence over the investee; and as the securities do not have readily determinable fair values, our investment is carried at cost less any impairment write-downs.

(8) OTHER COMPREHENSIVE LOSS

The following tables present the changes in the balances of accumulated other comprehensive loss, net of tax by component:

	Unrealized Loss On Available-for-Sales Securities	Other	Accumulated Other Comprehensive Loss
Balance as of December 31, 2020	$ (46)	$ —	$ (46)
Other comprehensive income before reclassifications	—	—	—
Amounts reclassified to net income	—	—	—
Other comprehensive income (loss)	—	—	—
Balance as of December 31, 2021	$ (46)	$ —	$ (46)
Other comprehensive loss before reclassifications	(850)	—	(850)
Reclassification adjustment of unrealized losses on securities transferred from held-to-maturity	(27)	—	(27)
Reclassification adjustment for net loss on sale of available for sale securities, included in net income	79	—	79
Other comprehensive loss	(798)	—	(798)
Balance as of December 31, 2022	$(844)	$ —	$(844)

(9) FAIR VALUE MEASUREMENTS

Fair value is defined as 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 in the principal or most advantageous market for that asset or liability. Guidance on fair value measurements and disclosures establishes a valuation hierarchy for disclosure of inputs used in measuring fair value defined as follows:

- Level 1—Inputs are unadjusted quoted prices that are available in active markets for identical assets or liabilities.
- Level 2—Inputs include quoted prices for similar assets and liabilities in active markets and quoted prices in non-active markets, inputs other than quoted prices that are observable, and inputs that are not directly observable, but are corroborated by observable market data.
- Level 3—Inputs that are unobservable and are supported by little or no market activity and reflect the use of significant management judgment.

The classification of a financial asset or liability within the hierarchy is determined based on the least reliable level of input that is significant to the fair value measurement. In determining fair value, we utilize valuation techniques that maximize the use of observable inputs and minimize the use of unobservable inputs to the extent possible. We also consider the counterparty and our own non-performance risk in our assessment of fair value.

The following table presents fair values of our financial and debt instruments categorized by their fair value hierarchy as of December 31, 2022:

	Level 1	Level 2	Level 3	Total
Available-for-sale investments	$ —	$ 55,538	$ —	$ 55,538
Equity investments	—	—	10,000	10,000
2021 Credit Agreement				
Revolving Credit Facility	—	—	—	—
Term Loan A-1	—	288,302	—	288,302
Term Loan A-2	—	104,603	—	104,603
Convertible Senior Notes due 2026	—	560,910	—	560,910

Assets that are Measured at Fair Value on a Recurring Basis

Cash and cash equivalents, accounts receivables, accounts payables, short-term obligations and certain other assets at cost approximate fair value because of the short maturity of these instruments.

As of December 31, 2022, we have $55.5 million in investment grade corporate bonds, municipal bonds, and asset-backed securities with maturity dates through 2027. The fair values of these securities are considered Level 2 as they are based on inputs from quoted prices in markets that are not active or other observable market data.

Assets that are Measured at Fair Value on a Nonrecurring Basis

As of December 31, 2022, we have an 18% interest in BFTR, LLC. The investment in common stock is accounted under the equity method because we do not have the ability to exercise significant influence over the investee and the securities do not have readily determinable fair values. Our investment is carried at cost less any impairment write-downs. Periodically, our equity method investments are assessed for impairment. We do not reassess the fair value of equity method investments if there are no identified events or changes in circumstances that may have a significant adverse effect on the fair value of the investments. No events or changes in circumstances have occurred during the period that require reassessment. There has been no impairment of our equity method investment for the periods presented. This investment is included in other non-current assets in the accompanying consolidated balance sheets.

We assess goodwill for impairment annually on October 1. In addition, we review goodwill, property and equipment, and other intangibles for impairment whenever events or changes in circumstances indicate the carrying value may not be recoverable. During the fourth quarter of 2022, we completed our annual assessment of goodwill which did not result in an impairment charge. Further, we identified no indicators of impairment to long-lived and other assets and therefore, no impairment was recorded as of and for the period ended December 31, 2022.

Financial instruments measured at fair value only for disclosure purposes

The fair value of our borrowing under our 2021 Credit Agreement would approximate book value as of December 31, 2022, because our interest rates reset approximately every 30 days or less.

The carrying amount of the Revolving Credit Facility and Term Loans is the par value less the debt discount and debt issuance costs that are amortized to interest expense using the effective interest method over the terms of the Term Loans. Interest expense is included in the accompanying consolidated statements of income.

The fair value of our Convertible Senior Notes due 2026 is determined based on quoted market prices for a similar liability when traded as an asset in an active market, a Level 2 input. See Note 6, "Debt," for further discussion.

The carrying amount of the Convertible Senior Notes is the par value less the debt discount and debt issuance costs that are amortized to interest expense using the effective interest method over the term of the Convertible Senior Notes. Interest expense is included in the accompanying consolidated statements of income.

