TYLER TECHNOLOGIES ANNUAL REPORT 2018

Connecting the Data That Connects Us All

tyler technologies

Meet the data-driven community

From the youngest school student to the everyday resident to community leaders, we all create and consume data as part of our daily lives.

For the public sector, this data can be a valuable tool to better understand the needs of constituents, focus limited resources where they can do the most good, and improve the way services are delivered.

As the leading software provider for the public sector, Tyler has solutions that collect, create, and manage data to power the performance of governing agencies and departments. In 2018, we made a significant investment in the ability of our clients to maximize their use of data. By taking data analysis, process integration, and citizen engagement to the next level, we're able to help our clients drive deeper insights, greater efficiency, and smarter outcomes.

20 years

In 1998, Tyler began executing its strategy to build the leading company focused on the unique software needs of local government.

To our fellow shareholders

A MESSAGE FROM PRESIDENT & CEO LYNN MOORE JR.

Tyler experienced another year of double-digit growth and strong financial results, with 2018 being notable as a year with a high level of strategic investment in acquisitions, research and development, and stock repurchases. Our steady growth continues to validate our long-term strategy of providing best-in-class software solutions for the public sector backed by investments that solidify and expand our market leadership.

Tyler's revenue topped $900 million for the first time, while the fourth quarter represented our 29th consecutive quarter of double-digit growth. GAAP revenue rose 11.2 percent to $935 million, while non-GAAP revenue increased 11.6 percent to $940 million. GAAP net income for the year was $147 million, or $3.68 per diluted share, down 13 percent. The decline was primarily due to the one-time tax benefit associated with the Tax Cuts and Jobs Act that was recognized in the fourth quarter of 2017. Non-GAAP net income for the year was $193 million, or $4.80 per diluted share, up 24.6 percent. Even as we increased our R&D spend by 33.7 percent, cash provided from operations grew 27.8 percent over 2017 to reach a new high of $250 million, while free cash flow grew 45.9 percent. We ended the year with a record high backlog of $1.25 billion, up 1.7 percent.

Our win rates were strong across our solution suites, with many of the year's most significant deals composed of multiple Tyler solutions or existing clients deepening their Tyler relationship. Among these were Lubbock County, Texas, with a $10 million multi-suite contract including our ERP, public safety, and courts & justice solutions; Loudoun County, Virginia, a long-time client who added EnerGov™ civic services solutions for $7 million; and Anchorage, Alaska, upgrading its tax system to the iasWorld® integrated CAMA and tax billing and collections solution for $3.6 million.

Consecutive quarters of double-digit growth

Increase in R&D spend

Cash provided by operations

Comprehensive solutions, comprehensive results

Tyler's approach to delivering software continues to distinguish us from competitors by offering clients the choice for accessing solutions in the way that makes the most sense for them, whether through on-premises, software as a service, or hybrid arrangements. In 2018, our software revenue was split between license and maintenance revenues of $478 million and subscription revenue of $221 million.

That said, we continue to see a long-term shift to the cloud by the public sector, albeit at a slower pace than the private sector. The cloud represents our fastest-growing revenue stream, with subscription revenues increasing 28.1 percent over 2017, and we've now achieved a greater than 20 percent growth in subscription revenue in 47 of the past 52 quarters. For the year, subscriptions made up 41 percent of total contract value for new software arrangements.

Although the gradual shift to more subscription arrangements creates a near-term headwind to revenue growth, it provides a long-term opportunity for higher revenues over the life of a client relationship. In addition, our bookings growth in 2018 was pressured by our intentional reduction of the initial term for most of our new software subscription contracts, as the weighted average term of new software agreements was 3.9 years in 2018, down from 5.2 years in 2017.

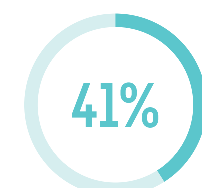
We continue to see a long-term shift to the cloud by the public sector, albeit at a slower pace than the private sector.

Software Revenues

License & maintenance revenue

Subscription revenue

New Cloud Contracts



Percent of total contract value of new software arrangements

Up 4% over 2017

Investing in the future

Our balance sheet has never been healthier, as we finished the year with $232 million in cash and investments and zero debt, even after investing a total of $328 million in cash for acquisitions and stock repurchases. Thanks to our financial strength, Tyler remains ideally positioned to make a variety of investments designed to deliver future growth and long-term shareholder value.

We remain diligent in proactively seeking out strategic acquisitions of market leaders to broaden our capabilities, strengthen our competitive position, and expand our addressable market. As we approach a billion dollars in annual revenues, our target of double-digit revenue growth becomes increasingly challenging, and continued achievement of our targets depends on healthy growth supplemented by strategic acquisitions. We completed five acquisitions during 2018, highlighted by the addition of Socrata, Inc. for $150 million in cash — our second largest acquisition on record — along with four much smaller acquisitions that strengthen our product offerings.

Last year was also a year of elevated internal investment, with our R&D spend increasing 33.7 percent to $63.3 million. These product development efforts span our product suites as we add a number of new features and applications that will further solidify our market leadership, while responding to the ever-changing needs of our clients.

We also utilized our balance sheet to resume our stock buyback activity, repurchasing approximately 781,000 shares in 2018 for an aggregate purchase price of approximately $150 million. This exceeded the amount spent on buybacks in the prior six years combined and reflects our confidence in the company's future.

Total Growth

$935 million 2018 GAAP revenues

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Leading experience

In May, John Marr assumed the role of executive chairman of the board, while I was appointed chief executive officer. My added responsibilities continue the transition of day-to-day operational oversight that began in January 2017 with my appointment as president. Since that time, my role has grown in working with operational groups, division leadership, and all aspects of Tyler operations.

As executive chairman, John continues to be actively involved in the company's management, engaging with Tyler's leadership team, as well as investors and clients. These new roles are a natural extension resulting from 19 years of a strong working partnership.

Looking ahead

This year's success was the result of the commitment Tyler made 20 years ago to singularly focus on the needs of the public sector. Through smart investments, fiscal discipline, great products and people, and unparalleled client service, we continue to fulfill our mission of empowering the people who serve the public, while continuously strengthening our market leadership. All of us at Tyler look forward to working together to make this year only the beginning of much greater success.

H. Lynn Moore Jr.
President & Chief Executive Officer

March 21, 2019

Through smart investments, fiscal discipline, great products and people, and unparalleled client service, we continue to fulfill our mission of empowering the people who serve the public, while continuously strengthening our market leadership.

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2018 Financial Year in Review

GAAP REVENUE

$935 million

NON-GAAP REVENUE

$940 million

SUBSCRIPTION REVENUE

$221 million

23.6% revenue from subscriptions

GAAP OPERATING MARGIN

NON-GAAP OPERATING MARGIN

BACKLOG

$1.25 billion

2018 BOOKINGS

$960 million

GAAP NET INCOME

$147 million

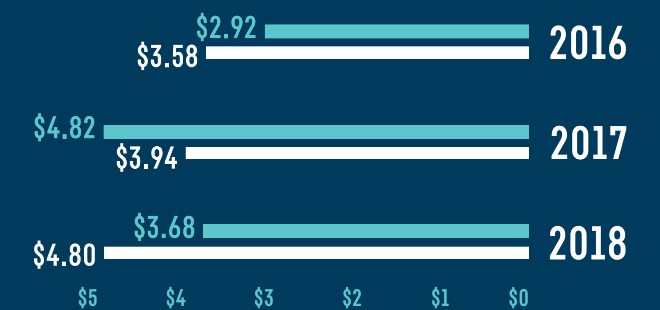
$3.68 per diluted share

NON-GAAP NET INCOME

$193 million

$4.80 per diluted share

ANNUAL EARNINGS PER DILUTED SHARE

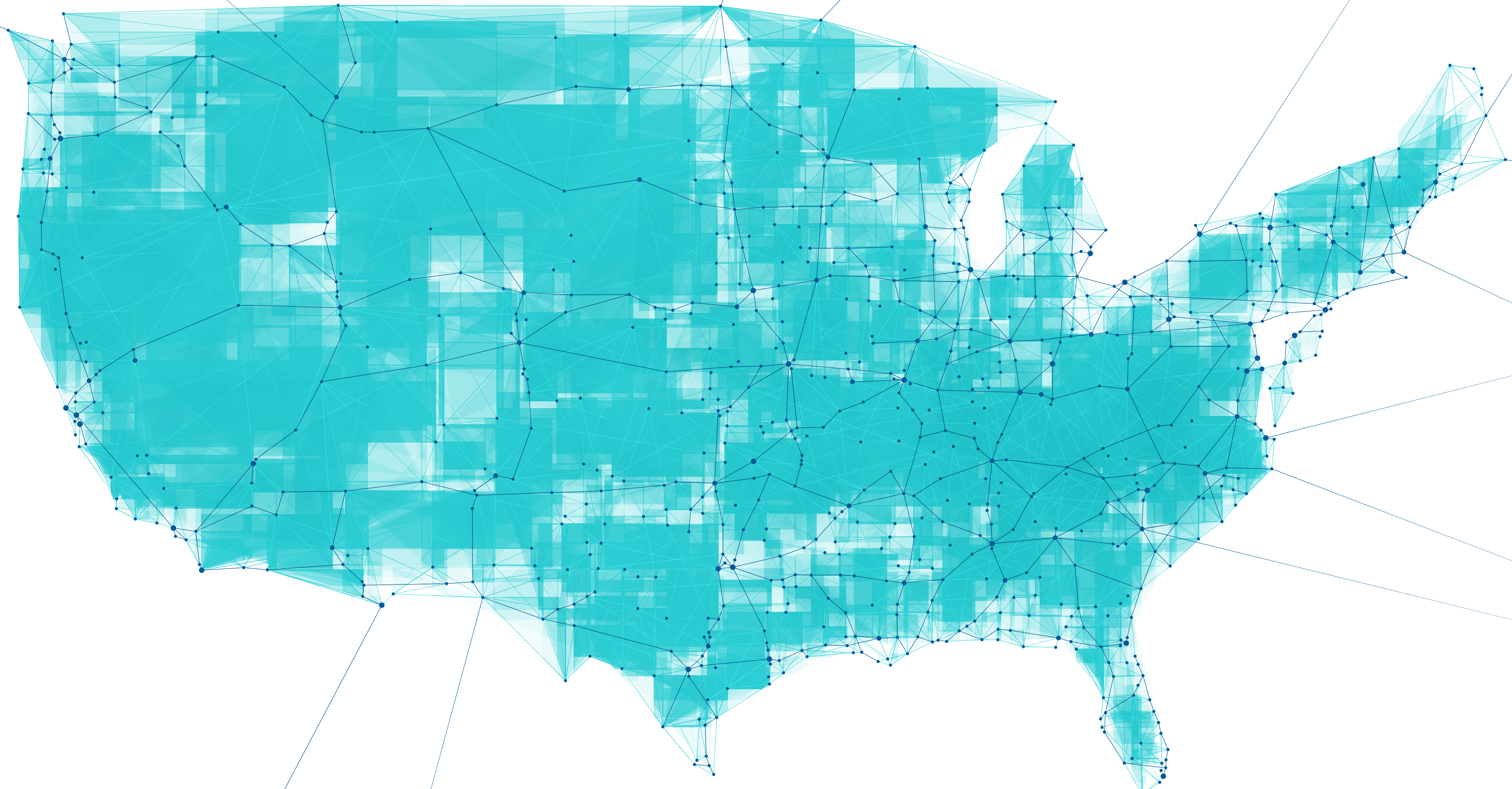


2018 Year in Review

Tyler is the largest software company in the nation solely focused on the public sector. We have implemented more than 21,000 installations in more than 10,000 local government agencies, schools, and other public organizations to help manage revenue, ensure public safety, deliver justice, administer finances, manage school transportation, and enable the thousands of other tasks for which the public sector is responsible. Healthy communities rely on local government, and Tyler helps local government to work smoothly.

In 2017, we announced our Connected Communities vision for empowering seamless connections between citizens and government, connecting data across geographic boundaries and processes between agencies. By working to connect applications and data across multiple departments and jurisdictions, we seek to improve the way local governments serve their constituents, increase employee efficiency, and heighten citizen engagement.

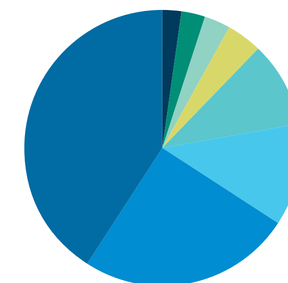
In 2018, we made progress in bringing our Connected Communities vision closer to reality. Thanks to our strategic acquisitions, product innovation, and a singular focus on client success, we helped local governments become more data-driven and better connected while creating significant shareholder value.



About Tyler Technologies

4,600+	30+	42
Employees	Offices	Product suites

Revenue by Solution Area



- ERP/FINANCIAL 41%
- COURTS & JUSTICE 25%
- PUBLIC SAFETY 12%
- APPRAISAL & TAX 10%
- CIVIC SERVICES 4%
- K–12 SCHOOLS 3%
- LAND & OFFICIAL RECORDS 3%
- DATA & INSIGHTS 2%

Accelerating innovation through acquisitions

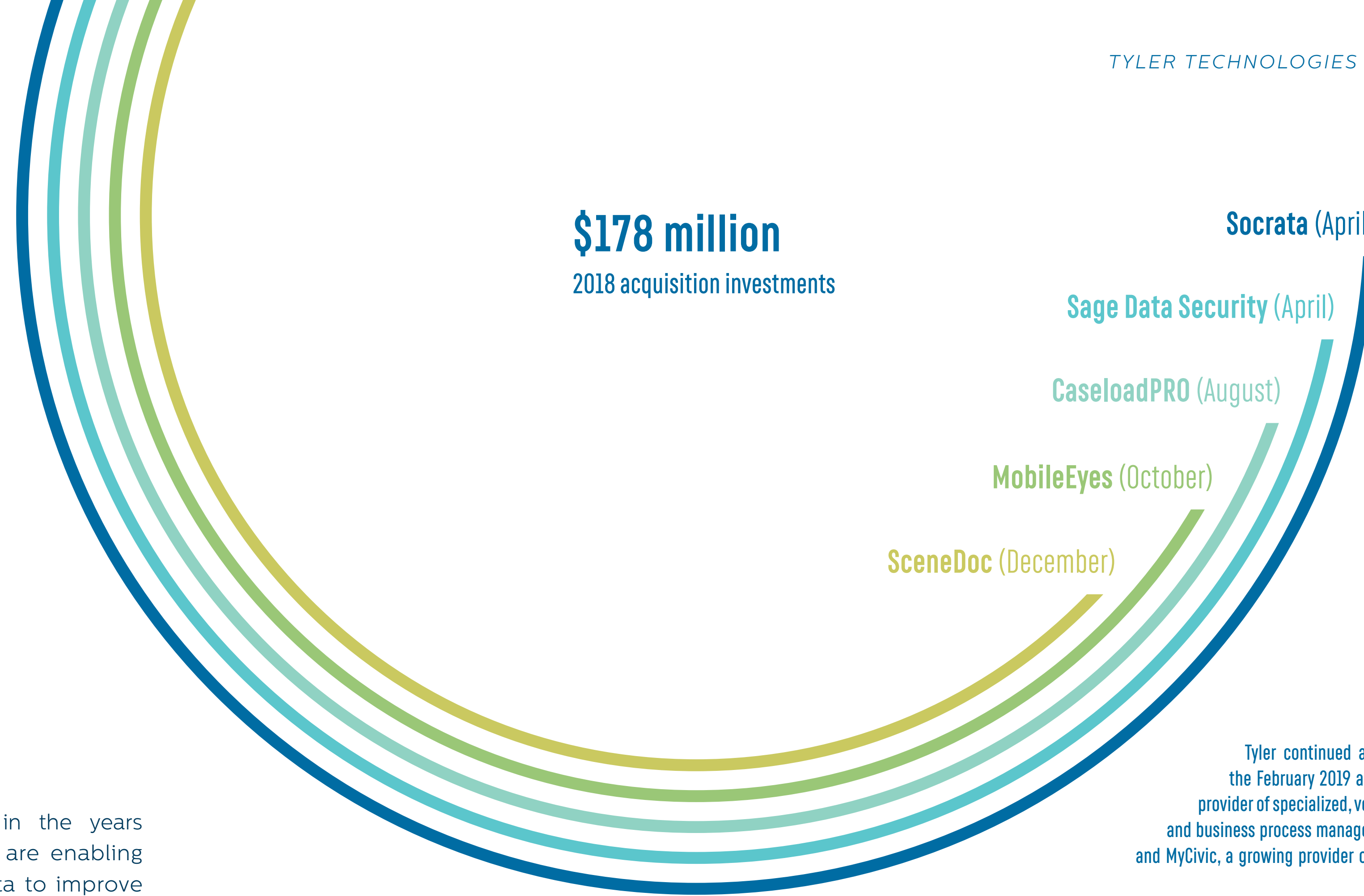
The future of a community will be determined, in part, by the way it uses data to power and improve its services. The more it can bring data together, the better it can understand the story the data is trying to tell, using the data to make smarter decisions and drive desired outcomes.

To further meet the public sector's growing need for connected data, we made five acquisitions, four of which provide native cloud applications. Each uses data in different ways to help the public sector improve performance, protect citizens, gain valuable insights, and extend citizen engagement. While this year represented a heightened level of M&A activity for Tyler, we continue to seek acquisition opportunities, as our strong financial position gives us the ability to act when we find companies that fit our strategic vision at reasonable valuations.

In April, we acquired Seattle-based Socrata, Inc. for $150 million in cash, representing our second-largest acquisition until being surpassed by MicroPact in February 2019. Socrata is the industry leader in open data and data-as-a-service solutions for government, providing cloud-based data integration, visualization, analysis, and reporting solutions. With this acquisition, Tyler created a new Data & Insights Division that will work across all Tyler solutions so that our broad footprint of clients can make data discoverable, actionable, and meaningful. The data sharing and analytical capabilities of the Socrata® platform will play a key role in accelerating and advancing our Connected Communities vision in the years ahead. Our combined offerings are enabling public sector leaders to use data to improve program outcomes at the city, county, and state levels, in addition to the prominent federal clients served by the Data & Insights team.

In the time since we acquired Socrata, the team has been hard at work launching new products and integrating its technology into Tyler's other solutions to help clients get more out of data. For example, the Socrata Connected Government Cloud™ lets clients collect data from different departments or jurisdictions to create a single source of business intelligence, while Open Finance™ integrates with Tyler's financial solutions to help citizens understand how their government is collecting and spending revenues.

In April, we acquired cybersecurity firm Sage Data Security LLC, whose unique cybersecurity services are being used to further protect our clients' investments in Tyler solutions. Sage's *n*Discovery™ gives us the ability to help the public sector manage data security issues as cybersecurity threats grow in scope and sophistication. Prior to the acquisition, we were greatly impressed by Sage as one of its customers. Since acquiring Sage, we have successfully piloted a new cybersecurity offering with several public sector clients and expect to begin to expand its usage throughout our client base in 2019.



