



Meeting Our Commitments

2019 ANNUAL REPORT



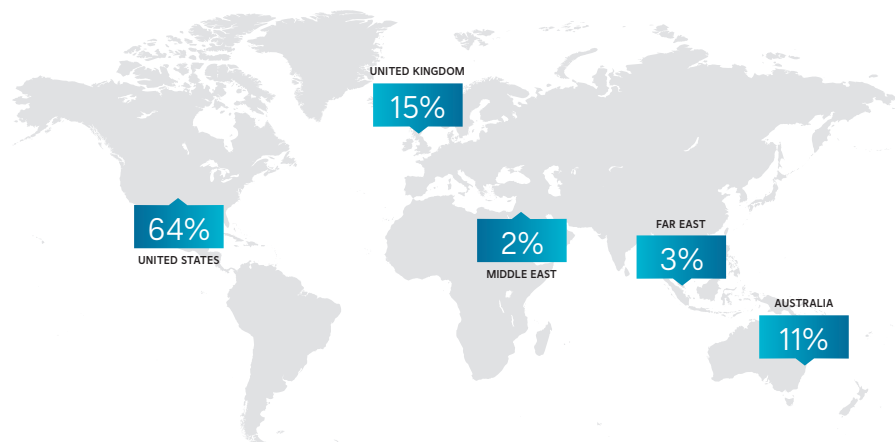
Cubic is a **technology-driven, market-leading** provider of integrated solutions that increase situational understanding for transportation, defense C4ISR and training customers worldwide to decrease urban congestion and improve the militaries' effectiveness and operational readiness.

Our teams innovate to make a positive difference in people's lives. We simplify their daily journeys. We promote mission success and safety for those who serve their nation.

CUBIC AT A GLANCE



SALES BY GEOGRAPHY (%)



SALES IN OTHER REGIONS: 5%



LETTER FROM THE CHAIRMAN, PRESIDENT & CEO

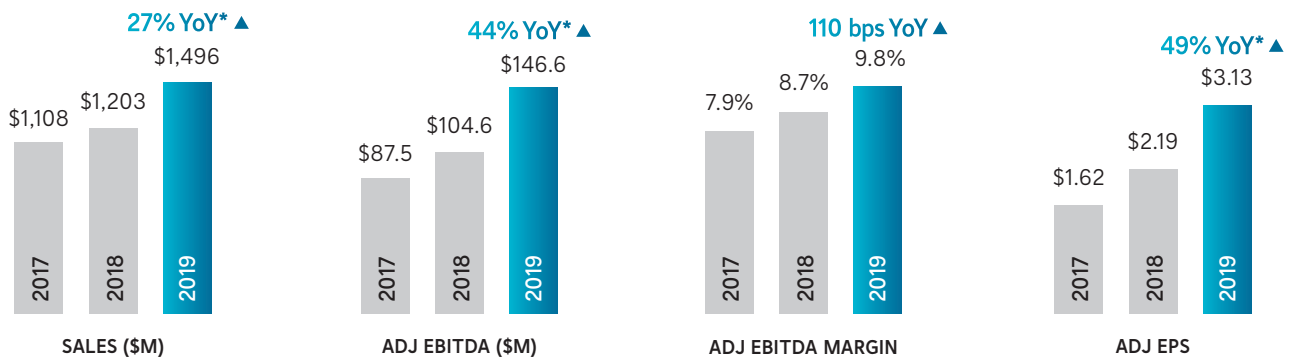
Record Results and Strong Progress

Thanks to our outstanding teammates and their focus on winning the trust of our customers and meeting our commitments, we delivered another year of strong performance – reaching all-time highs for continuing operations in Sales and Adjusted EBITDA.

At the same time, we made investments in research and development (R&D), strategic acquisitions, talent development and business optimization to further advance our strategy. Over the last three years, our Sales and Adjusted EBITDA have grown at a compound annual growth rate of 12 percent and 16 percent, respectively.

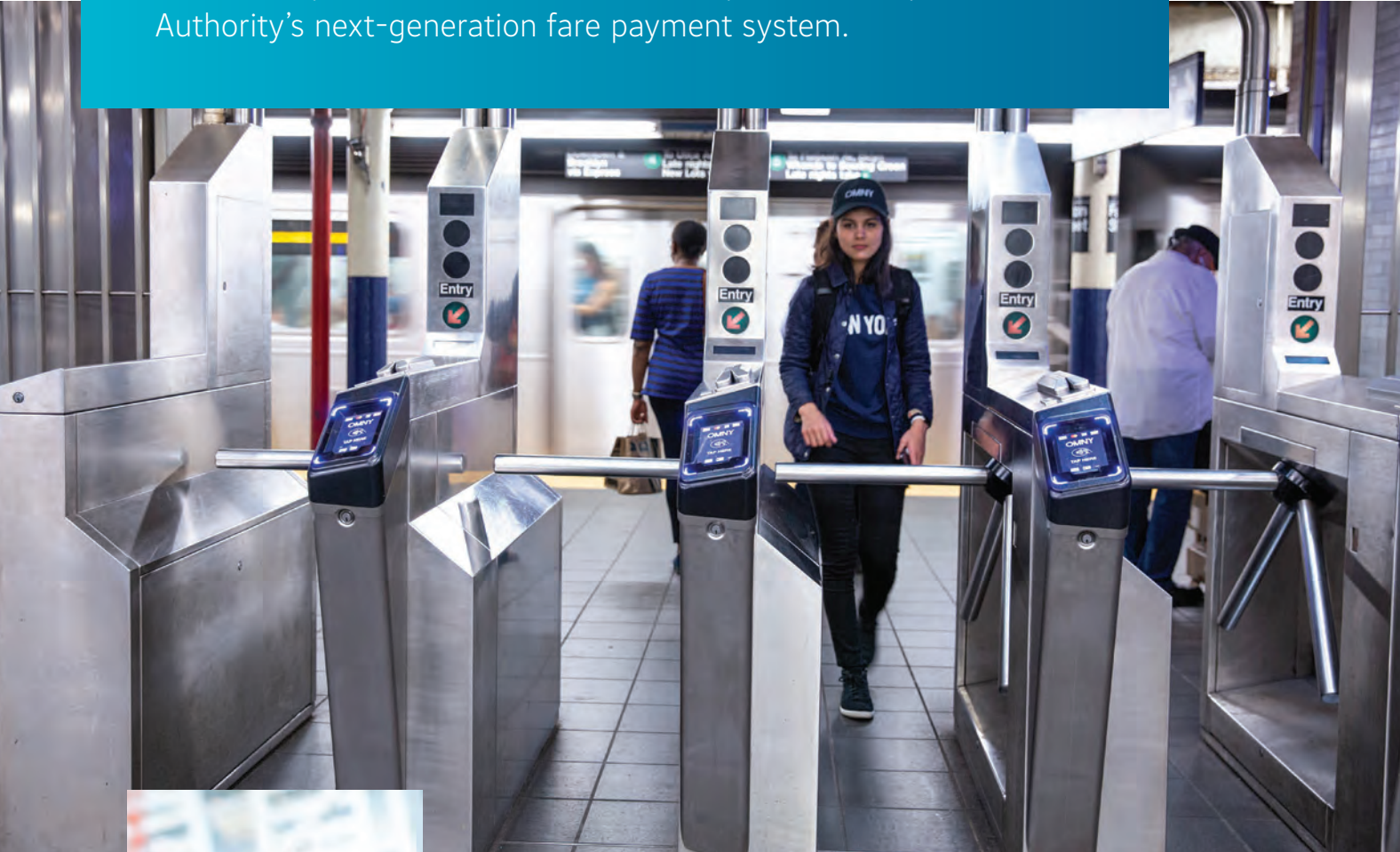


Bradley H. Feldmann



* FY2019 growth rates for Sales, Adj. EBITDA and Adj. EPS reflect constant currency basis. Constant currency growth rates are calculated by translating current period local currency amounts to USD based on prior period average exchange rates. The amounts are compared to prior period GAAP amounts to derive constant currency growth. Unadjusted growth rates: Sales 24%, Adj. EBITDA 40% and Adj. EPS 43%.

We achieved a key milestone in May with the successful launch of the first phase of the New York Metropolitan Transportation Authority's next-generation fare payment system.



This state-of-the-art system, known as One Metro New York (OMNY), features mobile and open payments via contactless bankcards and mobile wallets to improve customer convenience and service for travelers. We will leverage our success in New York throughout our upcoming large-scale transit system launches, which include Boston, Brisbane and the San Francisco Bay Area, all of which share a common core of technology and solutions to help drive Cubic's current and future growth and margin improvement. While our transportation team has much to celebrate, I am particularly pleased with the advancements of our mobile solutions, including our announcements to integrate contactless transit cards with Google Pay and Apple Pay. Cubic strives to be at the forefront of creating mobile transit payment solutions and next-generation apps, and we are confident these developments will provide the most efficient way for travelers to "pay and go."



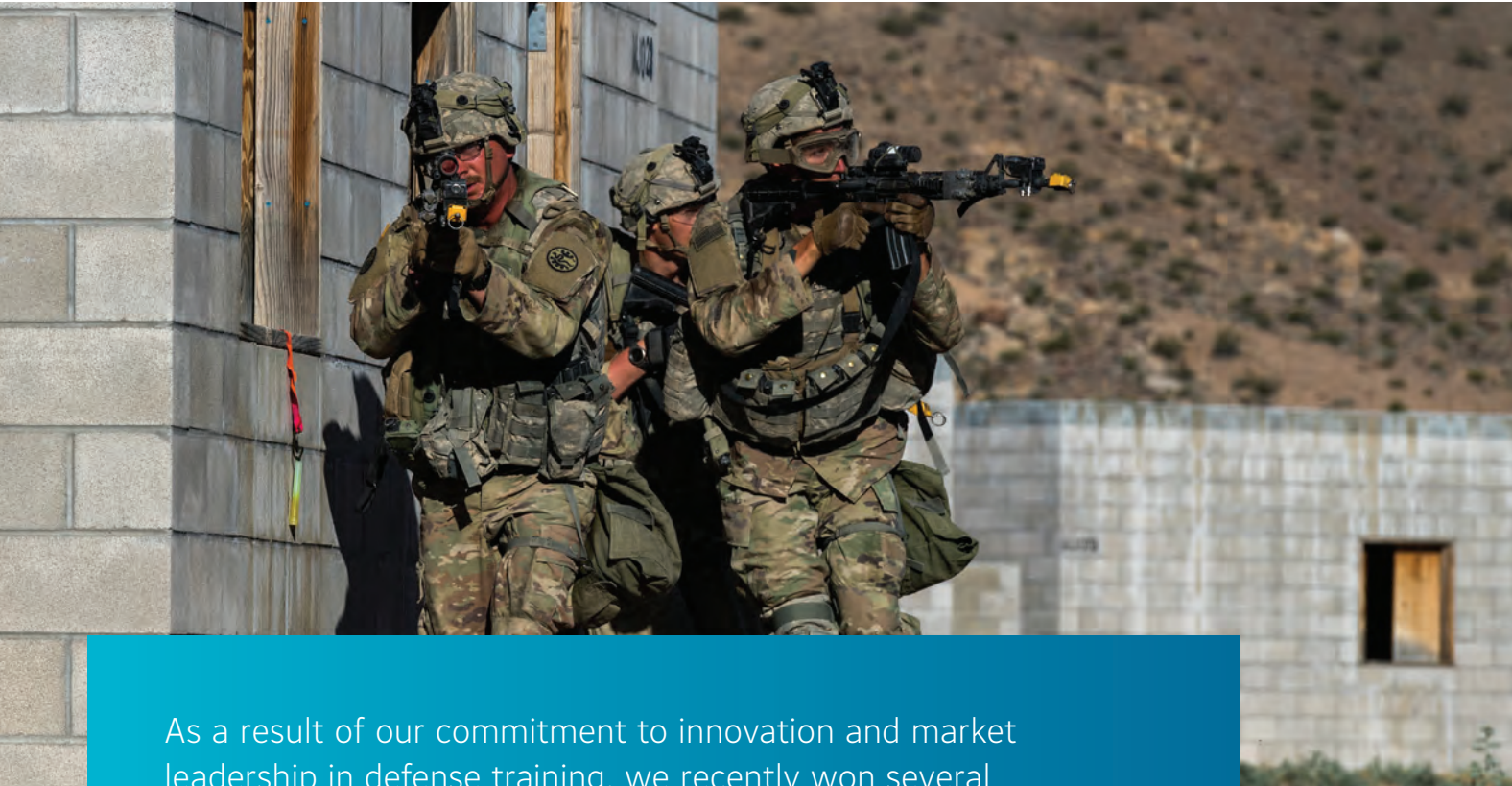
In addition to robust growth from delivery on our major transportation projects, our growth this year was also fueled by demand for our networked C4ISR* solutions, led by strong sales of GATR, the world's most portable, secure satellite antenna systems.

We made important business investments in airborne SATCOM and common datalink (CDL) communications in connection with several key platform wins including awards to provide the SATCOM and CDL communications for Boeing's MQ-25 program, and Video Data Link for the F-35 Lightning II Program. Our ongoing advancements with multi-link communication technology led to a network contract with the Air Force Research Lab to develop and demonstrate this solution. We won significant Command Post opportunities this year with the U.S. Army, U.S. Marine Corps and the U.S. Special Operations Command

positioning us for further growth in the Rugged Internet of Things (IoT) market. We continued to invest in and advance our ISR-as-a-Service priority and conducted a successful first flight and endurance testing of our ISR One Unmanned Air Vehicle. We also signed a cooperative research and development agreement with the U.S. Special Operations Command (USSOCOM) to mature this capability. While making significant organic investments to support future growth, our Cubic Mission Solutions (CMS) business increased Adjusted EBITDA by an impressive 31 percent year-over-year.

* Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance



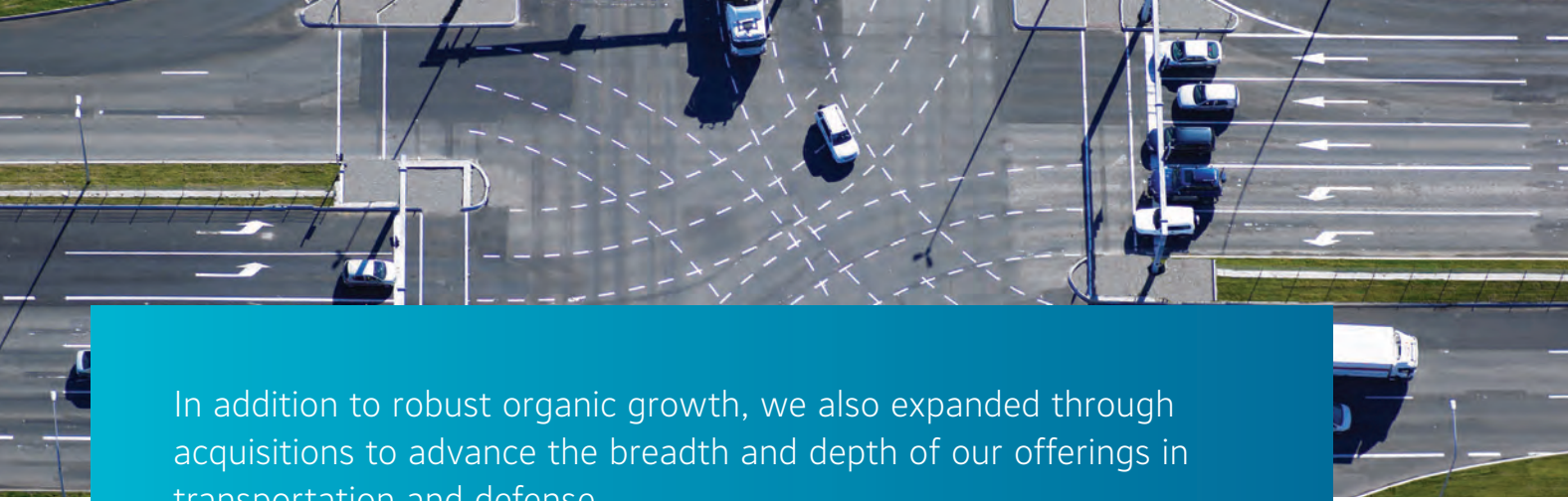


As a result of our commitment to innovation and market leadership in defense training, we recently won several demonstration contracts to support our customers in defining their future training requirements.

One such contract was for the Live Training Environment within the U.S. Army's training modernization program. We were selected for an innovative non-laser-based solution that provides significant levels of accuracy and ballistic modeling while taking into account the surrounding environment, enabling highly realistic and threat-representative operational environments – the first time an effective non-laser system has been

demonstrated and proven. Our solutions better train, equip and engage warfighters by replicating warfare domains, as well as creating realistic and immersive training experiences with Live, Virtual and Constructive (LVC) technologies. In the near-term, our performance in defense training will be supported by recently awarded international air and ground training contracts, coupled with disciplined cost management.





In addition to robust organic growth, we also expanded through acquisitions to advance the breadth and depth of our offerings in transportation and defense.

Our fiscal 2019 acquisitions included Trafficware, GRIDSMART and Nuvotronics. Two months after the fiscal year-end, we announced the acquisitions of two additional companies: Delerrok and Pixia.

SURFACE TRANSPORT MANAGEMENT

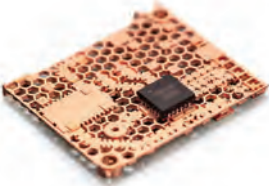
Acquisitions of Trafficware (October 2018) and GRIDSMART (January 2019)

In connection with our vision to be the leading provider of integrated payment and information systems and services for all forms of mobility, we acquired Trafficware and GRIDSMART, two leading providers of best-in-class intelligent intersection management technologies. We are pleased with our early wins with these businesses, including our first international cross-sell of GRIDSMART technology in Victoria, Australia. We believe that significant value can be created by integrating these technologies with our broader regional traffic and intelligent congestion management platforms. Ultimately, our goal is to reduce congestion by optimizing the transportation network and providing travelers with vital information, allowing them to navigate more efficiently across the city.

PROTECTED COMMUNICATIONS

Acquisition of Nuvotronics (March 2019)

Nuvotronics is a disruptive technology provider of advanced radio frequency devices that provide exceptional performance with leading size, weight and power parameters. This game-changing technology enables supply chain synergies within our protected communications business and positions Cubic to address high-priority, dual-use technology markets in space, electronic warfare, hypersonics and 5G communications.



C2ISR

Pixia (January 2020)

Pixia advances Cubic's battlefield cloud strategy of processing and disseminating data-rich, actionable intelligence at the edge of the battlefield in real-time. This acquisition will enhance Cubic's existing video dissemination network with access to Wide Area Motion Imagery (WAMI).

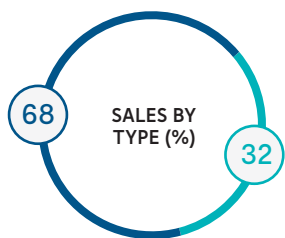


FARE COLLECTION-AS-A-SERVICE

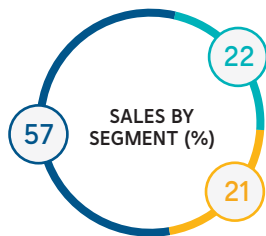
Delerrok (January 2020)

Delerrok expands our services to small and mid-market transportation customers with an innovative fare collection-as-a-service solution. Our industry expertise in fare collection and real-time information solutions and services, combined with Delerrok's innovative and scalable technology, will allow us to deliver a cost-effective and complete offering for small to mid-sized transit agencies.





- Product
- Service



- Cubic Transportation Systems
- Cubic Mission Solutions
- Cubic Global Defense

When Our Teams are Engaged, Energized & Enabled – We Win

We aim to empower our employees with the purpose, vision and resources necessary to attract and retain top talent and to create superior value for our customers. We have greatly improved our human resources systems and talent initiatives across a variety of programs related to employee recognition, employee development and total rewards. We focus on developing a highly engaged, “all-in” culture and we measure this through quarterly employee engagement surveys. Starting this year, our annual performance goals for leaders across all levels of the company now specify that we will hold ourselves accountable for performing in the top quartile for employee engagement. Another primary area of focus is our talent development initiatives which are designed to enable our teams and help us continuously build our talent pipeline.

We developed our Diversity and Inclusion strategic plan and are launching several initiatives focused on fostering inclusive and diverse environments to strengthen our company culture, generate innovative ideas and, in turn, best serve our customers. One such initiative is the establishment of employee resource groups (ERGs) to help foster an inclusive environment in which all employees are fully engaged, working together effectively to help each other maximize their potential and meet our business objectives. Championing and reinforcing a culture where Innovation is the DNA of the company – all the time, everywhere – activates us to connect diverse and global innovators to transform knowledge and technologies into new products and accelerate results. These cross-functional and inclusive teams create breakthroughs by successfully harnessing the talents of every individual.

Financial and Operating Highlights

CONTINUING OPERATIONS

(Amounts in thousands, except per share data and percentages)	2019	2018	2017
Bookings	\$ 1,002,320	\$ 2,779,782	\$ 1,234,013
Backlog	\$ 3,400,952	\$ 4,064,451	\$ 2,536,499
Sales	\$ 1,496,475	\$ 1,202,898	\$ 1,107,709
Sales growth %	24%	9%	
Research & development	\$ 50,132	\$ 52,398	\$ 52,652
Operating income	\$ 86,237	\$ 24,382	\$ 2,628
Net income (loss) per share, continuing operations attributable to Cubic	\$ 1.67	\$ 0.29	\$ (0.95)
Adjusted EBITDA ⁽¹⁾	\$ 146,594	\$ 104,561	\$ 87,470
Adjusted EBITDA growth %	40%	20%	
Adjusted earnings per share ⁽¹⁾	\$ 3.13	\$ 2.19	\$ 1.62
Adjusted earnings per share growth %	43%	35%	
Cash dividend per share	\$ 0.27	\$ 0.27	\$ 0.27
Long-term debt, inclusive of current portion	\$ 199,824	\$ 199,793	\$ 199,761

(1) See reconciliation of GAAP to non-GAAP financial measures tables in Management's Discussion and Analysis of Financial Condition and Results of Operations in the Form 10-K.

SALE PRICE OF

Common Shares and Dividends

		HIGH	LOW	DIVIDENDS		HIGH	LOW	DIVIDENDS	
Q1	2019	\$72.29	/\$50.85	—	Q2	2019	\$65.25	/\$53.09	\$0.14
	2018	\$63.00	/\$51.90	—		2018	\$65.65	/\$54.05	\$0.14
Q3	2019	\$64.48	/\$53.43	—	Q4	2019	\$73.00	/\$63.36	\$0.14
	2018	\$71.85	/\$59.80	—		2018	\$76.85	/\$65.90	\$0.14



Commitment to Innovation in the Digital World

Innovation sits at the heart of everything we do. The mission of Cubic Innovation is to accelerate solving our customers' toughest problems to create extraordinary value for the end-users, from their perspective, and to generate new revenue streams for Cubic. Cubic's Innovation Social System is both collaborative and dynamic – we are constantly evolving to integrate new technologies and implement better methodologies. Our cutting-edge research and development delivers robust solutions for our growing global customer base. We will continue to innovate and work relentlessly with our customers to meet their challenges of tomorrow and drive superior value for our customers, employees and shareholders.

Cubic's commitment to *Winning the Customer* requires us to master the forces of digital disruption as we serve our customers and our team members. Cloud computing, mobile devices and data-powered platforms are disrupting market landscapes and raising the bar on customer experience. Industry norms surrounding bidding processes, data rights and pricing models are being reinvented as customers embrace "as-a-service" offerings, digital platforms and data-powered solutions.

We remain focused on building technology-driven, market-leading businesses and our actions continue to be guided by Cubic's five key priorities: *Winning the Customer*, Building NextCity™, Building NextMission™, Building NextTraining™ and *Living One Cubic*. In the next evolution of our strategy, Cubic's digital pivot will bolster and enhance these growth initiatives by aiming to activate recurring revenue growth and margin expansion through strategic digital initiatives across Cubic.

Our digital pivot also prioritizes increased productivity and engagement of the global Cubic workforce through access to increased customer insights, new ways to work and cyber-resiliency across our workspace, so Cubes can do their best work. We will leverage and build upon our *One Cubic* enterprise modernization investments including SAP, unified Product Lifecycle Management and our experience with secure hybrid-cloud environments. Our digital talent development and recruitment priorities emphasize increased data and analytics expertise, entrepreneurship and agility.

Ultimately, we will transform our way of doing business by shifting, from:

- Programs and bespoke solutions to digital platforms.
- Lengthy development to rapid and agile release methods for our offerings.
- Data collection to data-driven decision-making for our customers and Cubic.
- Periodic and one-time delivery to recurring revenue streams.

In Closing

In fiscal year 2020, we are in a solid position to deliver another year of strong growth in Sales, Adjusted EBITDA and Adjusted earnings per share. We expect to reach approximately \$1.6 billion in Sales while further expanding margins.

We recently announced that Matt Cole, Senior Vice President and President of Cubic Transportation Systems (CTS), will be

leaving Cubic at the end of January to lead a technology business in a non-competing market. On behalf of Cubic, I would like to express my gratitude for Matt's significant contributions over the last 17 years. Matt has led and significantly advanced Cubic's NextCity™ vision, including four major contract wins in fiscal 2018 and key advancement in our strategic priorities related to mobile and Intelligent Transport Systems. We are fortunate that CTS is very well positioned for continued success by delivering innovative solutions that reduce urban congestion.

Laurent Eskenazi, who is currently Senior Vice President and Managing Director of CTS EMEA, will assume the responsibility of interim President of CTS, while we conduct a formal search process for a permanent replacement. Laurent brings extensive experience in ticketing and revenue collection globally and we are confident in his ability to serve in this interim role. Prior to Cubic, Laurent was Managing Director for Thales, responsible for the Revenue Collection Systems business across nine countries.

Thank you to my fellow Board members for your insight, guidance and active engagement in our strategic planning. In fiscal 2020, we have continued our active Board refreshment with two new directors: Denise Devine, a financial leader and innovator with a breadth of experience developing and commercializing technology platforms, and Carolyn Flowers, a seasoned executive and thought leader in the transportation

industry. I look forward to their leadership as we continue to build technology-driven, market-leading businesses with a strong focus on digitalization. We are grateful to John Warner who will retire from the Board at the 2020 Annual Meeting after more than a decade of dedicated service.

I will close by thanking our talented employees not only for their hard work and many achievements, but also for their impeccable ethics and moral conduct. As I reflect on my fifth year as Cubic's CEO, I am proud of what we have accomplished together.

To our shareholders, thank you for your confidence in Cubic. I remain very optimistic about the future as we continue to transform Cubic into a technology-driven, market-leading company.