The following table presents the fair value and carrying value, net, of the 2021 Credit Agreement and our Convertible Notes due 2026):

	Fair Value at December 31,		Fair Value at December 31,	
	2022	2021	2022	2021
2021 Credit Agreement				
Revolving Credit Facility	$ —	$ —	$ —	$ —
Term Loan A-1	288,302	580,515	288,302	580,515
Term Loan A-2	104,603	167,997	104,603	167,996
Convertible Notes due 2026	560,910	736,662	594,484	592,765
	$953,815	$1,485,174	$987,389	$1,341,276

(10) INCOME TAX

Income tax provision (benefit) on income from operations consists of the following:

Years Ended December 31,	2022	2021	2020
Current:			
Federal	$ 84,570	$ 7,591	$(10,538)
State	25,975	3,203	(1,304)
	110,545	10,794	(11,842)
Deferred	(87,192)	(13,271)	(7,936)
	$ 23,353	$ (2,477)	$(19,778)

Reconciliation of the U.S. statutory income tax rate to our effective income tax expense rate for operations follows:

Years Ended December 31,	2022	2021	2020
Federal income tax expense at statutory rate	$ 39,395	$ 33,386	$ 36,759
State income tax, net of federal income tax benefit	9,197	5,594	6,677
Net operating loss carryback	(261)	3,391	(3,445)
Excess tax benefits of share-based compensation	(7,752)	(47,675)	(60,190)
Tax credits	(31,334)	(4,999)	(3,867)
Non-deductible business expenses	5,425	7,542	4,199
Uncertain tax positions	8,338	(425)	—
Other, net	345	709	89
	$ 23,353	$ (2,477)	$(19,778)

In 2022, we completed a multi-year research and development tax credit study, which resulted in a $31.3 million research tax credit benefit.

The tax effects of the major items recorded as deferred tax assets and liabilities as of December 31 are:

	2022	2021
Deferred income tax assets:		
Capitalized research and experimental expenditures	$ 76,731	$ —
Operating expenses not currently deductible	17,263	16,639
Stock option and other employee benefit plans	21,373	19,596
Loss and credit carryforwards	8,589	18,604
Deferred revenue	4,405	4,717
Other	289	—
Total deferred income tax assets	128,650	59,556
Valuation allowance	—	—
Total deferred income tax assets, net of valuation allowance	128,650	59,556
Deferred income tax liabilities:		
Intangible assets	(256,818)	(266,827)
Property and equipment	(11,220)	(12,272)
Prepaid expenses	(9,503)	(8,542)
Total deferred income tax liabilities	(277,541)	(287,641)
Net deferred income tax liabilities	$(148,891)	$(228,085)

As of December 31, 2022, the capitalization and amortization requirements of research and experimental expenditures pursuant to the TCJA changes to Internal Revenue Code Section 174 resulted in a deferred tax asset of $76.7 million.

As of December 31, 2022, we had federal net operating loss carryforwards of approximately $22.9 million, after-tax state net operating loss carryforwards of approximately $1.6 million, and tax credit carryforwards of approximately $4.1 million. The federal net operating loss carryforward will begin to expire in 2037, if not utilized, and a portion of the state net operating loss and tax credit carryforwards begin expiring in 2033, if not utilized.

The acquired carryforwards are subject to an annual limitation but are expected to be realized. We believe it is more likely than not that all other deferred tax assets will be realized. However, the amount of the deferred tax asset considered realizable could be adjusted in the future if estimates of reversing taxable temporary differences are revised.

The following table provides a reconciliation of the gross unrecognized tax benefits from uncertain tax positions for the years ended December 31:

	2022	2021
Balance at beginning of period	$ 4,635	$ 1,929
Additions for tax positions of prior period	5,522	4,508
Reductions for tax positions of prior period	(170)	(10)
Additions for tax positions of current period	5,804	212
Settlements	—	—
Expiration of statutes of limitations	(1,160)	(2,004)
Balance at end of period	$14,631	$ 4,635

As of December 31, 2022, $1.9 million of the unrecognized tax benefits are reflected as a decrease in deferred income taxes and $12.7 million are included in other long-term liabilities in our consolidated balance sheets. The total amount of unrecognized tax benefits, net of federal income tax benefit of state taxes, if recognized, that would affect the effective tax rate is $13.9 million as of December 31, 2022, and $4.3 million and $1.9 million as of December 31, 2021, and 2020, respectively. It is reasonably possible that events will occur during the next 12 months that would cause the total amount of unrecognized tax benefits to increase or decrease. However, we do not expect such increases or decreases to be material to the financial condition or results of operations.

We are subject to U.S. federal income tax, as well as income tax of multiple state, local and foreign jurisdictions. We are routinely subject to income tax examinations by these taxing jurisdictions, but we do not have a history of, nor do we expect any material adjustments as a result of these examinations. With few exceptions, major U.S. federal, state, local and foreign jurisdictions are no longer subject to examination for years before 2018. As of February 22, 2023, no significant adjustments have been proposed by any taxing jurisdiction.

We recognize interest and penalties related to uncertain tax positions as a component of income tax expense in the consolidated statements of income. Accrued interest and penalty amounts were not significant at December 31, 2022.

(11) SHAREHOLDERS' EQUITY

The following table details activity in our common stock:

	Years Ended December 31,					
	2022		2021		2020	
	Shares	Amount	Shares	Amount	Shares	Amount
Purchases of treasury shares	—	$ —	(33)	$(12,977)	(59)	$ (15,484)
Stock option exercises	186	26,329	627	96,714	1,174	124,363
Employee stock plan purchases	49	16,651	35	13,158	40	10,912
Restricted stock units vested, net of withheld shares upon award settlement	176	(27,219)	147	(25,158)	76	(12,923)
Shares issued for acquisition	56	18,169	—	—	—	—

As of February 22, 2023, we had authorization from our board of directors to repurchase up to 2.3 million additional shares of our common stock.