Tyler continued acquisition activity into 2019 with the February 2019 acquisitions of MicroPact, a leading provider of specialized, vertically oriented case management and business process management applications for government, and MyCivic, a growing provider of citizen engagement applications.

In August, we acquired CaseloadPRO, whose comprehensive probation case management system is being used to help strengthen Tyler Alliance — our suite of applications connecting public safety and justice processes from dispatch through disposition. The product, now known as Tyler Supervision,™ helps probation and other judicial departments efficiently track and manage probationers and parolees, filling an important gap in our portfolio.

In October, we acquired MobileEyes, whose solution for fire suppression and fire prevention strengthens our public safety and civic services solutions. MobileEyes™ is used by fire prevention agencies, building departments, and sprinkler and alarm contractors to perform custom inspections, produce professional reports, and quickly communicate findings to the right constituents.

In December, we acquired SceneDoc, whose solution enables mobile-powered field reporting for law enforcement agencies through the field capture of data, electronic notes, and multimedia from smartphones, tablets, wearables, and task-specific apps, along with secure storage and access to and from the cloud.

We continue to use our ongoing whitespace analysis to guide our priorities for expanding our product offerings and growing our addressable market, either through internal product development efforts or by acquiring best-in-breed products that complement and strengthen existing offerings in our portfolio. We then further invest in these businesses to integrate their products with our existing solutions while leveraging our sales team and client base.

Supporting the people who support our communities

So much of what makes a community run smoothly is the work of public administration. These are the people and departments that help build, finance, manage resources, and provide civic services to our communities. Our products act as the operating systems for local government, with solutions like Munis® managing core functions like financial, human resources, and procurement; EnerGov™ managing land use, business, and regulatory processes; and iasWorld managing property valuations and tax collections. As an example, this year more than 1,800 clients used Munis to work smarter while better serving their constituents.

4.3 million

Users of Tyler e-services to submit payments, apply for permits, file court documents, or perform other online functions.

> Tyler gives local government the tools and data it needs to keep our communities moving.

New products, new opportunities

Our core ERP applications continue to provide the foundation for our success, accounting for more than 40 percent of our revenue. The strength of these more mature products gives us the flexibility to nurture our R&D investments and give them the time needed to grow. This year we spent more than $63 million — a 34 percent increase over 2017 — on projects spanning across our verticals. While our R&D spending has contributed to short-term pressure on our margins in the past two years, this record level of investment allowed us to further develop the new features and applications necessary to remain a leader across our verticals while extending into new markets. As with our acquisitions, much of our R&D reflects our long-term focus on the cloud and connecting Tyler products more closely together.

$63 million R&D expense

34% increase over 2017

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Notable project launches in 2018 included:

Tyler EAM

Launched in April, our enterprise asset management (EAM) solution provides public sector organizations a complete view of its assets from procurement to maintenance to retirement. Tyler EAM™ is the only EAM system available today that integrates seamlessly with our enterprise resource planning (ERP), community development, utility billing customer information system (CIS), and incident management systems, increasing the overall value of a community's investment in Tyler products.

Socrata Connected Government Cloud

In May, we launched the Socrata Connected Government Cloud to give government workers a single source of trusted data they can use to measure and analyze performance across multiple departments and programs, including financial, civic services, and public safety solutions.

Traversa Multi-District Model

In July, we announced the Multi-District Model version of our popular transportation management software, enabling large student transportation service providers to easily centralize operations for all of their locations or regions within one app.

New World Enterprise Records for Public Safety

Also in July, we added a browser-based records management solution to our New World public safety solution, enabling public safety agencies to capture, process, analyze, and act on information quickly. Enterprise Records shares mission-critical data between applications with fully integrated workflow.

New World ShieldForce

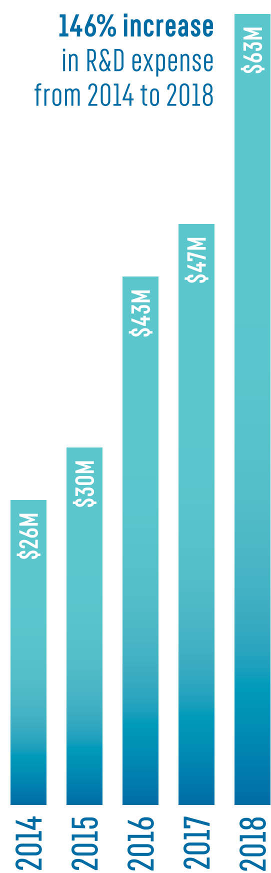
Launched in October, this mobile-first application gives first responders, command staff, and patrol officers access to real-time, mission-critical computer-aided dispatch (CAD) data at the scene through smartphones, tablets, and watches.

Today's investments drive long-term growth

Unlike some other technology companies, our acquisitions and R&D investments are focused on our long-term success. Because of the time required to fully incorporate investments into our portfolio, along with a sales and RFP process for the public sector that can take months or even years, many investments we make today may not generate a return for several years. While we look forward to celebrating the success of this year's investments in future reports, we should also take the opportunity to appreciate past investments that began to bear fruit in 2018.

- Since the acquisition of ExecuTime in mid-2016, efforts have been focused on improving integration with the Tyler portfolio to provide a more comprehensive offering to clients. In 2018, 30 percent of all new Munis Human Capital Management™ agreements included ExecuTime.™
- Acquired in 2017, our online dispute resolution solution Modria® went live with an implementation that represented its first integration with the Odyssey® court case management system. In April, Clark County, Nevada, added Modria to give its citizens and courts an alternative option for completing divorce mediation requirements. More than 50 percent of litigants used the Modria solution as a part of a pilot project, with half of those using Modria all the way through the final mediation process. This sped up the resolution of these cases while allowing the courts' mediators to spend more time facilitating more complex or contentious cases. The success of this pilot led to a decision for mandatory use in 2019.
- New World CrewForce® and ShieldForce™ are Tyler's latest mobile-first applications designed and developed for fire and law enforcement. Each product brings the power of computer-aided dispatch (CAD) information into the hands of first responders via smartphones, tablets, and watches. Since being released in the spring of 2017 and fall of 2018, respectively, more than 2,500 individual user licenses have been sold for CrewForce and ShieldForce.
- Launched in 2017, our case records portal re:Search® provides attorneys, judges, and constituents a more efficient way to access important case records and documents at any time and on any device. This year, the re:Search solution was added by the states of Texas, New Mexico, and Georgia, joining the initial launch by courts in Illinois.

146% increase in R&D expense from 2014 to 2018



Building products and relationships in equal measure

Our financial success is directly connected to the operational success of the local governments across the country and around the world that rely on our products. Our 98 percent client retention rate speaks to the value of both our products and our expertise.

Not only do our clients stay, but they are often a source for growth. New business frequently comes from cross-sell or add-on sales opportunities, while many clients are users of more than one Tyler solution.

Time and again, we've found that a client who trusts us to manage one process, such as fund accounting, 911 dispatch, or school transportation, is more likely to trust us with another, like student records, appraisals, or court case management, opening the door for future growth. As we continue to more closely integrate our products and provide comprehensive tools for managing and analyzing client data, our clients will have more incentive to continue to invest with Tyler and add other Tyler solutions to their technology portfolio. Expanding our relationships with our existing clients and increasing the number of multiproduct clients represent a major growth opportunity in the coming years as we continue to build out our common digital infrastructure.

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Protecting communities by connecting data and processes

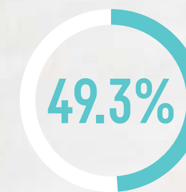
To help keep our communities safe, our courts and public safety solutions are used by judges, prosecutors, defenders, jails, police and fire departments, and probation officers to share data, minimize errors, eliminate redundancies, and provide citizens with greater access to justice. Even if it's just for a speeding ticket. For example, this year we implemented our Odyssey Case Manager™ software at Los Angeles Traffic Court for 850 users at 20 locations — one of our largest go-lives ever.

Tyler provides jurisdictions the information and access required to deliver justice swiftly.

U.S. population in jurisdictions using Odyssey to manage courts

Odyssey users (excluding e-filing)

Pages filed electronically annually using Odyssey File & Serve



911 dispatch centers in Pennsylvania using New World Enterprise CAD

Improving our connection to our clients

In addition to investing in strategic acquisitions, new products, and creating a common foundation for our solutions, we continually invest in other areas of our business that can help us better serve our current and prospective clients.

This year our user-driven support portal, Tyler Community, grew to more than 55,000 members as users from jurisdictions across North America crowdsourced best practices and solutions. Tyler University, our online education and training tool, added 1,104 new modules of content to help users improve skills and learn about new features, while in November we expanded the Socrata Data Academy to teach government leaders and data specialists how to gain insights from data to affect change in their communities.

Along with our client support platform, we made a significant investment this year in our external support and outreach platform through the development and launch of a new corporate website. The new site helps current and prospective clients and investors navigate the site more easily, accessing content that is relevant to their interests.

Each year we reinforce client connections through our annual Tyler Connect user conference, and in 2018 we met in Boston. With 54 educational tracks and more than 1,000 training classes over a three-day period, clients engaged in discussions on a number of industry topics, such as citizen transparency, privacy and security, cloud solutions, and data analysis. The 2018 conference hosted more than 4,600 clients from all 50 states and D.C., as well as six Canadian provinces.

4,600 Connect 2018 client attendance | **55,179** Tyler Community members | **147,735** Tyler University online courses completed

Community is always a smart investment

Our commitment to local communities extends far beyond our products. One in every three Tyler employees worked in the public sector before joining our team. Our passion for public service not only informs the work we do for our clients, but inspires us to invest back into the community whenever possible.

Tyler employees generously contributed their time and money this year to nonprofit organizations in the communities where we live and work. Thanks to our employees, charities were able to feed the hungry, fund STEM education for at-risk children, support families in need, and more. In addition, our nonprofit Tyler Foundation provided funding for organizations across the country to improve health, human services, and technology education.

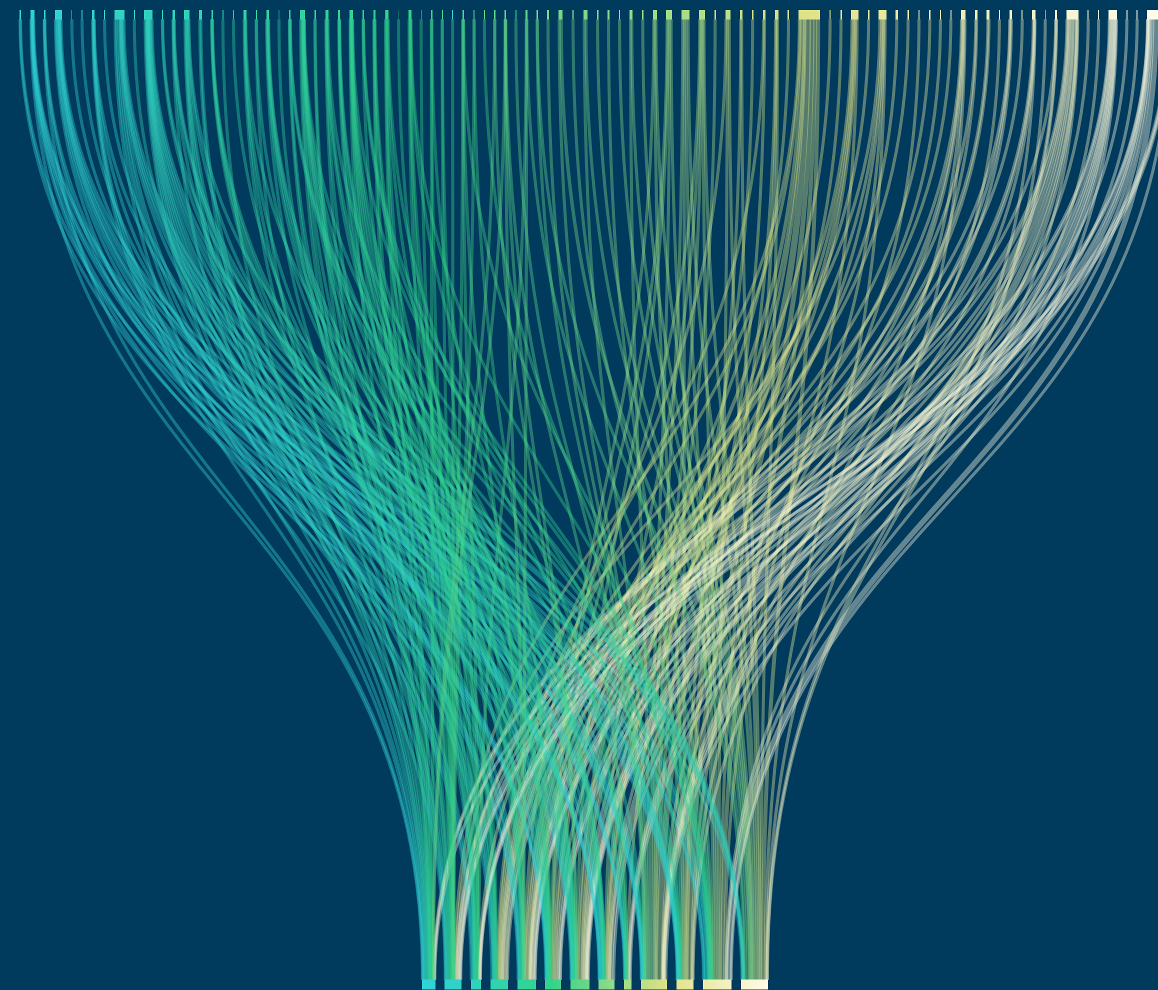
Due to natural disasters, 2018 was an especially challenging year for many of the clients we serve. We worked with hundreds of communities facing hurricanes, wildfires, tornadoes, flooding, and other disasters to ensure they had the data and support needed to coordinate services, inform constituents, and save lives. For example, our engineers developed a real-time map showing the locations of emergency shelters and other free lodging in response to Hurricane Michael, which devastated large portions of the southeastern United States, while our disaster recovery team ensured stricken communities were able to access their data even when government offices were damaged or destroyed.

$1.1 million Tyler Foundation charitable contributions over the past 5 years

Empowering insight from outside the jurisdiction

Our Data & Insights solutions are integrated across our solution areas to empower communities with a single source for financial, performance, and human data. An example of the potential of connected data can be seen with the recent adoption of the Socrata Connected Government Cloud by the Metropolitan Transportation Commission (MTC) in San Francisco, California. The MTC will be able to deliver data from more than 100 jurisdictions around the Bay Area into a single, self-service website that employees and residents can use to analyze the impact of transportation on affordable housing, climate change, and more.

Tyler brings data together from across departments for a true picture of the community.



3 million

Massachusetts' state financial transparency site reached 3 million pageviews in December, a 3x increase over 2017

629

New York City published 629 datasets from 38 city agencies on its open data portal

100%

The City of Cincinnati published 100% of datasets listed in the Sunlight Foundation's Open Data Census, the benchmark for municipal transparency

$17.2 million

Hawaii launched a first-of-its-kind election spending dashboard, which showed the public details on candidate contributions and loans, and expenditures totaling $17.23 million

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Building the team that builds our business

In addition to naming Lynn Moore Jr. as CEO and John Marr Jr. as executive chairman of the board, another notable change to our leadership team was the addition of Kelley Shimansky as our new chief human resources officer. Kelley assumed the role from Bob Sansone, who retired after 23 years with Tyler.

Part of Kelley's mission will be continuing to provide the best environment for our people to serve our clients. In a highly competitive job market, our talented team members continue to see Tyler as a top employer, with an average employee tenure of more than 7.5 years. This tenure means our clients continue to be served by experienced professionals who are familiar with meeting the challenges of the public sector.

460

New team members added in 2018

11.3% increase over 2017

Lynn Moore Jr. and John Marr Jr.

Finding and attracting talented employees is a challenge for every company in today's economy, and while Tyler is no different, we work hard to attract great people to power Tyler's continued success. As always, a key part of our recruiting strategy is to provide great benefits and a top work environment. This year, Tyler was again recognized on multiple "Best Places to Work" lists, in addition to being named to *Forbes*' "Best Employers for Women" and "Best Employers for Diversity" lists. Our robust internship program helps us source talent from top schools in markets across the country, while our improved careers page on our new website makes it easier than ever for job seekers to explore open positions. Finally, our employee referral program helps us identify candidates who will be compatible with our culture and passion for serving the public sector. As a result of our efforts, we were able to grow our workforce by 11.3 percent in 2018, adding more than 460 new team members.

From left to right: Bret Dixon, Abigail Diaz, Dane Womble, John Marr Jr., Lynn Moore Jr., Brian Miller, Chris Hepburn, Jeff Green, Samantha Crosby, Brett Cate, Greg Sebastian, Andy Teed, Kelley Shimansky, Bruce Graham, Michael Smith, Matt Bieri, Kevin Merritt.

RECOGNITION

Voted Best Places to Work
Lubbock, TX | Dallas-Fort Worth, TX | Troy, MI | Maine

Top 100
2018 GovTech 100 List

Finalist
2018 Tech Titans Award for Corporate Innovation

#93
Fortune's "2018 Fastest-Growing Companies" List for 2018

9
Years on *Forbes*' "Best Small Companies" List

8
Years on *Barron's* "Most Promising Companies in America" List

Working to make schools work smarter

Because of their responsibility for the safety and success of our children, school districts turn to Tyler to help manage the day-to-day needs of students and the adults who support them. One example of our continued innovation in this area is the 81 new features and enhancements we added to Tyler SIS Student 360,™ such as the integration of popular learning management systems like Google Classroom™ and Canvas.™ In doing so, we've created the industry's most powerful mobile-capable portal for making data more accessible and transparent for districts, teachers, students, and parents.

5,000
School districts using Tyler school solutions for financials, transportation, and student information systems

46
U.S. states and 8 Canadian provinces with districts using Tyler to manage student transportation

1,189,469
Students served by districts using Tyler SIS for student information management

Tyler helps teachers, administrators, and students use data to make the most out of every school day.

Connection makes a community

Data-driven innovation has the ability to fundamentally change the way our communities work, but only if people have the support and tools they need to analyze, understand, and act on this data. Public sector leaders, their employees, and their constituents can now interact with information in a way that improves service, reduces frustration, and increases transparency. We're proud to be the company that is leading the public sector toward a world powered by data-driven insights.

Our investments, our solutions, and our people combined to make 2018 our strongest year yet. As pleased as we are with the success we experienced this year, we believe that the people, products, and strategy we have in place will allow us to look back at the investments we made in 2018 as valuable contributions to the foundation for greater success to come.