Bradley H. Feldmann
Chairman, President and CEO
January 13, 2020

In Memory of Edwin A. Guiles

In June, we shared with great sadness the news of the passing of long-time Board member Edwin Guiles. Ed was a devoted family man and a passionate, thoughtful leader.

Ed provided guidance and oversight for Cubic since 2008, serving as lead independent director for the last two years in addition to having a director role for the California Water Service Group.

In 1972, Guiles joined San Diego Gas & Electric (SDG&E) where he held a variety of management roles before becoming Chairman and CEO of Sempra Energy's utilities SDG&E and Southern California Gas Company in 2000. During his tenure, he was responsible for overseeing the company's procurement, generation and transmission of electricity and natural gas; operation of the company's power plants; as well as the administration of its 20-percent ownership of the San Onofre Nuclear Power Plant. Guiles retired from Sempra Energy in 2009.

His tremendous business experience with strategy, people and financial management has helped transform Cubic into the company it is today. He was not only a colleague, but also a great friend and mentor. He will be deeply missed.



Fiscal 2019 Year in Review

2018

OCTOBER

- Cubic enters fiscal 2019 with the highest backlog in our history
- Acquired Trafficware, a leading provider of intelligent traffic solutions
- “Business App of the Year Award” from Mobile Breakthrough Awards for Cubic Transportation Systems’ Mobile Suite
- Deployed GATR SATCOM antenna to aid recovery efforts in communities impacted by Hurricane Michael



NOVEMBER

- Awarded the National Training and Simulation Training Award for Air Live, Virtual and Constructive system
- Cubic and Transport for New South Wales extend contactless payments to Sydney’s trains



DECEMBER

- Completed public offering with net proceeds of \$216m

2019

JANUARY

- Cubic Corporation Named a 2019 Best Employer for Diversity by Forbes Magazine
- Acquired GRIDSMART, a leading provider of intelligent traffic solutions
- DTECH, a product line under Cubic’s Rugged IoT offering, was selected by the U.S. Marine Corps to provide a data communications backbone for its Combat Data Network



FEBRUARY

- Awarded a contract from the Naval Air Systems Command (NAVAIR) to provide a Full Motion Video system for the U.S. Navy’s MH-60S Helicopter
- Demonstrated Multi-Domain Live, Virtual and Constructive analytics and visualization platform (SPEAR) at USAF Red Flag Exercise

MARCH

- Acquired Nuvotronics, a disruptive technology provider of microfabricated radio frequency products
- Delivered account-based ticketing pilot for Abellio ScotRail, bringing world-leading, pay-as-you-go One Account management technologies to U.K. rail



2019

APRIL

Cubic recognized on “America’s Best Large Employers” list by Forbes

Announced that Cubic is working with Apple to bring Apple Pay to U.S. transit systems

Awarded contract from National Transport Authority to deliver mobile ticketing system in Ireland

Awarded contract from New Zealand Ministry of Defence to Deliver Command and Control capabilities

Awarded a subcontract to provide wideband SATCOM and Common Data Link for Boeing’s MQ-25

MAY

Delivered next-generation fare payment system for the first phase of New York Metropolitan Transportation Authority’s OMNY fare payment system

JUNE

Awarded defense training contracts from customers in the Indo-Pacific region

Cubic’s Engage™ Air Combat Training System Miniature Encryptor receives NSA certification

Awarded a contract to deliver secure video data link solution for F-35 Lightning II program

Awarded Small Form Factor Radio prototype for the U.S. Air Force Data Link Enterprise

Upgraded LA County’s TAP retail network point of sale device with our Cubic Mobile for Merchants Android app

Acquired minority stake in Pixia, a commercial technology company that provides high-performance platform solutions to manage massive amounts of imagery data for U.S. Intelligence agencies and other customers

JULY

Cubic extends contactless payment to Sydney’s bus fleet, marking the final rollout of contactless payment technologies in Sydney’s Opal network

AUGUST

Cubic named a winner of Stevie® Awards in the 16th Annual International Business® Awards within four categories: Big Data Solution; Integrated Mobile Experience; Travel; and Best New Product or Service of the Year – Transportation

Launched open payments for Miami-Dade Department of Transportation and Public Works’ EASY Card transit fare system

SEPTEMBER

Cubic expands Trafficware Central Transportation Management System in Connecticut

Deployed GATR SATCOM antenna and rugged IoT solutions to aid Hurricane Dorian recovery efforts



OMNY



Living One Cubic

One Cubic is our ongoing priority to share resources across the company. By *Living One Cubic* we will be a unified, global team with shared values, policies, enabling-systems and technologies, working together toward common goals. Our *One Cubic* initiatives support Cubic's growth strategy, help us operate more efficiently and enable our teams to focus on the most important thing – *Winning the Customer*.



This year our teams at Cubic Mission Solutions and Cubic Global Defense collaborated with Cubic Transportation Systems and its customer, Network Rail, in a key redevelopment project. The objective of this project was to de-risk large-scale track and station renovations through real-time tracking and situational understanding of project asset locations to improve overall project delivery of their track renovation.



Cubic's new Tri-Reader 4 validator, which is the device at the forefront of our next-generation fare collection systems, is an innovation developed through engineering collaboration across all three businesses.

This year we launched the first phase of our Product Lifecycle Management (PLM) system. The biggest benefit of PLM for Cubic is the ability to share technical information and data amongst our engineering teams and the overall company, using disciplined workflows. This is expected to result in increased quality and cost-savings across the organization.



Decrease Urban Congestion

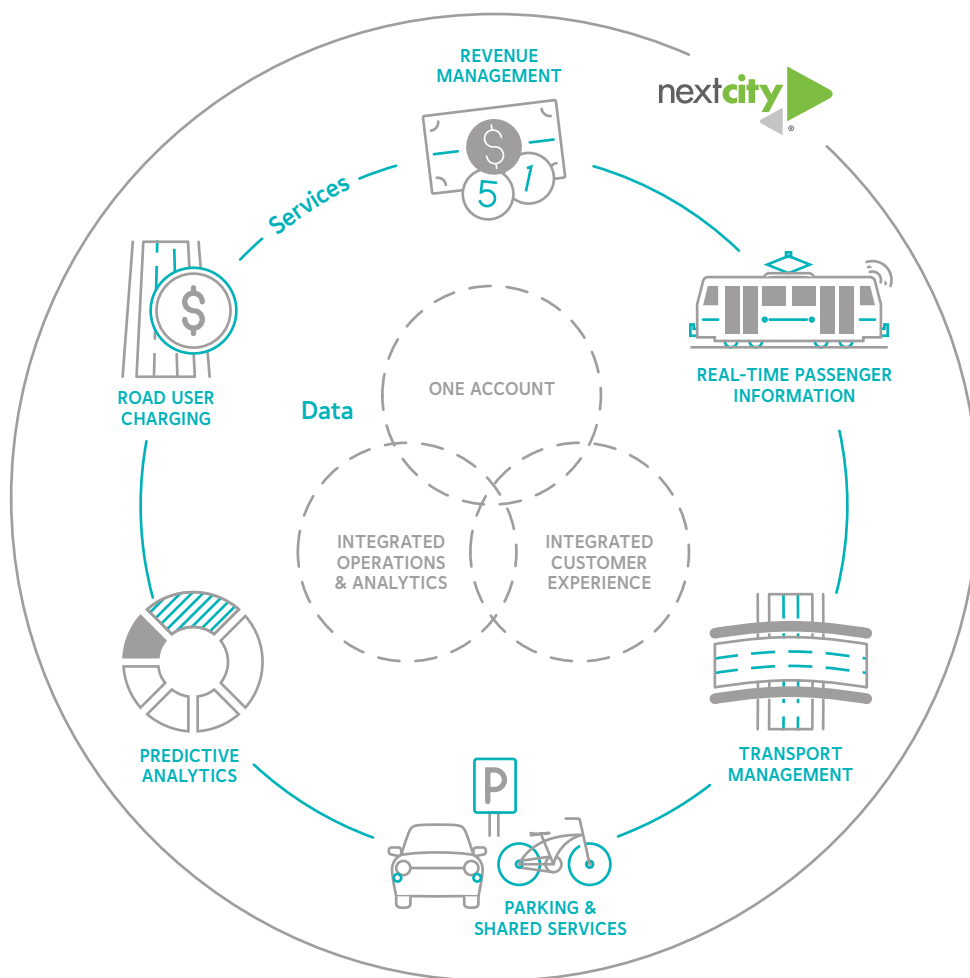
Growing urbanization and rising consumer expectations are driving innovation and demand for mobility management technologies.

Governments need new policies and solutions to manage congestion and respond to and absorb new technologies, such as autonomous and connected vehicles and shared mobility services. Travelers expect increasingly sophisticated and data-driven experiences integrating new technological trends.

We optimize journeys better than anybody else through integrated payment, information and management solutions. We deliver superior technologies to turn data into actionable

insights to maximize the use of new and existing transportation infrastructure and achieve wider policy goals.

NextCity™ is our vision and strategic roadmap to becoming the leader in providing integrated payment and information systems and services for all forms of mobility, not just mass transit. NextCity™ is centered on three core principles: integrated customer experience, One Account and integrated operations and analytics.

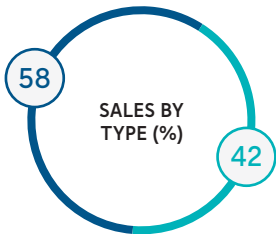


BACKLOG
\$2,953.3

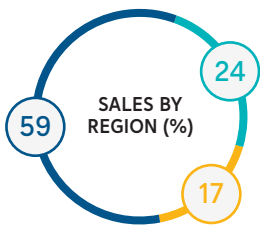
SALES
\$849.8

ADJ EBITDA
\$110.5

DOLLARS ARE IN MILLIONS



- Product
- Service



- U.S.
- Europe
- Asia Pacific



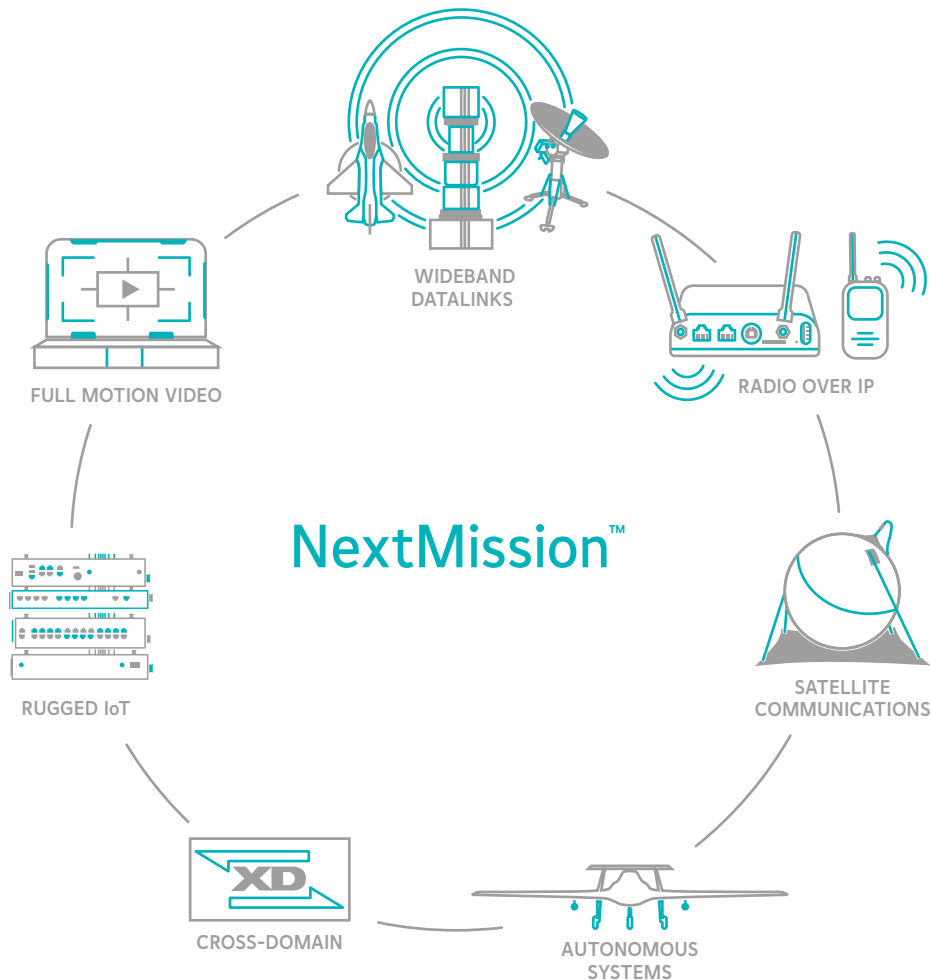
Increase Operational Effectiveness

Geopolitical global complexity is driving the need for robust, secure, mobile situational surveillance solutions at the edge.

As a leading C4ISR innovator, Cubic Mission Solutions provides integrated mission capabilities to solve our customers' hardest problems in protected communications, ruggedized tactical cloud computing, secure networking, autonomous systems and command, control, intelligence, surveillance and reconnaissance (C2ISR). Our solutions enable rapid and continuous situational understanding that provides the knowledge needed to make timely decisions to achieve desired effects for defense, intelligence, security and commercial missions.

Our powerful, differentiated solutions address our customers' most pressing needs:

- Higher performing – Greater bandwidth, resilient to threats, expeditionary, more capabilities.
- Lower SWaP-C – Significantly lower size, weight and power – cost-enabling additional platform capabilities at similar prices and higher margins.
- Low life-cycle costs – Interoperability, low-cost integration, fewer parts, higher reliability, industry-leading warranty and value-based pricing.
- Challenging environments – Harsh, austere environments, high-threat anti-access/area-denial (A2/AD) resilience.

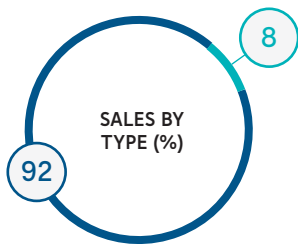


BACKLOG
\$103.7

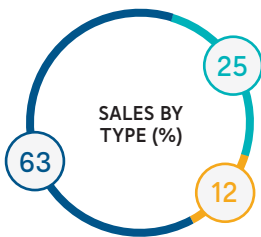
SALES
\$328.8

ADJ EBITDA
\$34.4

DOLLARS ARE IN
MILLIONS



- Product
- Service



- Protected Communications
- Rugged IoT
- C2ISR

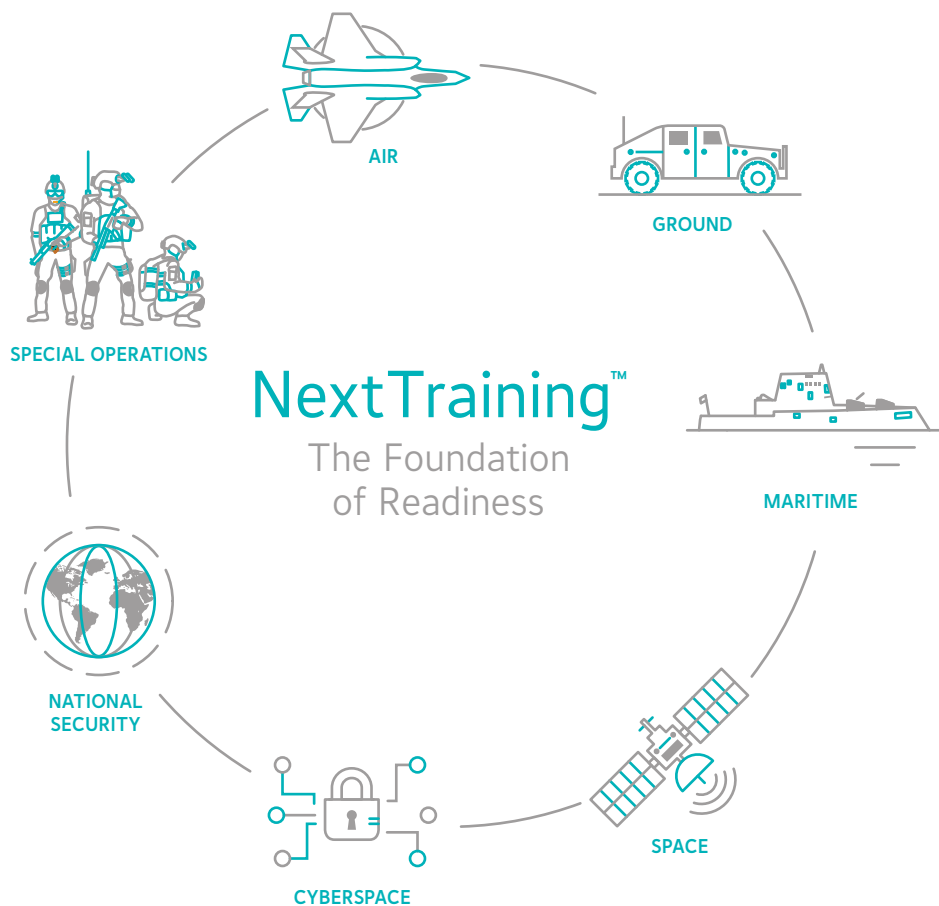


Increase Operational Readiness

The rise of near-peer adversaries demands multi-domain readiness enabled by Live, Virtual and Constructive solutions.

Accelerating readiness through training proficiency across the entire spectrum of conflict is a top priority of our customers. Emerging and evolving threats continue to drive the need for high fidelity, secure, multi-domain training solutions with electronic warfare, space and cyber effects. To achieve readiness for the future operational environment, there is increased demand for “leapfrog” technologies in the shift from Live to Live, Virtual and Constructive (LVC) training environments to allow warfighters to cost-effectively “train as they fight.”

With more than 30 years of experience, Cubic Global Defense continues to be an innovator of military training and a market leader in integrated defense training solutions. Our NextTraining™ portfolio delivers leading edge capabilities for the multi-domain training environment.

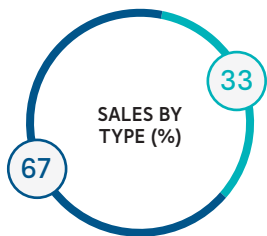


BACKLOG
\$344.0

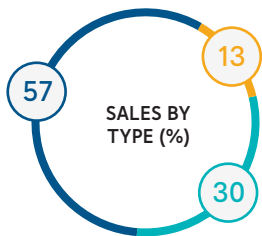
SALES
\$317.9

ADJ EBITDA
\$32.8

DOLLARS ARE IN
MILLIONS



- Product
- Service



- Ground Training
- Air Training
- Virtual Training





Corporate Social Responsibility (CSR)

At Cubic, we believe in making a positive difference in people's lives while creating long-term value for shareholders. Giving back to the community is one of the many ways our Cubes help cultivate a sense of well-being in our society. Our employees graciously donate their time to company and non-company-sponsored charitable organizations and are encouraged to find philanthropic causes through volunteering that they are passionate about.

Giving back to the community is one of the many ways our Cubes help cultivate a sense of well-being in our society.



Cubic also has long-standing relationships with a diverse group of local and national non-profit organizations and programs that are relevant to Cubic's humanitarian and social interests, focused in: Health and Human Services; Veterans; and Science, Technology, Engineering and Math (STEM).

Since 2005, Cubic's GATR satellite terminals have been deployed to support 15 natural disasters worldwide. The ease of deployment and extreme portability make them ideal systems for disaster recovery efforts. In September, after Hurricane Dorian struck the Bahamas, Cubic deployed our GATR satellite communication (SATCOM) antennas and DTECH rugged IoT solutions to restore connectivity within 72 hours of arrival at five different locations.

Across the globe, our UK Cubes spent a spring day cleaning up an abandoned field overrun by weeds and junk and turned it into a play space for local, underprivileged children; while in Australia, Cubic proudly aided nearby businesses, provided shelters from Cubic's deployable Combat Centers and rescued kids using Cubic's high axled IVECO trucks after



major flooding devastated Townsville. Additionally, Cubic made monetary donations to support the recovery efforts.

Additionally, Cubic's products and services further the company's commitment to sustainability. For example, Cubic's transportation products reduce congestion and disposable consumables in cities and improve travel efficiency for millions of customers. In our defense businesses, Cubic's Live, Virtual and Constructive (LVC) training programs reduce the need for on-battlefield training and our efforts to improve size, weight, power and cost for our products reduces power draws in order to efficiently support our customers' missions.

As Cubic continues to grow worldwide, we seek to minimize our carbon footprint, conserve natural resources, reduce waste and utilize safe materials in our products. In July 2019, we broke ground on redeveloping our corporate campus in San Diego. This project consolidates our two main San Diego campuses into *One Cubic* site, modernizing the buildings and facilities. It has been designed to LEED Silver Certification Standards and exemplifies Cubic's commitment to sustainability. Cubic's new buildings will incorporate water efficiency, energy efficiency, a 730kWh carport photovoltaic system, battery storage, electric vehicle charging stations, natural light accessibility, healthy air circulation, sustainable materials, and other efforts to promote employee well-being throughout the space. Additionally, in fiscal year 2020 we will conduct a full review of our CSR strategy and key priorities, while ensuring that we continue to operate to the highest ethical standards across our global operations.



In July 2019, we broke ground on redeveloping our corporate campus in San Diego.

Directors



Bradley H. Feldmann
*Chairman, President and
Chief Executive Officer*



Prithviraj Banerjee
Independent Director



Bruce G. Blakley
Independent Director



Maureen Breakiron-Evans
Independent Director



Denise L. Devine
Independent Director



Carolyn A. Flowers
Independent Director



Janice M. Hamby
Independent Director



David F. Melcher
Lead Independent Director



Steven J. Norris
Independent Director



John H. Warner, Jr., Ph.D.
Independent Director

Senior Officers



Bradley H. Feldmann
*Chairman, President and
Chief Executive Officer*



Anshooman Aga
*Executive Vice President,
Chief Financial Officer*



Matthew J. Cole
*Former Senior Vice President,
President of Cubic
Transportation Systems*



Michael Knowles
*Senior Vice President, President
of Cubic Global Defense*



Michael R. Twyman
*Senior Vice President, President
of Cubic Mission Solutions*



Kevin Eagen
*Senior Vice President,
Chief Digital Officer*



Hilary L. Hageman
*Senior Vice President,
General Counsel and
Corporate Secretary*



Mark A. Harrison
*Senior Vice President and
Chief Accounting Officer*



Grace G. Lee
*Senior Vice President,
Chief Human Resources and
Diversity Officer*

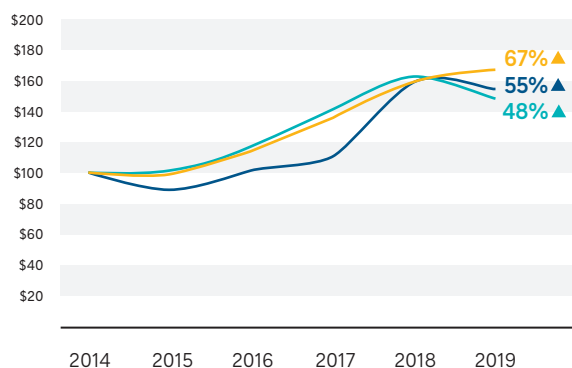


Rhys V. Williams
Vice President, Treasurer

Shareholder Information

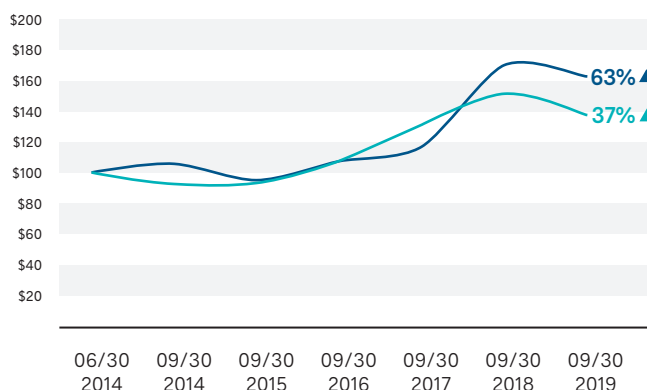
STOCK PERFORMANCE GRAPH (1)

(% RETURN)



63 MONTH CUMULATIVE TOTAL RETURN (2)

(% RETURN)



■ Cubic Corporation ■ S&P 500 ■ Russell 2000

(1) The graph assumes an investment of \$100 on October 1, 2014 and illustrates the cumulative total shareholder return over the last five years of Cubic's common stock, the S&P 500 Index, and the Russell 2000 Index. The Company has chosen the Russell 2000 as a comparative index of issuers with similar market capitalizations as there is not a published industry index or peer group that appropriately represents Cubic's unique and diverse sales mix. The return on investment represents the change in the fiscal year-end stock price plus reinvested dividends.

(2) The graph reflects the company's cumulative total shareholder return since Brad Feldmann became President and Chief Executive Officer of Cubic Corporation. The graph assumes an investment of \$100 on July 1, 2014 and illustrates the cumulative total shareholder return of Cubic Corporation and the Russell 2000 Index. The return on investment represents the change in the stock price plus reinvested dividends.

Annual Meeting

The 2020 Annual Meeting will be held in the main conference room at Cubic's headquarters.

Location

Cubic Corporation
9333 Balboa Avenue, San Diego, California 92123

Date and Time

February 17, 2020, 11:00 a.m. Pacific Time
Shareholders of record on December 19, 2019 are being sent formal notice of the meeting, together with the proxy form and statement.

Company News

Visit www.cubic.com for a link to Securities and Exchange Commission filings, quarterly earnings reports, and other company news. Additional investor information is available at the "Investor Relations" tab of the company's website, including:

- Corporate governance information
- Company ethics policies
- Contact information
- Annual Reports
- Committee Charters

Cubic will furnish its 2019 Annual Report to shareholders, its annual SEC form 10-K [excluding exhibits], and ethics policies without charge to shareholders upon their written request by mail or e-mail.

Stock Listing

New York Stock Exchange
Ticker symbol: CUB

Shareholder Services

Shareholders with questions on account balances, dividend checks, reinvestment, or direct deposit; address changes; lost or misplaced stock certificates; or other shareholder account matters may contact Cubic's stock transfer agent, registrar, and dividend disbursing agent:

TRANSFER AGENT
Broadridge Corporate Issuer Solutions, Inc.
P.O. Box 1342
Brentwood, NY 11717
1-877-830-4936
1-720-378-5591
shareholder@broadridge.com
www.shareholder.broadridge.com

Cubic Corporation

For shareholder questions on other matters related to Cubic, contact:

BY REGULAR MAIL Cubic Corporation Kirsten Nielsen Vice President Investor Relations 9333 Balboa Avenue San Diego, California 92123	BY E-MAIL investor.relations@cubic.com
	BY TELEPHONE Investor Line: (858) 505-2222

Auditors

Ernst & Young LLP

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

FORM 10-K

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

For the Fiscal Year Ended September 30, 2019

OR

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

For the transition period from ____ to ____

Commission File Number 001-08931

CUBIC CORPORATION

Exact Name of Registrant as Specified in its Charter

Delaware
State of Incorporation

95-1678055
IRS Employer Identification No.