(12) SHARE-BASED COMPENSATION

Share-Based Compensation Plan

In May 2018, stockholders approved the Tyler Technologies, Inc. 2018 Stock Incentive Plan ("the 2018 Plan") which amended and restated the existing Tyler Technologies, Inc. 2010 Stock Option Plan ("the 2010 Plan"). Upon stockholder approval of the 2018 Plan, the remaining shares available for grant under the 2010 Plan were added to the shares authorized for grant under the 2018 Plan. Additionally, any awards previously granted under the 2010 Plan that expire unexercised or are forfeited are added to the shares authorized for grant under the 2018 Plan.

During fiscal year 2022, we granted stock awards under the 2018 Plan in the form of stock options, restricted stock units and performance share units. Stock options generally vest after three to six years of continuous service from the date of grant and have a contractual term of 10 years. Once options become exercisable, the employee can purchase shares of our common stock at the market price on the date we granted the option. Restricted stock unit grants generally vest ratably over three to five years of continuous service from the date of grant. Each performance share unit represents the right to receive one share of our common stock based on our achievement of certain financial performance targets during applicable performance periods. We account for share-based compensation utilizing the fair value recognition pursuant to ASC 718, *Stock Compensation.*

As of December 31, 2022, there were 1.3 million shares available for future grants under the 2018 Plan from the 22.9 million shares previously approved by the shareholders.

Determining Fair Value of Stock Compensation

Valuation and Amortization Method. We estimate the fair value of stock option awards granted using the Black-Scholes option valuation model. For restricted stock unit and performance stock unit awards, we estimate fair value as market value on the date of grant. We amortize the fair value of all awards on a straight-line basis over the requisite service periods, which are generally the vesting periods.

Expected Life. The expected life of awards granted represents the period of time that they are expected to be outstanding. The expected life represents the weighted-average period the stock options are expected to be outstanding based primarily on the options' vesting terms, remaining contractual life and the employees' expected exercise based on historical patterns.

Expected Volatility. Using the Black-Scholes option valuation model, we estimate the volatility of our common stock at the date of grant based on the historical volatility of our common stock.

Risk-Free Interest Rate. We base the risk-free interest rate used in the Black-Scholes option valuation model on the implied yield currently available on U.S. Treasury zero-coupon issues with an equivalent remaining term equal to the expected life of the award.

Expected Dividend Yield. We have not paid any cash dividends on our common stock in more than ten years and we do not anticipate paying any cash dividends in the foreseeable future. Consequently, we use an expected dividend yield of zero in the Black-Scholes option valuation model.

Expected Forfeitures. We use historical data to estimate pre-vesting option forfeitures. We record share-based compensation only for those awards that are expected to vest.

The following weighted average assumptions were used for options granted:

Years Ended December 31,	2022	2021	2020
Expected life (in years)	5.0	5.0	5.0
Expected volatility	28.3%	26.1%	27.0%
Risk-free interest rate	3.3%	1.0%	0.4%
Expected forfeiture rate	—%	—%	—%

Share-Based Award Activity

The following table summarizes restricted stock unit and performance stock unit activity during the periods presented (shares in thousands):

	Number of Shares	Weighted Average Grant Date Fair Value per Share
Unvested at December 31, 2021	600	$355.43
Granted	240	374.16
Conversion of Unvested Restricted Stock Awards	—	—
Vested	(246)	316.10
Forfeited	(26)	392.35
Unvested at December 31, 2022	568	$376.07

Options granted, exercised, forfeited and expired are summarized as follows:

	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (Years)	Aggregate Intrinsic Value
Outstanding at December 31, 2021	1,620	206.06		
Granted	90	349.05		
Exercised	(186)	141.54		
Forfeited	(13)	292.50		
Outstanding at December 31, 2022	1,511	$221.38	5	$175,246
Exercisable at December 31, 2022	1,249	$195.54	5	$167,620

We had unvested options to purchase approximately 267,000 shares with a weighted average grant date exercise price of $346.14 as of December 31, 2022, and unvested options to purchase approximately 445,000 shares with a weighted average grant date exercise price of $293.84 as of December 31, 2021.

Other information pertaining to option activity was as follows during the twelve months ended December 31:

	2022	2021	2020
Weighted average grant-date fair value of stock options granted	$108.99	$ 113.18	$ 98.69
Total intrinsic value of stock options exercised	$43,160	$215,062	$292,394

Share-Based Compensation Expense

The following table summarizes share-based compensation expense related to share-based awards which is recorded in the consolidated statements of income:

Years Ended December 31,	2022	2021	2020
Subscriptions, maintenance and professional services	$ 27,486	$ 23,705	$ 18,125
Sales and marketing expense	8,800	8,834	7,904
General and administrative expense	66,699	72,187	41,336
Total share-based compensation expense	102,985	104,726	67,365
Total tax benefit	(27,599)	(63,456)	(66,241)
Net decrease in net income	$ 75,386	$ 41,270	$ 1,124

As of December 31, 2022, we had $175.6 million of total unrecognized compensation cost related to unvested options and restricted stock units, net of expected forfeitures, which is expected to be amortized over a weighted average amortization period of 2.7 years.