2018

Financial Information

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

	2018	2017 [a]	2016 [a]	2015	2014
Reconciliation of non-GAAP total revenues					
GAAP total revenues	$935,282	$840,899	$759,880	$591,022	$493,101
Non-GAAP adjustments:					
Add: Write-downs of acquisition-related deferred revenue	4,000	663	15,063	3,186	—
Add: Amortization of acquired leases	426	444	444	37	—
Non-GAAP total revenues	$939,708	$842,006	$775,387	$594,245	$493,101
Reconciliation of non-GAAP gross profit and margin					
GAAP gross profit	$439,578	$399,377	$359,188	$277,187	$233,371
Non-GAAP adjustments:					
Add: Write-downs of acquisition-related deferred revenue	4,000	663	15,063	3,186	—
Add: Amortization of acquired leases	426	444	444	37	—
Add: Share-based compensation expense included in cost of revenues	13,588	9,415	6,548	3,380	2,177
Add: Amortization of acquired software	22,972	21,686	22,235	4,440	1,858
Non-GAAP gross profit	$480,564	$431,585	$403,478	$288,230	$237,406
GAAP gross margin	47.0%	47.5%	47.3%	46.9%	47.3%
Non-GAAP gross margin	51.1%	51.3%	52.0%	48.5%	48.1%
Reconciliation of non-GAAP operating income and margin					
GAAP operating income	$152,492	$162,758	$137,656	$108,043	$ 94,822
Non-GAAP adjustments:					
Add: Write-downs of acquisition-related deferred revenue	4,000	663	15,063	3,186	—
Add: Amortization of acquired leases	426	444	444	37	—
Add: Share-based compensation expense	52,740	37,348	29,747	20,182	14,819
Add: Employer portion of payroll tax related to employee stock transactions	1,412	1,102	1,001	1,506	514
Add: Acquisition-related costs	—	—	—	5,875	—
Add: Amortization of acquired software	22,972	21,686	22,235	4,440	1,858
Add: Amortization of customer and trade name intangibles	16,217	13,381	13,202	5,905	4,546
Non-GAAP adjustments subtotal	$ 97,767	$ 74,624	$ 81,692	$ 41,131	$ 21,737
Non-GAAP operating income	$250,259	$237,382	$219,348	$149,174	$116,559
GAAP operating margin	16.3%	19.4%	18.1%	18.3%	19.2%
Non-GAAP operating margin	26.6%	28.2%	28.3%	25.1%	23.6%
Reconciliation of non-GAAP net income and earnings per share					
GAAP net income	$147,462	$169,571	$113,701	$ 64,869	$ 58,940
Non-GAAP adjustments:					
Add: Total non-GAAP adjustments to operating income	97,767	74,624	81,692	41,131	21,737
Less: Tax impact related to non-GAAP adjustments	(52,464)	(89,440)	(56,045)	(13,318)	(6,658)
Non-GAAP net income	$192,765	$154,755	$139,348	$ 92,682	$ 74,019
GAAP earnings per diluted share	$ 3.68	$ 4.32	$ 2.92	$ 1.77	$ 1.66
Non-GAAP earnings per diluted share	$ 4.80	$ 3.94	$ 3.58	$ 2.54	$ 2.09
Detail of share-based compensation expense					
Cost of software services, maintenance and subscriptions	$ 13,588	$ 9,415	$ 6,548	$ 3,380	$ 2,177
Selling, general and administrative expenses	39,152	27,933	23,199	16,802	12,642
Total share-based compensation expense	$ 52,740	$ 37,348	$ 29,747	$ 20,182	$ 14,819

(a) Restated to reflect the impact of the adoption of Accounting Standards Update ("ASU") ASU No. 2014-09, Revenue from Contracts with Customers in fiscal year 2018. Refer to Note — 1 "Summary of Significant Accounting Policies" for further discussion.

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Stock Market Data

Our common stock is traded on the New York Stock Exchange under the symbol "TYL." At December 31, 2018, we had approximately 1,262 stockholders of record. Most of our stockholders hold their shares in street name; therefore, there are substantially more than 1,262 beneficial owners of our common stock.

The following table shows, for the calendar periods indicated, the high and low sales price per share of our common stock as reported on the New York Stock Exchange.

		High	Low
2017	First Quarter	$166.86	$142.75
	Second Quarter	178.09	152.00
	Third Quarter	182.49	165.14
	Fourth Quarter	188.22	168.12
2018	First Quarter	$214.33	$176.93
	Second Quarter	240.35	201.91
	Third Quarter	252.47	219.59
	Fourth Quarter	246.62	173.26

We did not pay any cash dividends in 2018 or 2017. 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

Years Ended December 31,	2018	2017 [a],[b] As Adjusted	2016 [a],[c] As Adjusted	2015 [d]	2014
(In thousands, except per share data)					
STATEMENT OF OPERATIONS DATA:					
Revenues	$ 935,282	$ 840,899	$ 759,880	$ 591,022	$493,101
Cost and expenses:					
Cost of revenues	495,704	441,522	400,692	313,835	259,730
Selling, general and administrative expenses	207,605	175,914	165,176	133,317	108,260
Research and development expense	63,264	47,324	43,154	29,922	25,743
Amortization of customer and trade name intangibles	16,217	13,381	13,202	5,905	4,546
Operating income	152,492	162,758	137,656	108,043	94,822
Other income (expense), net	3,378	698	(1,998)	381	(355)
Income before income taxes	155,870	163,456	135,658	108,424	94,467
Income tax (benefit) provision [b]	8,408	(6,115)	21,957	43,555	35,527
Net income	147,462	169,571	113,701	64,869	58,940
Net earnings per diluted share	$ 3.68	$ 4.32	$ 2.92	$ 1.77	$ 1.66
Weighted average diluted shares [c]	40,123	39,246	38,961	36,552	35,401
STATEMENT OF CASH FLOWS DATA:					
Cash flows provided by operating activities [c]	$ 250,203	$ 195,755	$ 191,859	$ 134,327	$142,839
Cash flows used by investing activities	(238,255)	(85,395)	(50,720)	(398,459)	(11,555)
Cash flows (used) provided by financing activities [c]	(63,595)	39,415	138,075	91,052	(3,993)
BALANCE SHEET DATA:					
Total assets	$1,790,963	$1,611,351	$1,378,502	$1,356,570	$569,812
Revolving line of credit	—	—	10,000	66,000	—
Shareholders' equity	1,324,846	1,191,736	934,540	858,857	336,973

(a) Reflects the impact of the adoption of Accounting Standards Update ("ASU") ASU No. 2014-09, *Revenue from Contracts with Customers* in fiscal year 2018. Refer to Note — 1 "Summary of Significant Accounting Policies" for further discussion.

(b) 2017 includes the significant impact of the enactment of the Tax Cuts and Jobs Act ("Tax Act"). The most significant impact of the Tax Act to us is the reduction in the U.S. federal corporate income tax rate from 35% to 21%. The impact of the rate reduction on our 2017 income tax provision is a $26.0 million (as adjusted) tax benefit due to the remeasurement of deferred tax assets and liabilities. Refer to Note — 7 "Income Tax" for further discussion on the impact of the Tax Act.

(c) During 2016, we early adopted ASU No. 2016-09 *Improvements to Employee Share-Based Payment Accounting* requiring the recognition of excess tax benefits or tax deficiencies as a component of income tax expense; these benefits or deficiencies were historically recognized in equity. As the standard requires a prospective method of adoption, our net income in 2016 includes a $29.6 million income tax benefit due to the adoption that did not occur in the comparable prior periods presented above. In 2016, ASU No. 2016-09 updated the method of calculating diluted shares resulting in the inclusion of 519,000 additional shares in our diluted earnings per share calculation, which is not comparable to the other prior periods presented. The adoption of ASU No. 2016-09 also required excess tax benefits, previously presented as financing activities, to be classified as operating activities. As retrospective adoption for this component of the standard is allowable, we have adjusted all periods presented above to reflect this change in classification.

(d) On November 16, 2015, we completed the acquisition of New World Systems Corporation ("NWS"). Operating results for the twelve months ended December 31, 2015, include $5.9 million for non-recurring financial advisory, legal, accounting, due diligence, valuation and other expenses necessary to complete the NWS acquisition.

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

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, with a focus on local governments. We develop and market a broad line of software products and services to address the IT needs of cities, counties, schools and other local government entities. 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. We also provide subscription-based services such as software as a service ("SaaS"), which primarily utilize the Tyler private cloud, and electronic document filing solutions ("e-filing"), which simplify the filing and management of court related documents. Revenues for e-filing are derived from transaction fees and, in some cases, fixed fee arrangements. We also provide property appraisal outsourcing services for taxing jurisdictions.

Our products generally automate seven major functional areas: (1) financial management and education, (2) courts and justice, (3) public safety (4) property appraisal and tax, (5) planning, regulatory and maintenance (6) land and vital records management and (7) data and insights. We report our results in two segments. The Enterprise Software ("ES") segment provides municipal and county governments and schools with software systems and services to meet their information technology and automation needs for mission-critical "back-office" functions such as: financial management; courts and justice processes; public safety; planning, regulatory and maintenance; land and vital records management; and data analytics. The Appraisal and Tax ("A&T") segment provides systems and software that automate the appraisal and assessment of real and personal property as well as property appraisal outsourcing services for local governments and taxing authorities. Property appraisal outsourcing services include: the physical inspection of commercial and residential properties; data collection and processing; computer analysis for property valuation; preparation of tax rolls; community education; and arbitration between taxpayers and the assessing jurisdiction.

Our total employee count increased to 4,525 at December 31, 2018, from 4,069 at December 31, 2017.

For the twelve months ended December 31, 2018, total revenues increased 11% compared to the prior year. Organic revenue growth was 9% for the twelve months ended December 31, 2018, compared to the prior year period and revenues from acquisitions contributed 2% of growth for the twelve months ended December 31, 2018.

Subscriptions revenue grew 28% for the twelve months ended December 31, 2018, due to a gradual shift toward cloud-based, software as a service business, as well as continued strong growth in our e-filing revenues from courts and the addition of new subscription revenues from the acquisition of Socrata. Organic subscriptions revenue increased 21% for the twelve months ended December 31, 2018.

Our backlog at December 31, 2018 was $1.25 billion, a 2% increase from last year.

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

Recent Acquisitions

On December 7, 2018, we acquired certain assets and intellectual property of SceneDoc, Inc. ("SceneDoc"), a company that provides mobile-first, software-as-a-service (SaaS) field reporting for law enforcement agencies. The total purchase price was approximately $6.2 million, of which $5.4 million was paid in cash and approximately $759,000 accrued for a working capital holdback. As of December 31, 2018, the purchase price allocation for SceneDoc is not yet complete. The preliminary estimates of fair value assumed at the acquisition date for intangible assets, receivables and deferred revenue and related deferred taxes are subject to change as valuations are finalized.

On October 1, 2018, we acquired all of the equity interests of TradeMaster, Inc. dba MobileEyes ("MobileEyes"), a company that develops software to improve public safety by supporting fire prevention and suppression, emergency response, and structural safety. The total purchase price was approximately $5.3 million in cash.

On August 31, 2018, we acquired all of the assets of CaseloadPRO, L. P. ("CaseloadPro"), a company that provides a fully featured probation case management system. The purchase price of $9.3 million was paid in cash.

On April 30, 2018, we acquired all of the capital stock of Socrata, Inc. ("Socrata"), a company that provides open data and data-as-a-service solutions including cloud-based data integration, visualization, analysis, and reporting solutions for federal, state and local government agencies. The purchase price, net of cash acquired of $1.7 million, was $147.6 million in cash.

On April 30, 2018, we acquired all of the equity interests of Sage Data Security, LLC ("Sage"), a cybersecurity company offering a suite of services that supports an entire cybersecurity lifecycle, including program development, education and training, technical testing, advisory services, and digital forensics. The total purchase price was $11.6 million paid in cash.

As of December 31, 2018, the purchase price allocations for Sage, Socrata, CaseloadPro, and MobileEyes are complete.

The operating results of all 2018 acquisitions are included with the operating results of the Enterprise Software segment since their date of acquisition. Revenues from Socrata included in Tyler's results of operations totaled approximately $13.9 million and the net loss was $11.5 million for the twelve months ended December 31, 2018. The impact of the Sage, CaseloadPRO, MobileEyes and SceneDoc acquisitions, individually and in the aggregate, on our operating results, assets and liabilities is not material.

Our balance sheet as of December 31, 2018, reflects the allocation of the purchase price to the assets acquired based on their fair value at the date of each acquisition. The fair value of the assets and liabilities acquired are based on valuations using Level III, unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

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: sale of software licenses and royalties; subscription-based arrangements; software services; maintenance; and appraisal services. Subscriptions and maintenance are considered recurring revenue sources and comprised approximately 65% of our revenue in 2018. 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 to our business, together with new software license sales and maintenance rate increases. In addition, we also monitor our customer base and churn as we historically have experienced very low customer turnover. During 2018, 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, 2018, our total employee count increased to 4,525 from 4,069 at December 31, 2017.

Selling, General and Administrative ("SG&A") Expenses — The primary components of SG&A expenses are administrative and sales personnel salaries and commissions, share-based compensation expense, marketing expense, rent and professional fees. Sales commissions typically fluctuate with revenues and 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.

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

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.

Adoption of New Revenue Accounting Standard

On January 1, 2018, we adopted ASU No. 2014-09, using the full retrospective method of transition, which requires that the new standard be applied to all periods presented. The impacts of adoption are reflected in the financial information herein. For additional details, see Note 1 – "Summary of Significant Accounting Policies" to our consolidated financial statements in this report.

Recent Accounting Guidance not yet Adopted

Leases. On February 25, 2016, the FASB issued its new lease accounting guidance in ASU No. 2016-02, *Leases* ("Topic 842"). Under the new guidance, lessees will be required to recognize the following for all leases (with the exception of short-term leases) at the commencement date:

- A lease liability, which is a lessee's obligation to make lease payments arising from a lease, measured on a discounted basis; and
- A right-of-use asset, which is an asset that represents the lessee's right to use, or control the use of, a specified asset for the lease term.

Topic 842 is effective for fiscal years beginning after December 15, 2018, including interim periods therein. Early application is permitted for all business entities upon issuance. Upon adoption, entities will be required to use a modified retrospective approach with an option to use certain practical expedients. We expect to adopt ASU 2016-02 when effective, using the transition method that allows us to initially apply the guidance at the adoption date of January 1, 2019, and recognize a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption. We expect to use the package of practical expedients that allows us to not reassess: (1) lease classification for any expired or existing leases and (2) initial direct costs for any expired or existing leases. We expect ASU 2016-02 will impact our consolidated financial statements and related disclosures. We are currently evaluating the extent of the impact and expect that most of our lease commitments will be subject to the updated guidance and recognized as lease liabilities and right-of-use assets on our consolidated balance sheets upon adoption. Based on our current portfolio of leases, we estimate a range of $15.5 million to $17.8 million of lease assets and liabilities to be recognized on our balance sheet, primarily relating to office facilities.

Outlook

The local government software market continues to be active, and our backlog at December 31, 2018 reached $1.25 billion, a 2% increase from last year. We expect to continue to achieve solid growth in revenue and earnings. With our strong financial position and cash flow, we plan to continue to make significant investments in product development to better position us to continue to expand our competitive position in the public sector software market over the long term.

CRITICAL ACCOUNTING POLICIES AND 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 carrying amount and estimated useful lives of intangible assets, determination of share-based compensation expense and valuation allowance for receivables. 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.

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

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

Revenue Recognition. We earn revenue from software licenses, royalties, subscription-based services, software 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

Most of 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 software services, such as training or installation, are evaluated to determine whether those services are highly interdependent or highly interrelated to the product's functionality. 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 software 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 software 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.

Subscription-based services consist of revenues derived from SaaS arrangements, which primarily utilize the Tyler private cloud, and electronic filing transactions. 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. When it is determined that software is distinct and the customer has the ability to take control of the software, we recognize revenue allocable to the software license fee when access to the software license is made available to the customer. We recognize hosting services ratably over the term of the arrangement, which range from one to ten years but are typically for a period of three to five years. For software 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.

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.

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.

We maintain allowances for doubtful accounts, which are provided at the time the revenue is recognized. 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 that the carrying amount for the allowances for doubtful accounts may require revision include, but are not limited to, deterioration of a customer's financial condition, 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. The allowance for doubtful accounts reflects our best estimate of probable losses inherent in the accounts receivable balance. We determine the allowance based on known troubled accounts, historical experience, and other currently available evidence.

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 maintenance billings for which payments are made in advance and the revenue is ratably earned over the maintenance 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.

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.

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 a reporting unit exceeds its fair value, a second step is performed to measure the amount of potential impairment. In the second step, we compare the implied fair value of reporting unit goodwill with the carrying amount of the reporting unit's goodwill. 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. 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. Our annual goodwill impairment analysis, which we performed quantitatively during the second quarter of 2018, did not result in an impairment charge. During 2018, we did not identify any triggering events that would require an update to our annual impairment review.

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.

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

Share-Based Compensation. We have a stock incentive plan that provides for the grant of stock options, restricted stock units and performance stock units to key employees, directors and non-employee consultants. We estimate the fair value of share-based awards on the date of grant. Share-based compensation expense includes the estimated effects of forfeitures, which will be adjusted over the requisite service period to the extent actual forfeitures differ or are expected to differ from such estimates. Changes in estimated forfeitures are recognized in the period of change and will also impact the amount of expense to be recognized in future periods. Forfeiture rate assumptions are derived from historical data.

We estimate stock price volatility at the date of grant based on the historical volatility of our common stock. Estimated option life is determined using 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. Determining the appropriate fair-value model and calculating the fair value of share-based awards at the grant date requires considerable judgment, including estimating stock price volatility, expected option life and forfeiture rates.

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, 2018, 2017 and 2016.

	Percentage of Total Revenues		
	2018	2017	2016
Years Ended December 31,		As Adjusted	
Revenues:			
Software licenses and royalties	10.0%	10.3%	11.0%
Subscriptions	23.6	20.5	18.8
Software services	20.5	21.5	22.6
Maintenance	41.1	42.6	42.2
Appraisal services	2.3	3.0	3.5
Hardware and other	2.5	2.1	1.9
Total revenues	100.0	100.0	100.0
Operating expenses:			
Cost of software licenses, royalties and acquired software	2.9	3.0	3.3
Cost of software services, maintenance and subscriptions	46.9	46.1	45.8
Cost of appraisal services	1.5	1.9	2.2
Cost of hardware and other	1.7	1.5	1.3
Selling, general and administrative expenses	22.2	20.9	21.7
Research and development expense	6.8	5.6	5.7
Amortization of customer and trade name intangibles	1.7	1.6	1.7
Operating income	16.3	19.4	18.3
Other income (expense), net	0.4	0.1	(0.3)
Income before income taxes	16.7	19.5	18.0
Income tax (benefit) provision	0.9	(0.7)	2.9
Net income	15.8%	20.2%	15.1%

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

2018 Compared to 2017

Revenues

On April 30, 2018, we acquired Socrata, a company that provides open data and data-as-a-service solutions for federal, state and local government agencies including cloud-based data integration, visualization, analysis, and reporting solutions. The following table details revenue for Socrata for the periods presented as of December 31, 2018, which is included in our consolidated statements of income:

	2018
Revenues:	
Software licenses and royalties	$ —
Subscriptions	12,106
Software services	1,751
Maintenance	—
Appraisal services	—
Hardware and other	20
Total revenues	$13,877

On December 7, 2018, we acquired SceneDoc, Inc., a company that provides mobile-first, software-as-a-service (SaaS) field reporting for law enforcement agencies. On October 1, 2018, we acquired MobileEyes, a company that develops software to improve public safety by supporting fire prevention and suppression, emergency response, and structural safety. On August 31, 2018, we acquired CaseloadPRO, a company that provides a fully featured probation case management system. On April 30, 2018, we also acquired Sage, a cybersecurity company offering a suite of services that supports an entire cybersecurity lifecycle. The impact of these acquisitions on our operating results is not considered material, individually and in the aggregate, and is not included in the table above. The results of these acquisitions are included with the operating results of the ES segment from their dates of acquisition. For comparative purposes, we have provided explanations for changes in operations to exclude results of operations for these acquisitions noting the exclusion.