**9333 Balboa Avenue
San Diego, California 92123
Telephone (858) 277-6780**

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

<u>Common Stock</u>	<u>CUB</u>	<u>New York Stock Exchange, Inc.</u>
Title of each class	Trading Symbol(s)	Name of exchange on which registered

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

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. Yes No

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

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

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

Emerging growth company

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

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

The aggregate market value of 22,695,571 shares of common stock held by non-affiliates of the registrant was: \$1,274,404,537, as of March 31, 2019, based on the closing stock price on that date. Shares of common stock held by each officer and director and by each person or group who owns 10% or more of the outstanding common stock have been excluded in that such persons or groups may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

Number of shares of common stock outstanding as of November 1, 2019 including shares held by affiliates is: 31,274,052 (after deducting 8,945,300 shares held as treasury stock).

DOCUMENTS INCORPORATED BY REFERENCE:

Portions of the Registrant's definitive Proxy Statement to be filed with the Securities and Exchange Commission pursuant to Regulation 14A in connection with its 2020 Annual Meeting of Shareholders are incorporated by reference into Part III of this Annual Report on Form 10-K. Such Proxy Statement will be filed with the Securities and Exchange Commission subsequent to the date hereof but not later than 120 days after registrant's fiscal year ended September 30, 2019.

CUBIC CORPORATION
ANNUAL REPORT ON FORM 10-K
For the Year Ended September 30, 2019

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PART I

Item 1. BUSINESS.

GENERAL

CUBIC CORPORATION (Cubic) is a technology-driven, market-leading global provider of innovative, mission-critical solutions that reduce congestion and increase operational readiness and effectiveness through increased situational understanding. Cubic designs, integrates and operates systems, products and services focused in the transportation, command, control, communication, computers, intelligence, surveillance and reconnaissance (C4ISR), and training markets. We offer integrated payment and information systems, expeditionary communications, cloud-based computing and intelligence delivery, as well as state-of-the-art training and readiness solutions. We believe that we have significant transportation and defense industry expertise which, combined with our innovative technology capabilities, contributes to our leading market positions and allows us to deepen and further expand each of our business segments in key markets. Headquartered in San Diego, California, we had approximately 6,200 employees working on 4 continents and in 19 countries as of September 30, 2019.

We operate in three reportable business segments: Cubic Transportation Systems (CTS), Cubic Mission Solutions (CMS), and Cubic Global Defense Systems (CGD). All of our business segments share a common mission of increasing situational awareness to create enhanced value for our customers worldwide through common technologies. Our transportation customers benefit from enhanced efficiency and reduced congestion, while our defense customers benefit from increased readiness and mission effectiveness.

CTS provided 57% of our sales in fiscal year 2019. CTS specializes in the design, development, production, installation, maintenance and operation of automated fare payment, traffic management and enforcement solutions, real-time information systems, and revenue management infrastructure and technologies for transportation agencies. As part of our turnkey solutions, CTS also provides these customers with a comprehensive suite of business process outsourcing (BPO) services and expertise, such as card and payment media management, central systems and application support, retail network management, customer call centers and financial clearing and settlement support. As transportation authorities seek to optimize their operations by outsourcing bundled systems and services, CTS has transformed itself from a provider of automated fare collection (AFC) systems into a systems integrator and services company focused on the intelligent transportation market.

CMS provided 22% of our sales in fiscal year 2019. CMS provides networked C4ISR capabilities for defense, intelligence, security and commercial missions. CMS' core competencies include protected wide-band communications for space, aircraft, Unmanned Aerial Vehicle (UAV), and terrestrial applications. It provides Rugged Internet of Things (IoT) cloud solutions, interoperability gateways, and artificial intelligence/machine learning (AI/ML) based Command and Control, intelligence, Surveillance and Reconnaissance (C2ISR) applications for video situational understanding. CMS is also building UAV systems to provide intelligence, surveillance and reconnaissance (ISR) -as-a-service.

CGD provided 21% of our sales in fiscal year 2019. CGD is a leading diversified supplier of live, virtual, constructive and game-based training solutions to the U.S. Department of Defense (DoD), other U.S. government agencies and allied nations. We offer a full range of training solutions for military and security forces. Our customized systems and services accelerate combat readiness in the air, on the ground and at sea while meeting the demands of evolving operations globally.

We have a broad customer base across our businesses, with approximately 63% of our fiscal year 2019 sales generated from U.S. federal, state and local governments. Approximately 2% of these sales were attributable to Foreign Military Sales, which are sales to allied foreign governments facilitated by the U.S. government. The remainder of our fiscal year 2019 sales were attributable to sales to foreign government and foreign municipal agencies. Sales to countries outside the U.S. amounted to 43%, 54% and 2% of the total sales of CTS, CGD and CMS, respectively, for fiscal year 2019. In fiscal year 2019, 68% of our total sales were derived from products, with services sales accounting for the remaining 32%.

In pursuing our business strategy, we routinely evaluate and selectively pursue acquisition opportunities that will expand or complement our existing products and services, or customer base, at attractive valuations. From fiscal 2015 through 2019 we acquired GATR, DTECH, TeraLogics, Vocality, MotionDSP, Shield Aviation, and Nuvotronics in connection with our strategic efforts to build and expand our C4ISR business. These businesses collectively provide wideband ultra-portable expeditionary satellite communication terminal solutions, secure video delivery, real time processing and enhancement, exploitation and dissemination of full motion video in the cloud, computer vision analytics, deployable secure computing tactical cloud and networking solutions equipment, and communication gateways. In 2017 we acquired Deltenna, a wireless infrastructure company that designs and manufactures cutting-edge integrated wireless products and enhances our tactical communication and training capabilities. In 2019 we acquired Trafficware and GRIDSMART in our CTS segment which, when combined with our existing transportation capabilities, enhance our ability to offer compelling solutions to reduce urban congestion using their intelligent, data-rich intersection management technology. Generally, our business acquisitions are dilutive to earnings in the short-term due to acquisition-related costs, integration costs, retention payments and often higher amortization of purchased intangibles in the early periods after acquisition and expenses related to earn-outs. However, we expect that each of these recent acquisitions will be accretive to earnings in the mid-term.

We are operating in an environment that is characterized by continuing economic pressures in the U.S. and globally. A significant component of our strategy in this environment is to focus on innovative solutions, program execution, improving the quality and predictability of the delivery of our products and services, and providing opportunities for customers to outsource services where we can provide a more effective solution. To the extent our business and contracts include operations in countries outside the U.S., other risks are introduced into our business, including changing economic conditions, fluctuations in relative currency rates, regulation by foreign countries, and the potential for deterioration of political relations.

We were incorporated in the State of California in 1949 and began operations in 1951. In 1984, we moved our corporate domicile to the State of Delaware. Our internet address is www.Cubic.com. The content on our website is available for information purposes only. It should not be relied upon for investment purposes, nor is it incorporated by reference into this Form 10-K. Our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports can be found on our internet website under the heading “Investor Relations”. We make these reports readily available free of charge in a reasonably practicable time after we electronically file these materials with the Securities and Exchange Commission (SEC).

BUSINESS SEGMENTS

Information regarding the amounts of revenue, operating profit and loss and identifiable assets attributable to each of our business segments, is set forth in Note 18 to the Consolidated Financial Statements for the year ended September 30, 2019. Additional information regarding the amounts of revenue and operating profit and loss attributable to major classes of products and services is set forth in “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” which follows in Item 7 of this Form 10-K.

Cubic Transportation Systems Segment

CTS is a systems integrator of payment and information technology and services for intelligent travel solutions. We deliver integrated systems for transportation and traffic management, delivering tools for travelers to choose the smartest and easiest way to travel and pay for their journeys, and enabling transportation authorities and agencies to manage demand across the entire transportation network — all in real time. We offer fare collection and revenue management devices, software, systems and multiagency, multimodal integration technologies, as well as a full suite of operational services that help agencies and operators efficiently collect fares and revenue, manage operations, reduce revenue leakage and make transportation more convenient. Our NextBus business provides transit passengers with accurate, real-time predictive arrival information about buses, subways and trains, and includes real-time management and dispatch tools that enable transit operators to effectively manage their systems. Our Intelligent Transport Management Solutions (ITMS) business has a portfolio of information-based solutions for transportation agency customers and provides traffic management systems technology, traffic and road enforcement and the maintenance of traffic signals, emergency equipment and other critical road and tunnel infrastructure. Our Trafficware and GRIDSMART businesses provide a

combination of hardware, software and sensor technology to optimize the flow of people and vehicles through intersections, corridors and urban grids. Through our Urban Insights business, we use big data and predictive analytics technology and a consulting model to help the transportation industry improve operations, reduce costs and better serve travelers.

CTS is comprised of approximately 3,100 employees working in major transportation markets worldwide. As an established partner with transportation authorities and operators, we have installed systems in over 40 markets and currently serve over 41 million users a day, which in total process approximately 14 billion revenue-related transactions per year, generating more than \$16 billion of revenue per year for such transportation authorities and operators. Products accounted for 58% of the segment's fiscal year 2019 sales, with services accounting for 42%.

We believe that we hold the leading market position in large-scale automated fare payment and revenue management systems and services for major metropolitan areas. We have implemented and, in many cases, operate, automated fare payment and revenue management systems for some of the world's largest transportation systems, examples include London (Oyster/Contactless Payment), the New York region (Metrocard/OMNY), the Chicago region (Ventra), the San Francisco Bay Area (Clipper), the Los Angeles region (TAP), the Washington D.C. region (Smartrip), the Vancouver region (Compass), the Sydney region (Opal Card) and the Brisbane region (Go Card). In fiscal 2018, we were awarded: a contract by the New York Metropolitan Transportation Authority (MTA) to replace the MetroCard system with a New Fare Payment System (NFPS) and now branded as OMNY; a contract by the Massachusetts Bay Transit Authority (MBTA) to provide the CharlieCard system with a next-generation fare payment system; a contract by the Queensland Department of Transportation & Main Roads to provide a next-generation ticketing system for the state of Queensland, Australia; and a contract by the San Francisco Bay Area's Metropolitan Transportation Commission (MTC) to deliver next-generation fare payment technology and operational services to the Clipper smart card system serving the Bay Area. The average lifecycle of our revenue management systems is approximately 10 years, providing long-term recurring sales visibility and opportunities for future replacements and upgrades.

We are currently designing and building major new systems in New York, Boston, Brisbane, and the San Francisco Bay Area. Profit margins during the design and build phase of major projects can be slightly lower than during the operate-and-maintain phase. This has in the past caused, and may in the future cause, swings in profitability from period to period. Also, during the operate-and-maintain phase, revenues and costs are typically more predictable.

Through our NextBus, ITMS, Trafficware and GRIDSMART businesses, we provide advanced transportation operational management capabilities and related services to hundreds of customers including organizations such as Transport for London, Transport Scotland, Highways England, Transport for Greater Manchester, Los Angeles Metro, San Francisco Muni and the Toronto Transit Commission. In August 2018, we were awarded an Intelligent Congestion Management Platform contract by Transport for New South Wales to provide Sydney, Australia with one of the world's most advanced transport management systems. The new system will enhance monitoring and management of the road network across New South Wales, coordinate the public transport network across all modes, improve management of clearways, planning of major events and improve incident clearance times, while providing real-time information and advice to the public about disruptions.

We also provide a modern tolling and road user charging alternative that uses state-of-the-art tools that are flexible and modular compared to the proprietary, legacy systems that the industry views as their only option.

Most of our sales in CTS for fiscal year 2019 were from fixed-price contracts. However, some of our service contracts provide for variable payments, in addition to the fixed payments, based on meeting certain service level requirements and, in some cases, based on system usage. Service level requirements are generally contingent upon factors that are under our control, while system usage payments are contingent upon factors that are generally not under our control, other than basic system availability. For certain CTS contracts for which we develop a system for a customer and subsequently operate and maintain the customer's system, the contract specifies that we will not be paid during system development, but rather we will be paid over the period that we operate and maintain the system.

Industry Overview

We define our addressable transportation market as multi-modal transportation revenue management systems (e.g. public transit fare collection, toll revenue collection, congestion charging), Real-Time Passenger Information and Intelligent Transportation Systems and services. We project the long-term growth for this market to be driven primarily by customer infrastructure expansion as well as technological refreshment and advancement which will lead to system replacements and upgrades. Together with additional opportunities that stem from our other businesses as well as entry into new geographies, we believe our overall addressable market to be in excess of \$16 billion. We believe industry experience, past performance, technological innovation and price are the key factors customers consider in awarding programs and such factors can serve as barriers to entry to potential competitors when coupled with scale and the upfront investments required for these programs.

Advances in communications, networking and security technologies are enabling interoperability of multiple modes of transportation within a single networked system, as well as interoperability of multiple transportation operators within a single networked system. As such, there is a growing trend for regional payment systems, usually built around a large agency and including neighboring operators, all sharing a common regional payment media. Recent procurements for open payment systems will further extend the acceptance of payment media from smart cards, to contactless bank cards and Near Field Communication (NFC) enabled smartphones.

There is also an emerging trend for other applications to be added to these regional systems to expand the utility of the payment media and back-office system, offering higher value and incentives to the end users, and lowering costs and creating new revenue streams through the integration of multi-modal and multi-operator systems for the regional system operators. As a result, these regional systems have created opportunities for new levels of systems support and services including customer support call centers and web support services, smart card production and distribution, financial clearing and settlement, retail merchant network management, transit benefit support, and software application support. In some cases, operators are choosing to outsource the ongoing operations and commercialization of these regional payment systems. This growing new market provides the opportunity to establish lasting relationships and grow revenues and profits over the long term.

Some customers have responded to the current market environment by seeking financing for their projects from the system supplier or from other sources. An example of this is our contract with the MBTA, which was awarded in early 2018 to develop, build, operate, and maintain a next-generation fare payment system in Boston. Under this contract, the MBTA required that we and a financing partner, John Laing, establish a public-private partnership (P3) in order to finance the design and build phase of the payment system. MBTA does not begin making payments until the ten-year operate and maintain phase of the contract, which will span from 2021 through 2031.

Backlog

Total backlog of CTS at September 30, 2019 and 2018 amounted to \$2.953 billion and \$3.545 billion, respectively. We expect that approximately \$729 million of the September 30, 2019 backlog will be converted into sales by September 30, 2020.

Cubic Mission Solutions Segment

CMS provides C4ISR capabilities for defense, intelligence, security and commercial missions. CMS' core competencies include protected wide-band communication for space, aircraft, UAV, and terrestrial applications. It provides Rugged IoT cloud solutions, interoperability gateways, and AI/ML based C2ISR applications for video situational understanding. CMS is also building UAV systems to provide ISR-as-a-service. With the acquisition of Nuvotronics, CMS will begin providing space and 5G solutions in the defense and commercial markets.

From fiscal 2015 through 2019, CMS acquired DTECH, GATR, TeraLogics, Vocality, MotionDSP, Shield Aviation, and Nuvotronics in connection with our strategic efforts to build and expand our C4ISR business. In fiscal 2019, CMS' organic growth was 55% and total growth including the Nuvotronics acquisition was 59%. CMS customers include the military services, principally the U.S. Army and U.S. Special Operations Command, various other government agencies

of the U.S. and other countries, and commercial customers. In fiscal 2019, U.S. government customers accounted for 96% of CMS' sales, international customers accounted for 2% of CMS' sales, and U.S. commercial and other customers accounted for 2% of CMS' sales. CMS is comprised of approximately 700 employees working primarily in the United States.

CMS is engaged in the research, design, development, manufacture, integration, and upgrade of C4ISR solutions for aircraft, UAVs, satellites, and related technologies. CMS' major programs include:

- US Army Contracting Command NJ SBIR IDIQ with a contract ceiling value of \$963 million.
- In fiscal 2019, CMS was awarded a total of \$135 million to deliver satellite communication systems supporting U.S. Army, Navy, Marines, and Air Force units. Of the \$135 million awarded, major program awards include the Army Transportable Tactical Command Communications (T2C2) full rate production, spares, engineering services for \$58 million, and Urgent Operational Needs (ONS) full rate production, spares, and training for \$70 million. These systems provide expeditionary satellite communication systems at up to 80% less Size, Weight, and Power (SWaP) than competing systems.
- US Special Operations Command SOF Deployable Node SBIR IDIQ with a contract ceiling value of \$175 million. In fiscal 2019, CMS was awarded \$32 million to provide satellite systems and Tactical Cloud/command post solutions.
- Defense Information Systems Agency Unified Video Dissemination System. In fiscal 2019, CMS received bookings totaling \$11 million to provide global, real-time video dissemination to enable the US Airborne ISR architecture.
- In fiscal 2019, CMS received initial awards on three weapon system franchise programs.
 - CMS was awarded a contract from the Naval Air Systems Command (NAVAIR) to provide a Full Motion Video (FMV) system for the U.S. Navy's MH-60S Multi-Mission Helicopter Program. The contract includes ability to purchase up to 80 systems and associated integration kits.
 - CMS was awarded an \$8.3 million development contract to provide wide-band SATCOM and line-of-sight communications for Boeing's US Navy MQ-25 program.
 - CMS was awarded a \$17.6 million contract to develop a video datalink system for the F-35 aircraft. The contract includes the ability to order up to 800 production systems, with potential to grow to the full F-35 buy, which is estimated to be 3,000 aircraft.

Industry Overview

We estimate that the Protected Communications, Ruggedized IoT and C2ISR markets within our CMS business have a total addressable market of approximately \$3 billion annually. We believe that our products and technologies address mission critical requirements such as integrated communications suites for UAVs, ships and the dismounted soldier, battlefield awareness, and secure and encrypted communications. We believe that these technologies will continue to experience strong demand as the U.S. military maintains a smaller, more agile force structure.

Backlog

Funded and total backlog of CMS at September 30, 2019 was \$104 million compared to \$77 million at September 30, 2018. We expect that approximately \$93 million of the September 30, 2019 backlog will be converted into sales by September 30, 2020.

Cubic Global Defense Segment

CGD is a market leader in live, virtual, constructive (LVC) and game-based training solutions to the DoD, other U.S. government agencies and allied nations. We design and manufacture realistic, high-fidelity air, ground, and surface instrumentation, visualization and data analytic systems that support LVC training in high fidelity environments. Our customized systems and services accelerate combat readiness in the air, on the ground and at sea while meeting the demands of evolving operations globally.

Training systems provided by CGD include customized military range instrumentation systems, multi-domain LVC instrumentation, laser and non-laser based ground training systems, live-fire range design, virtual simulation systems, game-based synthetic training environments and advanced data visualization and analytics solutions.

CGD's training systems are used to effectively deliver a range of training objectives, such as training for fighter pilots, ground troops, infantry, armored vehicles, ship operation and maintenance personnel, cyber warriors, and special operations forces. These systems deliver high fidelity threat representative environments that are used to create stressful scenarios and weapons' effects, collect event and tactical performance data, record simulated engagements and tactical actions, and deliver after actions reviews to evaluate individual and collective training effectiveness.

CGD also provides software and services that take the data and information generated in instrumented training ranges and provides advanced data visualization and data analytics that allow for training, proficiency and readiness assessment.

Our products and systems help our customers to retain operational, tactical, and technological superiority with cost-effective solutions. We also provide ongoing support services for systems we have built for several of our international customers. Our training business portfolio is currently organized into air training, ground training, and synthetic/digital solutions. CGD is comprised of approximately 1,300 employees working in 13 nations on 4 continents providing training systems to the DoD and allied nations.

Our established international footprint in 35 allied nations is a key element of our strategy. Our global footprint helps to mitigate possible shifts or downturns in DoD spending. Sales to international customers of CGD accounted for 51% of sales in 2019. In addition, new innovative technologies such as LVC training systems and potential expansion into adjacent markets provides us the means to add scale to our business. Strategically, we believe CGD is very well positioned to lead the increasing trend to fully integrated solutions that connect LVC and game-based training in multi-domain environments.

Fixed-price contracts accounted for 92% of CGD's revenue for fiscal year 2019. Fixed-price contracts create both the risk of cost growth and the opportunity to increase margins if we are able to reduce our costs.

Air Training Solutions

In air training, Cubic was the initial developer and supplier of Air Combat Maneuvering Instrumentation (ACMI) capability during the Vietnam War. The ACMI product line has progressed through five generations of technologies and capabilities. The latest generation, the P5 Combat Training System, provides advanced air combat training capability to the U.S. Air Force, Navy and Marine Corps, as well as allied nations which has solidified Cubic's global market leading position. We have been awarded a series of contracts to produce and enhance ACMI for the F-35 Joint Strike Fighter. We have also developed a broad international base for our ACMI product, particularly in Asia Pacific and the Middle East. In addition to procuring the ACMI training system, many nations also rely on Cubic for on-site operations and maintenance support. We are constantly evolving our air combat training solutions to achieve full-spectrum LVC training systems. Cubic was the industry system integrator for the U.S. Air Force Research Lab's Secure LVC Advanced Training Environment (SLATE) and Advanced Technology Demonstration (ATD). SLATE ATD validated production ready LVC with National Security Agency certified multi-level encryption and a newly developed 5th generation advanced training waveform. The LVC system was verified operationally in both tethered and untethered LVC training scenarios. SLATE is a combination of protocols, standards, hardware and software that are joint, interoperable and supports advanced multi-domain warfighting concepts.

Ground Training Solutions

CGD is a leading provider of realistic, easy-to-use, high-fidelity, reliable, and cost-effective tactical engagement simulation systems that minimize user set-up time and increase training effectiveness. Our leadership role in instrumented training was established during the 1990s when Cubic provided turnkey systems for U.S. Army training centers including the Joint Readiness Training Center (JRTC) at Fort Polk, Louisiana, and the Combat Maneuver Training Center (CMTTC) at Hohenfels, Germany, now known as the Joint Multinational Readiness Center. Since the completion of these original contracts, we have significantly expanded our market footprint with the sale of fixed, mobile

and urban operation training centers to uniformed military and security forces in the United States and allied nations around the world. Our ground combat training systems operate at over 90 combat training centers (CTCs) worldwide. Our laser-based tactical engagement simulation systems, widely known as Multiple Integrated Laser Engagement Systems (MILES), are used to enable realistic training without live ammunition. Cubic MILES are being utilized by multiple branches of the U.S. Armed Services, as well as the Department of Energy, and numerous international government customers. We have increased our focus on joint training solutions and those that can operate simultaneously in multiple simulation environments including live, virtual, constructive and gaming domains. The business continues to deliver innovative ground-based training solutions with the introduction of non-laser based solutions and synthetic overlay to live training environments

Synthetic/Digital Solutions

The Littoral Combat Ship (LCS) courseware contract win in 2013 has opened a large new market for CGD. A key discriminator in the LCS proposal was the use of a high-fidelity gaming engine that allows avatars to instruct students at their own pace in an immersive environment based on realistic graphics. By integrating instructional material into a gaming environment, we have dramatically reduced instructor costs and provided a platform that is ideal for embedded training. These technologies are easily transferrable to different training domains and subject matters. The experiential learning environment can be augmented with intelligent tutoring and assessment tools increasing the value of this approach. The acquisition of Intific in 2014 brought enhanced software, data visualization and data analytics capabilities that provide in depth training analysis for customers.

As the blend of LVC training creates broader higher fidelity training environments the data generated creates significant opportunity to capitalize on our advanced synthetic and digital capabilities to deliver greater insight into customer training effectiveness.

Industry Overview

CGD's market is relatively large and stable. According to the 2018 Global Military Simulation and Virtual Training Market report, the value of the global military simulation and virtual training programs market was \$10.2 billion in 2018.

Backlog

Funded and total backlog of CGD at September 30, 2019 was \$344 million compared to \$443 million at September 30, 2018. We expect that approximately \$183 million of the September 30, 2019 backlog will be converted into sales by September 30, 2020.

Additional Defense Industry Considerations

The U.S. government continues to focus on discretionary spending, tax, and other initiatives to control spending, debt and the deficit. More than 40 years since the Budget Act created the existing budget framework. Congress has rarely followed the required process and deadlines. Regular order has not been fully followed since fiscal year 1995—the last time Congress passed a budget conference agreement followed by all 12 appropriations bills before the beginning of the new fiscal year. The trend over the past decades has been reliance on continuing resolutions.

Since 2011, we've experienced a constrained fiscal environment imposed by the Budget Control Act (BCA) and various ensuing Bipartisan Budget Acts (BBA). Budgetary considerations have put downward pressure on growth in the defense industry from 2011-2017 but under the BBA of 2018, defense budgets in 2018 and 2019 have shown substantial increases from previous years.

In 2019, we were encouraged by the President's proposed near-record defense spending of \$750 billion for fiscal year 2020 and the U.S. Congress' passage of a new BBA 2019 covering fiscal years 2020 and 2021 officially ending the threat of sequestration under the BCA. Unfortunately, even with the passage of BBA 2019, funding uncertainty endures as Congress has once again failed to pass all 12 appropriations bills for fiscal year 2020 and has relied on a continuing

resolution to temporarily fund the government and avoid a government shutdown. Nonetheless, beyond 2021, the President's administration and Congress will likely continue to debate the size and expected growth of the U.S. federal budget as well as the defense budget over the next few years and balance decisions regarding defense, homeland security, and other federal spending priorities. If enacted, significant reductions in defense spending levels could have a materially adverse effect on our consolidated financial position. Regardless of the political outcomes and budgetary constraints, we believe that much of our business is well positioned in the DoD's areas of focus for defense spending designed to help the DoD meet its critical future capability requirements for protecting U.S. security and the security of our allies in the years to come.

Regarding international markets, an important revenue source, global defense expenditures were again on the rise in 2018 reaching their highest level since the end of the Cold War at approximately \$1.67 trillion in 2018. Defense spending increased by approximately 3.3% in 2018 - the fastest rate of growth in a decade - driven by the largest year-on-year increase in U.S. defense spending since 2008. The increase in defense spending reflects improved global economic conditions coupled with continuing instability in several key regions.

COMPETITIVE ENVIRONMENT

Our businesses operate in highly competitive markets. CTS is one of several companies specializing in the transportation systems and services market. Our competitors in various market segments include among others Accenture, Conduent, Econolite, IBM, Indra, Init, Intelight, Kapsch, Kimley-Horn, McCain, Flowbird, Roper Technologies, Scheidt & Bachmann, Siemens, Thales, Trapeze and Vix. For large tenders, our competitors may form consortiums that could include telecommunications companies, financial institutions and consulting companies in addition to the companies noted above. These procurement activities are very competitive and require that we have highly skilled and experienced technical personnel to compete. We believe that our competitive advantages include intermodal and interagency regional integration expertise, technical skills, innovation, past contract performance, systems quality and reliability, experience in the industry and long-term customer relationships.