Employee Stock Purchase Plan

Under our Employee Stock Purchase Plan ("ESPP") participants may contribute up to 15% of their annual compensation to purchase common shares of Tyler. The purchase price of the shares is equal to 85% of the closing price of Tyler shares on the last day of each quarterly offering period. As of December 31, 2022, there were 576,000 shares available for future issuances under the ESPP from the 2.0 million shares previously approved by the stockholders.

(13) EARNINGS PER SHARE

The following table details the reconciliation of basic earnings per share to diluted earnings per share:

Years Ended December 31,	2022	2021	2020
Numerator for basic and diluted earnings per share:			
Net income	$164,240	$161,458	$194,820
Denominator:			
Weighted-average basic common shares outstanding	41,544	40,848	40,035
Assumed conversion of dilutive securities:			
Stock awards	855	1,382	1,491
Convertible Senior Notes	—	14	—
Denominator for diluted earnings per share – Adjusted weighted-average shares	42,399	42,244	41,526
Earnings per common share:			
Basic	$ 3.95	$ 3.95	$ 4.87
Diluted	$ 3.87	$ 3.82	$ 4.69

Share-based awards representing the right to purchase common stock of 372,000 shares in 2022, 117,000 shares in 2021, and 132,000 shares in 2020, were not included in the computation of diluted earnings per share because their inclusion would have had an antidilutive effect.

We have used the if-converted method for calculating any potential dilutive effect of the Convertible Senior Notes due 2026 on our diluted net income per share. Under the if-converted method, the Notes are assumed to be converted at the beginning of the period and the resulting common shares are included in the denominator of the diluted earnings per share calculation for the entire period being presented and interest expense, net of tax, recorded in connection with the Convertible Senior Notes is not added back to the numerator, only in the periods in which such effect is dilutive. The approximately 1.2 million remaining resulting common shares related to the Notes are not included in the dilutive weighted-average common shares outstanding calculation for the twelve months ended December 31, 2022, as their effect would be antidilutive given none of the conversion features have been triggered. See Note 6, "Debt," for discussion on the conversion features related to the Convertible Senior Notes.

(14) LEASES

We lease office facilities for use in our operations, as well as transportation and other equipment. Most of our leases are non-cancelable operating lease agreements with original maturities between one to 12 years. Some of these leases include options to extend for up to six years. We have no finance leases and no related party lease agreements as of December 31, 2022. Right-of-use lease assets and lease liabilities for our operating leases are recorded in the consolidated balance sheets. During 2022, we incurred lease restructuring costs, resulting in an additional $1.7 million of operating lease costs.

The components of operating lease expense were as follows:

	Years ended December 31,		
Lease Costs	2022	2021	2020
Operating lease cost	$14,743	$11,095	$ 6,524
Short-term lease cost	2,166	2,308	1,940
Variable lease cost	1,047	1,659	1,760
Net lease cost	$17,956	$15,062	$10,224

Notes to Consolidated Financial Statements

Supplemental information related to leases is as follows:

Other Information	Years ended December 31, 2022	2021
Cash flows:		
Cash paid amounts included in the measurement of lease liabilities:		
Operating cash outflows from operating leases	$13,562	$11,432
Right-of-use assets obtained in exchange for lease obligations (non-cash):		
Operating leases	$25,171	$20,140
Lease term and discount rate:		
Weighted average remaining lease term (years)	7	6
Weighted average discount rate	1.57%	1.81%

As of December 31, 2022, maturities of lease liabilities were as follows:

Year ending December 31,	Amount
2023	$11,054
2024	10,878
2025	8,942
2026	7,022
2027	5,943
Thereafter	17,876
Total lease payments	61,715
Less: Interest	(2,930)
Present value of operating lease liabilities	$58,785

Rental Income from third parties

We own office buildings in Bangor, Falmouth and Yarmouth, Maine; Lubbock and Plano, Texas; Troy, Michigan; Latham, New York; and Moraine, Ohio. We lease space in some of these buildings to third-party tenants. The property we lease to others under operating leases consists primarily of specific facilities where one tenant obtains substantially all of the economic benefit from the asset and has the right to direct the use of the asset. These non-cancelable leases expire between 2023 and 2027, and some have options to extend the lease for up to 10 years. We determine if an arrangement is a lease at inception. None of our leases allow the lessee to purchase the leased asset.

Rental income from third-party tenants was $1.7 million in 2022, $1.2 million in 2021, and $1.1 million in 2020. Rental income is included in hardware and other revenue on the consolidated statements of income. Future minimum operating rental income based on contractual agreements is as follows:

Year ending December 31,	Amount
2023	$ 1,881
2024	1,904
2025	1,363
2026	408
2027	131
Thereafter	—
Total	$ 5,687

As of December 31, 2022, we had no additional significant operating or finance leases that had not yet commenced.

(15) EMPLOYEE BENEFIT PLANS

We provide a defined contribution plan for the majority of our employees meeting minimum service requirements. Eligible employees can contribute up to 30% of their current compensation to the plan subject to certain statutory limitations. We contribute up to a maximum of 3% of an employee's compensation to the plan. We made contributions to the plan and charged operating results $17.5 million in 2022, $15.6 million in 2021, and $12.7 million in 2020.