Software licenses and royalties.

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

			Change	
	2018	2017	$	%
($ in thousands)		As Adjusted		
ES	$83,735	$78,388	$5,347	7%
A&T	9,706	7,854	1,852	24
Total software licenses and royalties revenue	$93,441	$86,242	$7,199	8%

Software license and royalties revenue grew 8% compared to the prior year. The majority of this growth was due to an active marketplace as the result of generally positive local government economic conditions, as well as our increasingly strong competitive position, which we attribute in part to our investment in product development in recent years. An increase in the number of larger contracts related to our planning, regulatory and maintenance solutions and public safety solutions also contributed to the growth in license revenue.

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 our longer-term software license growth rate to be negatively impacted by a growing number of customers choosing our subscription-based options, rather than purchasing the software under a traditional perpetual software license arrangement. 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. Our new client mix in 2018 was approximately 47% selecting perpetual software license arrangements and approximately 53% selecting subscription-based arrangements compared to a client mix in 2017 of approximately 53% selecting perpetual software license arrangements and approximately 47% selecting subscription-based arrangements.

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Subscriptions.

The following table sets forth a comparison of our subscriptions revenue for the years ended December 31:

($ in thousands)	2018	2017 As Adjusted	Change $	Change %
ES	$210,740	$164,317	$ 46,423	28%
A&T	9,807	7,859	1,948	25
Total subscriptions revenue	$220,547	$172,176	$ 48,371	28%

Subscription-based revenue primarily consists of revenue derived from our SaaS arrangements, which generally utilize the Tyler private cloud. As part of our subscription-based services, 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.

Excluding the results of acquisitions, subscription-based revenue increased 21% compared to 2017. New SaaS clients as well as existing clients who converted to our SaaS model provided the majority of the subscription revenue increase. In 2018, we added 410 new SaaS clients and 97 existing clients elected to convert to our SaaS model. Also, e-filing services contributed approximately $6.2 million of the subscription revenue increase in 2018. The increase in e-filing revenue is attributed to new e-filing clients, as well as increased volumes as the result of several existing clients mandating e-filing. The acquisition of Socrata, which primarily has a subscription revenue model, also contributed to the increase in subscription revenues.

Software services.

The following table sets forth a comparison of our software services revenue for the years ended December 31:

($ in thousands)	2018	2017 As Adjusted	Change $	Change %
ES	$166,921	$161,245	$ 5,676	4%
A&T	24,348	19,215	5,133	27
Total software services revenue	$191,269	$180,460	$ 10,809	6%

Software 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 generally also contract with us to provide for the related software services. Existing clients also periodically purchase additional training, consulting and minor programming services. Excluding the results of acquisitions, software services revenue grew 3% compared to the prior year period. This growth is due to a higher level of new software sales, through both our license and subscription models.

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Maintenance.

The following table sets forth a comparison of our maintenance revenue for the years ended December 31:

($ in thousands)	2018	2017 As Adjusted	Change $	Change %
ES	$359,904	$337,701	$ 22,203	7%
A&T	24,617	21,618	2,999	14
Total maintenance revenue	$384,521	$359,319	$ 25,202	7%

We provide maintenance and support services for our software products and certain third-party software. Maintenance revenue grew 7% compared to the prior year. Maintenance and support revenue increased mainly due to growth in our installed customer base from new software license sales as well as annual maintenance rate increases.

Appraisal services.

The following table sets forth a comparison of our appraisal services revenue for the years ended December 31:

($ in thousands)	2018	2017 As Adjusted	Change $	Change %
ES	$ —	$ —	$ —	—%
A&T	21,846	25,023	(3,177)	(13)
Total appraisal services revenue	$21,846	$25,023	$(3,177)	(13)%

In 2018, appraisal services revenue decreased 13% compared to the prior year primarily due to the successful completion of several large revaluation projects in mid-2017. The appraisal services business is somewhat cyclical and driven in part by statutory revaluation cycles in various states.

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)	2018	2017 As Adjusted	Change $	Change %
Software licenses and royalties	$ 3,802	$ 3,321	$ 481	14%
Acquired software	22,972	21,686	1,286	6
Software services, maintenance and subscriptions	438,923	387,634	51,289	13
Appraisal services	14,299	16,286	(1,987)	(12)
Hardware and other	15,708	12,595	3,113	25
Total cost of revenues	$495,704	$441,522	$ 54,182	12%

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

Gross margin percentage	2018	2017 As Adjusted	Change
Software licenses, royalties and acquired software	71.3%	71.0%	0.3%
Software services, maintenance and subscriptions	44.9	45.6	(0.7)
Appraisal services	34.5	34.9	(0.4)
Hardware and other	33.6	28.8	4.8
Overall gross margin	47.0%	47.5%	(0.5)%

Software licenses, royalties and acquired software. Cost of software licenses, royalties and acquired software is primarily comprised of amortization expense for acquired software and third-party software costs. We do not have any direct costs associated with royalties. The gross margin increase of 0.3% is due to higher software license revenues offset by an increase in amortization expense for acquired software attributed to new acquisitions completed in 2018.

Software services, maintenance and subscriptions. Cost of software services, maintenance and subscriptions 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 and on-going operation of SaaS and e-filing arrangements. In 2018, the software services, maintenance and subscriptions gross margin decreased 0.7% compared to the prior year. Excluding employees added through acquisitions, our implementation and support staff has grown by 57 employees since December 31, 2017 as we accelerated hiring to ensure that we are well-positioned to deliver our current backlog and anticipated new business. Recognition of acquisition-related deferred revenue associated with subscriptions and maintenance also resulted in lower gross margins.

Appraisal services. Appraisal services revenue comprised approximately 2.3% of total revenue. The appraisal services gross margin decreased 0.4% compared to 2017 due to the reduction in higher margin projects substantially complete by early 2017 and lower volume of revenues in the current period to cover relatively fixed costs.

Our 2018 blended gross margin slightly decreased by 0.5% compared to 2017. Our overall gross margin decrease is mainly attributed to additions to our implementation staff and lower margin revenues from appraisal services, offset by improved margin on revenues from software licenses.

Selling, General and Administrative Expenses

Selling, general and administrative ("SG&A") expenses consist primarily of salaries, employee benefits, travel, share-based compensation expense, commissions and related overhead costs for administrative and sales and marketing employees, as well as, professional fees, trade show activities, advertising costs and other marketing related costs. The following table sets forth a comparison of our SG&A expenses for the years ended December 31:

($ in thousands)	2018	2017 As Adjusted	Change $	Change %
Selling, general and administrative expenses	$207,605	$175,914	$ 31,691	18%

SG&A as a percentage of revenue was 22.2% in 2018 compared to 20.9% in 2017. SG&A expense increased approximately 18% compared to the prior year period. In 2018, our operating results include $9.1 million of SG&A expenses for Socrata from the date of acquisition. The remaining SG&A expense increase is mainly due to compensation cost related to increased staff levels, higher stock compensation expense and increased commission expense as a result of higher sales. Excluding employees added with acquisitions, we have added 47 employees mainly to our sales and finance teams since December 31, 2017. In addition, our 2018 stock compensation expense rose $11.2 million, mainly due to increases in our stock price over the last few years.

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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)	2018	2017 As Adjusted	Change $	Change %
Research and development expense	$63,264	$47,324	$15,940	34%

Research and development expense increased 34% in 2018 compared to the prior year 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. To support these initiatives, our research and development staff has grown by 159 since December 31, 2017.

Amortization of Customer and Trade Name Intangibles

Acquisition intangibles are comprised of the excess of the purchase price over the fair value of net tangible assets acquired that is allocated to acquired software, leases and customer and trade name 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 both customer and trade name intangibles range from five to 25 years. The following table sets forth a comparison of amortization of customer and trade name intangibles for the years ended December 31:

($ in thousands)	2018	2017 As Adjusted	Change $	Change %
Amortization of customer and trade name intangibles	$16,217	$13,381	$2,836	21%

Amortization of customer and trade name intangibles increased due to the impact of intangibles added with several acquisitions completed in 2017 and 2018.

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

2019	$16,459
2020	15,350
2021	15,232
2022	14,740
2023	14,665
Thereafter	95,419

Amortization expense relating to acquired leases will be recorded as a reduction to hardware and other revenue and is expected to be $372,000 in 2019, $313,000 in 2020, $312,000 in 2021, $312,000 in 2022, $312,000 in 2023 and $723,000 thereafter.

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Other

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

($ in thousands)	2018	2017	Change $	Change %
Other income, net	$3,378	$698	$2,680	N/M

Other income is comprised of interest expense and non-usage and other fees associated with our revolving credit agreement as well as interest income from invested cash. Other income, net, increased compared to the prior period due to increased interest income from significantly higher levels of cash and investments resulting from cash generated in the last year. We had no debt in the current period, as we repaid all borrowings under the revolving line of credit in January 2017.

Income Tax Provision (Benefit)

The following table sets forth a comparison of our income tax provision for the years ended December 31:

($ in thousands)	2018	2017 As Adjusted	Change $	Change %
Income tax provision (benefit)	$8,408	$(6,115)	$14,523	(237)%
Effective income tax rate	5.4%	(3.7)%		

The increase in the income tax provision in 2018 is primarily due to the one-time tax benefit of $26.0 million (as adjusted) recognized in the fourth quarter of 2017 resulting from the remeasurement of deferred tax assets and liabilities associated with the enactment of the Tax Act which reduced the statutory U.S. federal corporate income tax rate from 35% to 21%. The increase is somewhat offset by the decrease in statutory U.S. federal corporate income tax rate for 2018. In addition, excess tax benefits from stock option exercises were lower in 2018 as compared to the prior period. Stock option exercise activity in 2018 generated excess tax benefits of $32.5 million, while stock option exercise activity in 2017 generated $40.6 million excess tax benefits.

The increase in the effective income tax rate in 2018 compared to 2017 is also primarily attributable to the one-time tax benefit associated with the Tax Act recognized in 2017 and the decrease in excess tax benefits related to stock option exercises realized, offset by the decrease in statutory U.S. federal corporate income tax rate for 2018. Excluding the impact of the Tax Act and the excess tax benefits, our income tax provision and effective tax rate in 2018 would have been $42.6 million and 27.4% and in 2017, would have been $60.5 million (as adjusted) and 37.0%, respectively.

The effective income tax rates in both 2018 and 2017 differed from the statutory United States federal corporate income tax rate of 21% and 35%, respectively, due to state income taxes, the research tax credit, non-deductible share-based compensation expense, disqualifying incentive stock option dispositions, and other non-deductible business expenses, and in 2017, the domestic production activities deduction.

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2017 Compared to 2016

Revenues

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)	2017 As Adjusted	2016 As Adjusted	Change $	Change %
ES	$78,388	$78,271	$ 117	—%
A&T	7,854	5,462	2,392	44
Total software licenses and royalties revenue	$86,242	$83,733	$2,509	3%

Software license and royalties revenue increased 3% compared to the prior year. The increase in software licenses and royalties is attributed to additions to our implementation staff, which increased our capacity to deliver backlog.

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 our longer-term software license growth rate to be negatively impacted by a growing number of customers choosing our subscription-based options, rather than purchasing the software under a traditional perpetual software license arrangement. 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. Our new client mix in 2017 was approximately 53% selecting perpetual software license arrangements and approximately 47% selecting subscription-based arrangements compared to a client mix in 2016 of approximately 68% selecting perpetual software license arrangements and approximately 32% selecting subscription-based arrangements.

Subscriptions.

The following table sets forth a comparison of our subscriptions revenue for the years ended December 31:

($ in thousands)	2017 As Adjusted	2016 As Adjusted	Change $	Change %
ES	$164,317	$135,469	$28,848	21%
A&T	7,859	7,188	671	9
Total subscriptions revenue	$172,176	$142,657	$29,519	21%

Subscription-based revenue primarily consists of revenue derived from our SaaS arrangements, which generally utilize the Tyler private cloud. As part of our subscription-based services, 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.

Subscription-based revenue increased 21% compared to 2016. New SaaS clients as well as existing clients who converted to our SaaS model provided the majority of the subscriptions revenue increase. In 2017, we added 374 new SaaS clients and 88 existing clients elected to convert to our SaaS model. The average contract size in 2017 were 64%and 44% higher than 2016 for new clients and clients converting to our SaaS model, respectively. Also, e-filing services contributed approximately $8.5 million of the subscriptions revenue increase in 2017. The increase in e-filing revenue is attributed to new e-filing clients, as well as increased volumes as the result of several existing clients mandating e-filing.

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Software services.

The following table sets forth a comparison of our software services revenue for the years ended December 31:

($ in thousands)	2017	2016	Change $	Change %
	As Adjusted			
ES	$161,245	$155,322	$5,923	4%
A&T	19,215	16,326	2,889	18
Total software services revenue	$180,460	$171,648	$8,812	5%

Software 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 generally also contract with us to provide for the related software services. Existing clients also periodically purchase additional training, consulting and minor programming services. Software services revenue grew 5% compared to the prior year period. This growth is partly due to additions to our implementation and support staff, which increased our capacity to deliver backlog and partially due to completing recognition of a majority of the acquisition-related deferred service revenue that was fair valued at rates below Tyler's average service rate in prior periods.

Maintenance.

The following table sets forth a comparison of our maintenance revenue for the years ended December 31:

($ in thousands)	2017	2016	Change $	Change %
	As Adjusted			
ES	$337,701	$302,409	$35,292	12%
A&T	21,618	18,589	3,029	16
Total maintenance revenue	$359,319	$320,998	$38,321	12%

We provide maintenance and support services for our software products and certain third-party software. Maintenance revenue grew 12% compared to the prior year. Maintenance and support revenue increased mainly due to growth in our installed customer base from new software license sales as well as annual maintenance rate increases. In addition, the increase is partially due to completing recognition of a majority of the acquisition-related deferred maintenance revenue that was fair valued at rates below Tyler's average maintenance rate in prior periods.

Appraisal services.

The following table sets forth a comparison of our appraisal services revenue for the years ended December 31:

($ in thousands)	2017	2016	Change $	Change %
ES	$ —	$ —	$ —	—%
A&T	25,023	26,287	(1,264)	(5)
Total appraisal services revenue	$25,023	$26,287	$(1,264)	(5)%

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In 2017, appraisal services revenue decreased 5% compared to the prior year primarily due to the successful completion of several large revaluation projects in mid-2017. The appraisal services business is somewhat cyclical and driven in part by statutory revaluation cycles in various states.

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)	2017	2016	Change $	Change %
Software licenses and royalties	$ 3,321	$ 2,964	$ 357	12%
Acquired software	21,686	22,235	(549)	N/M
Software services, maintenance and subscriptions	387,634	348,939	38,695	11
Appraisal services	16,286	16,411	(125)	(1)
Hardware and other	12,595	10,143	2,452	24
Total cost of revenues	$441,522	$400,692	$40,830	10%

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

Gross margin percentage	2017	2016	Change
	As Adjusted		
Software licenses, royalties and acquired software	71.0%	69.9%	1.1%
Software services, maintenance and subscriptions	45.6	45.1	0.5
Appraisal services	34.9	37.6	(2.7)
Hardware and other	28.8	30.3	(1.5)
Overall gross margin	47.5%	47.3%	0.2%

Software licenses, royalties and acquired software. Cost of software licenses, royalties and acquired software is primarily comprised of amortization expense for acquired software and third-party software costs. We do not have any direct costs associated with royalties. The gross margin increase of 1.1% is due to higher incremental margins on software license revenues, in part due to slightly lower amortization expense for acquired software resulting from acquisitions.

Software services, maintenance and subscriptions. Cost of software services, maintenance and subscriptions 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 and on-going operation of SaaS and e-filing arrangements. In 2017, the software services, maintenance and subscriptions gross margin increased 0.5% compared to the prior year. Our implementation and support staff grew by 220 employees in 2017. Many of these additions occurred in early to mid-2017 and are contributing to revenue in 2017. Costs related to maintenance and various other services such as SaaS and e-filing typically grow at a slower rate than related revenue due to leverage in the utilization of support and maintenance staff and economies of scale. Reduced recognition of acquisition-related deferred revenue associated with software services and maintenance obligations completed in prior periods also resulted in higher gross margins.

Appraisal services. Appraisal services revenue comprised approximately 3.0% of total revenue. The appraisal services gross margin decreased 2.7% compared to 2016 due to the reduction in higher margin projects substantially complete by early 2017 and lower volume of revenues in the current period to cover relatively fixed costs.

Our 2017 blended gross margin slightly increased 0.2% compared to 2016. Our overall gross margin was positively impacted by a product mix that included more higher-margin recurring revenues from subscriptions and maintenance and improved margin on revenues from software licenses offset by the lower-margin revenues from appraisal services as described above.

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Selling, General and Administrative Expenses

The following table sets forth a comparison of selling, general and administrative expenses for the years ended December 31:

($ in thousands)	2017	2016	Change $	Change %
	As Adjusted			
Selling, general and administrative expenses	$175,914	$165,176	$10,738	7%

SG&A as a percentage of revenue was 20.9% in 2017 compared to 21.7% in 2016. SG&A expense increased approximately 7% mainly due to compensation costs related to increased staff levels, merit increases and higher stock compensation expense. We added 28 SG&A employees, mainly to our sales and finance teams in 2017. In addition, our 2017 stock compensation expense rose $4.7 million, mainly due to increases in our stock price over the last few years.

Research and Development Expense

The following table sets forth a comparison of our research and development expense for the years ended December 31:

($ in thousands)	2017	2016	Change $	Change %
Research and development expense	$47,324	$43,154	$4,170	10%

Research and development expense consists mainly of costs associated with development of new products and technologies from which we do not currently generate revenue, as well as costs related to the ongoing development efforts for Microsoft Dynamics AX. Our contractual research and development commitment to develop public sector functionality for Microsoft Dynamics AX was amended in March 2016, which significantly reduced our development commitment through March 2018. However, we continue to provide sustained engineering and technical support for the public sector functionality within Dynamics AX. License and maintenance royalties for all applicable domestic and international sales of Dynamics AX to public sector entities will continue under the terms of the contract.