CMS competes with numerous companies, large and small, including Boeing, General Dynamics, L3Harris, Lockheed Martin, and Northrop Grumman, as well as other smaller companies. In many cases, we have also teamed with several of these companies, in both prime and subcontractor roles, on specific bid opportunities.

CGD competes with many of the same companies as CMS including Boeing, General Dynamics, L3 Harris, Lockheed Martin, Northrop Grumman and Saab Training Systems, as well as other smaller companies. Similarly to CMS, in many cases we have also teamed with several of these companies, in both prime and subcontractor roles, on specific bid opportunities.

While we are generally smaller than our principal competitors, we believe our competitive advantages include an outstanding record of past performance, strong incumbent relationships, the ability to control operating costs and rapidly focus technology and innovation to solve customer problems.

BUSINESS STRATEGY

Goal 2020 reflects our vision of Cubic's continued growth path to help generate superior returns for our shareholders. We believe our growth will be fueled by continually innovating in our markets to build leadership positions, accelerated with strategic acquisitions, led by our talented and dedicated employees. We will enhance value creation by building technology-driven market-leading businesses and providing our global customers with mission-critical solutions that reduce transportation congestion and increase military readiness and effectiveness. To achieve Goal 2020, we are focused on our winning proposition and the five key priorities of *Winning the Customer*, Building NextCity Globally, Building Next-Mission Globally, Building NextTraining Globally and Living *One Cubic*.

Our strategy remains guided by our objective of *Winning the Customer* to create market-leading positions, delivering superior operational performance, developing customer-centric innovations and investing our capital and talent to enhance our market-leading businesses. We will accelerate our growth by being innovative, responsive, connected and,

ultimately, indispensable to our customers. We will be good listeners, understand our customers' perspective and find solutions together.

In CTS, we have developed our NextCity vision for the future of transportation. We are repositioning ourselves from being a leading provider of mass transit fare collection systems to be a leading provider of integrated payment and information systems across all modes of transportation. In Building NextCity Globally, we will create transportation payment and information solutions in cities to help our customers increase efficiency and reduce congestion. We will focus on integrating transportation payments more efficiently and leveraging transportation data more effectively than anyone else. We will endeavor to increase our product reusability, innovate faster, use our superior global footprint to our advantage, and have a competitive cost structure. We will continue to grow our portfolio beyond fare collection to include industries such as tolling/road user charging, analytics and traffic management and design our solutions to scale to all cities, large and small.

In CMS, over the past three years we acquired DTECH, GATR, TeraLogics, Deltenna, Motion DSP, Shield Aviation and Nuvotronics in connection with our strategic efforts to build and expand our NextMission Strategy. The CMS business unit combines and integrates our C4ISR and secure communications operations. In building C4ISR globally, we will become a leader in Communications-on-the-Move, Joint Aerial Layer Network and C2ISR cloud transformation markets. We will provide superb technology-leading mission solutions at optimal SWaP (size, weight, and power) for our global customers' most challenging problems at market-based prices.

In CGD, we have developed our vision for NextTraining. At its core, NextTraining will identify and quickly integrate highly valued, cutting-edge technical solutions that accelerate training proficiency for our customers. We will assist our customers in defining future training requirements while leveraging market conditions to generate competitive differentiation and cost synergies. In Building NextTraining Globally, we will provide superior value, cost effective all-domain readiness solutions built on an integrated, adaptable architecture to enable performance-based customer training solutions designed to exacting operational readiness standards.

Lastly, Goal 2020 is supported by our Living *One Cubic* key priority of sharing resources across the company to help achieve superior talent management, absolute customer focus, innovation, collaboration, cost-effective enterprise systems and impeccable ethics.

As part of our strategic planning process, we routinely conduct portfolio reviews and are reshaping our portfolio to help allow us to grow sales, improve profitability and deliver attractive returns. Our acquisition approach remains focused on opportunities that align with our strategy to build technology-driven, market-leading businesses in NextCity, NextMission and NextTraining.

Long-Term Customer Relationships

We seek to build leadership positions in our core markets by ensuring all our businesses are customer focused, thereby maintaining our long-term relationships with our customers. The length of relationship with many of our customers exceeds 30 years and further supports our industry-wide leadership and technological capabilities. As a result of

maintaining a high level of performance, we continue to provide a combination of services and upgrades for our long-term customers. Such long-term relationships include the following:

Segment & Business Area	Customer Relationships
CTS - Automated Fare Collection	<ul style="list-style-type: none"> • Since 1972, provided ticket encoding and vending technology to the San Francisco Bay Area's MTC, which includes Bay Area Rapid Transit (BART). We are in process of delivering next-generation fare payment technology and operational services to the Clipper smart card system • Since 1985, provided the London Underground (the Tube) with new fare gates and standardized ticketing machines.
CGD - Air Training	<ul style="list-style-type: none"> • In 1973, supplied first "Top Gun" Air Combat Maneuvering Instrumentation system for the Marine Corps Air Station at Yuma, AZ.
CGD - Ground Training	<ul style="list-style-type: none"> • In 1990, pioneered the world's first turnkey ground combat-instrumentation system at Hohenfels, Germany for the U.S. Army.
CMS - Expeditionary Satellite Communication Terminals	<ul style="list-style-type: none"> • In 2008, GATR's technology was made an evolutionary component of the U.S. Special Operations Command Deployable Node family of SATCOM terminals.

Strategic Innovation-focused Investment of Capital

We target markets that have the potential for above-average growth and profit margins where domain expertise, innovation, technical competency and contracting dynamics can help to create meaningful barriers to entry. We will strategically reinvest our cash in key program captures, internal research and development (R&D), and acquisitions to target priority markets and help ensure market leading positions to drive long-term shareholder return.

We are committed to using innovation and technology to address our customers' most pressing problems and demanding requirements. We have made meaningful and recognized contributions to technological advancements within our industries.

The cost of company-sponsored R&D activities included in our Consolidated Statements of Operations are as follows (in thousands):

	Years Ended September 30,		
	2019	2018	2017
Company-Sponsored Research and Development Expense:			
Cubic Transportation Systems	\$ 10,948	\$ 13,394	\$ 26,308
Cubic Mission Solutions	27,111	22,745	11,949
Cubic Global Defense	10,573	16,259	14,395
Unallocated corporate expenses	1,500	—	—
Total company-sponsored research and development expense	<u>\$ 50,132</u>	<u>\$ 52,398</u>	<u>\$ 52,652</u>

In addition to internally funded R&D, a significant portion of our new product development occurs in conjunction with the performance of work on our contracts. These costs are included in cost of sales in our Consolidated Statements of Operations as they are directly related to contract performance. The cost of contract R&D activities included in our cost of sales are as follows (in thousands):

	Years Ended September 30,		
	2019	2018	2017
Cost of Contract Research and Development Activities:			
Cubic Transportation Systems	\$ 39,640	\$ 28,967	\$ 26,173
Cubic Mission Solutions	11,568	8,999	6,182
Cubic Global Defense	27,232	31,625	35,599
Total cost of contract research and development activities	<u>\$ 78,440</u>	<u>\$ 69,591</u>	<u>\$ 67,954</u>

Pursue Strategic Acquisitions

We have developed an acquisition strategy that focuses our technology-driven, market-leading business strategy. We are focused on finding attractive acquisitions that enhance our market positions through technology, provide expansion into complementary growth markets and ensure sustainable long-term profitability and return on invested capital. Over the last several years, we have completed multiple acquisitions that have diversified our customer base and expanded our systems and services offerings. For example, from fiscal 2015 through fiscal 2019 we acquired GATR, DTECH, TeraLogics, Vocality, MotionDSP, Shield Aviation and Nuvotronics in connection with our strategic efforts to build and expand our C4ISR business. In fiscal 2019 we acquired GRIDSMART and Trafficware to complement our integrated traffic solutions business.

Enhance Services Business

We view services tied to our technologies as a core element of our business and we are working to expand our service offerings and customer base. In aggregate, approximately 32% of our sales in fiscal year 2019, were from service-related work. We believe that a strong base of service work helps to consistently generate profits and smooth the sales fluctuations inherent in systems work.

At CTS, we deliver a number of customer services from key service facilities for multiple transportation authorities worldwide. Due to the technical complexities of operating payment systems, transportation agencies are turning to their system suppliers for IT services and other operational and maintenance services, such as regional settlement, card management and customer support services that would otherwise be performed by the agencies. As a result, we have transitioned from a supplier to a systems integration and services company providing a suite of turnkey outsourced services for more than 20 transit authorities and cities worldwide. Today, CTS delivers a wide range of services from customer support to financial management and technical support at operation centers across the United States, Canada, United Kingdom and Australia.

At CGD, we primarily provide services for products for which we are the Original Equipment Manufacturer. Our services on OEM equipment drive value for our customers and allow us to earn higher margins. Compared to the U.S. market where small business requirements, omnibus contracts and local preferences create acquisition challenges, we believe the international market offers greater opportunities to bundle and negotiate multi-year, turnkey contracts. We believe these long-term contracts reinforce CGD's competitive posture and enable us to provide enhanced services through regular customer contact and increased visibility of product performance and reliability.

Expand International Footprint

We have developed a large global presence in our business segments. CTS has delivered over 500 projects in 40 major markets on 4 continents to date. Approximately 43% of the CTS segment's fiscal year 2019 sales were attributable to international customers. In fiscal 2018, CTS was selected by the Queensland Department of Transport & Main Roads (DTMR) in Australia to design, build and operate a new ticketing system for the state and signed a contract with

Transport for New South Wales in Australia to build an Intelligent Congestion Management Platform. In 2017, CTS signed a contract with Transport for London (TfL) for a three-year extension of services to London's Oyster and contactless ticketing system to extend the contract for these services from 2022 to 2025.

CGD has delivered systems in more than 35 allied nations. In fiscal year 2019, approximately 51% of CGD sales were to allied foreign governments and an additional 5% of CGD sales were to projects funded by the U.S. government pursuant to Foreign Military Sales and Foreign Military Financing arrangements. We have expanded our presence in the United Kingdom, Canada, and the Middle-East in response to growing opportunities. These complement a well-established and sound presence in Singapore, Australia, New Zealand, and Italy.

Our CMS products are designed to address the needs of numerous international defense and civil applications. Our ISR data links are used by a number of international allied forces. In early fiscal 2018, CMS was awarded an order to provide satellite communication solutions for the New Zealand Defence Force (NZDF) under which we are supplying inflatable satellite antennas with supporting hardware and equipment training for the NZDF Network Enabled Army program. In addition, in late fiscal 2018 Australia's Ministry of Defense procured CMS Atlas Strike kits that provide communications capability and situational awareness for Australia's Joint Tactical Air Controllers. In fiscal 2019, CMS was awarded a contract from the New Zealand Ministry of Defence to deliver Command and Control (C2) capabilities to support the Network Enabled Army (NEA) program's Tactical Network (TNet) project. The NEA program is a transformational program to be delivered in four tranches over 12 years and will benefit the New Zealand Army's Land Forces and Special Operations Forces. The TNet contract is a framework agreement allowing multiple awards over the life of the contract to address current, emerging and future requirements through support of the four tranches.

EXECUTIVE OFFICERS

The executive officers of Cubic as of November 1, 2019 are as follows:

Bradley H. Feldmann, 58. Mr. Feldmann is Chairman of the Board of Directors, Chief Executive Officer (CEO), and President of Cubic. He was appointed to the Board of Directors in May 2014 and was elected as Chairman of the Board in February 2018. He has served as CEO of Cubic since July 2014, and as President since January 2013. He also served as Chief Operating Officer of Cubic from January 2013 to July 2014. Prior to that, he was President of the companies comprising the Cubic Defense Systems segment, a role he assumed in 2008. He previously worked at Cubic Defense Systems from 1989 to 1999. Prior to rejoining Cubic in 2008, Mr. Feldmann held senior leadership positions at OMNIPLEX World Services Corporation and ManTech International. He is a Board Leadership Fellow of the National Association of Corporate Directors, a member of the Aerospace Industries Association Board of Governors and serves on its Executive Committee and is a member of the Board of the National Defense Industrial Association, and serves on their Executive Committee and as Chair of the Finance Committee. He also serves on the Board of UrbanLife, a non-profit organization, as Chair of the Finance Committee.

Anshooman Aga, 44. Mr. Aga is Executive Vice President and Chief Financial Officer (CFO) of Cubic. He joined Cubic in July 2017 as Executive Vice President and assumed the role of CFO in October 2017. In this role, Mr. Aga is responsible for all aspects of the Company's financial strategies, processes and operations, including corporate development, risk management, investor relations, real estate, and global manufacturing and procurement. Prior to joining Cubic, Mr. Aga served at AECOM since June 2015, where he was senior vice president and CFO of their multi-billion-dollar Design and Consulting Services business in the Americas. He also held a series of financial leadership positions at Siemens from July 2006 to May 2015, including CFO of the Energy Automation business based in Nuremberg, Germany, in addition to similar CFO roles for Siemen's Rail Electrification and TurboCare business units.

Matthew. J. Cole, 40. Mr. Cole is Senior Vice President of Cubic and President of the companies comprising the CTS segment, a position he has held since October 2015. Prior to that he held a variety of increasingly responsible roles at CTS since he joined in 2003, most recently serving as Executive Vice President/Deputy for Strategy, Business Development and Diversification and in key roles worldwide including in Australia and the U.K. Before joining Cubic, Mr. Cole held various financial positions with large public and private companies such as British Airways, Schlumberger, First Choice and Endemol.

Hilary L. Hageman, 51. Hilary Hageman is Senior Vice President, General Counsel and Corporate Secretary for Cubic, a position she has held since October 2019. She is responsible for managing the legal department as well as overseeing ethics, contracts, global trade compliance and security. Ms. Hageman is a business leader with extensive legal experience. Prior to joining Cubic, she was the senior vice president and deputy general counsel for SAIC. She has also held senior legal counsel roles at CACI, the U.S. Intelligence Community and Department of Defense.

Mark A. Harrison, 62. Mr. Harrison is Senior Vice President and Chief Accounting Officer of Cubic. He was appointed to the position in June 2019. His prior roles at Cubic include, Senior Vice President and Corporate Controller from 2012 to June 2019, Vice President and Corporate Controller from 2004 to June 2012, Vice President – Financial Planning and Accounting from 2000 to 2004, and Assistant Corporate Controller and Director of Financial Planning from 1991 to 2000. Since 1983, Mr. Harrison has held a variety of financial positions with Cubic. From 1980 to 1983 he was a Senior Auditor with Ernst & Young.

Michael Knowles, 52. Mr. Knowles was named Senior Vice President of Cubic and President of the companies comprising our CGD business segment, as of October 1, 2018. Previously, Mr. Knowles served as Vice President and General Manager of the Air Ranges business unit for CGD since July 2014. In this role, Mr. Knowles was responsible for the strategic direction and business management of air ranges, air training, Air Combat Maneuvering Instrumentation and LVC business initiatives. Before joining Cubic, Mr. Knowles served as the senior director of Air Transport and Mission Solutions at Rockwell Collins where he was employed from 2004 until he joined Cubic. He also held a series of program management and engineering roles at Photon Research Associates and Lockheed Martin. Mr. Knowles also served as a Naval Flight Officer, flight test engineer and aerospace engineering duty officer in the United States Navy where he retired as a Commander.

Michael R. Twyman, 59. Mr. Twyman is Senior Vice President of Cubic and President of the companies comprising the CMS segment, a position he has held since May 2016. He joined Cubic as Senior Vice President of air training and secure communications in June 2014. Prior to that he held a variety of executive leadership positions spanning more than 30 years at Northrup Grumman including sector Vice President and General Manager of the defense systems division and Vice President of integrated C3I systems.

Rhys V. Williams, 50. Mr. Williams is Vice President and Treasurer of Cubic, a position he has held since March 2018. Prior to joining Cubic, Mr. Williams led the treasury function at Ancestry, the largest online resource for family history and consumer genomics, as its Treasurer since October 2013. Prior to that, Mr. Williams was the Director of Treasury from April 2009 to October 2013, at Life Technologies, a biotechnology company which was later acquired by Thermo Fisher Scientific, responsible for overseeing all facets of the capital markets function. He also held treasury and business development roles at Callaway Golf Company, and Gateway, Inc.

RAW MATERIALS

The principal raw materials used in our products include sheet aluminum and steel, copper electrical wire and castings, fabrics, purchased electronic subcomponents, cabling to include electrical wiring, connectors and harnesses, injection molded plastics, and composite products. A significant portion of our end products are composed of purchased electronic components and subcontracted parts and supplies that we procure from third-party suppliers. In general, supplies of raw materials and purchased parts are adequate to meet our requirements.

INTELLECTUAL PROPERTY

We seek to protect our proprietary technology and inventions through patents and other proprietary-right protection, and also rely on trademark laws to protect our brand. However, we do not regard ourselves as materially dependent on patents for the maintenance of our competitive position. We also rely on trade secrets, proprietary know-how and continuing technological innovation to remain competitive.

REGULATION

Our businesses must comply with and are affected by various government regulations that impact our operating costs, profit margins and our internal organization and operation of our businesses. We deal with numerous U.S. government agencies and entities, including all branches of the U.S. military and the DoD. Therefore, we must comply with and are affected by laws and regulations relating to the formation, administration, and performance of U.S. government and other contracts. These laws and regulations, among other things, include the Federal Acquisition Regulations and all department and agency supplements, which comprehensively regulate the formation, administration and performance of U.S. government contracts. These and other federal regulations require certification and disclosure of cost or pricing data in connection with contract negotiations for certain types of contracts, define allowable and unallowable costs, govern reimbursement rights under cost-based contracts, and restrict the use, dissemination and exportation of products and information classified for national security purposes. For additional discussion of government contracting laws and regulations and related matters, see “Risk factors” and “Business—Industry Considerations” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Critical Accounting Policies, Estimates and Judgments—Revenue Recognition” with respect to pricing and revenue under government contracts.

Our business is subject to a range of foreign, federal, state and local laws and regulations regarding environmental protection and employee health and safety, including those that govern the emission and discharge of hazardous or toxic materials into the environment and the generation, storage, treatment, handling, use, transportation and disposal of such materials. From time to time, we have been named as a potentially responsible party at third-party waste disposal sites. We do not currently expect compliance with such laws and regulations to have a material effect upon our capital expenditures, earnings or competitive position. However, such laws and regulations are complex, change frequently and have tended to become increasingly stringent over time. Accordingly, we cannot assure that such laws and regulations will not have a material effect on our business in the future.

OTHER MATTERS

We do not generally engage in any business that is seasonal in nature. Since our revenues are generated primarily from work on contracts performed by our employees and subcontractors, first quarter revenues tend to be lower than the other three quarters due to our policy of providing many of our employees more holidays in the first quarter, compared to other quarters of the year. The U.S. government’s fiscal year ends on September 30 of each year. It is not uncommon for U.S. government agencies to award extra tasks or complete other contract actions in the weeks before the end of a fiscal year in order to avoid the loss of unexpended funds. These are not necessarily consistent patterns and depend upon actual activities in any given year.

We employed approximately 6,200 persons at September 30, 2019.

Our domestic products and services are sold almost entirely by our employees. Overseas sales are made either directly or through representatives or agents.

Item 1A. RISK FACTORS.

Risks relating to our business

We depend on government contracts for substantially all of our revenues and the loss of government contracts or a delay or decline in funding of existing or future government contracts could decrease our backlog or adversely affect our sales and cash flows and our ability to fund our growth.

Our revenues from contracts, directly or indirectly, with foreign and U.S. state, regional and local governmental agencies represented substantially all of our total revenues in fiscal year 2019. Although these various government agencies are subject to common budgetary pressures and other factors, many of our various government customers exercise independent purchasing decisions. As a result of the concentration of business with governmental agencies, we are

vulnerable to adverse changes in our revenues, income and cash flows if a significant number of our government contracts, subcontracts or prospects are delayed or canceled for budgetary or other reasons.

The factors that could cause us to lose these contracts and could decrease our backlog or otherwise materially harm our business, prospects, financial condition or results of operations include:

- budget constraints affecting government spending generally, or specific departments or agencies such as U.S. or foreign defense and transportation agencies and regional transportation agencies, and changes in fiscal policies or a reduction of available funding;
- re-allocation of government resources as the result of actual or threatened terrorism or hostile activities or for other reasons;
- Congress and the executive branch may reach an impasse on increasing the national debt limit which would restrict the U.S. government's ability to pay contractors for prior work;
- disruptions in our customers' ability to access funding from capital markets;
- curtailment of governments' use of outsourced service providers and governments' in-sourcing of certain services;
- the adoption of new laws or regulations pertaining to government procurement;
- government appropriations delays or blanket reductions in departmental budgets;
- if Congress does not agree on a budget or continuing resolution, it may result in a partial shutdown of the U.S. government and cause the termination or suspension of our contracts with the U.S. government or automatic cuts to the U.S. defense budget, which could require us to furlough affected employees for an indefinite time, terminate or suspend subcontracts, or incur contract wind-down costs. It is uncertain if we would be compensated or reimbursed for any loss of revenue during such periods. If we were not compensated or reimbursed, it could result in significant adverse effects on our revenues, operating costs and cash flows.
- suspension or prohibition from contracting with the government or any significant agency with which we conduct business;
- increased use of shorter duration awards by the federal government in the defense industry, which increases the frequency we may need to compete for work;
- impairment of our reputation or relationships with any significant government agency with which we conduct business;
- increased use of small business set asides by government agencies, resulting in limitations on our ability to bid on contracts or to perform work as a subcontractor;
- increased use of lowest-priced, technically acceptable contract award criteria by government agencies;
- increased aggressiveness by the government in seeking rights in technical data, computer software, and computer software documentation that we deliver under a contract, which may result in "leveling the playing field" for competitors on follow-on procurements;
- impairment of our ability to provide third-party guarantees and letters of credit; and
- delays in the payment of our invoices by government payment offices.

In addition, some of our international work is done at the request and at the expense of the U.S. government and its agencies. Therefore, risks associated with performing work for the U.S. government and its agencies may also apply to our international contracts.

Government spending priorities and terms may change in a manner adverse to our businesses.

At times, our businesses have been adversely affected by significant changes in U.S. and foreign government spending during periods of declining budgets. A significant decline in overall spending, or the decision not to exercise options to renew contracts, or the loss of or substantial decline in spending on a large program in which we participate could materially adversely affect our business, prospects, financial condition or results of operations. For example, the U.S. defense and national security budgets in general, and spending in specific agencies with which we work, such as those that are a part of the DoD, have declined from time to time for extended periods, resulting in program delays, program cancellations and a slowing of new program starts. Future levels of expenditures and authorizations for defense-related programs by the U.S. and foreign governments may decrease, remain constant or shift to programs in areas where we do not currently provide products or services, thereby reducing the chances that we will be awarded new contracts.

Even though our contract periods of performance for a program may exceed one year, Congress and certain foreign governments must usually approve funds for a given program each fiscal year and may significantly reduce funding of a program in a particular year. Significant reductions in these appropriations or the amount of new defense contracts awarded may affect our ability to complete contracts, obtain new work and grow our business. Congress and such foreign governments do not always enact spending bills by the beginning of the new fiscal year. Such delays leave the affected agencies under-funded which delays their ability to contract. Future delays and uncertainties in funding could impose additional business risks on us.

In addition, the DoD has an increased emphasis on awarding contracts to small businesses and awarding shorter duration contracts, each of which has the potential to reduce the amount of revenue we could otherwise earn from such contracts. Shorter duration contracts lower our backlog numbers and increase the risk associated with re-competing for a contract, as we would need to do so more often. In addition, as we may need to expend capital resources at higher levels upon the award of a new contract, the shorter the duration of the contract, the less time we have to recoup such expenditures and turn a profit under such contract.

Our contracts with government agencies may be terminated or modified prior to completion, which could adversely affect our business.

Government contracts typically contain provisions and are subject to laws and regulations that give the government agencies rights and remedies not typically found in commercial contracts, including providing the government agency with the ability to unilaterally:

- terminate our existing contracts;
- reduce the value of our existing contracts;
- modify some of the terms and conditions in our existing contracts;
- suspend or permanently prohibit us from doing business with the government or with any specific government agency;
- control and potentially prohibit the export of our products;
- cancel or delay existing multi-year contracts and related orders if the necessary funds for contract performance for any subsequent year are not appropriated;
- decline to exercise an option to extend an existing multi-year contract; and

- claim rights in technologies and systems invented, developed or produced by us.

Most U.S. government agencies and some other agencies with which we contract can terminate their contracts with us for convenience, and in that event we generally may recover only our incurred or committed costs, settlement expenses and profit on the work completed prior to termination. If an agency terminates a contract with us for default, we may be denied any recovery and may be liable for excess costs incurred by the agency in procuring undelivered items from an alternative source. We may receive show-cause or cure notices under contracts that, if not addressed to the agency's satisfaction, could give the agency the right to terminate those contracts for default or to cease procuring our services under those contracts.

In the event that any of our contracts were to be terminated or adversely modified, there may be significant adverse effects on our revenues, operating costs and income that would not be recoverable.

We have made assumptions concerning behavior by transportation authorities which may not hold true over time.

In our transportation business we have made certain assumptions that support the growth of the business. For example, we have assumed that governments will continue to charge passengers for using public transit. We have also assumed that transportation agencies will continue to outsource operations and services. Should these assumptions not hold true, our transportation business could experience a material loss of business.

The use of ride sharing, microtransit, and other shared mobility services and the development of autonomous vehicles could erode the demand for traditional public transit.

Ride sharing, microtransit, and other shared mobility services are creating options for public transit patrons which may be leading to the decline of ridership in some markets. The development and acceptance of autonomous vehicles could also lead to a decline in ridership for public transit systems. If these trends accelerate or expand, public transit agencies may decide to defer or reduce plans to upgrade their fare collection systems and our prospects for growth in our transportation business could diminish.

Failure to retain existing contracts or win new contracts under competitive bidding processes may adversely affect our revenue.

We obtain most of our contracts through a competitive bidding process, and substantially all of the business that we expect to seek in the foreseeable future likely will be subject to a competitive bidding process. Competitive bidding presents a number of risks, including:

- the need to compete against companies or teams of companies with more financial and marketing resources and more experience in bidding on and performing major contracts than we have;
- the need to compete against companies or teams of companies that may be long-term, entrenched incumbents for a particular contract for which we are competing and that have, as a result, greater domain expertise and better customer relations;
- the need to compete to retain existing contracts that have in the past been awarded to us on a sole-source basis or as to which we have been incumbent for a long time;
- the U.S. government's increased emphasis on awarding contracts to small businesses could preclude us from bidding on certain work or reduce the scope of work we can bid as a prime contractor and limit the amount of revenue we could otherwise earn as a prime contractor for such contracts;
- the award of contracts on a "lowest-priced technically acceptable" basis which may lower the profit we may generate under a contract awarded using this evaluation method or prevent us from submitting a bid for such work due to us deeming such work to be unprofitable;

- the reduction of margins achievable under any contracts awarded to us;
- the expense and delay that may arise if our competitors protest or otherwise challenge new contract awards;
- the need to bid on some programs in advance of the completion of their design, which may result in higher R&D expenditures, unforeseen technological difficulties, or increased costs which lower our profitability;
- the substantial cost and managerial time and effort, including design, development and marketing activities, necessary to prepare bids and proposals for contracts that may not be awarded to us;
- the need to develop, introduce and implement new and enhanced solutions to our customers' needs;
- the need to locate and contract with teaming partners and subcontractors; and
- the need to accurately estimate the resources and cost structure that will be required to perform any fixed-price contract that we are awarded.