(16) COMMITMENTS AND CONTINGENCIES

Litigation

During the first quarter 2022, the Company received a notice of termination for convenience for professional services under a contractual arrangement with a state client. Upon receipt of the termination notice, we ceased performing services under the contractual arrangement and sought payment of contractually owed fees of approximately $15 million in connection with the termination for convenience. As of December 31, the total exposure in our financial statements included the remaining balance of net billed accounts receivable for licenses and services rendered under the contract of approximately $12 million.

The client was unresponsive to company outreach for several months. On August 23, 2022, the Company filed a lawsuit to enforce our rights and remedies under the applicable contractual arrangement. The client has not filed responsive pleadings and no other significant activity has occurred in the lawsuit. Although we believe our products and services were delivered in accordance with the terms of our contract and that we are entitled to payment in connection with the termination for convenience, at this time the matter remains unresolved. We are unable to estimate the probability of a favorable or unfavorable outcome with respect to the dispute or estimate the amount of potential loss, if any, related to this matter. We can provide no assurances that we will not incur additional costs as we pursue our rights and remedies under the contract.

Purchase Commitments

We have contractual obligations for third-party technology used in our solutions and for other services we purchase as part of our normal operations. In certain cases, these arrangements require a minimum annual purchase commitment by us. As of December 31, 2022, the remaining aggregate minimum purchase commitment under these arrangements was approximately $264 million through 2028. Future minimum payments related to purchase commitments based on contractual agreements is as follows:

Year ending December 31,	Amount
2023	$ 41,210
2024	41,862
2025	39,730
2026	42,681
2027	42,734
Thereafter	56,245
Total	$264,462

Notes to Consolidated Financial Statements

(17) SEGMENT AND RELATED INFORMATION

We provide integrated information management solutions and services for the public sector.

We provide our software systems and related professional services and appraisal services through seven business units, which focus on the following products:

- financial management, education and planning, regulatory, and maintenance software solutions;
- financial management, municipal courts, planning, regulatory, and maintenance software solutions;
- courts and justice and public safety software solutions;
- data and insights solutions;
- appraisal and tax software solutions, land and vital records management software solutions, and property appraisal services;
- development platform solutions including case management and business process management; and
- digital government and payments solutions.

In accordance with ASC 280-10, *Segment Reporting,* we report our results in two reportable segments. The Enterprise Software ("ES") reportable segment provides public sector entities with software systems and services to meet their information technology and automation needs for mission-critical "back-office" functions such as: financial management and education; planning, regulatory and maintenance; courts and justice; public safety; data and insights; appraisal and tax software solutions; land and vital records management software solutions; and property appraisal services. The Platform Technologies ("PT") reportable segment provides public sector entities with software solutions to perform transaction processing, streamline data processing, and improve operations and workflows such as digital government and payments solutions and development platform solutions.

We evaluate performance based on several factors, of which the primary financial measure is business segment operating income. We define segment operating income for our business units as income before non-cash amortization of intangible assets associated with their acquisitions, interest expense, and income taxes. Segment operating income includes intercompany transactions. The majority of intercompany transactions relate to contracts involving more than one unit and are valued based on the contractual arrangement. Corporate segment operating loss primarily consists of compensation costs for the executive management team, certain shared services staff, and share-based compensation expense for the entire company. Corporate segment operating income also includes revenues and expenses related to a company-wide user conference. The accounting policies of the reportable segments are the same as those described in Note 1, "Summary of Significant Accounting Policies."

As of January 1, 2022, the appraisal and tax software solutions, land and vital records management software solutions, and property appraisal service business unit, which was previously reported in the Appraisal & Tax ("A&T") reportable segment, was moved to the ES reportable segment. The digital government and payments solutions, which was previously reported in the NIC reportable segment, and development platform solutions moved to the PT reportable segment to reflect changes in the way in which management makes operating decisions, allocates resources, and manages the growth and profitability of the Company. As a result of the changes in our reportable segments, the former A&T and NIC reportable segments are no longer considered separate segments. Prior periods amounts for the ES and PT reportable segments have been adjusted to reflect the segment change.

Segment assets primarily consist of net accounts receivable, prepaid expenses and other current assets and net property and equipment, and software development costs. Corporate assets primarily consist of cash and investments, prepaid insurance, intangibles associated with acquisitions, deferred income taxes and net property and equipment mainly related to unallocated information and technology assets.

The ES segment capital expenditures included $3.6 million in 2022 and $12.8 million in 2021 for the expansion of existing buildings and purchases of buildings. The PT segment had $863,000 capital expenditures in 2022 and had no capital expenditures in 2021 for the expansion of existing buildings.