Research and development expense increased 10% in 2017 compared to the prior year period, mainly due to research and development efforts related to new Tyler product development initiatives, primarily in our public safety solutions, offset by reduced development efforts for Microsoft Dynamics AX. As a result of the Microsoft Dynamics AX amendment, we have redeployed certain development resources to enhance functionality on several existing solutions and these costs are being recorded in cost of revenues — software services, maintenance and subscriptions.

Amortization of Customer and Trade Name Intangibles

The following table sets forth a comparison of amortization of customer and trade name intangibles for the years ended December 31:

($ in thousands)	2017	2016	Change $	Change %
Amortization of customer and trade name intangibles	$13,381	$13,202	$179	1%

Amortization of customer and trade name intangibles increased due to the impact of intangibles added with several small acquisitions completed in 2016 and 2017.

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Other

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

($ in thousands)	2017	2016	Change $	Change %
Other income (expense), net	$698	$(1,998)	$2,696	N/M

Other income (expense) is comprised of interest expense and non-usage and other fees associated with our revolving credit agreement as well as interest income from invested cash. Other income (expense), net increased compared to the prior period is attributed to significantly lower debt levels in the current period, as we repaid all borrowings under the revolving line of credit in January 2017, and correspondingly higher levels of cash investments.

Income Tax (Benefit) Provision

The following table sets forth a comparison of our income tax provision for the years ended December 31:

($ in thousands)	2017	2016	Change $	Change %
	As Adjusted			
Income tax provision	$(6,115)	$21,957	$(28,072)	(128)%
Effective income tax rate	(3.7)%	16.2%		

The decrease in the income tax provision during 2017 was primarily driven by the enactment of the Tax Act which reduced the statutory U.S. federal corporate income tax rate from 35% to 21%. The impact of the rate reduction on our 2017 income tax provision is a $26.0 million (as adjusted) tax benefit due to the remeasurement of deferred tax assets and liabilities. See Note 7 — "Income Tax" for additional information related to the Tax Act. The income tax provision is also lower due to the increase in the excess tax benefits from stock option exercises as compared to prior period. We experienced significant stock option exercise activity in 2017 and 2016 that generated excess tax benefits of $40.6 million and $29.6 million, respectively.

The change in the effective income tax rate in 2017 compared to 2016 is also primarily attributable to the impact of the Tax Act and the changes in excess tax benefits related to stock option exercises realized. Excluding the impact of the Tax Act and the excess tax benefits, our income tax provision and effective tax rate in 2017 would have been $60.5 million (as adjusted) and 37.0%, respectively. Excluding the excess tax benefits, our income tax provision and effective tax rate in 2016 would have been $51.5 million (as adjusted) and 38.0% respectively.

The effective income tax rates in both 2017 and 2016 differed from the statutory United States federal corporate income tax rate of 35% due to state income taxes, the domestic production activities deduction, the research tax credit, non-deductible share-based compensation expense, disqualifying incentive stock option dispositions, and other non-deductible business expenses.

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FINANCIAL CONDITION AND LIQUIDITY

As of December 31, 2018, we had cash and cash equivalents of $134.3 million compared to $185.9 million at December 31, 2017. We also had $97.7 million invested in investment grade corporate bonds, municipal bonds and asset-backed securities as of December 31, 2018 compared to $63.8 million at December 31, 2017. These investments mature between 2018 through 2022 and we intend to hold these investments until maturity. Cash and cash equivalents consist of cash on deposit with several domestic banks and money market funds. As of December 31, 2018, we had no outstanding borrowings and no outstanding letters of credit. We believe our revolving line of credit, cash from operating activities, cash on hand 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)	2018	2017	2016
Cash flows provided (used) by:			
Operating activities	$ 250,203	$ 195,755	$ 191,859
Investing activities	(238,255)	(85,395)	(50,720)
Financing activities	(63,595)	39,415	(138,075)
Net (decrease) increase in cash and cash equivalents	$ (51,647)	$ 149,775	$ 3,064

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 cash provided by operating activities, cash on hand 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 2018, operating activities provided cash of $250.2 million compared to $195.8 million in 2017. Operating activities that provided cash were primarily comprised of net income of $147.5 million, non-cash depreciation and amortization charges of $61.8 million and non-cash share-based compensation expense of $52.7 million. Working capital, excluding cash, increased approximately $14.0 million due to higher accounts receivable because of an increase in unbilled receivables attributed to revenues recognized from prior billings, higher accounts receivable related to annual maintenance and subscription billings, and the deferred taxes associated with stock option activity during the period. These increases were offset slightly by the growth in deferred revenue balances and timing of income tax payments.

In general, changes in the balance of deferred revenue are cyclical and primarily driven by the timing of our maintenance and subscription billings. Our renewal dates occur throughout the year, but our largest maintenance renewal cycles occur in the second and fourth quarters.

Days sales outstanding in accounts receivable were 111 days at December 31, 2018, compared to 102 days at December 31, 2017. The increase in our DSO is mainly due to an increase in unbilled receivables attributed to the increase in software license 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. An increase in software services contracts accounted for using progress-to-completion method of revenue recognition in which the services are performed in one accounting period, but the billing normally occurs subsequently in another accounting period also contributed to the increase in DSO. Furthermore, our maintenance billing cycle typically peaks at its highest level in June and second highest level in December of each year and is followed by collections in the subsequent quarter. DSO is calculated based on quarter-end accounts receivable (excluding long-term receivables but including unbilled receivables) divided by the quotient of annualized quarterly revenues divided by 360 days.

Investing activities used cash of $238.3 million in 2018 compared to $85.4 million in 2017. We invested $115.6 million and received $81.2 million in proceeds from investment grade corporate bonds, municipal bonds and asset-backed securities with maturity dates ranging from 2018 through 2022. Approximately $27.4 million was invested in property and equipment, primarily for computer equipment, furniture and fixtures in support of internal growth, particularly with respect to our cloud-based offerings. We paid $2.2 million for the expansion of existing buildings. On December 7, 2018, we acquired certain assets and intellectual property of SceneDoc, Inc., a company that provides mobile-first, SaaS field reporting for law enforcement agencies. The total purchase price was approximately $6.2 million, of which $5.4 million was paid in cash and

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approximately $759,000 accrued for a working capital holdback. On October 1, 2018, we acquired all of the equity interests of MobileEyes, a company that develops software to improve public safety by supporting fire prevention and suppression, emergency response, and structural safety. The total purchase price was approximately $5.3 million in cash. On August 31, 2018, we acquired all of the assets of CaseloadPRO, a company that provides a fully featured probation case management system. The purchase price of $9.3 million was paid in cash. On April 30, 2018, we acquired all of the capital stock of Socrata, a company that provides open data and data-as-a-service solutions including cloud-based data integration, visualization, analysis, and reporting solutions for state and local government agencies. The purchase price, net of cash acquired of $1.7 million, was $147.6 million paid in cash. On April 30, 2018, we acquired all of the equity interests of Sage, a cybersecurity company offering a suite of services that supports an entire cybersecurity lifecycle, including program development, education and training, technical testing, advisory services, and digital forensics. The total purchase price was $11.6 million paid in cash. These expenditures were funded from cash generated from operations.

In 2017, we invested $59.8 million and received $28.8 million in proceeds from investment grade corporate bonds, municipal bonds and asset-backed securities. Approximately $43.1 million was invested in property and equipment. We purchased an office building in Latham, New York for approximately $2.9 million and paid $2.1 million for building improvements. We paid $19.4 million for construction to expand our office building in Yarmouth, Maine. We also made three small acquisitions with a combined cash purchase price of $11.3 million. The remaining additions were for computer equipment, furniture and fixtures in support of internal growth, particularly with respect to our cloud-based offerings. These expenditures were funded from cash generated from operations.

Financing activities used cash of $63.6 million in 2018 compared to cash provided of $39.4 million in 2017. Financing activities in 2018 were comprised of collections of $83.0 million from stock option exercises and employee stock purchase plan activity. We also purchased approximately 781,000 shares of our common stock for an aggregate purchase price of $150.1 million, of which $3.5 million was accrued as of December 31, 2018.

Financing activities in 2017 were comprised of $10.0 million net payments on our revolving line of credit offset by collections of $56.9 million from stock option exercises and employee stock purchase plan activity. We also purchased approximately 44,000 shares of our common stock for an aggregate purchase price of $6.6 million.

In February 2019, our board of directors authorized the repurchase of an additional 1.5 million shares of Tyler common stock. The repurchase program, which was approved by our board of directors, was announced in October 2002, and was amended at various times from 2003 through 2019. As of February 20, 2019, we had remaining authorization to repurchase up to 2.7 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.

On November 16, 2015, we entered into a $300.0 million Credit Agreement (the "Credit Facility") with the various lenders party thereto and Wells Fargo Bank, National Association, as Administrative Agent. The Credit Facility provides for a revolving credit line of up to $300.0 million, including a $10.0 million sublimit for letters of credit. The Credit Facility matures on November 16, 2020. Borrowings under the Credit Facility may be used for general corporate purposes, including working capital requirements, acquisitions and share repurchases. Borrowings under the Credit Facility bear interest at a rate of either (1) Wells Fargo Bank's prime rate (subject to certain higher rate determinations) plus a margin of 0.25% to 1.00% or (2) the 30, 60, 90 or 180 day LIBOR rate plus a margin of 1.25% to 2.00%. As of December 31, 2018, our interest rate was 5.75% under the prime rate option or approximately 3.77% under the 30-day LIBOR option. The Credit Facility is secured by substantially all of our assets. The Credit Facility 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, 2018, we were in compliance with those covenants.

As of December 31, 2018, we had no outstanding borrowings and had unused borrowing capacity of $300.0 million under the Credit Facility. We paid interest of $770,000 in 2018, $804,000 in 2017, and $1.9 million in 2016.

We paid income taxes, net of refunds received, of $6.8 million in 2018, $36.0 million in 2017, and $30.2 million in 2016. In 2018, we experienced significant stock option exercise activity that generated net tax benefits of $32.5 million and reduced tax payments accordingly. In 2017 and 2016, excess tax benefits were $40.6 million and $29.6 million, respectively.

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

We anticipate that 2019 capital spending will be between $54 million and $56 million, including approximately $16 million related to real estate and approximately $6 million of capitalized software development. We expect the majority of the other capital spending will consist of computer equipment and software for infrastructure replacements and expansion. Capital spending is expected to be funded from existing cash balances and cash flows from operations.

On January 31, 2019, we entered in to a Merger agreement to acquire 100% of the equity interests of MP Holdings, Parent, Inc. dba MicroPact ("MicroPact") for the anticipated purchase price of $185 million in cash at closing (subject to possible adjustments and holdback) plus contingent consideration not to exceed $10 million. The completion of the acquisition is subject to customary closing conditions, including the expiration or the termination of the waiting period under the Hart-Scott-Rodino Antitrust Improvements Act. The Federal Trade Commission granted early termination of that waiting period effective February 15, 2019. The cash portion of the merger consideration will be funded from cash on hand and proceeds from the revolving credit facility.

On February 1, 2019, we acquired all the assets of Civic, LLC ("MyCivic"), a company that provides software solutions to connect communities. The purchase price is $3.7 million of which $3.6 million was paid in cash and approximately $90,000 was accrued for a working capital holdback.

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, as well as transportation and other equipment used in our operations under non-cancelable operating lease agreements expiring at various dates through 2026.

Summarized in the table below are our obligations to make future payments under the Credit Facility and lease obligations at December 31, 2018 (in thousands):

	2019	2020	2021	2022	2023	Thereafter	Total
Revolving line of credit	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Lease obligations	5,994	5,146	3,976	1,925	1,164	2,132	20,337
Total future payment obligations	$5,994	$5,146	$3,976	$1,925	$1,164	$2,132	$20,337

As of December 31, 2018, we do not have any off-balance sheet arrangements, guarantees to third-parties or material purchase commitments, except for the operating lease commitments listed above.

CAPITALIZATION

At December 31, 2018, our capitalization consisted of no outstanding borrowings and $1.3 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.

In 2018, our effective average interest rate for borrowings was 5.22%. As of December 31, 2018, our interest rate was 5.75% under the prime rate option or approximately 3.77% under the 30-day LIBOR option. The Credit Facility is secured by substantially all of our assets. Loans under the Credit Facility bear interest, at Tyler's option, at a per annum rate of either (1) the Wells Fargo Bank prime rate (subject to certain higher rate determinations) plus a margin of 0.25% to 1.00% or (2) the 30, 60, 90 or 180-day LIBOR rate plus a margin of 1.25% to 2.00%.

As of December 31, 2018, we had no outstanding borrowings under the Credit Facility and therefore are not subject to any interest risk.

Management's Discussion and Analysis of Financial Condition and Results of 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, 2018. 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, 2018.

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, 2018. 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, 2018, Tyler's internal control over financial reporting was effective based on those criteria.

Tyler's internal control over financial reporting as of December 31, 2018 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 42 hereof.

Changes in Internal Control Over Financial Reporting — During the quarter ended December 31, 2018, there were no changes in our internal control over financial reporting, as defined in Securities Exchange Act Rule 13a-15(f), that 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, 2018 and 2017, the related consolidated statements of comprehensive income, cash flows and shareholders' equity for each of the three years in the period ended December 31, 2018, 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, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018, 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, 2018, 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 20, 2019 expressed an unqualified opinion thereon.

As discussed in Note 1 to the consolidated financial statements, the Company changed its method of accounting for revenue in 2018 due to the adoption of Accounting Standards Update (ASU) No. 2014-09, Revenue from Contracts with Customers (Topic 606), and the related amendments.

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.

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

Dallas, Texas
February 20, 2019

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, 2018, 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, 2018, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), consolidated balance sheets of the Company as of December 31, 2018 and 2017, the related consolidated statements of comprehensive income, shareholders' equity and cash flows for each of the three years in the period ended December 31, 2018, and the related notes and our report dated February 20, 2019 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.

Dallas, Texas
February 20, 2019

Consolidated Statements of Comprehensive Income

For the years ended December 31,	2018	2017 As Adjusted	2016 As Adjusted
(In thousands, except per share amounts)			
Revenues:			
Software licenses and royalties	$ 93,441	$ 86,242	$ 83,733
Subscriptions	220,547	172,176	142,657
Software services	191,269	180,460	171,648
Maintenance	384,521	359,319	320,998
Appraisal services	21,846	25,023	26,287
Hardware and other	23,658	17,679	14,557
Total revenues	935,282	840,899	759,880
Cost of revenues:			
Software licenses and royalties	3,802	3,321	2,964
Acquired software	22,972	21,686	22,235
Software services, maintenance and subscriptions	438,923	387,634	348,939
Appraisal services	14,299	16,286	16,411
Hardware and other	15,708	12,595	10,143
Total cost of revenues	495,704	441,522	400,692
Gross profit	439,578	399,377	359,188
Selling, general and administrative expenses	207,605	175,914	165,176
Research and development expense	63,264	47,324	43,154
Amortization of customer and trade name intangibles	16,217	13,381	13,202
Operating income	152,492	162,758	137,656
Other income (expense), net	3,378	698	(1,998)
Income before income taxes	155,870	163,456	135,658
Income tax provision (benefit)	8,408	(6,115)	21,957
Net income	$147,462	$169,571	$113,701
Earnings per common share:			
Basic	$ 3.84	$ 4.55	$ 3.12
Diluted	$ 3.68	$ 4.32	$ 2.92

See accompanying notes.

Consolidated Balance Sheets

December 31,	2018	2017 As Adjusted
(In thousands, except par value and share amounts)		
ASSETS		
Current assets:		
Cash and cash equivalents	$ 134,279	$ 185,926
Accounts receivable (less allowance for losses of $4,647 in 2018 and $5,427 in 2017)	298,912	246,188
Short-term investments	44,306	43,159
Prepaid expenses	33,258	32,206
Income tax receivable	4,697	11,339
Other current assets	3,406	1,997
Total current assets	518,858	520,815
Accounts receivable, long-term	16,020	12,107
Property and equipment, net	155,177	152,315
Other assets:		
Goodwill	753,718	657,987
Other intangibles, net	276,852	229,617
Non-current investments and other assets	70,338	38,510
	$1,790,963	$1,611,351
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 6,910	$ 8,174
Accrued liabilities	66,480	64,675
Deferred revenue	350,512	298,613
Total current liabilities	423,902	371,462
Revolving line of credit	—	—
Deferred revenue, long-term	424	1,274
Deferred income taxes	41,791	46,879
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 2018 and 2017	481	481
Additional paid-in capital	731,435	626,867
Accumulated other comprehensive loss, net of tax	(46)	(46)
Retained earnings	771,925	624,463
Treasury stock, at cost; 9,872,505 and 10,262,182 shares in 2018 and 2017, respectively	(178,949)	(60,029)
Total shareholders' equity	1,324,846	1,191,736
	$1,790,963	$1,611,351

See accompanying notes.

Consolidated Statements of Cash Flows

For the years ended December 31,	2018	2017 (As Adjusted)	2016 (As Adjusted)
(In thousands)			
Cash flows from operating activities:			
Net income	$ 147,462	$169,571	$ 113,701
Adjustments to reconcile net income to cash provided by operations:			
Depreciation and amortization	61,759	53,395	49,773
Share-based compensation expense	52,740	37,348	29,747
Provision for losses – accounts receivable	2,286	4,110	4,484
Deferred income tax benefit	(5,069)	(33,664)	(26,432)
Changes in operating assets and liabilities, exclusive of effects of acquired companies:			
Accounts receivable	(53,771)	(35,170)	(34,760)
Income tax receivable	6,642	(8,444)	18,185
Prepaid expenses and other current assets	(588)	(6,958)	246
Accounts payable	(2,416)	878	387
Accrued liabilities	(2,445)	6,050	10,717
Deferred revenue	43,603	8,639	25,811
Net cash provided by operating activities	250,203	195,755	191,859
Cash flows from investing activities:			
Cost of acquisitions, net of cash acquired	(178,093)	(11,344)	(9,394)
Purchase of marketable security investments	(115,625)	(59,779)	(20,316)
Proceeds from marketable security investments	81,205	28,786	16,837
Additions to property and equipment	(27,424)	(43,057)	(37,726)
Decrease (increase) in other	1,682	(1)	(121)
Net cash used by investing activities	(238,255)	(85,395)	(50,720)
Cash flows from financing activities:			
Decrease in net borrowings on revolving line of credit	—	(10,000)	(56,000)
Purchase of treasury shares	(146,553)	(7,474)	(111,838)
Contributions from employee stock purchase plan	8,051	7,044	6,236
Proceeds from exercise of stock options	74,907	49,845	23,527
Net cash (used) provided by financing activities	(63,595)	39,415	(138,075)
Net (decrease) increase in cash and cash equivalents	(51,647)	149,775	3,064
Cash and cash equivalents at beginning of period	185,926	36,151	33,087
Cash and cash equivalents at end of period	$ 134,279	$185,926	$ 36,151

See accompanying notes.