We may not be afforded the opportunity in the future to bid on contracts that are held by other companies and are scheduled to expire if the agency decides to extend the existing contract. If we are unable to win particular contracts that are awarded through the competitive bidding process, we may not be able to operate in the market for services that are provided under those contracts for a number of years. If we win a contract, and upon expiration the customer requires further services of the type provided by the contract, there is frequently a competitive rebidding process and there can be no assurance that we will win any particular bid, or that we will be able to replace business lost upon expiration or completion of a contract.

As a result of the complexity and scheduling of contracting with government agencies, we occasionally incur costs before receiving contractual funding by the government agency. In some circumstances, we may not be able to recover these costs in whole or in part under subsequent contractual actions.

In addition, the customers currently serviced by our CTS segment are finite in number. The loss of any one of these customers, or the failure to win replacement awards upon expiration of contracts with such customers, could adversely impact us.

If we are unable to consistently retain existing contracts or win new contract awards, our business, prospects, financial condition and results of operations will be adversely affected.

Many of our U.S. government customers spend their procurement budgets through multiple-award or ID/IQ contracts, under which we are required to compete among the awardees for post-award orders. Failure to win post-award orders could affect our ability to increase our sales.

The U.S. government can select multiple winners under multiple-award contracts, federal supply schedules and other agency-specific ID/IQ contracts, as well as award subsequent purchase orders among such multiple winners. This means that there is no guarantee that these ID/IQ, multiple-award contracts will result in the actual orders equal to the ceiling value under the contract, or result in any actual orders. We are only eligible to compete for work (purchase orders and delivery orders) as an awardee pursuant to government-wide acquisition contracts already awarded to us. Our failure to compete effectively in this procurement environment could reduce our sales, which would adversely affect our business, results of operations and financial condition.

Government audits of our contracts could result in a material charge to our earnings, have a negative effect on our cash position following an audit adjustment or adversely affect our ability to conduct future business.

U.S. government agencies, including the DoD and others, routinely audit and review a contractor's performance on government contracts, contract costs, indirect rates and pricing practices, and compliance with applicable contracting and procurement laws, regulations and standards. Based on the results of such audits, the relevant government agency could

adjust our contract costs, and any costs found to be unreasonable, improperly allocated, or unallowable under government cost accounting standards or contractual provisions will not be reimbursed. The government could also potentially refuse to agree to our proposed unit prices if the auditing agency does not find them to be “fair and reasonable.” The government may also demand that we refund what the government claims are any excess proceeds we received on particular items where the government claims we did not properly disclose required information in negotiating the unit price.

The DoD, in particular, also reviews the adequacy of, and compliance with, our internal control systems and policies, including our purchasing, accounting, financial capability, pricing, labor pool, overhead rate and management information systems. Our failure to obtain an “adequate” determination of our various accounting and management internal control systems from the responsible U.S. government agency could significantly and adversely affect our business, including our ability to bid on new contracts and our competitive position in the bidding process. Failure to comply with applicable contracting and procurement laws, regulations and standards could also result in the U.S. government imposing penalties and sanctions against us, including suspension of payments and increased government scrutiny that could delay or adversely affect our ability to invoice and receive timely payment on contracts or perform contracts, or could result in suspension or debarment from competing for contracts with the U.S. government. In addition, we could suffer serious harm to our reputation if allegations of impropriety were made against us, whether or not true.

In addition, transit authorities have the right to audit our work under their respective contracts. If, as the result of an adverse audit finding, we were suspended, debarred, proposed for debarment, or otherwise prohibited from contracting with the U.S. government, any significant government agency or a transit authority terminated its contract with us, or our reputation or relationship with such agencies and authorities was impaired or they otherwise ceased doing business with us or significantly decreased the amount of business done with us, it would adversely affect our business, results of operations and financial condition.

Our international business exposes us to additional risks, including exchange rate fluctuations, foreign tax and legal regulations and political or economic instability that could harm our operating results.

Our international operations subject us to risks associated with operating in and selling products or services in foreign countries, including:

- devaluations and fluctuations in currency exchange rates;
- changes in foreign laws that adversely affect our ability to sell our products or services or our ability to repatriate profits to the United States;
- increases or impositions of withholding and other taxes on remittances and other payments by foreign subsidiaries or joint ventures to us;
- increases in investment and other restrictions or requirements by foreign governments in order to operate in the territory or own the subsidiary;
- costs of compliance with local laws, including labor laws, privacy laws, and import/export regulations;
- compliance with applicable U.S. and foreign anti-corruption laws, anti-trust/competition laws, anti-Boycott Israel laws, anti-money laundering laws and sanctions;
- export control regulations and policies which govern our ability to supply foreign customers;
- unfamiliar and unknown business practices and customs;
- compliance with domestic and foreign government policies, including requirements to expend a portion of contract funds locally and governmental industrial cooperation or offset requirements;

- the complexity and necessity of using foreign representatives and consultants or being prohibited from such use;
- the difficulty of ensuring that our foreign representatives, consultants and partners comply with applicable U.S. and foreign anti-corruption laws and anti-trust/competition laws;
- increased risk of cyber or other security threats;
- the need to form joint ventures or other special purpose companies with local, in-country partners to pursue projects as a prime contractor;
- the uncertainty of the ability of foreign customers to finance purchases;
- imposition of tariffs or embargoes, export controls and other trade restrictions;
- potentially being prohibited from bidding for international work due to perceived conflicts or national security concerns resulting from the significant amount of work we do for the U.S. government and its agencies;
- the difficulty of management and operation of an enterprise in various countries; and
- economic and geopolitical developments and conditions, including ongoing instability in global economies and financial markets, international hostilities, acts of terrorism and governmental reactions, inflation, trade relationships and military and political alliances.

Our foreign subsidiaries generally enter into contracts and make purchase commitments that are denominated in foreign currencies. Accordingly, we are exposed to fluctuations in exchange rates, which could have a significant impact on our results of operations. We have no control over the factors that generally affect this risk, such as economic, financial and political events and the supply of and demand for applicable currencies. While we use foreign exchange forward and option contracts to hedge significant contract sales and purchase commitments that are denominated in foreign currencies, our hedging strategy may not prevent us from incurring losses due to exchange fluctuations.

The impacts of the United Kingdom's proposed withdrawal from the European Union (EU) may have a negative effect on global economic conditions, financial markets and our business.

In June 2016, a majority of voters in the United Kingdom elected to withdraw from the EU in a national referendum. In March 2017, the United Kingdom formally notified the European Union of its intention to withdraw pursuant to Article 50 of the Lisbon Treaty. The referendum was advisory, and the terms of any withdrawal are subject to a negotiation period that is ongoing with a possible further extension to January 31, 2020. The referendum has created significant uncertainty about the future relationship between the United Kingdom and the EU with a number of outcomes still possible.

These developments, or the perception that any of them could occur, have had and may continue to have a material adverse effect on global economic conditions and the stability of global financial markets, and could significantly reduce global market liquidity and restrict the ability of key market participants to operate in certain financial markets. Asset valuations, currency exchange rates and credit ratings have been and may continue to be subject to increased market volatility. Lack of clarity about future United Kingdom laws and regulations as the United Kingdom determines which EU laws to replace or replicate in the event of a withdrawal, could depress economic activity, restrict our access to capital or adversely affect our contracts or relationships with customers in the United Kingdom or elsewhere in the European economic area. For example, our total sales to customers in the United Kingdom accounted for \$218.2 million, \$240.7 million and \$219.4 million of our consolidated sales in 2019, 2018 and 2017, respectively. If the United Kingdom and the EU are unable to negotiate acceptable withdrawal terms, barrier-free access between the United Kingdom and other EU member states or among the European economic area overall could be diminished or eliminated. Any of these factors could have a material adverse effect on our business, financial condition and results of operations.

Our business and stock price may be adversely affected if our internal control over financial reporting is not effective.

The accuracy of our financial reporting is dependent on the effectiveness of our internal controls. We are required to provide a report from management to our shareholders on our internal control over financial reporting that includes an assessment of the effectiveness of these controls. Internal control over financial reporting has inherent limitations, including human error, the possibility that controls could be circumvented or become inadequate because of changed conditions, and fraud. Because of these inherent limitations, internal control over financial reporting might not prevent or detect all misstatements or fraud. If we cannot maintain and execute adequate internal control over financial reporting or implement required new or improved controls that provide reasonable assurance of the reliability of the financial reporting and preparation of our financial statements for external use, we could suffer harm to our reputation, incur incremental compliance costs, fail to meet our public reporting requirements on a timely basis, be unable to properly report on our business and our results of operations, or be required to restate our financial statements, and our results of operations, our share price and our ability to obtain new business could be materially adversely affected.

We are subject to new and evolving laws and regulations governing personal data privacy both in the United States and internationally, which may expose us to legal claims, penalties, increased costs of business, and other harm to our business.

The changing legal landscape in the area of data privacy may affect the way we do business or impose increased costs. As an example, the EU's General Data Protection Regulation (GDPR) was implemented in May 2018 and has created a variety of new compliance obligations as well as increased financial penalties for noncompliance (which include fines up to 4% of global turnover of the preceding financial year or €20 million, whichever is greater, for serious violations). While there is still significant uncertainty around the United Kingdom's exit from the EU, the United Kingdom privacy obligations will remain substantially similar to those in the GDPR. Noncompliance with such laws could result in fines, legal claims, loss of contracts and reputational harm.

We may not be able to receive the necessary licenses required for us to sell our export-controlled products and services overseas. In addition, the loss of our registration as either an exporter or a broker under the International Traffic in Arms Regulations (ITAR) or the Export Administration Regulations (EAR), would adversely affect our business, results of operations and financial condition.

U.S. government agencies, primarily the Directorate of Defense Trade Controls within the State Department and the Bureau of Industry Security within the U.S. Department of Commerce, must license shipments of certain export-controlled products that we export. These licenses are required due to both the products we export and to the foreign customers we service. If we do not receive a license for an export-controlled product, we cannot ship that product. We cannot be sure of our ability to gain any licenses required to export our products, and failure to receive a required license would eliminate our ability to make that sale. A delay in obtaining the necessary licenses to sell our export-controlled products abroad could result in delayed deliveries and delayed recognition of revenue, which could cause us reputational damage and could result in a customer's decision not to do business with us in the future. We may also be subject to inquiries by such U.S. government agencies relating to issues involving the export-controlled products and services we export and failure to satisfactorily resolve such inquiries would adversely affect our business, results of operations and financial condition.

In addition to obtaining a license for certain of our exports outside of the United States, we are also required to maintain a standing registry under the ITAR and the EAR as an exporter. We operate as an exporter when we ship certain products to our customers outside the United States. If we were to lose our registration as an exporter under the ITAR or the EAR, we would not be able to sell export-controlled products abroad, which would adversely affect our business, results of operations and financial condition.

The loss of required licenses from the Bureau of Alcohol, Tobacco, Firearms and Explosives could limit our ability to perform on contracts requiring the use of controlled firearms.

In our training business we use certain firearms which are regulated by the Bureau of Alcohol, Tobacco, Firearms and Explosives. If we fail to properly manage the firearms pursuant to the regulations, we could face fines and the possible

loss of the licenses. The loss of the licenses could result in our inability to perform on certain contracts, which would have an adverse business, reputational and financial impact.

Our operating margins may decline under our fixed-price contracts if we fail to accurately estimate the time and resources necessary to satisfy our obligations.

Approximately 97% of our revenues in fiscal year 2019 were from fixed-price contracts under which we bear the risk of cost overruns. Our profits are adversely affected if our costs under these contracts exceed the assumptions we used in bidding for the contract. We may therefore need to absorb any increases in our supply costs and may not be able to pass such costs increases along to our customers. Sometimes we are required to fix the price for a contract before the project specifications are finalized, which increases the risk that we will incorrectly price these contracts. The complexity of many of our engagements makes accurately estimating the time and resources required more difficult.

We may not receive the full amounts estimated under the contracts in our total backlog, which could reduce our sales in future periods below the levels anticipated and which makes backlog an uncertain indicator of future operating results.

As of September 30, 2019, our total backlog was approximately \$3.4 billion. Orders may be cancelled, and scope adjustments may occur, and we may not realize the full amounts of sales that we may anticipate in our backlog numbers. There can be no assurance that the projects underlying the contracts and purchase orders will be placed or completed or that amounts included in our backlog ultimately will be billed and collected. Additionally, the timing of receipt of sales, if any, on contracts included in our backlog could change. The failure to realize amounts reflected in our backlog could materially adversely affect our business, financial condition and results of operations in future periods.

We may be liable for civil or criminal penalties under a variety of complex laws and regulations, and changes in governmental regulations could adversely affect our business and financial condition.

Our businesses must comply with and are affected by various U.S. government and foreign regulations that impact our operating costs, profit margins and our internal organization and operation of our businesses. These regulations affect how we do business and, in some instances, impose added costs. Any changes in applicable laws could adversely affect our business and financial condition. Any material failure to comply with applicable laws could result in contract termination, price or fee reductions or suspension or debarment from contracting. The more significant regulations include:

- the FAR and all department and agency supplements, which comprehensively regulate the formation, administration and performance of U.S. government contracts;
- the Truth in Negotiations Act and implementing regulations, which require certification and disclosure of all cost and pricing data in connection with certain contract negotiations;
- the ITAR, which control the export of items on the U.S. Munitions Control List administered by the U.S. Department of State;
- the Export Administration Regulations which control commercial, dual-use and select defense related articles;
- the Bureau of Alcohol, Tobacco, Firearms and Explosives regulations that control the manufacture, possession and sale of firearms and explosive devices and materials;
- laws, regulations and executive orders restricting the use and dissemination of information classified for national security purposes and the exportation of certain products and technical data;
- regulations of most state and regional agencies and foreign governments similar to those described above;

- the trade sanctions laws and regulations administered by the U.S. Department of the Treasury’s Office of Foreign Assets Control;
- the Sherman Act and Clayton Act, which proscribe unlawful, anti-competitive conduct and business practices;
- the Foreign Corrupt Practices Act, the U.K. Bribery Act, and similar anti-bribery and anti-corruption laws in other countries in which we operate;
- the Sarbanes-Oxley Act of 2002 and the Dodd-Frank Wall Street Reform and Protection Act;
- healthcare reform laws and regulations, including those enacted under the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act of 2010;
- the Fair Labor Standards Act, the Equal Pay Act and similar state wage and hour laws;
- Title VII of the Civil Rights Act of 1964 and similar state and federal employment laws in the U.S., and in other countries in which we operate;
- tax laws and regulations in the U.S. and in other countries in which we operate;
- privacy laws in the U.S. and in other countries in which we operate, such as the California Consumer Privacy Act, the GDPR and any attendant European country legislation;
- the civil False Claims Act, which provides for substantial civil penalties and treble damages for violations, including for submission of a false or fraudulent claim to the U.S. government for payment or approval, and allows private litigants to pursue violations as “whistleblower” or *qui tam* actions on behalf of the U.S. government;
- the Procurement Integrity Act, which requires evaluation of ethical conflicts surrounding procurement activity and establishing certain employment restrictions for individuals who participate in the procurement process; and
- the Small Business Act and the Small Business Administration, size status regulations, which regulate eligibility for performance of government contracts which are set aside for, or a preference is given in the evaluation process if awarded to, specific types of contractors such as small businesses and minority-owned businesses.

Many of our U.S. government contracts contain organizational conflicts of interest clauses that may limit our ability to compete for or perform certain other contracts. Organizational conflicts of interest arise when we engage in activities that provide us with an unfair competitive advantage. A conflict of interest issue that precludes our competition for or performance on a significant program or contract could harm our prospects and negative publicity about a conflict of interest issue could damage our reputation.

In addition, the U.S. and foreign governments may revise existing contract rules and regulations or adopt new contract rules and regulations at any time and may also face restrictions or pressure regarding the type and amount of services it may obtain from private contractors. For instance, Congressional legislation and initiatives dealing with procurement reform and shifts in the buying practices of U.S. government agencies resulting from those proposals could have adverse effects on government contractors, including us. Any of these changes could impair our ability to obtain new contracts or renew contracts under which we currently perform when those contracts are eligible for re-competition. Any new contracting methods could be costly or administratively difficult for us to implement, which would adversely affect our business, results of operations and financial condition.

Our failure to identify, attract and retain qualified technical and management personnel could adversely affect our existing businesses, financial condition and results of operations.

We may not be able to identify, attract or retain qualified technical personnel, including engineers, computer programmers and personnel with security clearances required for classified work, or management personnel to supervise such activities that are necessary for maintaining and growing our existing businesses, which could adversely affect our financial condition and results of operations. The technically complex nature of our operations results in difficulties finding qualified staff. In our defense businesses especially, experienced personnel possessing required security clearances are finite in number. A number of our employees maintain a top-secret clearance level. Obtaining and maintaining security clearances for employees involves a lengthy process, and it is difficult to identify, recruit and retain employees who already hold security clearances. If our cleared employees lose or are unable to timely obtain security clearances or we lose a facility clearance, our U.S. government customers may terminate their contracts with us or decide not to renew such contracts upon their expiration. As a result, to the extent we cannot obtain or maintain the required security clearances for a particular contract, or we fail to obtain them on a timely basis, we may not generate the sales anticipated from the contract, which could harm our operating results. To the extent we are not able to obtain facility security clearances or engage employees with the required security clearances for a particular contract, we will be unable to perform that contract and we may not be able to compete for or win new awards for similar work.

In addition, in our transportation business, we frequently need to recruit new highly skilled people into technical roles in order to perform our contractual obligations. An inability to recruit such people and quickly integrate them into the business may cause us to not be able to meet contractual deadlines which could lead to the imposition of liquidated damages or termination of our contracts for default in certain cases.

Our business could be negatively affected by cyber or other security threats or other disruptions.

We face cyber threats, threats to the physical security of our facilities and employees, including senior executives, and terrorist acts, as well as the potential for business disruptions associated with information technology failures, damaging weather or other acts of nature, and pandemics or other public health crises, which may adversely affect our business.

We routinely experience cyber security threats, threats to our information technology infrastructure and attempts to gain access to our company sensitive information, as do our customers, suppliers, subcontractors and joint venture partners. We may experience similar security threats at customer sites that we operate and manage as a contractual requirement.

Prior cyber-attacks directed at us have not had a material impact on our financial results, and we believe our threat detection and mitigation processes and procedures are robust. However, because of the evolving nature and sophistication of security threats, which can be difficult to detect, there can be no assurance that our policies, procedures and controls have detected or will detect or prevent any of these threats and we cannot predict the full impact of any such past or future incident.

In addition, we could be impacted by cyber security threats or other disruptions or vulnerabilities found in products we use or in the systems of our customers, suppliers, subcontractors and joint venture partners that are used in connection with our business. Although we work cooperatively with these third parties to seek to minimize the impacts of cyber threats, other security threats or business disruptions, in addition to our internal processes, procedures and systems, we must also rely on the safeguards put in place by those entities.

The costs related to cyber or other security threats or disruptions may not be fully mitigated by insurance or other means. Occurrence of any of these events could adversely affect our internal operations, the services we provide to customers, loss of competitive advantages derived from our R&D efforts, early obsolescence of our products and services, our future financial results, our reputation or our stock price. The occurrence of any of these events could also result in civil and/or criminal liabilities.

Internal system or service failures could disrupt our business and impair our ability to effectively provide our services and products to our customers, which could damage our reputation and adversely affect our revenues and profitability.

Any system or service disruptions, if not anticipated and appropriately mitigated, could have a material adverse effect on our business. We are also subject to systems failures, including network, software or hardware failures, whether caused by us, our customers, suppliers, subcontractors or joint venture partners, cybersecurity threats, malicious insiders, power shortages, terrorist acts or other events, which could cause loss of data and interruptions or delays in our business, cause us to incur remediation costs, subject us to claims and damage our reputation. In addition, the failure or disruption of our systems or services, or those of our customers, suppliers, subcontractors or joint venture partners, could cause us to interrupt or suspend our operations or otherwise adversely affect our business. Our insurance may be inadequate to compensate us for all losses that may occur as a result of any system or operational failure or disruption and, as a result, our revenues and profitability could be adversely affected.

We may incur significant costs in protecting our intellectual property which could adversely affect our profit margins. Our inability to obtain, maintain and enforce our patents and other proprietary rights could adversely affect our businesses' prospects and competitive positions.

We seek to protect our proprietary technology and inventions through patents and other proprietary-right protection, and also rely on trademark laws to protect our brand. However, we may fail to obtain the intellectual property rights necessary to provide us with a competitive advantage, and any of our owned or licensed intellectual property rights could be challenged, invalidated, circumvented, infringed or misappropriated.

We may also fail to apply for or obtain intellectual property protection in important foreign countries, and the laws of some foreign countries do not protect proprietary rights to the same extent as the laws of the United States. If we are unable to obtain or maintain these protections, we may not be able to prevent third parties from using our technology and inventions, which could adversely affect our business.

The U.S. government, and the DoD in particular, has become more aggressive in seeking rights in all technical data, computer software, and computer software documentation that we may deliver under U.S. government contracts. The U.S. government generally takes the position that it has the right to royalty-free use of technologies that are developed under U.S. government contracts. Those rights include, but are not limited to, the ability of the government to provide that technical data, computer software, and computer software documentation to our competitors which may result in "leveling the playing field" for competitors and reducing our incumbency advantage during re-procurements for those goods or services. Thus, we may not have the right to prohibit the U.S. government from using certain technologies developed by us, and we may not be able to prohibit third party companies, including our competitors, from using those technologies in providing products and services to the U.S. government.

We may incur significant expense in obtaining, maintaining, defending and enforcing our intellectual property rights. We may fail to take the actions necessary to enforce our intellectual property rights and even if we attempt to enforce such rights, we may ultimately be unsuccessful, and such efforts may result in our intellectual property rights being challenged, limited in scope, or declared invalid or unenforceable. Also, some aspects of our business and services may rely on technologies and software developed by or licensed from third parties, and we may not be able to maintain our relationships with such third parties or enter into similar relationships in the future on reasonable terms or at all.

We also rely on trade secrets, proprietary know-how and continuing technological innovation to remain competitive. We have taken measures to protect our trade secrets and know-how, including seeking to enter into confidentiality agreements with our employees, consultants and advisors, but the measures we have taken may not be sufficient. For example, confidentiality agreements may not provide adequate protection or may be breached. We generally control and limit access to our product documentation and other proprietary information, but other parties may independently develop our know-how or otherwise obtain access to our technology, which could adversely affect our businesses' prospects and competitive position.

Assertions by third parties that we violate their intellectual property rights could have a material adverse effect on our business, financial condition and results of operations.

Third parties may claim that we, our customers, licensees or parties indemnified by us are infringing upon or otherwise violating their intellectual property rights. Such claims may be made by competitors seeking to obtain a competitive advantage or by other parties. Additionally, in recent years, individuals and groups have begun purchasing intellectual property assets for the purpose of making claims of infringement and attempting to extract settlements from companies like ours.

Any claims that we violate a third party's intellectual property rights can be time consuming and costly to defend and distract management's attention and resources, even if the claims are without merit. Such claims may also require us to redesign affected products and services, enter into costly settlement or license agreements or pay costly damage awards, or face a temporary or permanent injunction prohibiting us from marketing or providing the affected products and services. Even if we have an agreement to indemnify us against such costs, the indemnifying party may not have sufficient financial resources or otherwise be unable to uphold its contractual obligations. If we cannot or do not license the infringed technology on favorable terms or cannot or do not substitute similar technology from another source, our revenue and earnings could be adversely impacted.

We compete primarily for government contracts against many companies that are larger, better capitalized and better known than us. If we are unable to compete effectively, our business and prospects will be adversely affected.

Our businesses operate in highly competitive markets. Many of our competitors are larger, better financed and better-known companies who may compete more effectively than we can. In order to remain competitive, we must keep our capabilities technically advanced and compete on price and on value added to our customers. Our ability to compete may be adversely affected by limits on our capital resources and our ability to invest in maintaining and expanding our market share. Consolidation in the industries in which we operate, and government budget cuts may lead to pressure being placed on the margins we may earn on any contracts we win. In addition, should the transportation market move towards requiring contractors to provide up-front financing for contracts they are awarded (for example, our contract for the Chicago Open Standards Fare System and our contract for a fare payment system in Boston), we may need to compete more heavily on the basis of our financial strength or alternate financial structures, which may limit the contracts we can service at any one time.

The terms of our financing arrangements may restrict our financial and operational flexibility, including our ability to invest in new business opportunities.

At September 30, 2019 we had \$200.0 million of senior unsecured notes payable to a group of insurance companies. We also have a committed revolving credit agreement with a group of financial institutions in the amount of \$800.0 million which is scheduled to expire in April 2024 (Revolving Credit Agreement). The available line of credit is reduced by any letters of credit issued under the Revolving Credit Agreement. As of September 30, 2019, there were \$195.5 million of borrowings under this agreement and there were letters of credit outstanding totaling \$31.5 million, which reduce the available line of credit to \$573.0 million. The \$31.5 million of letters of credit includes both financial letters of credit and performance guarantees.

Our revolving credit agreement and note purchase and private shelf agreement each contain a number of customary covenants, including requirements for us to maintain certain interest coverage and leverage ratios and restrictions on our and certain of our subsidiaries' abilities to, among other things, incur additional debt, create liens, consolidate or merge with any other entity, or transfer or sell substantially all of their assets, in each case subject to certain exceptions and limitations.

The occurrence of any event of default under these agreements may result in all of the indebtedness then outstanding becoming immediately due and payable, or the increase of the coupon rate for such indebtedness. For example, at March 31, 2017 we did not maintain the required leverage ratio. Therefore, in May 2017 certain terms and conditions of the Revolving Credit Agreement and note purchase and private shelf agreement were further revised to allow us to maintain

a higher level of leverage as of March 31, 2017 and for the remainder of the 2017 fiscal year. The revisions to the agreements did not impact the required leverage ratios in fiscal 2018 or subsequent years.

Additionally, we may continue to use alternative financing structures in order to fund certain projects related to the redevelopment of our corporate campus. Any such financing arrangements may further restrict our financial and operational flexibility.