For the year ended December 31, 2022	Enterprise Software	Platform Technologies	Corporate	Totals
Subscriptions	$ 526,323	$485,981	$ —	$1,012,304
Maintenance	444,143	24,312	—	468,455
Professional services	170,462	72,655	—	243,117
Software licenses and royalties	55,158	4,248	—	59,406
Appraisal services	34,508	—	—	34,508
Hardware and other	26,592	—	5,822	32,414
Intercompany	21,636	—	(21,636)	—
Total revenues	$1,278,822	$587,196	$ (15,814)	$1,850,204
Depreciation and amortization expense	55,389	84,609	19,074	159,072
Segment operating income	418,776	123,291	(214,263)	327,804
Software development expenditures	3,790	14,581	9,251	27,622
Capital expenditures	8,972	6,845	6,712	22,529
Segment assets	$ 636,377	$362,610	$3,688,430	$4,687,417

For the year ended December 31, 2021	Enterprise Software	Platform Technologies	Corporate	Totals
Revenues				
Subscriptions	$ 425,078	$359,357	$ —	$ 784,435
Maintenance	439,589	34,698	—	474,287
Professional services	165,396	43,995	—	209,391
Software licenses and royalties	66,816	7,636	—	74,452
Appraisal services	27,788	—	—	27,788
Hardware and other	18,876	31	3,027	21,934
Intercompany	22,033	—	(22,033)	—
Total revenues	$1,165,576	$445,717	$ (19,006)	$1,592,287
Depreciation and amortization expense	54,011	55,539	26,074	135,624
Segment operating income	401,382	92,582	(222,779)	271,185
Software development expenditures	3,504	12,332	5,857	21,693
Capital expenditures	19,213	3,696	11,010	33,919
Segment assets	$ 601,390	$359,919	$3,770,852	$4,732,161

For the year ended December 31, 2020	Enterprise Software	Platform Technologies	Corporate	Totals
Revenues				
Subscriptions	$ 339,842	$ 10,806	$ —	$ 350,648
Maintenance	427,813	39,700	—	467,513
Professional services	165,022	21,387	—	186,409
Software licenses and royalties	67,979	5,185	—	73,164
Appraisal services	21,127	—	—	21,127
Hardware and other	17,755	36	11	17,802
Intercompany	19,131	—	(19,131)	—
Total revenues	$1,058,669	$ 77,114	$ (19,120)	$1,116,663
Depreciation and amortization expense	52,715	15,717	13,225	81,657
Segment operating income	355,679	15,569	(144,698)	226,550
Software development expenditures	—	5,776	—	5,776
Capital expenditures	14,246	652	7,792	22,690
Segment assets	$ 561,324	$ 57,420	$1,988,530	$2,607,274

Reconciliation of reportable segment operating income to the Company's consolidated totals:	Years Ended December 31, 2022	2021	2020
Total segment operating income	$327,804	$271,185	$226,550
Amortization of acquired software	(52,192)	(45,601)	(31,962)
Amortization of other intangibles	(61,363)	(44,849)	(21,662)
Interest expense	(28,379)	(23,298)	(1,013)
Other income, net	1,723	1,544	3,129
Income before income taxes	$187,593	$158,981	$175,042

(18) DISAGGREGATION OF REVENUE

The tables below show disaggregation of revenue into categories that reflect how economic factors affect the nature, amount, timing, and uncertainty of revenues and cash flows.

Timing of Revenue Recognition

Timing of revenue recognition by revenue category during the period is as follows:

For the year ended December 31, 2022	Products and services transferred at a point in time	Products and services transferred over time	Total
Revenues:			
Subscriptions	$ —	$1,012,304	$1,012,304
Maintenance	—	468,455	468,455
Professional services	—	243,117	243,117
Software licenses and royalties	50,302	9,104	59,406
Appraisal services	—	34,508	34,508
Hardware and other	32,414	—	32,414
Total	$82,716	$1,767,488	$1,850,204

For the year ended December 31, 2021	Products and services transferred at a point in time	Products and services transferred over time	Total
Revenues:			
Subscriptions	$ —	$ 784,435	$ 784,435
Maintenance	—	474,287	474,287
Professional services	—	209,391	209,391
Software licenses and royalties	62,847	11,605	74,452
Appraisal services	—	27,788	27,788
Hardware and other	21,934	—	21,934
Total	$84,781	$1,507,506	$1,592,287

For the year ended December 31, 2020	Products and services transferred at a point in time	Products and services transferred over time	Total
Revenues:			
Subscriptions	$ —	$ 350,648	$ 350,648
Maintenance	—	467,513	467,513
Professional services	—	186,409	186,409
Software licenses and royalties	62,029	11,135	73,164
Appraisal services	—	21,127	21,127
Hardware and other	17,802	—	17,802
Total	$79,831	$1,036,832	$1,116,663

Recurring Revenues

The majority of our revenue is comprised of revenues from subscriptions and maintenance, which we consider to be recurring revenues. Subscriptions revenue primarily consists of revenues derived from our SaaS arrangements and transaction-based fees, which relate to digital government services, e-filing transactions, and payment processing. Total subscriptions revenue derived from transaction-based fees included in total recurring revenues was $600.8 million, $454.8 million, and $91.0 million, respectively, for the twelve months ended December 31, 2022, 2021, and 2020, respectively. The contract terms for subscription arrangements range from one to 10 years but are typically contracted for initial periods of three to five years. Virtually all of our on-premises software clients contract with us for maintenance and support, which provides us with a significant source of recurring revenues. That maintenance and support is generally provided under annual, or in some cases, multi-year contracts. We consider all other revenue categories to be non-recurring revenues.