Consolidated Statements of Shareholders' Equity

For the years ended December 31, 2018, 2017 and 2016

	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, 2015 (As Adjusted)	48,148	$481	$607,755	$(46)	$341,191	(11,374)	$ (75,352)	$ 874,029
Net income	—	—	—	—	113,701	—	—	113,701
Issuance of shares pursuant to stock compensation plan	—	—	(82,273)	—	—	827	105,800	23,527
Stock compensation	—	—	29,747	—	—	—	—	29,747
Issuance of shares pursuant to employee stock purchase plan	—	—	1,434	—	—	47	4,802	6,236
Treasury stock purchases	—	—	—	—	—	(882)	(112,699)	(112,699)
Balance at December 31, 2016 (As Adjusted)	48,148	481	556,663	(46)	454,892	(11,382)	(77,449)	934,541
Net income	—	—	—	—	169,571	—	—	169,571
Issuance of shares pursuant to stock compensation plan	—	—	28,174	—	—	1,113	21,671	49,845
Stock compensation	—	—	37,348	—	—	—	—	37,348
Issuance of shares pursuant to employee stock purchase plan	—	—	4,682	—	—	51	2,362	7,044
Treasury stock purchases	—	—	—	—	—	(44)	(6,613)	(6,613)
Balance at December 31, 2017 (As Adjusted)	48,148	481	626,867	(46)	624,463	(10,262)	(60,029)	1,191,736
Net income	—	—	—	—	147,462	—	—	147,462
Issuance of shares pursuant to stock compensation plan	—	—	44,458	—	—	1,126	30,449	74,907
Stock compensation	—	—	52,740	—	—	—	—	52,740
Issuance of shares pursuant to employee stock purchase plan	—	—	7,370	—	—	45	681	8,051
Treasury stock purchases	—	—	—	—	—	(781)	(150,050)	(150,050)
Balance at December 31, 2018	48,148	$481	$731,435	$(46)	$771,925	(9,872)	$(178,949)	$1,324,846

See accompanying notes.

Notes to Consolidated Financial Statements

(Tables in thousands, except pdf share data)

(1) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

DESCRIPTION OF BUSINESS

We provide integrated software systems and related services for the public sector, with a focus on local governments. We develop and market a broad line of software solutions and services to address the information technology ("IT") needs of cities, counties, schools and other local government entities. 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. We also provide subscription-based services such as software as a service ("SaaS") arrangements, which primarily utilize the Tyler private cloud, and electronic document filing solutions ("e-filing"). In addition, we provide property appraisal outsourcing services for taxing jurisdictions.

PRINCIPLES OF CONSOLIDATION

The consolidated financial statements include our parent company and two subsidiaries, which are wholly-owned. All significant intercompany balances and transactions have been eliminated in consolidation. Comprehensive income 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). We had no items of other comprehensive income (loss) during the years ended December 31, 2018, 2017 and 2016.

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 revenue from software licenses, royalties, subscription-based services, software 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

Most of 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 software 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.

Notes to Consolidated Financial Statements

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 software 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 are trued up when we receive notice of amounts we are entitled to receive. We typically receive notice of royalty revenues we are entitled to and billed on a quarterly basis in the quarter immediately following the royalty reporting period.

Software 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 software 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 software 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.

Notes to Consolidated Financial Statements

Subscription-Based Services:

Subscription-based services consist of revenues derived from SaaS arrangements, which primarily utilize the Tyler private cloud, and electronic filing transactions. 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. Our subscription contracts are generally three to five years or longer in length, billed annually in advance, and non-cancelable.

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. When it is determined that software is distinct, and the customer has the ability to take control of the software, we recognize revenue allocable to the software license fee when access to the software license is made available to the customer. We recognize hosting services ratably over the term of the arrangement, which range from one to ten years but are typically for a period of three to five years. For software 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.

Electronic 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 sales as we are acting as a principal 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 the statement of comprehensive income. For 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.

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 useful life.

Appraisal Services:

For our property appraisal projects, we recognize revenue using the progress-to-completion method since many of these projects are implemented 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 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. 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.

Notes to Consolidated Financial Statements

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 software 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 software 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 software 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. We use the level of profit margin that is most likely to occur on a contract. If the most likely profit margin cannot be precisely determined, the lowest probable level of profit margin in the range of estimates is used until the results can be estimated more precisely. 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.

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.

Refer to Note 15 — Disaggregation of Revenue for further information, including the economic factors that affect the nature, amount, timing, and uncertainty of revenue and cash flows of our various revenue categories.

Contract Balances:

Accounts receivable and allowance for doubtful accounts

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 revenue is recognized subsequent to invoicing. 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.

We maintain allowances for doubtful accounts, which are provided at the time the revenue is recognized. 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 doubtful accounts may require revision include, but are not limited to, deterioration of a customer's financial condition, 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.

Notes to Consolidated Financial Statements

The following table summarizes the changes in the allowances for doubtful accounts and sales adjustments:

Years Ended December 31,	2018	2017	2016
Balance at beginning of year	$ 5,427	$ 3,396	$ 1,640
Provisions for losses – accounts receivable	2,286	4,110	4,484
Collection of accounts previously written off	—	—	—
Deductions for accounts charged off or credits issued	(3,066)	(2,079)	(2,728)
Balance at end of year	$ 4,647	$ 5,427	$ 3,396

The allowance for doubtful accounts reflects our best estimate of probable losses inherent in the accounts receivable balance. We determine the allowance based on known troubled accounts, historical experience, and other currently available evidence.

In connection with our appraisal services contracts and certain software 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) software 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 20% 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.

The opening balance of current and long-term accounts receivable, net of allowance for doubtful accounts, was $226.8 million (as adjusted) as of January 1, 2017.

As of December 31, 2018, and December 31, 2017, total current and long-term accounts receivable, net of allowance for doubtful accounts, was $314.9 million and $258.3 million (as adjusted), respectively. We have recorded unbilled receivables of $104.2 million and $64.6 million (as adjusted) at December 31, 2018, and December 31, 2017, respectively. Included in unbilled receivables are retention receivables of $12.2 million and $7.2 million at December 31, 2018, and December 31, 2017, 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 60 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.

Notes to Consolidated Financial Statements

Deferred Revenue

The majority of deferred revenue consists of deferred maintenance 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 software licensing, subscription-based services, software and appraisal services and hardware installation. Refer to Note 16 – 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 on a straight-line basis over a period of benefit that we have determined to be three to seven years. We utilized the 'portfolio approach' practical expedient in ASC 606-10-10-4, 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 selling, general and administrative expenses in the accompanying consolidated statements of income. Refer to Note 17 – 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, and 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 carrying amount and estimated useful lives of intangible assets; determining share-based compensation expense; the valuation allowance for receivables; 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 costs of $63.3 million in 2018, $47.3 million in 2017, and $43.2 million in 2016.

Notes to Consolidated Financial Statements

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 would be established to reduce deferred tax assets if it is more likely than not that a deferred tax asset will not be "realized." On December 22, 2017, the Tax Cuts and Jobs Act (the "Tax Act") was enacted into law. The Tax Act amends the Internal Revenue Code to reduce tax rates and modify policies, credits and deductions for individuals and businesses. For businesses, the Tax Act reduces the corporate U.S. federal tax rate from a maximum of 35% to a flat 21% rate and transitions from a worldwide tax system to a territorial tax system. Under ASC 740 Income Taxes, the effects of changes in tax rates and laws are recognized in the period in which the new legislation is enacted. See Note 7 – "Income Tax" for further discussion related to the Tax Act.

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. We account for share-based compensation utilizing the fair value recognition pursuant to ASC 718, *Stock Compensation*. See Note 9 – "Share-Based Compensation" for further information.

GOODWILL AND OTHER INTANGIBLE ASSETS

Goodwill

Goodwill represents the excess of the purchase price over the fair value of net assets acquired, including identifiable intangible assets, in connection with our business combinations. Upon acquisition, goodwill is assigned to the reporting unit that is expected to benefit from the synergies of the business combination, which is the reporting unit to which the related acquired technology is assigned. A reporting unit is the operating segment, or a business unit one level below that operating segment, for which discrete financial information is prepared and regularly reviewed by executive management.

We assess goodwill for impairment annually as of April 1st, 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. If it is determined through the evaluation of events or circumstances that the carrying value may not be recoverable, we perform a comparison of the estimated fair value of the reporting unit to which the goodwill has been assigned to the sum of the carrying value of the assets and liabilities of that unit. If the sum of the carrying value of the assets and liabilities of a reporting unit exceeds the estimated fair value of that reporting unit, the carrying value of the reporting unit's goodwill is reduced to its fair value through an adjustment to the goodwill balance, resulting in an impairment charge. The fair values calculated in our impairment tests are determined using discounted cash flow models involving several assumptions. The assumptions that are used are based upon what we believe a hypothetical marketplace participant would use in estimating fair value. 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.

We did not record any goodwill impairment charges for the years ended December 31, 2018 and 2017. See Note 4 – Goodwill and Other Intangible Assets, for additional information.

Notes to Consolidated Financial Statements

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 significant 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. Assets to be disposed of would be separately presented in the balance sheet and reported at the lower of the carrying amount or fair value less costs to sell, and would no longer be depreciated. The assets and liabilities of a disposed group classified as held for sale would be presented separately in the appropriate asset and liability sections of the balance sheet. There have been no significant impairments 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. Software development costs primarily consist of personnel costs and rent for related office space. We begin to amortize capitalized costs when a product is available for general release to customers. Amortization expense is determined on a product-by-product basis at a rate not less than straight-line basis over the product's remaining estimated economic life. We have not capitalized any internal software development costs in any of the periods presented.

FAIR VALUE OF FINANCIAL INSTRUMENTS

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. The fair value of our revolving line of credit would approximate book value as of December 31, 2018, because our interest rates reset approximately every 30 days or less. See Note 6 – "Revolving Line of Credit" for further discussion.

As of December 31, 2018, we have $97.7 million in investment grade corporate bonds, municipal bonds and asset-backed securities with maturity dates ranging from 2018 through 2022. We intend to hold these bonds to maturity and have classified them as such. We believe cost approximates fair value because of the relatively short duration of these investments. The fair values of these securities are considered Level II as they are based on inputs from quoted prices in markets that are not active or from other observable market data. These investments are included in short-term investments and non-current investments and other assets.

As of December 31, 2018, we have $15.0 million invested in convertible preferred stock representing a 20% interest in Record Holdings Pty Limited, a privately held Australian company specializing in digitizing the spoken word in court and legal proceedings. The investment in convertible preferred stock is accounted under the cost 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. Annually, our cost method investments are assessed for impairment. We do not reassess the fair value of cost 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. There has been no impairment of our cost method investment for the periods presented. This investment is included in non-current investments and other assets in the accompanying consolidated balance sheets.

Notes to Consolidated Financial Statements

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, 2018, we had cash and cash equivalents of $134.3 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. Historically, our credit losses have not been significant. As a result, we do not believe we have any significant concentrations of credit risk as of December 31, 2018.

We maintain allowances for doubtful accounts, which are provided at the time the revenue is recognized. 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 doubtful accounts may require revision include, but are not limited to, deterioration of a customer's financial condition, 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.

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 recorded no 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 our officers and 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 recorded no liability associated with these indemnifications. Because of our insurance coverage, we believe the estimated fair value of these indemnification agreements is minimal.

RECLASSIFICATIONS

Certain amounts for previous years have been reclassified to conform to the current year presentation.

RECENTLY ADOPTED ACCOUNTING PRONOUNCEMENTS

Revenue from Contracts with Customers. In May 2014, the Financial Accounting Standards Board ("FASB") issued ASU No. 2014-09, *Revenue from Contracts with Customers.* ASU No. 2014-09 supersedes the revenue recognition requirements in Accounting Standards Codification ("ASC") Topic 605, *Revenue Recognition,* and requires the recognition of revenue when promised goods or services are transferred to customers in an amount that reflects the consideration to which the entity expects to be entitled to in exchange for those goods or services. This model involves a five-step process that includes identifying the contract with the customer, identifying the performance obligations in the contract, determining the transaction price, allocating the transaction price to the performance obligations in the contract and recognizing revenue when (or as) the entity satisfies the performance obligations. Topic 606 also includes Subtopic 340-40 *Other Assets and Deferred Costs – Contracts with Customers,* which requires the deferral of incremental costs of obtaining a contract with a customer. Collectively, we refer to ASU No. 2014-09 and Subtopic 340-40 as the "new standard."

Notes to Consolidated Financial Statements

We adopted the requirements of the new standard as of January 1, 2018, utilizing the full retrospective method of transition. Adoption of the new standard resulted in changes to our accounting policies for revenue recognition, trade and other receivables, and deferred commissions as detailed below. We applied the new standard using a practical expedient where the consideration allocated to the remaining performance obligations or an explanation of when we expect to recognize that amount as revenue for all reporting periods presented before the date of the initial application is not disclosed.

The impact of adopting ASU No. 2014-09 on our total revenues for 2017 and 2016 was not material. The impact of adopting the new standard on our retained earnings and deferred commissions is material. The most significant impact of the new standard relates to our accounting for software license revenue. Specifically, under the new standard, software license fees under perpetual agreements are no longer subject to 100% discount allocations from other performance obligations in the contract. Discounts in arrangements are allocated across all performance obligations increasing license revenues and decreasing revenues allocated to other performance obligations. In addition, in most cases, net license fees (total license fees less any allocated discounts) are recognized at the point in time when control of the software license transfers to the customer versus our legacy policy of recognizing revenue upon delivery and only to the extent billable per the contractual terms. Under the new standard, time-based license fees are no longer recognized over the contractual period of the license and are instead recognized at the point in time when the control of the software license transfers to the customer. Revenues related to our PCS renewals, SaaS offerings and appraisal services remain substantially unchanged. Due to the complexity of certain contracts, the actual revenue recognition treatment required under the new standard is dependent on contract-specific terms and may vary in some instances from recognition at the time of billing.

Adoption of the new standard requires that incremental costs directly related to obtaining a contract (typically sales commissions) must be recognized as an asset and expensed on a systematic basis that is consistent with the transfer to the customer of the goods and services to which the asset relates, unless that life is less than one year. Prior to adoption of the new standard, we deferred sales commissions and recognized expense over the relevant initial contractual term, which was generally one to two years. Under the new standard, we amortize these costs over a period of benefit that we have determined to be three to seven years.

We adjusted our consolidated financial statements from amounts previously reported due to the adoption of the new standard. Select unaudited condensed consolidated statement of income line items, which reflect the adoption of the new standard, are as follows (in thousands, except per share data):

	December 31, 2017			December 31, 2016		
	As Reported	Adjustments	As Adjusted	As Reported	Adjustments	As Adjusted
Statement of Income:						
Software licenses and royalties	$ 75,694	$10,548	$ 86,242	$ 74,306	$ 9,427	$ 83,733
Subscriptions	173,510	(1,334)	172,176	142,704	(47)	142,657
Software services	187,149	(6,689)	180,460	174,804	(3,156)	171,648
Maintenance	361,569	(2,250)	359,319	322,969	(1,971)	320,998
Appraisal services	25,023	—	25,023	26,287	—	26,287
Hardware and other	17,717	(38)	17,679	14,973	(416)	14,557
Total revenues	840,662	237	840,899	756,043	3,837	759,880
Selling, general and administrative expenses	176,974	(1,060)	175,914	167,161	(1,985)	165,176
Amortization of customer and trade name intangibles	13,912	(531)	13,381	13,731	(529)	13,202
Operating income	160,930	1,828	162,758	131,305	6,351	137,656
Income tax (benefit) provision	(2,317)	(3,798)	(6,115)	19,450	2,507	21,957
Net income	$163,945	$ 5,626	$169,571	$109,857	$ 3,844	$113,701
Earnings per common share:						
Basic	$ 4.40		$ 4.55	$ 3.01		$ 3.12
Diluted	$ 4.18		$ 4.32	$ 2.87		$ 2.92

Notes to Consolidated Financial Statements

Select condensed consolidated balance sheet line items, which reflect the adoption of the new standard, are as follows (in thousands):

	December 31, 2017		
	As Reported	Adjustments	As Adjusted
Balance Sheet:			
Accounts receivable	$ 227,127	$ 19,061	$ 246,188
Prepaid expenses	27,252	4,954	32,206
Accounts receivable, long-term	7,536	4,571	12,107
Other intangibles, net	236,444	(6,827)	229,617
Total assets	1,589,592	21,759	1,611,351
Deferred revenue	309,461	(10,848)	298,613
Deferred income taxes	38,914	7,965	46,879
Retained earnings	599,821	24,642	624,463
Total liabilities and shareholders' equity	$1,589,592	$ 21,759	$1,611,351

Our adoption of ASU No. 2014-09 had no impact on our net cash provided by or used in operating, investing or financing activities for any of the periods reported.

Recent tax legislation. On December 22, 2017, the Tax Cuts and Jobs Act ("Tax Act") was enacted into law. The Tax Act amends the Internal Revenue Code to reduce tax rates and modify policies, credits and deductions for businesses and individuals. For businesses, the Tax Act reduces the U.S. corporate federal income tax rate from a maximum of 35% to a flat 21% rate and transitions from a worldwide tax system to a territorial tax system. The Tax Act also adds many new provisions including changes to bonus depreciation, the deduction for executive compensation and a tax on global intangible low-taxed income (GILTI). The most significant impact of the Tax Act to us is the reduction in the U.S. federal corporate income tax rate. Refer to Note 7 — Income Tax Provision for further information.

NEW ACCOUNTING PRONOUNCEMENTS

Recent Accounting Guidance not yet Adopted

Leases. On February 25, 2016, the FASB issued its new lease accounting guidance in ASU No. 2016-02, *Leases* ("Topic 842"). Under the new guidance, lessees will be required to recognize the following for all leases (with the exception of short-term leases) at the commencement date:

- A lease liability, which is a lessee's obligation to make lease payments arising from a lease, measured on a discounted basis; and
- A right-of-use asset, which is an asset that represents the lessee's right to use, or control the use of, a specified asset for the lease term.

Topic 842 is effective for fiscal years beginning after December 15, 2018, including interim periods therein. Early application is permitted for all business entities upon issuance. Upon adoption, entities will be required to use a modified retrospective approach with an option to use certain practical expedients. We expect to adopt ASU 2016-02 when effective, using the transition method that allows us to initially apply the guidance at the adoption date of January 1, 2019, and recognize a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption. We expect to use the package of practical expedients that allows us to not reassess: (1) lease classification for any expired or existing leases and (2) initial direct costs for any expired or existing leases. We expect ASU 2016-02 will impact our consolidated financial statements and related disclosures. We are currently evaluating the extent of the impact and expect that most of our lease commitments will be subject to the updated guidance and recognized as lease liabilities and right-of-use assets on our consolidated balance sheets upon adoption. Based on our current portfolio of leases, we estimate a range of $15.5 million to $17.8 million of lease assets and liabilities to be recognized on our balance sheet, primarily relating to office facilities.