Our corporate campus redevelopment plan may be subject to certain unanticipated financial, environmental, regulatory, and construction risks that are beyond the scope of our typical business activities.

We are in the process of developing our corporate campus in San Diego and this redevelopment project may be subject to various risks associated with real property development including but not limited to financing, compliance with environmental laws and regulations, obtaining permits and other governmental approvals, regulatory compliance, changes in market conditions, labor and material shortages, legal claims, delays in completion, distracting management's and employees' attention and resources, natural disasters, cost overruns, socio-political risks, and construction defects. Any of the abovementioned risks, or other risks generally associated with real property development, could increase our operational expenses, expose us to fines and penalties, disrupt our business operations, require us to expend additional resources, or expose us to other unanticipated liabilities that are not encountered in our typical business activities.

Our development contracts may be difficult for us to comply with and may expose us to third-party claims for damages.

We are often party to government and commercial contracts involving the development of new products and systems. These contracts typically contain strict performance obligations and project milestones. We cannot assure you we will comply with these performance obligations or meet these project milestones in the future. If we are unable to comply with these performance obligations or meet these milestones, our customers may terminate these contracts and, under some circumstances, recover damages or other penalties from us. If other parties elect to terminate their contracts or seek damages from us, it could materially harm our business and negatively impact our stock price.

Our revenues could be less than expected if we are not able to deliver services or products as scheduled due to disruptions in supply.

Since our internal manufacturing capacity is limited, we use third parties to supply certain products or components we use. While we use care in selecting our suppliers, we have less control over the reliability of supply, quality and price of products or components than if we manufactured them. In some cases, we obtain products from a sole supplier or a limited group of suppliers. Consequently, we risk disruptions in our supply of key products and components if our suppliers fail or are unable to perform because of shortages in raw materials, operational problems, strikes, natural disasters, financial condition or other factors. We may have disputes with our suppliers arising from, among other things, the quality of products and services or customer concerns about the supplier. If any of our suppliers fail to timely meet their contractual obligations or have regulatory compliance or other problems, our ability to fulfill our obligations may be jeopardized. Economic downturns can adversely affect a supplier's ability to manufacture or deliver products. Further, suppliers may also be enjoined from manufacturing and distributing products to us as a result of litigation filed by third parties, including intellectual property litigation. If we were to experience difficulty in obtaining certain products, there could be an adverse effect on our results of operations, customer relationships and reputation. Additionally, our suppliers could also increase pricing of their products, which could negatively affect our ability to win contracts by offering competitive prices.

Any material supply disruptions could adversely affect our ability to perform our obligations under our contracts and could result in cancellation of contracts or purchase orders, penalties, delays in realizing revenues, payment delays, as well as adversely affect our ongoing product cost structure.

Failure to perform by our subcontractors could materially and adversely affect our contract performance and our ability to obtain future business.

Our performance of contracts often involves subcontractors, upon which we rely to complete delivery of products or services to our customers. We may have disputes with subcontractors. A failure by a subcontractor to satisfactorily deliver products or services can adversely affect our ability to perform our obligations as a prime contractor. Any subcontractor performance deficiencies could result in the customer terminating our contract for default, which could expose us to liability for excess costs of re-procurement by the customer and have a material adverse effect on our ability to compete for other contracts.

Our future success will depend on our ability to develop new products, systems and services that achieve market acceptance in our current and future markets.

Both our commercial and government businesses are characterized by rapidly changing technologies and evolving industry standards. Accordingly, our performance depends on a number of factors, including our ability to:

- identify emerging technological trends and business models in our current and target markets;
- develop and maintain competitive products, systems and services;
- enhance our offerings by adding technological innovations that differentiate our products, systems and services from those of our competitors; and
- develop, manufacture and bring to market cost-effective offerings quickly.

We believe that, in order to remain competitive in the future, we will need to continue to develop new products, systems and services, and in some cases transition to a product-oriented approach as opposed to our historical, project oriented approach, all of which will require the investment of significant financial resources. The need to make these expenditures could divert our attention and resources from other projects, and we cannot be sure that these expenditures ultimately will lead to the timely development of new products, systems or services. In recent years, we have spent an amount equal to approximately 3% to 5% of our annual sales on internal R&D efforts. There can be no assurances that this percentage will not increase should we require increased innovations to successfully compete in the markets we serve. We may also experience delays in completing development and introducing certain new products, systems or services in the future due to their design complexity. Any delays could result in increased costs of development or redirect resources from other projects. In addition, we cannot provide assurances that the markets for our products, systems or services will develop as we currently anticipate, which could significantly reduce our revenue and harm our business. Furthermore, we cannot be sure that our competitors will not develop competing products, systems or services that gain market acceptance in advance of ours, or that cause our existing products, systems or services to become non-competitive or obsolete, which could adversely affect our results of operations.

If we deliver products or systems with defects, our reputation will be harmed, revenue from, and market acceptance of, our products and systems will decrease and we could expend significant capital and resources as a result of such defects.

Our products and systems are complex and frequently operate in high-performance, challenging environments. Notwithstanding our internal quality specifications, our products and systems have sometimes contained errors, defects and bugs when introduced. If we deliver products or systems with errors, defects or bugs, our reputation and the market acceptance and sales of our products and systems would be harmed. Further, if our products or systems contain errors, defects or bugs, we may be required to expend significant capital and resources to alleviate such problems and incur significant costs for product recalls and inventory write-offs. Defects could also lead to product liability lawsuits against us or against our customers, and could also damage our reputation. We have agreed to indemnify our customers in some circumstances against liability arising from defects in our products and systems. In the event of a successful product liability claim, we could be obligated to pay damages significantly in excess of our product liability insurance limits.

We face certain significant risk exposures and potential liabilities that may not be covered adequately by insurance or indemnity.

We are exposed to liabilities that are unique to the products, systems and services we provide. A significant portion of our business relates to designing, developing, manufacturing, operating and maintaining advanced defense and transportation systems and products. New technologies associated with these systems and products may be untested or unproven. In addition, certain activities in connection with which our training systems are used or our services are provided are inherently dangerous.

While in some circumstances we may receive indemnification from U.S. and foreign governments, and we maintain insurance for certain risks, the amount of our insurance or indemnity may not be adequate to cover all claims or liabilities, and we may be forced to bear substantial costs from an accident or incident. It also is not possible for us to obtain insurance to protect against all operational risks and liabilities. Substantial claims resulting from an incident in excess of the indemnification we receive from our insurance coverage would harm our financial condition, results of operations and cash flows. Moreover, any accident or incident for which we are liable, even if fully insured, could negatively affect our standing with our customers and the public, thereby making it more difficult for us to compete effectively, and could significantly impact the cost and availability of adequate insurance in the future.

We may acquire other companies, which could increase our costs or liabilities or be disruptive to our business.

Part of our strategy involves the acquisition of other companies. For example, from fiscal 2015 through fiscal 2019 we acquired GATR, DTECH, TeraLogics, Vocality, MotionDSP, Shield Aviation and Nuvotronics in connection with our strategic efforts to build and expand our C4ISR business. In fiscal 2019 we acquired GRIDSMART and Trafficware to complement our integrated traffic solutions business.

We may not be able to integrate acquired companies successfully without substantial expense, delay or operational or financial problems. Such expenses, delays or operational or financial problems may include the following:

- we may need to divert management resources to integration, which may adversely affect our ability to pursue other more profitable activities;
- integration may be difficult as a result of the necessity of coordinating geographically separated organizations, integrating personnel with disparate business backgrounds and combining different corporate cultures;
- we may not be able to eliminate redundant costs anticipated at the time we select acquisition candidates; and
- one or more of our acquisitions may have unexpected liabilities, fraud risk, or adverse operating issues that we fail to discover through our due diligence procedures prior to the acquisition.

As a result, the integration of acquired businesses may be costly and may adversely impact our results of operations and financial condition. Acquisitions also could result in dilutive issuances of equity securities or the incurrence of debt, which could adversely affect our operating results. In addition, we may not achieve the anticipated benefits from any acquisition, in which case our results of operations, business, and financial condition may suffer.

Changes in future business or other market conditions could cause business acquisitions or investments and/or recorded goodwill or other long-term assets to become impaired, resulting in substantial losses and write-downs that would reduce our results of operations.

As part of our strategy, we have in the past acquired, and expect to continue to acquire, from time to time, businesses, or a minority or majority interest in a business. These acquisitions or investments are made upon analysis and due diligence procedures designed to achieve a desired return or strategic objective. These procedures often involve certain assumptions and judgment in determining acquisition price. After acquisition, unforeseen issues could arise which adversely affect the anticipated returns or which are otherwise not recoverable as an adjustment to the purchase price. Even after careful integration efforts, actual operating results may vary significantly from initial estimates.

A significant portion of the purchase price of companies we acquire may be allocated to acquired goodwill. We evaluate our recorded goodwill balances for potential impairment annually as of July 1, or when circumstances indicate that the carrying value may not be recoverable. Any goodwill impairment could result in substantial losses and write-downs that would reduce our results of operations. For more information on the accounting policies we have in place for impairment of goodwill, see our discussion under “Valuation of Goodwill” in Item 7 of this Form 10-K.

Our employees or third-party contractors may engage in misconduct or other improper activities, which could harm our business, financial condition and results of operations.

We are exposed to the risk of employee and third-party contractor fraud or other misconduct. Employee and third-party contractor misconduct could include intentionally failing to comply with U.S. government procurement regulations, engaging in unauthorized activities, attempting to obtain reimbursement for improper expenses, or submitting falsified time records, which could result in legal proceedings against us, lost contracts or reduced revenues.

Employee and third-party contractor misconduct could also involve improper use of our customers’ sensitive or classified information, which could result in regulatory sanctions against us and serious harm to our reputation. Misconduct could also involve making payments, or offering something of value, to government officials or third parties that would expose us to being in violation of the Foreign Corrupt Practices Act, the UK Anti-Bribery Act or similar laws in other countries.

It is not always possible to deter employee or third-party contractor misconduct, and the precautions we take to prevent and detect this activity may not be effective in controlling unknown or unmanaged risks or losses, which could harm our business, financial condition and results of operations. In addition, alleged or actual employee or third-party contractor misconduct could result in investigations or prosecutions of employees or third-party contractors engaged in the subject activities, which could result in unanticipated consequences or expenses and management distraction for us regardless of whether we are alleged to have any responsibility.

Unanticipated changes in our tax provisions or exposure to additional tax liabilities could affect our profitability.

Our business operates in many locations under government jurisdictions that impose taxes based on income and other criteria. Changes in domestic or foreign tax laws and regulations, or their interpretation, could result in higher or lower tax rates assessed, changes in the taxability of certain revenues or activities, or changes in the deductibility of certain expenses, thereby affecting our tax expense and profitability. In addition, audits by tax authorities could result in unanticipated increases in our tax expense.

Continued narrowing of the definition of a “commercial item” for federal government contracting purposes could affect our profitability.

If the federal government continues to narrow the definition of a “commercial item” for government contracting purposes and increases the aggressiveness in challenging our assertions that items we furnish to the government as “commercial items” our profitability on the affected contracts could be reduced.

Changes in accounting principles and guidance, or their interpretation, could result in unfavorable accounting charges or effects, including changes to previously filed financial statements, which could cause our stock price to decline.

We prepare our consolidated financial statements in accordance with accounting principles generally accepted in the United States. These principles are subject to interpretation by the SEC and various bodies formed to create and interpret appropriate accounting principles and guidance. A change in these principles or guidance, or in their interpretations, may have a significant effect on our reported results, as well as our processes and related controls, and may retroactively affect previously reported results.

For example, in May 2014, the Financial Accounting Standards Board issued Accounting Standards Update (ASU) 2014-09, Revenue from Contracts with Customers, as amended (commonly referred to as ASC 606). We adopted ASC 606 effective October 1, 2018 using the modified retrospective transition method. The adoption of ASC 606 resulted in a change in our significant accounting policy regarding revenue recognition and resulted in changes in our accounting policies regarding contract estimates, backlog, inventory, contract assets, long-term capitalized contract costs, and contract liabilities. The cumulative effect of applying the standard was an increase of \$24.5 million to shareholders' equity as of October 1, 2018. However, the adoption of ASC 606 or any other new or revised accounting standard could adversely affect our financial position or operating results in the future or may retroactively adversely affect previously reported results, which could cause our stock price to decline.

For a discussion of the impact that the adoption of ASC 606 has had and is expected to have on our consolidated financial statements and related disclosures, see "Recently Adopted Accounting Pronouncements" in Note 1 of the Consolidated Financial Statements of this Form 10-K.

Our results of operations have historically fluctuated and may continue to fluctuate significantly in the future, which could adversely affect our stock price.

Our results of operations are affected by factors such as the unpredictability of contract awards due to the long procurement process for most of our products and services, the potential fluctuation of governmental agency budgets, any timing differences between our work performed and costs incurred under a contract and our ability to recognize revenue and generate cash flow from such contract, the time it takes for the new markets we target to develop and for us to develop and provide products and services for those markets, competition and general economic conditions. Our contract type/product mix and unit volume, our ability to keep expenses within budget and our pricing affect our operating margins. Significant growth in costs to complete our contracts may adversely affect our results of operations in future periods and cause our financial results to fluctuate significantly on a quarterly or annual basis. In addition, certain contracts in our CTS segment are structured such that we incur significant expenses during the design and build phases of the contract that are not offset by revenue recognized or cash flows generated under the contract until we deliver a product or perform operational or maintenance services during the latter phases of the contract. Consequently, we do not believe that comparison of our results of operations from period to period is necessarily meaningful or predictive of our likely future results of operations. In future financial periods our operating results or cash flows may be below the expectations of public market analysts or investors, which could cause the price of our stock to decline significantly.

The funding and costs associated with our pension plans may cause our earnings, cash flows, and shareholders' equity to fluctuate significantly from year to year.

Certain of our employees in the U.S. are covered by a noncontributory defined benefit pension plan and approximately one-half of our European employees are covered by a contributory defined benefit pension plan. The impact of these plans on our GAAP earnings may be volatile in that the amount of expense we record for our pension plans may materially change from year to year because those calculations are sensitive to changes in several key economic assumptions, including discount rates, inflation, salary growth, expected return on plan assets, retirement rates and mortality rates. Changes in these factors affect our plan funding, cash flows, earnings, and shareholders' equity.

We have taken certain actions to mitigate the effect of our defined benefit pension plans on our financial results. For example, benefits under the U.S. plan were frozen as of December 31, 2006, so no new benefits have accrued after that

date, and benefits under the European plan were frozen as of September 30, 2010, though the European plan is a final pay plan, which means that benefits will be adjusted for increases in the salaries of participants until their retirement or departure from the company. U.S. and European employees hired subsequent to the dates of freezing of the respective plans are not eligible for participation in the defined benefit plans. For more information on how these factors could impact earnings, cash flows and shareholders' equity, see "Pension costs" in Item 7 of this Form 10-K.

We are subject to various investigations, claims and litigation that could ultimately be resolved against us.

The size, nature and complexity of our business make us susceptible to investigations, claims, and litigation, particularly those involving governments. We are and may become subject to investigations, claims and administrative, civil or criminal litigation globally and across a broad array of matters, including, but not limited to, government contracts, false claims, products liability, fraud, environmental, intellectual property, tax, export/import, anti-corruption, anti-trust, breach of contract, labor, wage and hour, health and safety, employee benefits and plans, including plan administration, and improper payments. These matters could divert financial and management resources; result in fines, penalties, compensatory, treble or other damages or non-monetary relief; and otherwise disrupt our business. Government regulations also provide that certain allegations against a contractor may lead to suspension or debarment from government contracts or suspension of export privileges for a company or one or more of its components. Suspension, debarment, or being proposed for debarment could have a material adverse effect on our company because of our reliance on government contracts and export authorizations. An investigation claim or litigation, even if fully indemnified or insured, could also negatively impact our reputation among our customers and the public, and make it more difficult for us to compete effectively or obtain adequate insurance in the future. Investigations, claims or litigation could have a material adverse effect on our financial position, results of operations and/or cash flows.

Risks relating to our common stock

The price of our common stock may fluctuate significantly

An active, liquid and orderly market for our common stock may not be sustained, which could depress the trading price of our common stock.

Volatility in the market price of our common stock may prevent you from being able to sell your shares at or above the price you paid for your shares or at all. The market price of our common stock could fluctuate significantly for various reasons, which include:

- our quarterly or annual earnings or those of our competitors;
- the public's reaction to our press releases, our other public announcements and our filings with the SEC;
- changes in earnings estimates or recommendations by research analysts who track our common stock or the stocks of our competitors;
- failure to meet the expectations of research analysts;
- inaccuracy of our guidance regarding future operating results;
- new laws or regulations or new interpretations of laws or regulations applicable to our business;
- changes in accounting standards, policies, guidance, interpretations or principles;
- changes in general conditions in the domestic and global economies or financial markets, including those resulting from war, incidents of terrorism or responses to such events;
- litigation involving our company or investigations or audits by regulators into the operations of our company or our competitors;

- strategic action by our competitors; and
- sales of common stock by our directors, executive officers and significant shareholders.

In addition, the stock market in general has experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of those companies. Broad market and industry factors may seriously affect the market price of our common stock, regardless of actual operating performance. In addition, in the past, following periods of volatility in the overall market and the market price of a particular company's securities, securities class action litigation has often been instituted against these companies. If litigation is instituted against us, it could result in substantial costs and a diversion of our management's attention and resources.

Your percentage ownership in us may be diluted by future issuances of capital stock, which could reduce your influence over matters on which shareholders vote.

Our board of directors has the authority, without action or vote of our shareholders, to issue all or any part of our authorized but unissued shares of common stock, including shares issuable upon the exercise of options and the vesting of restricted stock units, shares that may be issued in the future under our Amended and Restated 2015 Incentive Award Plan or shares of our authorized but unissued preferred stock. For example, in December 2018, we completed the sale of approximately 3.8 million shares of our common stock in an underwritten public offering. Issuances of common stock or preferred voting stock could reduce your influence over matters on which our shareholders vote and, in the case of issuances of preferred stock, likely could result in your interest in us being subject to the prior rights of holders of that preferred stock.

Provisions in our charter documents and Delaware law could delay or prevent a change in control of Cubic.

Provisions of our amended and restated certificate of incorporation and amended and restated bylaws may discourage, delay or prevent a merger, acquisition or other change in control that shareholders may consider favorable, including transactions in which shareholders might otherwise receive a premium for their shares. In addition, these provisions may frustrate or prevent any attempt by our shareholders to replace or remove our current management by making it more difficult to replace or remove our board of directors. These provisions include:

- prior to the date of the transaction, an affirmative vote of the holders of at least the majority of our outstanding common stock is required for the approval, adoption or authorization of a business combination;
- a prohibition on shareholder action through written consent;
- a requirement that special meetings of shareholders be called only by our board of directors or by a committee of our board of directors that has been duly designated to do so by our board of directors;
- the authority of our board of directors to issue preferred stock with such terms as our board of directors may determine; and
- a requirement for the affirmative vote of the holders of at least the majority of the total voting power of all outstanding shares of our voting stock to amend our amended and restated bylaws, or to amend specific provisions of our amended and restated certificate of incorporation.

In addition, Delaware law prohibits a publicly held Delaware corporation from engaging in a business combination with an interested shareholder, generally a person who, together with its affiliates, owns or within the last three years has owned 15% of our voting stock, for a period of three years after the date of the transaction in which the person became an interested shareholder, unless the business combination is approved in a prescribed manner. Accordingly, Delaware law may discourage, delay or prevent a change in control of our company.

If we are unable to pay semiannual dividends at the targeted level, our reputation and stock price may be harmed.

We have consistently paid cash dividends to our shareholders since 1971, and, in fiscal 2019, we paid \$8.4 million of cash dividends to our shareholders.

The dividend program requires the use of a portion of our cash flows. Our ability to continue to pay semiannual dividends will depend on our ability to generate sufficient cash flows from operations in the future. This ability may be subject to certain economic, financial, competitive and other factors that are beyond our control. Our board of directors may, at its discretion, decrease the targeted semiannual dividend amount or entirely discontinue the payment of dividends at any time. Any failure to pay dividends after we have announced our intention to do so may adversely affect our reputation and investor confidence in us, and negatively impact our stock price.

CAUTIONARY STATEMENT ABOUT FORWARD-LOOKING INFORMATION

This report, including the documents incorporated by reference herein, contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 that are subject to the safe harbor created by such Act. Any statements about our expectations, beliefs, plans, objectives, assumptions, future events or our future financial and/or operating performance, including those concerning new programs and growth in the markets in which we do business, Goal 2020 and our five key priorities, increases in demand for our products and for fully integrated systems, retention of existing contracts and receipt of new contracts, the development of new products, systems and services, expansion of our automated payment and fare collection systems and services, maintenance of long-term relationships with our existing customers, expansion of our service offerings and customer base for services, maintenance of a diversified business mix, expansion of our international footprint, strategic acquisitions, U.S. and foreign government funding, supplies of raw materials and purchased parts, cash needs, financial condition, liquidity, prospects, and the trends that may affect us or the industries in which we operate, are not historical and may be forward-looking.

These statements are often, but not always, made through the use of words or phrases such as “may,” “will,” “anticipate,” “estimate,” “plan,” “project,” “continuing,” “ongoing,” “expect,” “believe,” “intend,” “predict,” “potential,” “opportunity” and similar words or phrases or the negatives of these words or phrases. These forward-looking statements involve risks, estimates, assumptions and uncertainties, including those discussed in “Risk factors” and elsewhere throughout this report and in the documents incorporated by reference herein, that could cause actual results to differ materially from those expressed in these statements.

Such risks, estimates, assumptions and uncertainties include, among others: our dependence on U.S. and foreign government contracts; delays in approving U.S. and foreign government budgets and cuts in U.S. and foreign government defense expenditures; the ability of certain government agencies to unilaterally terminate or modify our contracts with them; the effects of potential sequestration on our contracts; our assumptions covering behavior by public transit authorities; our ability to successfully integrate new companies into our business and to properly assess the effects of such integration on our financial condition; the U.S. government’s increased emphasis on awarding contracts to small businesses, and our ability to retain existing contracts or win new contracts under competitive bidding processes; negative audits by the U.S. government; the effects of politics and economic conditions on negotiations and business dealings in the various countries in which we do business or intend to do business; competition and technology changes in the defense and transportation industries; the change in the way transit agencies pay for transit systems: our ability to accurately estimate the time and resources necessary to satisfy obligations under our contracts; the effect of adverse regulatory changes on our ability to sell products and services; our ability to identify, attract and retain qualified employees; our failure to properly implement our enterprise resource planning system; unforeseen problems with the implementation and maintenance of our information systems; business disruptions due to cyber security threats, physical threats, terrorist acts, acts of nature and public health crises; our involvement in litigation, including litigation related to patents, proprietary rights and employee misconduct; our reliance on subcontractors and on a limited number of third parties to manufacture and supply our products; our ability to comply with our development contracts and to successfully develop, introduce and sell new products, systems and services in current and future markets; defects in, or a lack of adequate coverage by insurance or indemnity for, our products and systems; changes in U.S. and foreign tax laws, exchange rates or our economic assumptions regarding our pension plans; unanticipated issues related to the restatement of our financial statements; our ability to monitor and evaluate the effectiveness of new processes and procedures we

have implemented to remediate the material weaknesses that existed in our internal control over financial reporting; and other factors discussed elsewhere in this report.

Because the risks, estimates, assumptions and uncertainties referred to above could cause actual results or outcomes to differ materially from those expressed in any forward-looking statements made by us or on our behalf, you should not place undue reliance on any forward-looking statements. In addition, past financial and/or operating performance is not necessarily a reliable indicator of future performance and you should not use our historical performance to anticipate results or future period trends.

Further, any forward-looking statement speaks only as of the date on which it is made, and, except as required by law, we undertake no obligation to update any forward-looking statement to reflect events or circumstances after the date on which the statement is made or to reflect the occurrence of unanticipated events. New factors emerge from time to time, and it is not possible for us to predict which factors will arise. In addition, we cannot assess the impact of each factor on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements.

Item 1B. UNRESOLVED STAFF COMMENTS.

None

Item 2. PROPERTIES.

We conduct our operations in approximately 2.0 million square feet of both owned and leased properties located in the United States and foreign countries. We own approximately 22% of the square footage, including about 265,000 square feet in San Diego, CA, 101,000 square feet in Tullahoma, TN, and 69,000 square feet in Salfords, Surrey, UK. All other properties are leased. In fiscal 2019, we entered into agreements related to the construction and leasing of two buildings on our existing corporate campus in San Diego, California. Under these agreements, a financial institution will own the buildings, and we will lease the property for a term of five years upon their completion. In fiscal 2019 we also sold the land and buildings comprising our separate CTS campus in San Diego. We have entered into a lease with the buyer of this campus and CTS employees will continue to occupy this separate campus until the new buildings on our corporate campus are ready for occupancy in fiscal 2021. In addition we also sold land and buildings in Orlando, Florida in fiscal 2019 and we are entering a lease for new space in Orlando to accommodate our employees and operations in Orlando.

All owned and leased properties are considered in good condition and adequately utilized. As of September 30, 2019 we had significant properties at the following locations:

Corporate: Arlington, VA; Orlando, FL; and San Diego, CA.

Investment Properties: Terterboro, NJ.

CTS: Amherst, NY; Amsterdam, Netherlands; Atlanta, GA; Balcatta, Australia; Boston, MA; Brisbane, Australia; Burnaby, BC, Canada; Cheshire, UK; Chicago, IL; Concord, CA; Concord, NH; Concord, Ontario, Canada; Cumbernauld, Scotland; Greenford, UK; Hamburg, Germany; Hyderabad, India; Kingswinford, UK; Knoxville, TN; London, UK; Los Angeles, CA; Malden, MA; Mallusk, Ireland; Malmo, Sweden; New York, NY; Norwalk, CA; Oakland, CA; Portsmouth, NH; Queensland, Australia; Quincy, MA; Rozelle, Australia; San Francisco, CA; Silverwater, Australia; Stockton-on-Tees, UK; Sugar Land, TX; Surrey, UK; Sydney, Australia; Tullahoma, TN; and West Sussex, UK.

CMS: Aberdeen, MD; Ashburn, VA; Blacksburg, VA; Dallas, TX; Durham, NC; Fayetteville, NC; Hanover, MD; Huntsville, AL; Pendleton, OR; Radford, VA; San Diego, CA; and Tampa, FL; Woburn, MA.

CGD: Abu Dhabi, UAE; Amesbury, UK; Auckland, New Zealand; Austin, TX; Beavercreek, OH; Chippenham Wilshire, UK; Fyschwyck, Australia; Helsingør, Denmark; Orlando, FL; Riyadh, Saudi Arabia; Rome, Italy; Shackleford, UK; Singapore, Asia; Tijuana, Mexico; and Townsville, Australia.