Recurring revenues and non-recurring revenues recognized during the period are as follows:

For the year ended December 31, 2022	Enterprise Software	Platform Technologies	Corporate	Totals
Recurring revenues	$ 970,466	$510,293	$ —	$1,480,759
Non-recurring revenues	286,720	76,903	5,822	369,445
Intercompany	21,636	—	(21,636)	—
Total revenues	$1,278,822	$587,196	$(15,814)	$1,850,204

For the year ended December 31, 2021	Enterprise Software	Platform Technologies	Corporate	Totals
Recurring revenues	$ 864,667	$394,055	$ —	$1,258,722
Non-recurring revenues	278,876	51,662	3,027	333,565
Intercompany	22,033	—	(22,033)	—
Total revenues	$1,165,576	$445,717	$(19,006)	$1,592,287

For the year ended December 31, 2020	Enterprise Software	Platform Technologies	Corporate	Totals
Recurring revenues	$ 767,655	$ 50,506	$ —	$ 818,161
Non-recurring revenues	271,883	26,608	11	298,502
Intercompany	19,131	—	(19,131)	—
Total revenues	$1,058,669	$ 77,114	$(19,120)	$1,116,663

(19) DEFERRED REVENUE AND PERFORMANCE OBLIGATIONS

Total deferred revenue, including long-term, by segment is as follows:

December 31,	2022	2021
Enterprise Software	$533,902	$479,048
Platform Technologies	33,691	29,705
Corporate	2,982	1,814
Totals	$570,575	$510,567

Changes in total deferred revenue, including long-term, were as follows:

Year ending December 31,	Amount
Balance at beginning of year	$ 510,567
Deferral of revenue	1,267,937
Recognition of deferred revenue	(1,207,929)
Balance at end of year	$ 570,575

Transaction Price Allocated to the Remaining Performance Obligations

The aggregate amount of transaction price allocated to the remaining performance obligations represents contracted revenue that has not yet been recognized ("backlog"), which includes deferred revenue and amounts that will be invoiced and recognized as revenue in future periods. Backlog as of December 31, 2022, was $1.89 billion, of which we expect to recognize approximately 47% as revenue over the next 12 months and the remainder thereafter.

(20) DEFERRED COMMISSIONS

Sales commissions earned by our sales force are considered incremental and recoverable costs of obtaining a contract with a customer. Sales commissions for initial contracts are deferred and then amortized commensurate with the recognition of associated revenue over a period of benefit that we have determined to be generally three to seven years. Deferred commissions were $43.8 million and $38.1 million as of December 31, 2022, and 2021, respectively. Amortization expense was $15.4 million, $13.4 million, and $11.9 million for the twelve months ended December 31, 2022, 2021, and 2020, respectively. There were no indicators of impairment in relation to the costs capitalized for the periods presented. Deferred commissions have been included with prepaid expenses for the current portion and non-current other assets for the long-term portion in the accompanying consolidated balance sheets. Amortization expense related to deferred commissions is included in sales and marketing expense in the accompanying consolidated statements of income.

(21) SUBSEQUENT EVENTS

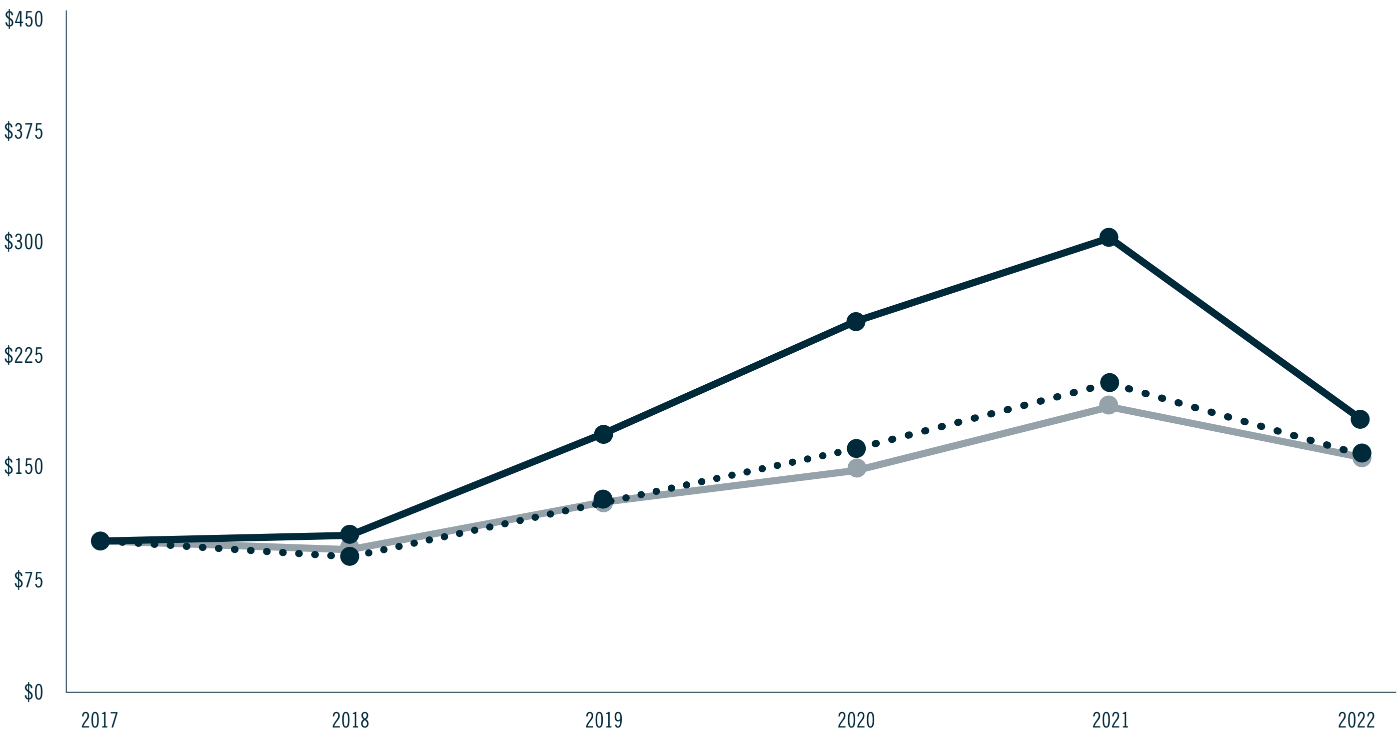
There have been no material events or transactions that occurred subsequent to December 31, 2022.