Notes to Consolidated Financial Statements

(2) ACQUISITIONS

2018

On December 7, 2018, we acquired certain assets and intellectual property of SceneDoc, Inc.("SceneDoc"), a company that provides mobile-first, SaaS field reporting for law enforcement agencies. The total purchase price was approximately $6.2 million, of which $5.4 million was paid in cash and approximately $759,000 accrued for a working capital holdback, subject to certain post-closing adjustments.

On October 1, 2018, we acquired all of the equity interests of TradeMaster, Inc. dba MobileEyes ("MobileEyes"), a company that develops SaaS software to improve public safety by supporting fire prevention and suppression, emergency response, and structural safety. The total purchase price was approximately $5.3 million in cash.

On August 31, 2018, we acquired all of the assets of CaseloadPRO, L. P., a company that provides a fully featured SaaS probation case management system. The purchase price of $9.3 million was paid in cash.

On April 30, 2018, we acquired all of the capital stock of Socrata, Inc.("Socrata"), a company that provides open data and data-as-a-service solutions including cloud-based data integration, visualization, analysis, and reporting solutions for state and local government agencies. The purchase price, net of cash acquired of $1.7 million, was $147.6 million paid in cash.

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

In thousands	
Cash	$ 1,724
Accounts receivable	3,616
Other current assets	2,057
Other noncurrent assets	68
Deferred tax assets, net	20
Identifiable intangible assets	75,000
Goodwill	75,657
Accounts payable	(1,254)
Accrued expenses	(1,604)
Deferred revenue	(5,915)
Total consideration	$149,369

In connection with this transaction, we acquired total tangible assets of $7.5 million and assumed liabilities of approximately $8.8 million. We recorded goodwill of $75.7 million, none of which is expected to be deductible for tax purposes, and other identifiable intangible assets of approximately $75.0 million. The $75.0 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 14 years. We recorded deferred tax assets, net of approximately $20,000 related to estimated fair value allocations. Socrata's solutions are a direct complement to our current offerings and will provide a new and important additional revenue stream. By offering Socrata within virtually every Tyler product suite, our clients will have the opportunity to make their existing data discoverable, usable and actionable, but more importantly, potentially include data from other agencies and jurisdictions to make analysis even more powerful and meaningful. Therefore, the goodwill of $75.7 million arising from this acquisition is primarily attributed to our ability to integrate Socrata's solutions with our existing portfolio and to generate increased revenues, earnings and cash flow by leveraging our sales resources and client base. Our final valuation of the fair market value of Socrata's assets and liabilities resulted in adjustments to the preliminary opening balance sheet. These adjustments related to a reduction in deferred income taxes and accrued expenses resulting in a net decrease to goodwill of approximately $3.3 million. We also incurred fees of approximately $578,000 for financial advisory, legal, accounting, due diligence, valuation and other various services necessary to complete the acquisition. These fees were expensed in 2018 and are included in selling, general and administrative expenses.

Notes to Consolidated Financial Statements

The following unaudited pro forma information of the consolidated results of operations have been prepared as if the Socrata acquisition had occurred at January 1, 2017, after giving effect to certain adjustments, including amortization of intangibles, interest, transaction costs and tax effects.

Twelve Months Ended December 31,	2018	2017
Revenues	$943,723	$865,944
Net income	139,315	150,515
Basic earnings per share	3.62	4.04
Diluted earnings per share	$ 3.47	$ 3.84

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 or event occurred on the dates specified, or to project our results of operations for any future period.

On April 30, 2018, we acquired all of the equity interests of Sage Data Security, LLC ("Sage"), a cybersecurity company offering a suite of services that supports an entire cybersecurity lifecycle, including program development, education and training, technical testing, advisory services, and digital forensics. The total purchase price was $11.6 million paid in cash. Tyler has performed a valuation analysis of the fair market value of Sage's assets and liabilities. As a result, we acquired total tangible assets of approximately $1.8 million and assumed liabilities of approximately $730,000. We have recorded total goodwill of approximately $3.5 million, all of which is expected to be deductible for tax purposes, and other intangible assets of approximately $7.0 million. The $7.0 million of intangible assets is attributable to customer relationships, acquired software and trade name and will be amortized over a weighted average period of approximately 14 years.

As of December 31, 2018, the purchase price allocations for Sage, Socrata, CaseloadPro, and MobileEyes are complete. As of December 31, 2018, the purchase price allocation for SceneDoc is not yet complete, therefore the preliminary valuation estimates of fair value assumed at the acquisition date for intangible assets, receivables and deferred revenue and related deferred taxes are subject to change as valuations are finalized.

The operating results of all 2018 acquisitions are included with the operating results of the Enterprise Software segment since their date of acquisition. Revenues from Socrata included in Tyler's results of operations totaled approximately $13.9 million and the net loss was $11.5 million for the twelve months ended December 31, 2018. The impact of the Sage, CaseloadPRO, MobileEyes and SceneDoc acquisitions, individually and in the aggregate, on our operating results, assets and liabilities is not material.

Our balance sheet as of December 31, 2018, reflects the allocation of the purchase price to the assets acquired based on their fair value at the date of each acquisition. The fair value of the assets and liabilities acquired are based on valuations using Level III, unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

2017

On November 29, 2017, we acquired audio and digital two-way radio communications technology and related assets from Radio 10-33, LLC. The total purchase price was $1.4 million, all of which was paid in cash.

On August 2, 2017, we acquired substantially all of the assets and assumed certain liabilities of Digital Health Department, Inc. ("DHD"), a company that provides environmental health software, offering a SaaS solution for public health compliance and inspections processes. The total purchase price, net of debt assumed, was $3.9 million, all of which was paid in cash.

On May 30, 2017, we acquired all of the capital stock of Modria.com, Inc., a company that specializes in online dispute resolution for government and commercial entities. The total purchase price, net of debt assumed, was $7.0 million, of which $6.1 million was paid in cash and $900,000 was accrued as of December 31, 2017.

The operating results of these acquisition are included in our results of operations of the Enterprise Software segment from their respective dates of acquisition. The impact of these acquisitions, individually and in the aggregate, on our operating results, assets and liabilities is not material.

Notes to Consolidated Financial Statements

2016

On May 31, 2016, we acquired all of the capital stock of ExecuTime Software, LLC, a leading provider of time, attendance, and advanced scheduling software solutions. The total purchase price, net of debt assumed, was $7.4 million. The fair value of the assets and liabilities acquired are based on valuations using Level III, unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities. The operating results of this acquisition are included in our results of operations of the Enterprise Software segment from the date of the acquisition. The impact of this acquisition on our operating results is not material.

(3) PROPERTY AND EQUIPMENT, NET

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

	Useful Lives (years)	2018	2017
Land	—	$ 9,958	$ 9,958
Building and leasehold improvements	5-39	122,241	116,214
Computer equipment and purchased software	3-5	84,649	72,531
Furniture and fixtures	5	27,238	24,834
Transportation equipment	5	438	476
		244,524	224,013
Accumulated depreciation and amortization		(89,347)	(71,698)
Property and equipment, net		$155,177	$152,315

Depreciation expense was $21.2 million in 2018, $17.3 million in 2017, and $13.4 million in 2016.

In 2018, we paid $2.2 million for the expansion of existing buildings.

In 2017, we purchased an office building in Latham, New York for approximately $2.9 million and paid $2.1 million for improvements to that building. We also paid $19.4 million for construction to expand our office building in Yarmouth, Maine.

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. These leases expire between 2019 and 2025 and are expected to provide rental income of approximately $1.3 million in 2019, $1.3 million in 2020, $1.3 million in 2021, $1.4 million in 2022, $1.4 million in 2023, and $2.4 million thereafter. Rental income from third-party tenants was $1.2 million in 2018, $1.5 million in 2017, and $1.7 million in 2016.

(4) GOODWILL AND OTHER INTANGIBLE ASSETS

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

	2018	2017
Gross margin percentage		As Adjusted
Gross carrying amount of acquisition intangibles:		
Customer related intangibles	$ 238,219	$ 179,789
Acquired software	202,416	179,466
Trade names	16,905	11,435
Leases acquired	3,694	3,694
	461,234	374,384
Accumulated amortization	(184,382)	(144,767)
Total intangibles, net	$ 276,852	$ 229,617

Total amortization expense for intangibles was $39.6 million in 2018, $35.5 million (as adjusted) in 2017, and $35.9 million (as adjusted) during 2016.

Notes to Consolidated Financial Statements

The allocation of acquisition intangible assets is summarized in the following table:

	December 31, 2018			December 31, 2017		
	Gross Carrying Amount	Weighted Average Amortization Period	Accumulated Amortization	Gross Carrying Amount	Weighted Average Amortization Period	Accumulated Amortization
Non-amortizable intangibles:						
Goodwill	$753,718	—	$ —	$657,987	—	$ —
Amortizable intangibles:						
Customer related intangibles	238,219	15 years	78,120	179,789	15 years	63,274
Acquired software	202,416	7 years	99,772	179,466	7 years	76,800
Trade names	16,905	11 years	5,139	11,435	11 years	3,768
Leases acquired	3,694	10 years	1,351	3,694	10 years	925

The changes in the carrying amount of goodwill for the two years ended December 31, 2018 are as follows:

	Enterprise Software	Appraisal and Tax	Total
Balance as of 12/31/2016	$643,680	$6,557	$650,237
Goodwill acquired with acquisitions	7,750	—	7,750
Balance as of 12/31/2017	651,430	6,557	657,987
Goodwill acquired related to the purchase of Socrata	75,657	—	75,657
Goodwill acquired related to other acquisitions	20,074	—	20,074
Balance as of 12/31/2018	$747,161	$6,557	$753,718

Estimated annual amortization expense related to acquired leases will be recorded as a reduction to hardware and other revenue and is expected to be $372,000 in 2019, $313,000 in 2020, $312,000 in 2021, $312,000 in 2022, $312,000 in 2023 and $723,000 thereafter. Estimated annual amortization expense related to acquisition intangibles, including acquired software, for which the amortization expense is recorded as cost of revenues, is as follows:

2019	$ 40,222
2020	38,820
2021	38,463
2022	34,987
2023	16,990
Thereafter	105,028

Notes to Consolidated Financial Statements

(5) ACCRUED LIABILITIES

Accrued liabilities consist of the following at December 31:

	2018	2017
Accrued wages, bonuses and commissions	$40,100	$43,688
Other accrued liabilities	26,380	20,987
	$66,480	$64,675

(6) REVOLVING LINE OF CREDIT

On November 16, 2015, we entered into a $300.0 million Credit Agreement (the “Credit Facility”) with the various lenders party thereto and Wells Fargo Bank, National Association, as Administrative Agent. The Credit Facility provides for a revolving credit line of up to $300.0 million, including a $10.0 million sublimit for letters of credit. The Credit Facility matures on November 16, 2020. Borrowings under the Credit Facility may be used for general corporate purposes, including working capital requirements, acquisitions and share repurchases.

Borrowings under the Credit Facility bear interest at a rate of either (1) Wells Fargo Bank’s prime rate (subject to certain higher rate determinations) plus a margin of 0.25% to 1.00% or (2) the 30, 60, 90 or 180-day LIBOR rate plus a margin of 1.25% to 2.00%. As of December 31, 2018, our interest rate was 5.75% under the prime rate option or approximately 3.77% under the 30-day LIBOR option. The Credit Facility is secured by substantially all our assets. The Credit Facility 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, 2018, we were in compliance with those covenants.

As of December 31, 2018, we had no outstanding borrowings and had unused borrowing capacity of $300.0 million under the Credit Facility. In addition, as of December 31, 2018, we had no outstanding letter of credit.

We paid interest of $770,000 in 2018, $804,000 in 2017, and $1.9 million in 2016.

(7) INCOME TAX

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

	2018	2017	2016
Years Ended December 31,		As Adjusted	
Current:			
Federal	$ 9,110	$ 22,883	$ 41,366
State	4,367	4,666	7,023
	13,477	27,549	48,389
Deferred	(5,069)	(33,664)	(26,432)
	$ 8,408	$ (6,115)	$ 21,957

Notes to Consolidated Financial Statements

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

Years Ended December 31,	2018	2017 As Adjusted	2016 As Adjusted
Federal income tax expense at statutory rate	$ 32,733	$ 57,209	$ 47,480
State income tax, net of federal income tax benefit	7,953	4,754	5,091
Domestic production activities deduction	—	(2,617)	(3,947)
Excess tax benefits related to stock option exercises	(32,487)	(40,624)	(29,582)
Tax Act adjustments	(1,750)	(25,992)	—
Tax credits	(3,715)	(3,578)	—
Non-deductible business expenses	5,655	4,573	2,979
Other, net	19	160	(64)
	$ 8,408	$ (6,115)	$ 21,957

On December 22, 2017, the Tax Act was enacted into law. The Tax Act amends the Internal Revenue Code to reduce tax rates and modify policies, credits and deductions for individuals and businesses. For businesses, the Tax Act reduces the U.S. corporate federal tax rate from a maximum of 35% to a flat 21% rate and transitions from a worldwide tax system to a territorial tax system. The Tax Act also adds many new provisions including changes to bonus depreciation, the deduction for executive compensation and a tax on global intangible low-taxed income (GILTI). The most significant impact of the Tax Act to us is the reduction in the U.S. federal corporate income tax rate from 35% to 21%. The impact of the rate reduction on our 2017 income tax provision was a $26.0 million (as adjusted) tax benefit due to the remeasurement of deferred tax assets and liabilities. We recorded an additional $1.8 million tax benefit in 2018 after our 2017 tax returns were finalized. The accounting for the income tax effects of the Tax Act was completed during the fourth quarter of 2018. Overall, the changes due to the Tax Act will favorably affect income tax expense and future U.S. earnings.

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

	2018	2017 As Adjusted
Deferred income tax assets:		
Operating expenses not currently deductible	$ 8,989	$ 9,714
Stock option and other employee benefit plans	19,496	15,932
Loss and credit carryforwards	17,999	—
Total deferred income tax assets	46,484	25,646
Valuation allowance	(1,049)	—
Total deferred income tax assets, net of valuation allowance	45,435	25,646
Deferred income tax liabilities:		
Intangible assets	(70,752)	(60,189)
Property and equipment	(8,455)	(5,699)
Prepaid expenses	(4,079)	(190)
Deferred revenue	(3,940)	(6,447)
Total deferred income tax liabilities	(87,226)	(72,525)
Net deferred income tax liabilities	$(41,791)	$(46,879)

The above 2017 balances reflect an $8.0 million deferred tax liability related to the recognition of revenue as part of the adoption of ASU No. 2014-09.

Notes to Consolidated Financial Statements

During 2018, we acquired federal and state net operating loss and tax credit carryforwards totaling $18.0 million in connection with the acquisition of Socrata. The federal and state net operating loss and tax credit carryforwards will expire in various years beginning in 2027, if not utilized. The acquired net operating loss and tax credit carryforwards are subject to an annual limitation but are expected to be realized with the exception of certain state net operating loss carryforwards. The valuation allowance disclosed in the table above relates to state net operating losses not likely 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.

In connection with the acquisition of Socrata in 2018, we recorded a $1.9 million liability for an uncertain tax position associated with acquired tax credit carryforwards. The unrecognized tax benefits are included in deferred income taxes in our consolidated balance sheets and are reflected in the opening balance sheet of Socrata. The entire amount, if recognized, would affect the effective tax rate.

The aggregate changes in the balance of unrecognized tax benefits were as follows:

	2018
Balance at beginning of year	$ —
Increases for tax positions related to prior years	1,929
Balance at end of year	$ 1,929

Based on the information currently available, we do not anticipate a significant increase or decrease to our tax contingencies for these issues for the next 12 months.

We are subject to U.S. federal 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. During 2017, the Internal Revenue Service issued a "no change" letter upon completion of their examination of our 2012 tax year. With few exceptions, major U.S. federal, state, local and foreign jurisdictions are no longer subject to examination for years before 2014. As of February 20, 2019, no significant adjustments have been proposed by any taxing jurisdiction.

We paid income taxes, net of refunds received, of $6.8 million in 2018, $36.0 million in 2017, and $30.2 million in 2016.

(8) SHAREHOLDERS' EQUITY

The following table details activity in our common stock:

	2018		2017		2016	
	Shares	Amount	Shares	Amount	Shares	Amount
Stock option exercises	1,126	$ 74,907	1,113	$ 49,845	827	$ 23,527
Purchases of common stock	(781)	(150,050)	(44)	(6,613)	(882)	(112,699)
Employee stock plan purchases	45	8,051	51	7,044	47	6,236

Years Ended December 31,

As of February 20, 2019, we had authorization from our board of directors to repurchase up to 2.7 million additional shares of our common stock.

Notes to Consolidated Financial Statements

(9) 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 2018, 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, 2018, there were 3.8 million shares available for future grants under the 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 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.

Notes to Consolidated Financial Statements

The following weighted average assumptions were used for options granted:

Years Ended December 31,	2018	2017	2016
Expected life (in years)	6.0	6.0	6.0
Expected volatility	26.7%	28.1%	29.3%
Risk-free interest rate	2.7%	2.0%	1.8%
Expected forfeiture rate	—%	—%	—%

Share-Based Award Activity

The following table summarizes restricted stock unit and performance stock unit activity during fiscal year 2018 (shares in thousands):

	Number of Shares	Weighted Average Grant Date Fair Value per Share
Unvested at January 1, 2018	—	$ —
Granted	336	$221.29
Vested	—	$ —
Forfeited	(2)	$229.75
Unvested at December 31, 2018	334	$221.25

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, 2015	5,164	$ 64.43		
Granted	846	147.25		
Exercised	(827)	28.43		
Forfeited	(27)	95.33		
Outstanding at December 31, 2016	5,156	83.64		
Granted	824	176.26		
Exercised	(1,113)	44.80		
Forfeited	(50)	134.83		
Outstanding at December 31, 2017	4,817	107.91		
Granted	432	208.21		
Exercised	(1,126)	66.53		
Forfeited	(31)	158.80		
Outstanding at December 31, 2018	4,092	129.51	7	$240,069
Exercisable at December 31, 2018	2,357	100.41	6	$201,349

We had unvested options to purchase 1.7 million shares with a weighted average grant date exercise price of $169.24 as of December 31, 2018, and unvested options to purchase 2.4 million shares with a weighted average grant date exercise price of $136.51 as of December 31, 2017.