Item 3. LEGAL PROCEEDINGS.

In August 2019, a transit authority asserted loss of revenue due to alleged accidental undercharging of their customers for specific transactions by a fare system which we operate for them and has requested a corresponding recoupment from us. Based upon our investigation into this matter, we believe this matter will not have a materially adverse effect on our financial position, results of operations, or cash flows. No liability for this claim has been recorded as of September 30, 2019.

We consider all other current legal matters to be ordinary proceedings incidental to our business. We believe the outcome of these proceedings will not have a materially adverse effect on our financial position, results of operations, or cash flows.

Item 4. MINE SAFETY DISCLOSURES.

Not Applicable.

PART II

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

The principal market on which our common stock is being traded is the New York Stock Exchange under the symbol CUB. The closing high and low sales prices for the stock, as reported in the consolidated transaction reporting system of the New York Stock Exchange for the quarterly periods during the past two fiscal years, and dividend information for those periods, are as follows:

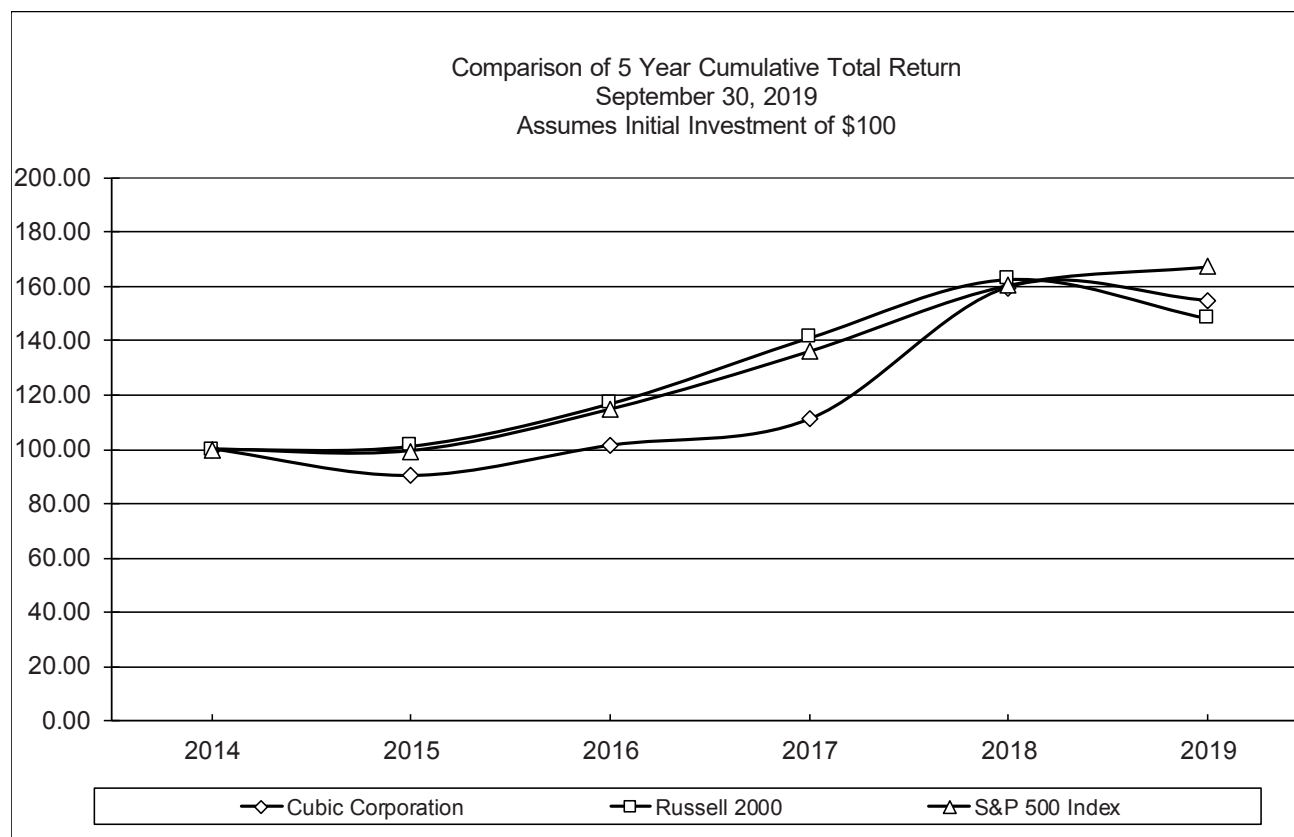
MARKET AND DIVIDEND INFORMATION

Quarter	Sales Price of Common Shares				Dividends per Share	
	Fiscal 2019		Fiscal 2018		Fiscal 2019	Fiscal 2018
	High	Low	High	Low		
First	\$ 72.29	\$ 50.85	\$ 63.00	\$ 51.90	—	—
Second	65.25	53.09	65.65	54.05	\$ 0.14	\$ 0.14
Third	64.48	53.43	71.85	59.80	—	—
Fourth	73.00	63.36	76.85	65.90	\$ 0.14	\$ 0.14

On November 1, 2019, the closing price of our common stock on the New York Stock Exchange was \$74.26. There were 495 shareholders of record of our common stock as of November 1, 2019.

Performance Graph

The following graph illustrates the cumulative total shareholder return over the last five years of Cubic's common stock, the S&P 500 Index, and the Russell 2000 Index. The graph assumes an investment of \$100 on October 1, 2014.



Item 6. SELECTED FINANCIAL DATA.**FINANCIAL HIGHLIGHTS AND SUMMARY OF CONSOLIDATED OPERATIONS**

(amounts in thousands, except per share data)

This summary should be read in conjunction with the related consolidated financial statements and accompanying notes in Item 8 of this Form 10-K.

	Years Ended September 30,				
	2019 (3)	2018	2017	2016	2015
Results of Operations:					
Sales	\$ 1,496,475	\$ 1,202,898	\$ 1,107,709	\$ 1,070,601	\$ 1,028,899
Cost of sales	1,065,060	835,392	779,323	766,477	729,179
Selling, general and administrative expenses (2)	270,064	258,644	240,196	253,163	195,752
Research and development	50,132	52,398	52,652	31,976	17,992
Amortization of purchased intangibles	42,106	27,064	30,245	29,356	19,860
Interest expense	20,453	10,424	15,027	11,199	4,400
Income taxes (1)	11,040	7,093	14,658	(14,357)	46,626
Net income (loss) from continuing operations (1) (2)	41,306	7,793	(25,740)	(12,080)	10,170
Net income (loss) from discontinued operations	(1,423)	4,243	14,531	13,815	12,744
Net income (loss) attributable to Cubic (1) (2)	49,694	12,310	(11,209)	1,735	22,885
Per Share Data:					
Net income (loss) per share:					
Basic					
Continuing operations (1) (2)	\$ 1.68	\$ 0.30	\$ (0.95)	\$ (0.45)	\$ 0.38
Discontinued operations	\$ (0.05)	\$ 0.16	\$ 0.54	\$ 0.51	\$ 0.47
Basic earnings per share (1) (2)	\$ 1.63	\$ 0.45	\$ (0.41)	\$ 0.06	\$ 0.85
Diluted					
Continuing operations (1) (2)	\$ 1.67	\$ 0.29	\$ (0.95)	\$ (0.45)	\$ 0.38
Discontinued operations	\$ (0.05)	\$ 0.16	\$ 0.54	\$ 0.51	\$ 0.47
Diluted earnings per share (1) (2)	\$ 1.62	\$ 0.45	\$ (0.41)	\$ 0.06	\$ 0.85
Cash dividends	0.27	0.27	0.27	0.27	0.27
Shares used in calculating net income (loss) per share:					
Basic	30,495	27,229	27,106	26,976	26,872
Diluted	30,606	27,351	27,106	26,976	26,938
Balance Sheet Data:					
Shareholders' equity related to Cubic	\$ 961,649	\$ 700,121	\$ 689,631	\$ 689,896	\$ 756,288
Equity per share, basic	31.53	25.71	25.44	25.57	28.14
Total assets	1,847,170	1,304,883	1,336,285	1,504,408	1,300,276
Short-term borrowings	195,500	—	55,000	240,000	60,000
Long-term debt	199,824	199,793	199,761	200,741	126,705

- (1) Fiscal 2019 tax provision primarily resulted from tax on foreign earnings and state income tax, partially offset by \$6.6 million of tax benefits in connection with acquisitions involving significant U.S. deferred tax liabilities which resulted in a release of deferred tax valuation allowance. Fiscal 2018 tax provision includes a one-time tax benefit of \$7.1 million related to U.S. Tax Reform. Fiscal 2017 pretax loss totaled \$11.1 million while the income tax provision totaled \$14.7 million. The provision primarily resulted from tax on foreign earnings and U.S. tax expense related to the amortization of indefinite lived intangible assets, partially offset by tax benefit related to the release of reserves for uncertain tax positions due to the positions being effectively settled. Fiscal 2016 tax provision included \$6.3 million of expense related to nondeductible acquisition-related compensation, as well as \$23.8 million of tax benefit in connection with an acquisition involving significant U.S. deferred tax liabilities which allowed for a subsequent release of deferred tax valuation allowance. Fiscal 2015 tax provision included the effect of establishing a deferred tax valuation allowances on U.S. deferred tax assets totaling \$35.8 million.
- (2) Results of the year ended September 30, 2016 included an \$18.5 million charge related to a business acquisition purchase accounting charge, before applicable income taxes.
- (3) We adopted Accounting Standards Update 2014-09, *Revenue from Contracts with Customers* (commonly known as Accounting Standards Codification (ASC) 606), effective October 1, 2018 using the modified retrospective transition method. Results for reporting periods beginning after September 30, 2018 are presented under ASC 606, while prior period comparative information has not been restated and continues to be reported in accordance with ASC 605, the accounting standard in effect for periods ending prior to October 1, 2018. Based on contracts in process at September 30, 2018, upon adoption of ASC 606 we recorded a net increase to shareholders' equity of \$24.5 million, which includes the acceleration of net sales of approximately \$114.9 million and the related cost of sales of \$90.4 million. In accordance with the modified retrospective transition provisions of ASC 606, we will not recognize any of the accelerated net sales and related cost of sales through October 1, 2018 in our Consolidated Statements of Operations for any historical or future period. For more information on the impact of our adoption of ASC 606, see Note 2 to the Consolidated Financial Statements in Item 8 of this Form 10-K.

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

Business Overview

Cubic is a technology-driven, market-leading global provider of innovative, mission-critical solutions that reduce congestion and increase operational readiness and effectiveness through superior situational understanding. Cubic designs, integrates and operates systems, products and services focused in the transportation, command, control, communication, computers, intelligence, surveillance and reconnaissance (C4ISR), and training markets. We offer integrated payment and information systems, expeditionary communications, cloud-based computing and intelligence delivery, as well as state-of-the-art training and readiness solutions. We operate in three reportable business segments: Cubic Transportation Systems (CTS), Cubic Mission Solutions (CMS), and Cubic Global Defense Systems (CGD).

For more information on our business, see our discussion in Item 1 of this Form 10-K.

FISCAL 2019 RESULTS COMPARED WITH FISCAL 2018 RESULTS

CONSOLIDATED RESULTS

	<u>Fiscal 2019</u>	<u>Fiscal 2018</u>	<u>% Change</u>
	<u>(in millions, except per share data)</u>		
Sales	\$ 1,496.5	\$ 1,202.9	24 %
Operating income	86.2	24.4	253
Net income from continuing operations attributable to Cubic	51.1	8.1	534
Diluted earnings per share from continuing operations attributable to Cubic	1.67	0.29	466
Adjusted EBITDA	146.6	104.6	40
Adjusted Net Income	95.6	60.0	59
Adjusted EPS	3.13	2.19	43

Note on non-GAAP measures: Throughout the following results of operations discussion, we disclose certain non-GAAP financial measures, including Adjusted EBITDA, Adjusted Net Income and Adjusted EPS. For an explanation and reconciliation of such measures, see the section titled 'Non-GAAP Financial Information' below.

Note on comparability of fiscal 2019 and 2018 results: We adopted Accounting Standards Update (ASU) 2014-09, *Revenue from Contracts with Customers* (commonly known as Accounting Standards Codification (ASC) 606), effective October 1, 2018 using the modified retrospective transition method. In accordance with the modified retrospective transition method, fiscal 2019 is presented under ASC 606, while fiscal 2018 is presented under ASC 605, *Revenue Recognition*, the accounting standard in effect for periods ending prior to October 1, 2018. The cumulative effect of the change in accounting for periods prior to October 1, 2018 was recognized through shareholders' equity at the date of adoption.

The table below quantifies the impact of adopting ASC 606 on sales, operating income, net income from continuing operations attributable to Cubic, for the year ended September 30, 2019 (in millions):

	Fiscal 2019		
	Under ASC 605	Effect of ASC 606	As Reported Under ASC 606
Sales:			
Cubic Transportation Systems	\$ 788.0	\$ 61.8	\$ 849.8
Cubic Mission Solutions	327.2	1.6	328.8
Cubic Global Defense	272.1	45.8	317.9
Total sales	<u>\$ 1,387.3</u>	<u>\$ 109.2</u>	<u>\$ 1,496.5</u>
Operating income:			
Cubic Transportation Systems	\$ 65.9	\$ 11.3	\$ 77.2
Cubic Mission Solutions	7.3	0.5	7.8
Cubic Global Defense	19.9	3.1	23.0
Unallocated corporate expenses	(21.8)	—	(21.8)
Total operating income	<u>\$ 71.3</u>	<u>\$ 14.9</u>	<u>\$ 86.2</u>
Net income from continuing operations attributable to Cubic	\$ 42.3	\$ 8.8	\$ 51.1

Sales: Our sales increased 24% to \$1.496 billion in fiscal year 2019 from \$1.203 billion in 2018. The increases in sales for CTS and CMS of 27% and 59%, respectively, were partially offset by a decrease in CGD sales of 2%. Sales from businesses we acquired in 2019 and 2018 amounted to \$83.3 million and \$0.6 million for fiscal years 2019 and 2018, respectively. The average exchange rates between the prevailing currencies in our foreign operations and the U.S. dollar between 2018 and 2019 had a negative impact on sales of \$25.3 million, which was 2% of 2019 sales. The impacts of changes in foreign currency exchange rates on sales from 2018 to 2019 predominantly affected our CTS segment results. See the segment discussions below for further analysis of segment sales.

Gross Margin: Our gross margin percentage from product sales was 28% in 2019, compared to 33% in 2018. The decrease in product sales gross margins was primarily due to sales mix. The gross margin on service sales was 31% in 2019 compared to 27% in 2018. The increase in service sales gross margins was primarily caused by an increase in service sales by CGD, which has a higher average margin percentage on services sales than our other business segments.

Selling, General, and Administrative: SG&A expenses increased to \$270.1 million in 2019, compared to \$258.6 million in 2018. However, as a percentage of sales SG&A decreased to 18% in 2019 compared to 22% in 2018. The increase in SG&A expense was primarily due to \$29.2 million of SG&A expenses incurred by three businesses we acquired in fiscal 2019 including the impacts of business acquisition accounting which is further described in the segment discussions below. These increases in SG&A expenses were partially offset by the results of cost reduction activities undertaken in fiscal 2019 as well as reduced strategic and IT system resource expenses which totaled \$8.2 million in 2019 compared to \$24.1 million in 2018.

Amortization of Purchased Intangibles: Amortization of purchased intangibles totaled \$42.1 million in 2019 compared to \$27.1 million in 2018. The increase is due to the amortization of purchased intangibles for companies acquired by Cubic in fiscal year 2019.

Gain on the Sale of Fixed Assets: In line with our *One Cubic* strategic objective, in fiscal 2019, we entered into agreements related to the construction and leasing of two buildings on our existing corporate campus in San Diego, California that will allow us to co-locate our San Diego-based employees on a single modern campus to foster innovation and collaboration across our business. Under these agreements, a financial institution will own the buildings, and we will lease the facilities for a term of five years commencing upon their completion. In the third quarter of fiscal 2019, we sold land and buildings comprising our separate CTS campus in San Diego. We have entered into a lease with the buyer of this campus and CTS employees will continue to occupy this separate campus until the new buildings on our corporate

campus are ready for occupancy in fiscal 2021. In the third quarter of fiscal 2019, we also sold land and buildings in Orlando, Florida and we are entering a lease for new space with a smaller footprint in Orlando to accommodate our employees and operations in Orlando. In connection with the sale of these real estate campuses we received total net proceeds of \$44.9 million and recognized net gains on the sales totaling \$32.5 million within operating income.

Research & Development: Company-sponsored R&D spending totaled \$50.1 million in 2019 compared to \$52.4 million in 2018. For fiscal 2019 there was a shift in the mix of R&D expenditures between our business segments with CMS increasing its portion of our total R&D spend and CTS and CGD decreasing. In fiscal 2019 CMS' R&D expenditures were driven by the development of secure communications and ISR-as-a-service technologies and CTS continued to make R&D investments in new transportation product development, including fare collection technologies, real-time passenger information and development of intelligent transport systems and analytic technologies. CGD's R&D expenditures focused on next generation live, virtual and constructive training systems.

In addition to company-sponsored R&D, a significant portion of our new product development occurs in conjunction with the performance of work on our contracts. These costs are included in cost of sales in our Consolidated Statements of Operations as they are directly related to contract performance. The cost of contract R&D activities included in our cost of sales were \$78.4 million in fiscal 2019 compared to \$69.6 million in fiscal 2018. The increase in contract R&D activities is primarily due to significant development on CTS contracts in New York, Boston, San Francisco Bay Area and Brisbane.

Operating Income: Operating income increased to \$86.2 million in 2019 compared to \$24.4 million in 2018 driven by improvements in profitability from all three of our businesses. CTS operating income increased by 28% to \$77.2 million in 2019 compared to \$60.4 million in 2018, primarily due to increased volumes on contracts in New York, Boston, San Francisco Bay Area and Brisbane. CMS generated operating income of \$7.8 million in fiscal 2019 compared to an operating loss of \$0.1 million in 2018. The increase in CMS profitability was driven by broad increases in sales volume across all of its major product lines. CGD's operating income increased 39% to \$23.0 million in 2019 compared to \$16.6 million in 2018 primarily due to the results of cost reduction efforts and reduced R&D expenditures. Businesses acquired in 2019 and 2018 generated operating losses of \$22.9 million in 2019 compared to \$3.5 million in 2018, including acquisition-related costs totaling \$9.7 million in 2019 and \$1.0 million in 2018, and including amortization of purchased intangible assets of \$22.0 million in 2019 and \$0.5 million in 2018. Excluding the gain on sale of fixed assets noted above, the unallocated corporate and other costs were \$54.3 million in 2019 compared to \$52.5 million in 2018, and included expenses related to strategic and IT system resource planning as part of our *One Cubic* initiative totaling \$8.2 million in 2019 and \$24.1 million in 2018. Unallocated corporate costs also include restructuring charges of \$8.9 million and \$3.1 million in fiscal years 2019 and 2018, respectively. The average exchange rates between the prevailing currencies in our foreign operations and the U.S. dollar resulted in a decrease in operating income of \$3.7 million in 2019 compared to 2018. See the segment discussions below for further analysis of segment operating income.

Interest and Dividend Income and Interest Expense: Interest and dividend income was \$6.5 million in 2019 compared to \$1.6 million in 2018. The increase in interest income in fiscal 2019 was primarily due to the interest income recorded on long-term contracts financing receivables in our consolidated balance sheet. Under ASC 606, in fiscal year 2019 we recognized interest income on such receivables. Interest expense was \$20.5 million in 2019 compared to \$10.4 million in 2018. The change in interest expense generally reflected the increase in our average outstanding debt balances. The average outstanding borrowings under our revolving credit agreement increased during fiscal 2019 primarily to finance the acquisition of three businesses.

Other Income (Expense): Other income (expense) netted to expense of \$20.0 million in fiscal 2019 and \$0.7 million in fiscal 2018. The nonoperating expense in fiscal 2019 included unrealized losses of \$21.6 million caused by the change in the fair value of an interest rate swap held by a variable interest entity (VIE) that is consolidated by Cubic. The 90 percent noncontrolling interest in the net loss of the consolidated VIE, which is comprised primarily of the VIE's loss on its interest rate swap, is added back to our net income to arrive at net income attributable to Cubic.

Income Tax Provision: Our income tax provision totaled \$11.0 million (effective rate of 21%) for fiscal 2019, compared to an income tax provision of \$7.1 million (effective rate of 48%) for fiscal 2018. The fiscal 2019 tax provision primarily resulted from tax on foreign earnings and state income tax, partially offset by tax benefits in connection with

acquisitions involving significant U.S. deferred tax liabilities which allowed for a subsequent release of deferred tax valuation allowance. The fiscal 2018 tax provision, as a result of the Tax Cuts and Jobs Act of 2017 (Tax Act), includes a one-time non-cash tax benefit of \$7.1 million, primarily related to the re-measurement of certain U.S. deferred tax liabilities and the impact of the utilization of indefinite lived deferred tax liabilities as a source of future taxable income when assessing the realizability of indefinite lived deferred tax assets. The change in the valuation allowance does not have any impact on our consolidated operations or cash flows, nor does such an allowance preclude us from using loss carryforwards or other deferred tax assets in the future. Until we re-establish a pattern of continuing profitability, in accordance with the applicable accounting guidance, U.S. income tax expense or benefit related to the recognition of deferred tax assets in the consolidated statement of operations for future periods will be offset by decreases or increases in the valuation allowance with no net effect on the consolidated statement of operations. Our effective tax rate could be affected in future years by, among other factors, the mix of business between U.S. and foreign jurisdictions, fluctuations in the need for a valuation allowance against deferred tax assets, our ability to take advantage of available tax credits and audits of our records by taxing authorities.

As of September 30, 2019, a total valuation allowance of \$69.1 million has been established against U.S. deferred tax assets, certain foreign operating losses and other foreign assets. During fiscal 2019, the valuation allowance decreased by \$12.7 million, of which \$10.0 million was recorded as a net tax benefit in our Consolidated Statement of Operations, offset by amounts recorded through acquisition accounting, retained earnings and other components of income. We will continue to assess the need for a valuation allowance on deferred tax assets and should circumstances change it is possible the valuation allowance, or a portion thereof, will be reversed.

Net Income from Continuing Operations attributable to Cubic: Our net income from continuing operations attributable to Cubic was \$51.1 million (\$1.67 per share) in 2019, compared to \$8.1 million (\$0.29 per share) in 2018. The increase in net income was primarily related to the increase in operating profits including the gain on the sale of fixed assets, partially offset by the increase in interest expense and the increase in our income tax provision, all of which are described above.

Net Income (Loss) from Discontinued Operations: Our net loss from discontinued operations was \$1.4 million in fiscal 2019 compared to net income from discontinued operations of \$4.2 million in fiscal 2018. In fiscal 2018, net income from discontinued operations included the results of the operations of Cubic Global Defense Services (CGD Services) through the date of the sale as well as a loss on the sale of CGD Services of \$6.1 million, which was calculated as the excess of the carrying value of the net assets of CGD Services at the sale date over the sales price, less estimated selling costs of \$4.5 million. In fiscal 2019, we revised certain estimates related to the working capital settlement and reduced the receivable from the purchaser of CGD Services by \$1.4 million and recognized a loss on the sale of CGD Services in the second quarter of fiscal 2019.

Adjusted EBITDA: Adjusted EBITDA increased 40% to \$146.6 million in 2019 compared to \$104.6 million in 2018 and included increases in Adjusted EBITDA for all three business segments as described in the segment disclosures below. The increase in Adjusted EBITDA was primarily due to the same factors that drove the increase in operating income described above, excluding the changes in amortization expense, acquisition transaction costs, and restructuring costs as such items are excluded from Adjusted EBITDA. In addition, Adjusted EBITDA increased by \$5.9 million in 2019 as a result of the adoption of the new revenue recognition standard. Adjusted EBITDA is a non-GAAP financial measure.

Adjusted Net Income: Adjusted Net Income increased 59% to \$95.6 million in 2019 compared to \$60.0 million in 2018. The increase in Adjusted Net Income was primarily due to the same factors that drove the increase in net income from continuing operations attributable to Cubic described above including margin growth on increased sales, but excludes the changes in amortization expense, the gain on sale of fixed assets, acquisition transaction costs, restructuring costs, acquisition related costs, and nonoperating losses as such items are excluded from Adjusted Net Income. In addition, Adjusted Net Income increased by \$9.1 million in 2019 as a result of the adoption of the new revenue recognition standard. Adjusted Net Income is a non-GAAP financial measure.

Adjusted EPS: Adjusted EPS increased 43% to \$3.13 in 2019 compared to \$2.19 in 2018. The increase in Adjusted EPS was due to the same factors that impacted Adjusted Net Income noted above. In addition, Adjusted EPS increased by

\$0.30 in 2019 as a result of the adoption of the new revenue recognition standard. Adjusted EPS is a non-GAAP financial measure.

SEGMENT RESULTS

Cubic Transportation Systems

	<u>Fiscal 2019</u>	<u>Fiscal 2018</u>	<u>% Change</u>
	(in millions)		
Sales	\$ 849.8	\$ 670.7	27 %
Operating income	77.2	60.4	28
Adjusted EBITDA	110.5	73.3	51

Sales: CTS sales increased 27% to \$849.8 million in 2019 compared to \$670.7 million in 2018, including the impact of the adoption of ASC 606. The increase in sales was primarily driven by growth in both organic and inorganic business in North America. Sales in 2019 were higher in the U.S. primarily due to system development on contracts in New York, Boston, and the San Francisco Bay Area. Businesses acquired by CTS during fiscal year 2019, whose operations are all located in the U.S., had sales of \$74.4 million in fiscal year 2019. Sales increased slightly in Australia between fiscal years 2018 and 2019 as increased system development work on a contract in Brisbane was partially offset by the negative impact of foreign currency exchange rates as well as a decrease in service sales. Sales were lower in the UK primarily due to a decrease in system development work in London and the negative impact of currency exchange rates. The average exchange rates between the prevailing currencies in our foreign operations and the U.S. dollar resulted in a decrease in CTS sales of \$22.2 million for 2019 compared to 2018, primarily due to the strengthening of the U.S. dollar against the British pound and Australian dollar.

Amortization of Purchased Intangibles: Amortization of purchased intangibles included in the CTS operating results totaled \$22.0 million in 2019 and \$5.2 million in 2018. The increase is due to the amortization of purchased intangibles for companies acquired by CTS in fiscal year 2019.