Performance Graph

The following Performance Graph and related information shall not be deemed "soliciting material" or to be "filed" with the Securities and Exchange Commission, nor shall such information be incorporated by reference into any future filing under the Securities Act of 1933 or Securities Exchange Act of 1934, each as amended, except to the extent that we specifically incorporate it by reference into such filing.

The following table compares total shareholder returns for Tyler over the last five years to the Standard and Poor's 500 Stock Index and the Standard and Poor's 600 Information Technology Index assuming a $100 investment made on December 31, 2017. Each of the three measures of cumulative total return assumes reinvestment of dividends. The stock performance shown on the graph below is not necessarily indicative of future price performance.

COMPARISON OF CUMULATIVE FIVE YEAR TOTAL RETURN



	100	104.95	169.45	246.55	303.84	182.10
	100	95.62	125.72	148.85	191.58	156.88
	100	91.07	127.12	162.47	206.09	160.00

Tyler Technologies, Inc.
S&P 500 Stock Index
S&P 600 Information Technology Index

Corporate Officers

H. Lynn Moore Jr.
President & Chief Executive Officer

Brian K. Miller
Executive Vice President
Chief Financial Officer & Treasurer

Samantha B. Crosby
Chief Marketing Officer

Abigail M. Diaz
Chief Legal Officer

Jason P. Durham
Chief Accounting Officer

Russell A. Gainford
Senior Vice President, Cloud Strategy & Operations

Bruce E. Graham
Senior Strategy Advisor

Jeffrey S. Green
Chief Technology Officer

Jayne F. Holland
Chief Privacy Officer
Deputy Chief Legal Officer

Kevin W. Iwersen
Chief Information Officer

Jeffrey D. Puckett
Chief Operating Officer

Kelley B. Shimansky
Chief Human Resources Officer

Jeremy M. Ward
Chief Information Security Officer

Board of Directors

John S. Marr Jr.[1]
Executive Chairperson of the Board
Tyler Technologies, Inc.

H. Lynn Moore Jr.[1]
President & Chief Executive Officer
Tyler Technologies, Inc.

Glenn A. Carter[3,4]
Retired Chief Executive Officer
DataProse, Inc.

Brenda A. Cline[2,3]
Executive Vice President
Kimbell Art Foundation

Ronnie D. Hawkins Jr.[4]
President
Angelo State University

Mary L. Landrieu[2,3]
Senior Policy Advisor
Van Ness Feldman LLP

Daniel M. Pope[2,4]
Executive Chairman
Victory Financial Corporation

Dustin R. Womble
Retired Executive Vice President
Tyler Technologies, Inc.

[1] Executive Committee
[2] Audit Committee
[3] Nominating & Governance Committee
[4] Compensation Committee

Operational Leadership

S. Franklin Williams III
President
Data & Insights Division

STATE & FEDERAL GROUP

D. Bret Dixon
President
State & Federal Group

Brian T. Combs
President
Platform Solutions Division

Elizabeth M. Proudfit
President
Digital Solutions Division

PUBLIC ADMINISTRATION GROUP

Dane L. Womble
President
Public Administration Group

Mark A. Hawkins
President
Property & Recording Division

Christopher J. Webster
President
ERP & Civic Division

Sean P. Marlow
President
Municipal & Schools Division

JUSTICE GROUP

Russell J. Smith
President
Justice Group

Brian A. McGrath
President
Courts & Justice Division

CORPORATE HEADQUARTERS

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INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Ernst & Young LLP
Dallas, Texas

ANNUAL MEETING OF STOCKHOLDERS

Thursday, May 11, 2023
9 a.m. Central Time • Virtual
www.virtualshareholdermeeting.com/TYL2023

CERTIFICATIONS

We submitted an unqualified Annual CEO Certification to the New York Stock Exchange (NYSE) as required by the NYSE Listed Company rules. We also filed with the Securities and Exchange Commission the Chief Executive Officer and Chief Financial Officer certifications required under Section 302 of the Sarbanes-Oxley Act as exhibits to our Annual Report on Form 10-K.

INVESTOR INFORMATION

Our annual report on Form 10-K is available on the company's website at www.tylertech.com. A copy of the Form 10-K or other information may also be obtained by contacting the Investor Relations Department at corporate headquarters.

INVESTOR RELATIONS

972.713.3714 • info@tylertech.com

COMMON STOCK

Listed on the New York Stock Exchange under the symbol "TYL"

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