Notes to Consolidated Financial Statements

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

	2018	2017	2016
Weighted average grant-date fair value of stock options granted	$ 66.52	$ 55.56	$ 46.89
Total intrinsic value of stock options exercised	176,716	137,699	103,703

Share-Based Compensation Expense

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

Years Ended December 31	2018	2017	2016
Cost of software services, maintenance and subscriptions	$ 13,588	$ 9,415	$ 6,548
Selling, general and administrative expenses	39,152	27,933	23,199
Total share-based compensation expenses	52,740	37,348	29,747
Tax benefit	(32,487)	(40,624)	(30,059)
Net decrease (increase) in net income	$ 20,253	$ (3,276)	$ (312)

As of December 31, 2018, we had $137.6 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 3 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, 2018, there were 749,000 shares available for future grants under the ESPP from the 2.0 million shares previously approved by the stockholders.

(10) EARNINGS PER SHARE

Basic earnings and diluted earnings per share data were computed as follows:

	2018	2017	2016
Years Ended December 31,		As Adjusted	
Numerator for basic and diluted earnings per share:			
Net income	$147,462	$169,571	$113,701
Denominator:			
Weighted-average basic common shares outstanding	38,445	37,273	36,448
Assumed conversion of dilutive securities:			
Stock options	1,678	1,973	2,513
Denominator for diluted earnings per share – Adjusted weighted-average shares	40,123	39,246	38,961
Earnings per common share:			
Basic	$ 3.84	$ 4.55	$ 3.12
Diluted	$ 3.68	$ 4.32	$ 2.92

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Notes to Consolidated Financial Statements

Share-based awards representing the right to purchase common stock of 888,000 shares in 2018, 1,343,000 shares in 2017, and 786,000 shares in 2016 were not included in the computation of diluted earnings per share because their inclusion would have had an anti-dilutive effect.

(11) 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 and they expire at various dates through 2026. In addition to rent, the leases generally require us to pay taxes, maintenance, insurance and certain other operating expenses.

Rent expense was approximately $8.0 million in 2018, $6.9 million in 2017, and $6.7 million in 2016, which included rent expense associated with related party lease agreements of $150,000 in 2017, and $330,000 in 2016. We had no related party lease agreements in 2018.

Future minimum lease payments under all non-cancelable leases at December 31, 2018 are as follows:

Years Ending December 31,	
2019	$ 5,994
2020	5,146
2021	3,976
2022	1,925
2023	1,164
Thereafter	2,132
Total	$20,337

(12) 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 $9.3 million in 2018, $7.9 million in 2017, and $6.9 million in 2016.

(13) COMMITMENTS AND CONTINGENCIES

Other than routine litigation incidental to our business, there are no material legal proceedings pending to which we are party or to which any of our properties are subject.

Notes to Consolidated Financial Statements

(14) SEGMENT AND RELATED INFORMATION

We provide integrated information management solutions and services for the public sector, with a focus on local governments.

We provide our software systems and services and appraisal services through five 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, and land and vital records management software solutions;
- courts and justice and public safety software solutions;
- data and insights solutions; and
- appraisal and tax software solutions and property appraisal services.

In accordance with ASC 280-10, *Segment Reporting*, the financial management, education and planning, regulatory and maintenance software solutions unit; financial management, municipal courts and land and vital records management software solutions unit; and the courts and justice and public safety software solutions unit meet the criteria for aggregation and are presented in one reportable segment, Enterprise Software ("ES"). The ES segment provides municipal and county governments and schools with software systems and services to meet their information technology and automation needs for mission-critical "back-office" functions such as financial management and courts and justice and public safety processes. The Appraisal and Tax ("A&T") segment provides systems and software that automate the appraisal and assessment of real and personal property as well as property appraisal outsourcing services for local governments and taxing authorities. Property appraisal outsourcing services include: the physical inspection of commercial and residential properties; data collection and processing; computer analysis for property valuation; preparation of tax rolls; community education; and arbitration between taxpayers and the assessing jurisdiction.

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 noncash amortization of intangible assets associated with their acquisition, 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. Segment operating income for corporate primarily consists of compensation costs for the executive management team and certain accounting and administrative 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."

Segment assets include net accounts receivable, prepaid expenses and other current assets and net property and equipment. Corporate assets 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.

ES segment capital expenditures included $2.2 million in 2018 and $24.4 million in 2017 for the expansion of existing buildings and purchases of buildings and land.

Notes to Consolidated Financial Statements

For the year ended December 31, 2018	Enterprise Software	Appraisal and Tax	Corporate	Totals
Revenues				
Software licenses and royalties	$ 83,735	$ 9,706	$ —	$ 93,441
Subscriptions	210,740	9,807	—	220,547
Software services	166,921	24,348	—	191,269
Maintenance	359,904	24,617	—	384,521
Appraisal services	—	21,846	—	21,846
Hardware and other	18,745	32	4,881	23,658
Intercompany	13,155	—	(13,155)	—
Total revenues	$853,200	$90,356	$ (8,274)	$ 935,282
Depreciation and amortization expense	50,130	914	10,715	61,759
Segment operating income	237,159	23,094	(68,572)	191,681
Capital expenditures	13,973	782	10,377	25,132
Segment assets	$556,100	$63,670	$1,171,193	$1,790,963

For the year ended December 31, 2017 (As Adjusted)	Enterprise Software	Appraisal and Tax	Corporate	Totals
Revenues				
Software licenses and royalties	$ 78,388	$ 7,854	$ —	$ 86,242
Subscriptions	164,317	7,859	—	172,176
Software services	161,245	19,215	—	180,460
Maintenance	337,701	21,618	—	359,319
Appraisal services	—	25,023	—	25,023
Hardware and other	13,057	10	4,612	17,679
Intercompany	10,425	—	(10,425)	—
Total revenues	$765,133	$81,579	$ (5,813)	$ 840,899
Depreciation and amortization expense	43,987	760	8,648	53,395
Segment operating income	229,001	20,788	(51,964)	197,825
Capital expenditures	28,096	1,181	16,341	45,618
Segment assets	$365,736	$46,279	$1,199,336	$1,611,351

For the year ended December 31, 2016 (As Adjusted)	Enterprise Software	Appraisal and Tax	Corporate	Totals
Revenues				
Software licenses and royalties	$ 78,271	$ 5,462	$ —	$ 83,733
Subscriptions	135,469	7,188	—	142,657
Software services	155,322	16,326	—	171,648
Maintenance	302,409	18,589	—	320,998
Appraisal services	—	26,287	—	26,287
Hardware and other	11,526	16	3,015	14,557
Intercompany	6,742	—	(6,742)	—
Total revenues	$689,739	$73,868	$ (3,727)	$ 759,880
Depreciation and amortization expense	43,434	984	5,355	49,773
Segment operating income	196,054	18,871	(41,832)	173,093
Capital expenditures	23,843	1,432	11,448	36,723
Segment assets	$321,886	$33,005	$1,023,612	$1,378,503

Notes to Consolidated Financial Statements

Reconciliation of reportable segment operating income to the Company's consolidated totals:	2018	2017	2016
	Years Ended December 31,		
		As Adjusted	
Total segment operating income	$191,681	$197,825	$173,093
Amortization of acquired software	(22,972)	(21,686)	(22,235)
Amortization of customer and trade name intangibles	(16,217)	(13,381)	(13,202)
Other income (expense), net	3,378	698	(1,998)
Income before income taxes	$155,870	$163,456	$135,658

(15) 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 revenue 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, 2018	Products and Services Transferred at a Point in Time	Products and Services Transferred Over Time	Total
Revenues			
Software licenses and royalties	$75,188	$ 18,253	$ 93,441
Subscriptions	—	220,547	220,547
Software services	—	191,269	191,269
Maintenance	—	384,521	384,521
Appraisal services	—	21,846	21,846
Hardware and other	23,658	—	23,658
Total	$98,846	$836,436	$935,282

For the year ended December 31, 2017 (As Adjusted)	Products and Services Transferred at a Point in Time	Products and Services Transferred Over Time	Total
Revenues			
Software licenses and royalties	$69,167	$ 17,075	$ 86,242
Subscriptions	—	172,176	172,176
Software services	—	180,460	180,460
Maintenance	—	359,319	359,319
Appraisal services	—	25,023	25,023
Hardware and other	17,679	—	17,679
Total	$86,846	$754,053	$840,899

Notes to Consolidated Financial Statements

Recurring Revenue

The majority of our revenue is comprised of recurring revenues from maintenance and subscriptions. Virtually all of our on-premises software clients contract with us for maintenance and support, which provides us with a significant source of recurring revenue. We generally provide maintenance and support for our on-premises clients under annual, or in some cases, multi-year contracts. The contract terms for subscription arrangements range from one to 10 years but are typically contracted for initial periods of three to five years, providing a significant source of recurring revenues on an annual basis. Non-recurring revenues are derived for all other revenue categories.

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

For the year ended December 31, 2018	Enterprise Software	Appraisal and Tax	Corporate	Totals
Recurring revenues	$570,645	$34,424	$ —	$605,069
Non-recurring revenues	269,400	55,932	4,881	330,213
Intercompany	13,155	—	(13,155)	—
Total revenues	$853,200	$90,356	$ (8,274)	$935,282

For the year ended December 31, 2017 (As Adjusted)	Enterprise Software	Appraisal and Tax	Corporate	Totals
Recurring revenues	$502,018	$29,477	$ —	$531,495
Non-recurring revenues	252,690	52,102	4,612	309,404
Intercompany	10,425	—	(10,425)	—
Total revenues	$765,133	$81,579	$ (5,813)	$840,899

(16) DEFERRED REVENUE AND PERFORMANCE OBLIGATIONS

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

December 31,	2018	2017
		As Adjusted
Enterprise Software	$327,521	$277,198
Appraisal and Tax	20,018	20,387
Corporate	3,397	2,302
Totals	$350,936	$ 299,88

The opening balance of total deferred revenue, including long-term, was $290.1 million (as adjusted) as of January 1, 2017.

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

	2018
Balance at beginning of year (As Adjusted)	$ 299,887
Deferral of revenue	871,498
Recognition of deferred revenue	(820,449)
Balance at end of year	$ 350,936

Notes to Consolidated Financial Statements

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, 2018 was $1.25 billion, of which we expect to recognize approximately 50% as revenue over the next 12 months and the remainder thereafter.

(17) 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. Deferred commissions were $21.9 million and $19.3 million (as adjusted) as of December 31, 2018, and December 31, 2017, respectively. Amortization expense was $15.6 million for the twelve months ended December 31, 2018 and $11.2 million (as adjusted) for the twelve months ended December 31, 2017, 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 in the accompanying consolidated balance sheets. Amortization expense related to deferred commissions is included in selling, general and administrative expenses in the accompanying consolidated statements of income.

(18) SUBSEQUENT EVENTS

The following events and transactions occurred subsequent to December 31, 2018:

On January 31, 2019, (i) Tyler Technologies, Inc., a Delaware corporation ("Parent"), (ii) TMP Subsidiary, Inc., a Delaware corporation and a wholly owned subsidiary of Parent ("Merger Sub"), (iii) MP Holdings Parent, Inc., dba MicroPact, a Delaware corporation ("Micropact"), and (iv) Arlington Capital Partners II, L.P., a Delaware limited partnership ("Representative"), signed an Agreement and Plan of Merger (the "Merger Agreement").

The Merger Agreement provides for the merger of Merger Sub with and into MicroPact on the terms and subject to the conditions set forth in the Merger Agreement, with MicroPact as the surviving company and a wholly owned, direct subsidiary of Parent.

Pursuant to the Merger Agreement, Parent will pay MicroPact's shareholders aggregate merger consideration of approximately $185.0 million in cash, which shall include an amount equal to MicroPact's closing date working capital and be subject to a post-closing working capital adjustment as described in the Merger Agreement and an additional merger consideration of up to $10.0 million based on certain fiscal 2019 EBITDA thresholds. The merger consideration will be funded from cash on hand and proceeds from the revolving credit facility.

The Merger and the Merger Agreement have been approved by the boards of directors of both MicroPact, Parent and Merger Sub. The Merger Agreement contains customary representations, warranties, and covenants of MicroPact, Parent and Merger Sub. The covenants include, among others, an obligation on behalf of MicroPact to operate its business in the ordinary course until the Merger is consummated, and limitations on the right of MicroPact to solicit or engage in negotiations regarding alternative acquisition proposals during the pre-Closing period.

The completion of the Merger is subject to customary closing conditions, including the expiration or the termination of the waiting period under the Hart-Scott-Rodino Antitrust Improvements Act. The Federal Trade Commission granted early termination of that waiting period effective February 15, 2019. Customary closing conditions also include each party's satisfaction of the applicable representations and warranties, and compliance in all material respects with its applicable covenants. Consummation of the Merger is not subject to a financing condition.

The Merger Agreement may be terminated prior to closing under certain enumerated circumstances, including if the Merger is not consummated by May 1, 2019. Termination rights are held by Parent, MicroPact, and Representative, depending on the circumstances giving rise to the termination.

MicroPact is a leading provider of commercial off-the-shelf (COTS) solutions, including entellitrak®, a low-code application development platform for case management and business process management used extensively in the public sector.

Notes to Consolidated Financial Statements

On February 1, 2019, we acquired all the assets of Civic, LLC ("MyCivic"), a company that provides software solutions to connect communities. The purchase price is $3.7 million of which $3.6 million was paid in cash and approximately $90,000 was accrued for a working capital holdback.

(19) QUARTERLY FINANCIAL INFORMATION (UNAUDITED)

The following table contains selected financial information from unaudited statements of income for each quarter of 2018 and 2017:

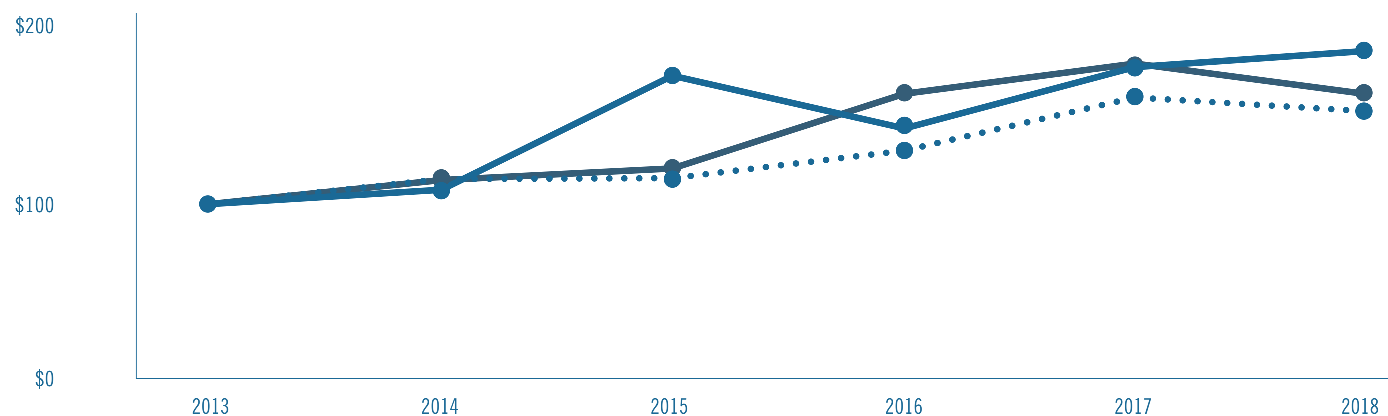
	Quarters Ended							
	2018				2017 (As Adjusted)			
	Dec. 31	Sept. 30	June 30	Mar. 31	Dec. 31[a]	Sept. 30	June 30	Mar. 31
Revenues	$241,981	$236,067	$236,060	$221,174	$217,701	$214,706	$208,763	$199,729
Gross profit	115,871	111,626	109,276	102,805	105,350	103,989	95,503	94,535
Income before income taxes	40,107	38,626	37,700	39,437	45,261	44,357	37,197	36,641
Net income	31,552	38,924	39,161	37,825	66,196	38,836	31,770	32,769
Earnings per diluted share	$ 0.79	$ 0.96	$ 0.97	$ 0.95	$ 1.68	$ 0.99	$ 0.81	$ 0.84
Shares used in computing diluted earnings per share	39,891	40,528	40,224	39,836	39,499	39,342	39,201	38,932

(a) The fourth quarter of 2017 includes the significant impact of the enactment of the Tax Act. The most significant impact of the Tax Act to us is the reduction in the U.S. federal corporate income tax rate from 35% to 21%. The impact of the rate reduction on our 2017 income tax provision is a $26.0 million tax benefit due to the remeasurement of deferred tax assets and liabilities. Refer to Note 7 — "Income Tax" for further discussion on the impact the Tax Act.

Performance Graph

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, 2013. 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



	2013	2014	2015	2016	2017	2018
Tyler Technologies, Inc.	100	107.16	170.68	139.79	173.36	181.94
S&P 500 Stock Index	100	113.69	115.26	129.05	157.22	150.33
S&P 600 Information Technology Index	100	113.29	118.56	158.70	175.01	159.38

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

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CORPORATE OFFICERS

H. Lynn Moore Jr.
President & Chief Executive Officer

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

Matthew B. Bieri
Chief Information Officer

S. Brett Cate
Chief Sales Officer

Samantha B. Crosby
Chief Marketing Officer

Abigail M. Diaz
Chief Legal Officer & Secretary

Bruce E. Graham
Chief Strategy Officer

Jeffrey S. Green
Chief Technology Officer

Kelley B. Shimansky
Chief Human Resources Officer

W. Michael Smith
Chief Accounting Officer

BOARD OF DIRECTORS

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

Donald R. Brattain[2, 3, 4]
President
Brattain and Associates, LLC

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

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

J. Luther King Jr.[2, 4]
Chief Executive Officer
Luther King Capital Management

Daniel M. Pope
Mayor
City of Lubbock, Texas

Dustin R. Womble[1]
Retired Executive Vice President
Tyler Technologies, Inc.

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

Operational Leadership

ENTERPRISE GROUP

Andrew D. Teed
President
Enterprise Group

Mark A. Hawkins
President
Appraisal & Tax Division

Christopher P. Hepburn
President
ERP & Schools Division

Dane L. Womble
President
Local Government Division

JUSTICE GROUP

D. Bret Dixon
President
Justice Group

Bruce E. Graham
President
Courts & Justice Division

Greg T. Sebastian
President
Public Safety Division

Kevin Merritt
President
Data & Insights Division

CORPORATE HEADQUARTERS

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Plano, Texas 75024
972.713.3700
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TRANSFER AGENT AND REGISTRAR

American Stock Transfer & Trust Company
6201 15th Avenue
Brooklyn, New York 11219
800.937.5449
help@astfinancial.com
amstock.com

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Ernst & Young LLP
Dallas, Texas

ANNUAL MEETING OF STOCKHOLDERS

Tuesday, May 7, 2019
9:30 a.m. Central Time
Renaissance Dallas at Plano Legacy West Hotel
6007 Legacy Drive
Plano, Texas 75024

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 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

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info@tylertech.com

COMMON STOCK

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

TYL
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