Operating Income: CTS operating income increased 28% in 2019 to \$77.2 million compared to \$60.4 million in 2018. The increase in operating income was primarily caused by higher margins on increased work on development projects in New York, Boston, the San Francisco Bay Area and Brisbane, as well as the impact of the adoption of ASC 606. These increases in operating income were partially offset by operating losses incurred by businesses acquired by CTS in fiscal 2019 as well as the negative impact of changes in foreign currency exchange rates. Businesses acquired by CTS in fiscal years 2019 incurred operating losses of \$10.1 million in fiscal 2019, which included acquisition transaction costs of \$8.1 million and amortization of intangible assets totaling \$19.3 million. The average exchange rates between the prevailing currency in our foreign operations and the U.S. dollar resulted in a decrease in CTS operating income of \$3.6 million for 2019 compared to 2018.

Adjusted EBITDA: CTS Adjusted EBITDA increased 51% to \$110.5 million in 2019 compared to \$73.3 million in 2018. The increase in Adjusted EBITDA was primarily driven by the same factors that drove the increase in operating income described above excluding the increases in amortization of purchased intangibles and acquisition transaction costs which are excluded from Adjusted EBITDA. Adjusted EBITDA for CTS increased by \$2.3 million in 2019 as a result of the adoption of the new revenue recognition standard.

Cubic Mission Solutions

	<u>Fiscal 2019</u>	<u>Fiscal 2018</u>	<u>% Change</u>
	<u>(in millions)</u>		
Sales	\$ 328.8	\$ 207.0	59 %
Operating income (loss)	7.8	(0.1)	n/a
Adjusted EBITDA	34.4	26.2	31

Sales: CMS sales increased 59% to \$328.8 million in fiscal 2019 compared to \$207.0 million in 2018. The increase in sales resulted from increased product deliveries in all of our CMS product lines, and particularly expeditionary satellite communications products and secure network products. Businesses acquired during fiscal years 2019 and 2018 whose operations are included in our CMS operating segment had sales of \$8.9 million and \$0.6 million for fiscal years 2019 and 2018, respectively.

Amortization of Purchased Intangibles: Amortization of purchased intangibles included in the CMS results amounted to \$19.5 million in 2019 and \$20.8 million in 2018.

Operating Income: CMS had operating income of \$7.8 million in 2019 compared to an operating loss of \$0.1 million in 2018. The improvement in operating results was primarily from higher sales from expeditionary satellite communications products and secure networks products. The improvements in operating profits was partially offset by operating losses incurred by businesses that CMS acquired during fiscal 2019 and 2018. Businesses acquired by CMS in fiscal years 2019 and 2018 incurred operating losses of \$12.8 million in fiscal 2019 compared to \$3.5 million in fiscal 2018. Included in the operating loss incurred by acquired businesses are acquisition transaction costs of \$1.6 million and \$1.0 million incurred in fiscal years 2019 and 2018, respectively. In addition, the increase in operating profits was partially offset by an increase of \$4.4 million in R&D expenditures from fiscal 2018 to fiscal 2019 related primarily to the development of secure communications and ISR-as-a-service technologies.

Adjusted EBITDA: CMS Adjusted EBITDA increased 31% to \$34.4 million in 2019 compared to \$26.2 million in 2018. The increase in CMS Adjusted EBITDA was primarily due to the same factors that drove the increase in operating income described above, excluding the changes in amortization expense and acquisition transaction costs as such items are excluded from Adjusted EBITDA. Adjusted EBITDA for CMS increased by \$0.5 million in 2019 as a result of the adoption of the new revenue recognition standard. The increase in Adjusted EBITDA was partially offset by the increase in R&D expenditures described above.

Cubic Global Defense

	<u>Fiscal 2019</u>	<u>Fiscal 2018</u>	<u>% Change</u>
	<u>(in millions)</u>		
Sales	\$ 317.9	\$ 325.2	(2)%
Operating income	23.0	16.6	39
Adjusted EBITDA	32.8	26.3	25

Sales: CGD sales decreased 2% to \$317.9 million in 2019 compared to \$325.2 million in 2018. The timing of sales recognition was impacted by the adoption of ASC 606. Under ASC 606, a number of our CGD contracts, most significantly in air combat training and ground live training, for which revenue was historically recorded upon delivery of products to the customer, are now accounted for on the percentage-of-completion cost-to-cost method of revenue recognition. For fiscal 2019, sales were lower from air combat training systems, simulation product development contracts, and international services contracts, partially offset by higher sales from ground combat training systems. The average exchange rates between the prevailing currencies in our foreign operations and the U.S. dollar resulted in a decrease in CGD sales of \$3.2 million for 2019 compared to 2018.

Amortization of Purchased Intangibles: Amortization of purchased intangibles included in the CGD results amounted to \$0.6 million in 2019 and \$1.1 million in 2018.

Operating Income: CGD operating income increased by 39% to \$23.0 million in 2019 compared to \$16.6 million in 2018. For fiscal 2019, operating profits improved primarily due to the results of cost reduction efforts, including headcount reductions designed to optimize our cost position, and reduced R&D expenditures. Operating profits were higher from increased sales of ground combat training system sales but were lower on decreased sales from air combat training systems, simulation product development contracts, and international services contracts. The average exchange rates between the prevailing currency in our foreign operations and the U.S. dollar had no significant impact on CGD operating income between 2018 and 2019.

Adjusted EBITDA: CGD Adjusted EBITDA was \$32.8 million in 2019 compared to \$26.3 million in 2018. The increase in Adjusted EBITDA was primarily driven by the same factors that drove the increase in operating income described above. Adjusted EBITDA for CGD increased by \$3.1 million in 2019 as a result of the adoption of the new revenue recognition standard.

FISCAL 2018 RESULTS COMPARED WITH FISCAL 2017 RESULTS

CONSOLIDATED RESULTS

	<u>Fiscal 2018</u>	<u>Fiscal 2017</u>	<u>% Change</u>
	<u>(in millions, except per share data)</u>		
Sales	\$ 1,202.9	\$ 1,107.7	9 %
Operating income	24.4	2.6	838
Net income (loss) from continuing operations	8.1	(25.7)	n/a
Diluted earnings per share from continuing operations attributable to Cubic	0.29	(0.95)	n/a
Adjusted EBITDA	104.6	87.5	20
Adjusted Net Income	60.0	43.9	37
Adjusted EPS	2.19	1.62	35

Sales: Our sales increased 9% to \$1.203 billion in fiscal year 2018 from \$1.108 billion in 2017. The increases in sales for CTS and CMS of 16% and 23%, respectively, were partially offset by a decrease in CGD sales of 10%. The average exchange rates between the prevailing currencies in our foreign operations and the U.S. dollar between 2017 and 2018 had a positive impact on sales of \$11.9 million, which was 1% of 2018 sales. The impacts of changes in foreign currency exchange rates on sales from 2017 to 2018 predominantly affected our CTS segment results. See the segment discussions below for further analysis of segment sales.

Gross Margin: Our gross margin percentage from product sales was 33% in 2018, compared to 31% in 2017. The increase in product sales gross margins was primarily due to supply chain cost savings and improved sales mix of higher-margin products including secure networks and expeditionary satellite communications products. In addition, we drove improved profitability on certain larger CTS development contracts. The gross margin on service sales was 27% in 2018 compared to 28% in 2017. The slight decrease in gross margins on service sales was primarily driven by a change in mix in our service contracts.

Selling, General, and Administrative: SG&A expenses increased to \$258.6 million or 22% of sales in 2018, compared to \$240.2 million or 22% of sales in 2017. The increase in total SG&A expense was primarily due to increases in bid and proposal costs on new business pursuits and a \$4.9 million increase in expense related to contingent consideration for recent business acquisitions between these periods. SG&A expense also increased as a result of the SG&A expenses of businesses acquired in fiscal 2018 and 2017. These increases in SG&A expenses were partially offset by a decrease in expenses related to strategic and IT system resource planning as part of our *One Cubic* initiative, which totaled \$24.1 million in 2018 compared to \$34.4 million in 2017.

Amortization of Purchased Intangibles: Amortization of purchased intangibles totaled \$27.1 million in 2018 compared to \$30.2 million in 2017. The decrease in amortization expense is related to purchased intangible assets that are amortized based upon accelerated methods.

Research & Development: Company-sponsored R&D spending totaled \$52.4 million in 2018 compared to \$52.7 million in 2017. Company-sponsored R&D spending for CTS was \$13.4 million in 2018 and \$26.3 million in 2017. R&D expenses for CTS in 2017 included \$6.4 million of expenses related to our contract with the New York Metropolitan Transit Authority that was awarded in early fiscal 2018; expenses incurred in 2018 are classified as cost of sales. CTS also continues to make significant R&D investments in new transportation product development, including fare collection technologies, real-time passenger information and development of tolling, Intelligent Traffic Systems and analytic technologies. Company-sponsored R&D spending for CGD was \$16.3 million in 2018 and \$14.4 million in 2017. The increase in CGD's R&D expenditures was caused by the acceleration of our development of next generation live, virtual, constructive, and game-based training systems. Company-sponsored R&D spending for CMS was \$22.7 million in 2018 and \$11.9 million in 2017. The increase in CMS R&D expenses was largely related to the acceleration of our development of our software definable antenna technology.

In addition to company-sponsored R&D, a significant portion of our new product development occurs in conjunction with the performance of work on our contracts. These costs are included in cost of sales in our Consolidated Statements of Operations as they are directly related to contract performance. The cost of contract R&D activities included in our cost of sales were \$69.6 million in fiscal 2018 compared to \$68.0 million in fiscal 2017.

Operating Income: Operating income increased to \$24.4 million in 2018 compared to \$2.6 million in 2017 driven by improved profitability in our CTS and CMS businesses. CTS operating income increased by 52% to \$60.4 million in 2018 compared to \$39.8 million in 2017, primarily due to increased volumes, disciplined execution, the transition of investments to contracts and cost improvements that were realized following prior year investments in cost reduction activities. CMS had an operating loss of \$0.1 million in fiscal 2018 compared to an operating loss of \$9.3 million in 2017 driven by higher volume including the T2C2 Full Rate Production. CGD's operating income decreased 41% to \$16.6 million in 2018 compared to \$28.1 million in 2017. CGD's 2017 results included a one-time positive impact for a Request for Equitable Adjustment of \$8.0 million. Businesses acquired in 2018 and 2017 generated operating losses of \$4.6 million in 2018 compared to \$3.1 million in 2017. Unallocated corporate and other costs were \$52.5 million in 2018 compared to \$56.0 million in 2017, and included expenses related to strategic and IT system resource planning as part of our *One Cubic* initiative totaling \$24.1 million in 2018 and \$34.4 million in 2017. The average exchange rates between the prevailing currencies in our foreign operations and the U.S. dollar resulted in an increase in operating income of \$2.1 million in 2018 compared to 2017. See the segment discussions below for further analysis of segment operating income (loss).

Interest and Dividend Income and Interest Expense: Interest and dividend income was \$1.6 million in 2018 compared to \$1.0 million in 2017. The increase in interest income in fiscal 2018 was primarily due to income on notes receivable from Shield Aviation that we held for a portion of fiscal year 2018 prior to our acquisition of that company. Interest expense was \$10.4 million in 2018 compared to \$15.0 million in 2017. The change in interest expense generally reflected the change in our average outstanding debt balances for these years, including the reduction in outstanding debt in 2018 caused by the use of proceeds from the sale of CGD Services to repay short-term borrowings in the third quarter of fiscal 2018.

Other Income (Expense): Other income (expense) netted to expense of \$0.7 million in fiscal 2018 and \$0.4 million in fiscal 2017. The changes in other income (expense) were caused primarily by the impact of foreign currency exchange rate changes on cash advances to our foreign subsidiaries that are not hedged.

Income Tax Provision: Our income tax provision totaled \$7.1 million (effective rate of 48%) for fiscal 2018, compared to an income tax provision of \$14.7 million (effective rate of negative 132%) for fiscal 2017. As a result of the Tax Act, tax expense for fiscal 2018 includes a one-time non-cash tax benefit of \$7.1 million, primarily related to the re-measurement of certain U.S. deferred tax liabilities and the impact of the utilization of indefinite lived deferred tax liabilities as a source of future taxable income when assessing the realizability of indefinite lived deferred tax assets. The expense for income taxes in fiscal 2017 primarily results from tax on foreign earnings and U.S. tax expense related to the

amortization of indefinite lived intangible assets, partially offset by a benefit related to the release of reserves for uncertain tax positions due to the positions being effectively settled. Generally, the year-over-year comparison of effective tax rates is not meaningful due to the impact of applying the accounting guidance provided by Accounting Standards Codification (ASC) 740-20-45-7, which requires allocation of tax expense amongst all components of income in certain situations and the impact of the U.S. deferred tax asset valuation allowance. The change in the valuation allowance does not have any impact on our consolidated operations or cash flows, nor does such an allowance preclude us from using loss carryforwards or other deferred tax assets in the future. Until we re-establish a pattern of continuing profitability, in accordance with the applicable accounting guidance, U.S. income tax expense or benefit related to the recognition of deferred tax assets in the consolidated statement of operations for future periods will be offset by decreases or increases in the valuation allowance with no net effect on the consolidated statement of operations. Our effective tax rate could be affected in future years by, among other factors, the mix of business between U.S. and foreign jurisdictions, fluctuations in the need for a valuation allowance against deferred tax assets, our ability to take advantage of available tax credits and audits of our records by taxing authorities. As of September 30, 2018, a total valuation allowance of \$81.8 million has been established against U.S. deferred tax assets, certain foreign operating losses and other foreign assets. For fiscal 2018, the valuation allowance was increased by \$24.7 million, of which \$21.1 million was recorded as a net tax expense in our Consolidated Statement of Operations, offset by amounts recorded to other components of income. We will continue to assess the need for a valuation allowance on deferred tax assets and should circumstances change it is possible the valuation allowance, or a portion thereof, will be reversed.

Net Income (Loss) from Continuing Operations Attributable to Cubic: Our net income from continuing operations attributable to Cubic was \$8.1 million (\$0.29 per share) in 2018, compared to a net loss from continuing operations attributable to Cubic of \$25.7 million (\$0.95 per share) in 2017. The change in net income (loss) was primarily related to the changes in operating income (loss) and the changes in tax expense (benefit) described above.

Net Income from Discontinued Operations: Our net income from discontinued operations was \$4.2 million in fiscal 2018 and \$14.5 million in fiscal 2017. In fiscal 2018, net income from discontinued operations includes a loss on the sale of CGD Services of \$6.1 million, which was calculated as the excess of the carrying value of the net assets of CGD Services at the sale date over the sales price, less estimated selling costs of \$4.5 million. Earnings from discontinued operations before income taxes totaled \$14.2 million in fiscal 2018 and \$14.9 million in fiscal 2017. The increase in the average monthly earnings from discontinued operations before income taxes between 2017 and 2018 was attributable to increased readiness and training exercises. The income tax provision for discontinued operations was \$1.6 million in fiscal 2018 and \$0.4 million in fiscal 2017 based upon the application of accounting guidance.

Adjusted EBITDA: Adjusted EBITDA increased 20% to \$104.6 million in 2018 compared to \$87.5 million in 2017. The increases in Adjusted EBITDA in 2018 for CTS and CMS were partially offset by a decrease in Adjusted EBITDA for CGD. The increase in Adjusted EBITDA was primarily due to the same factors that drove the increase in operating income described above, excluding the changes in amortization expense, acquisition transaction costs, and restructuring costs as such items are excluded from Adjusted EBITDA.

Adjusted Net Income: Adjusted Net Income increased 37% to \$60.0 million in 2018 compared to \$43.9 million in 2017. The increase in Adjusted Net Income was primarily due to the same factors that drove the increase in net income from continuing operations attributable to Cubic described above including margin growth on increased sales, but excludes the changes in amortization expense, acquisition transaction costs, restructuring costs, acquisition related costs, and nonoperating losses as such items are excluded from Adjusted Net Income.

Adjusted EPS: Adjusted EPS increased 35% to \$2.19 in 2018 compared to \$1.62 in 2017. The increase in Adjusted EPS was due to the same factors that impacted Adjusted Net Income above.

SEGMENT RESULTS

Cubic Transportation Systems

	Fiscal 2018	Fiscal 2017	% Change
	(in millions)		
Sales	\$ 670.7	\$ 578.6	16 %
Operating income	60.4	39.8	52
Adjusted EBITDA	73.3	48.8	50

Sales: CTS sales increased 16% to \$670.7 million in 2018 compared to \$578.6 million in 2017 and were higher in North America and the U.K., but were slightly lower in Australia. Sales in 2018 were higher in the U.S. primarily due to system development on the New York New Fare Payment System contract, which was awarded in October 2017. Increased work on both development and service contracts, including work on new change orders in London also increased CTS sales for the year. Sales were also positively impacted in the U.K. and Australia due to the impact of exchange rates. The average exchange rates between the prevailing currencies in our foreign operations and the U.S. dollar resulted in an increase in CTS sales of \$12.4 million for 2018 compared to 2017, primarily due to the strengthening of the British Pound against the U.S. dollar.

Amortization of Purchased Intangibles: Amortization of purchased intangibles included in the CTS operating results totaled \$5.2 million in 2018 and \$5.7 million in 2017.

Operating Income: CTS operating income increased 52% in 2018 to \$60.4 million compared to \$39.8 million in 2017. For 2018, operating income was higher from increased volumes of system development work and services, including work on new projects and change orders, primarily in North America and the U.K. Operating income was also higher due to operational efficiencies and reductions in R&D spending. R&D expenses for CTS in 2017 included \$6.4 million of system development expenses related to our anticipated contract with the New York Metropolitan Transit Authority that was awarded in early fiscal 2018; such expenses incurred in 2018 on this contract are classified as cost of sales. During the first quarter of fiscal year 2018 CTS implemented our new enterprise resource planning (ERP) system, and as a result began depreciating the cost of certain capitalized software into its operating results. This resulted in a decrease in operating income of \$4.2 million between fiscal 2017 and fiscal 2018. The average exchange rates between the prevailing currency in our foreign operations and the U.S. dollar resulted in an increase in CTS operating income of \$2.2 million for 2018 compared to 2017.

Adjusted EBITDA: CTS Adjusted EBITDA increased 50% to \$73.3 million in 2018 compared to \$48.8 million in 2017 primarily due to the same items described in the operating income section above. The increase in Adjusted EBITDA was primarily driven by the same factors that drove the increase in operating income described above excluding the increase in depreciation and decrease in amortization which are excluded from Adjusted EBITDA.

Cubic Mission Solutions

	Fiscal 2018	Fiscal 2017	% Change
	(in millions)		
Sales	\$ 207.0	\$ 168.9	23 %
Operating loss	(0.1)	(9.3)	(99)
Adjusted EBITDA	26.2	14.4	82

Sales: CMS sales increased 23% to \$207.0 million in fiscal 2018 compared to \$168.9 million in 2017. The increase in sales was primarily due to increased orders and shipments of expeditionary satellite communications products, tactical networking products, and Command and Control, Intelligence, Surveillance and Reconnaissance (C2ISR) products and services. Businesses acquired during fiscal years 2018 and 2017 whose operations are included in our CMS operating segment had sales of \$5.6 million and \$1.5 million for fiscal years 2018 and 2017, respectively.

Amortization of Purchased Intangibles: Amortization of purchased intangibles included in the CMS results amounted to \$20.8 million in 2018 and \$23.6 million in 2017. The \$2.8 million decrease in amortization expense is related to purchased intangible assets that are amortized based upon accelerated methods.

Operating Income: CMS had an operating loss of \$0.1 million in 2018 compared to \$9.3 million in 2017. CMS realized increased profits from expeditionary satellite communications products, tactical networking products, and C2ISR products and services. As mentioned above, amortization of purchased intangibles decreased to \$20.8 million in 2018 compared to \$23.6 million in 2017. CMS increased R&D expenditures between 2017 and 2018 by \$10.8 million, primarily driven by development of new antenna technologies. Businesses acquired by CMS in fiscal years 2018 and 2017 incurred operating losses of \$4.7 million in fiscal 2018 compared to \$2.9 million in fiscal 2017. Included in the operating loss incurred by acquired businesses are acquisition transaction costs of \$1.6 million and \$1.8 million incurred in fiscal years 2018 and 2017, respectively.

Adjusted EBITDA: CMS Adjusted EBITDA increased 82% to \$26.2 million in 2018 compared to \$14.4 million in 2017. The increase in CMS Adjusted EBITDA was primarily due to the same items described in the operating income section above, excluding the changes in amortization expense and acquisition transaction costs discussed above as such items are excluded from Adjusted EBITDA.

Cubic Global Defense

	<u>Fiscal 2018</u>	<u>Fiscal 2017</u>	<u>% Change</u>
	(in millions)		
Sales	\$ 325.2	\$ 360.2	(10)%
Operating income	16.6	28.1	(41)
Adjusted EBITDA	26.3	39.4	(33)

Sales: CGD sales decreased 10% to \$325.2 million in 2018 compared to \$360.2 million in 2017. The year-over-year comparative sales and operating income were significantly impacted by an \$8.0 million gain recognized on an equitable contract adjustment in fiscal 2017 for our littoral combat ship virtual training contract with the U.S. Navy. Sales were lower in fiscal 2018 on virtual training sales, air combat training system sales, and ground combat training system sales, while sales of international training support services increased between fiscal 2017 and 2018. The average exchange rates between the prevailing currency in our foreign operations and the U.S. dollar had no significant impact on CGD sales between 2017 and 2018.

Amortization of Purchased Intangibles: Amortization of purchased intangibles included in the CGD results amounted to \$1.1 million in 2018 and \$0.9 million in 2017.

Operating Income: CGD had operating income of \$16.6 million in 2018 compared to \$28.1 million in 2017. The decrease in operating income was primarily caused by the gain of \$8.0 million recognized in fiscal 2017 due to the approval of a contract adjustment with the U.S. Navy described above. In fiscal 2018 an arbitrator awarded \$1.7 million to a former reseller of our air combat training systems in the Far East, which was recorded as SG&A expense by CGD in 2018. In addition, CGD's R&D expenditures increased approximately \$1.8 million year-over-year. The increase in R&D expenditures is indicative of the acceleration of our development of next generation live, virtual, constructive, and game-based training systems. These decreases in operating income in fiscal 2018 were partially offset by increased operating income from ground combat training systems, which was higher primarily due to improvements in expected total costs for the development of two ground combat training system contracts in the Far East. The average exchange rates between the prevailing currency in our foreign operations and the U.S. dollar had no significant impact on CGD operating income between 2017 and 2018.

Adjusted EBITDA: CGD Adjusted EBITDA was \$26.3 million in 2018 compared to \$39.4 million in 2017. The decrease in Adjusted EBITDA was primarily driven by the same factors that drove the decrease in operating income described above excluding the increase in amortization which is excluded from Adjusted EBITDA.

Non-GAAP Financial Information

In addition to results reported under GAAP, this Annual Report on Form 10-K also contains non-GAAP measures. These non-GAAP measures consist of Adjusted EBITDA, Adjusted Net Income, and Adjusted EPS. We believe that these non-GAAP measures provide additional insight into our ongoing operations and underlying business trends, facilitate a comparison of our results between current and prior periods, and facilitate the comparison of our operating results with the results of other public companies that provide non-GAAP measures. We use Adjusted EBITDA internally to evaluate the operating performance of our business, for strategic planning purposes, and as a factor in determining incentive compensation for certain employees. These non-GAAP measures facilitate company-to-company operating comparisons by excluding items that we believe are not part of our core operating performance. Adjusted net income is defined as GAAP net income (loss) from continuing operations attributable to Cubic excluding amortization of purchased intangibles, restructuring costs, acquisition related expenses, strategic and IT system resource planning expenses, gains or losses on the disposal of fixed assets, other non-operating expense (income), tax impacts related to acquisitions, and the impact of U.S. Tax Reform. Adjusted EPS is defined as Adjusted Net Income on a per share basis using the weighted average diluted shares outstanding. Adjusted EBITDA is defined as GAAP net income (loss) from continuing operations attributable to Cubic before interest expense (income), income taxes, depreciation and amortization, other non-operating expense (income), acquisition related expenses, strategic and IT system resource planning expenses, restructuring costs, and gains or losses on the disposal of fixed assets. Strategic and IT system resource planning expenses consists of expenses incurred in the development of our ERP system and the redesign of our supply chain which include internal labor costs and external costs of materials and services that do not qualify for capitalization. Acquisition related expenses include business acquisition expenses including retention bonus expenses, due diligence and consulting costs incurred in connection with the acquisitions, and expenses recognized related to the change in the fair value of contingent consideration for acquisitions.

These non-GAAP measures are not measurements of financial performance under GAAP and should not be considered as measures of discretionary cash available to the company or as alternatives to net income as a measure of performance. In addition, other companies may define these non-GAAP measures differently and, as a result, our non-GAAP measures may not be directly comparable to the non-GAAP measures of other companies. Furthermore, non-GAAP financial measures have limitations as an analytical tool and you should not consider these measures in isolation, or as a substitute for analysis of our results as reported under GAAP. Investors are advised to carefully review our GAAP financial results that are disclosed in our SEC filings.

We reconcile Adjusted EBITDA and Adjusted Net Income to GAAP net income, which we consider to be the most directly comparable GAAP financial measure. We reconcile Adjusted EPS to GAAP EPS, which we consider to be the most directly comparable GAAP financial measure. The following tables reconcile these non-GAAP measures to their most directly comparable GAAP financial measure. On May 31, 2018 Cubic sold the CGD Services business. The operating results of this business and loss on sale have been excluded from the figures for all periods presented.

Adjusted Net Income Reconciliation

	Years Ended September 30,		
	2019	2018	2017
	(in millions, except per share data)		
GAAP EPS	\$ 1.67	\$ 0.29	\$ (0.95)
GAAP Net income (loss) from continuing operations attributable to Cubic	\$ 51.1	\$ 8.1	\$ (25.7)
Noncontrolling interest in the loss of the VIE	(9.8)	(0.3)	—
Amortization of purchased intangibles	42.1	27.1	30.2
Gain on sale of fixed assets	(32.5)	—	0.4
Restructuring costs	15.4	5.0	2.3
Acquisition related expenses, excluding amortization	13.4	4.5	(0.2)
Strategic and IT system resource planning expenses	8.3	24.1	34.4
Other non-operating expense (income), net	20.0	0.7	(0.4)
Noncontrolling interest in Adjusted Net Income of VIE	(9.7)	—	—
Tax impact related to acquisitions ¹	(6.6)	(1.2)	(0.1)
Impact of US Tax Reform	—	(7.0)	—
Tax impact related to non-GAAP adjustments ²	3.9	(1.0)	3.0
Adjusted net income	\$ 95.6	\$ 60.0	\$ 43.9
Adjusted EPS	\$ 3.13	\$ 2.19	\$ 1.62
<i>Weighted Average Diluted Shares Outstanding (in thousands)</i>	<i>30,606</i>	<i>27,351</i>	<i>27,173</i>

¹ Represents the tax accounting impact of significant discrete items recorded at the time of acquisition.

² The tax effect of the non-GAAP adjustments is generally based on the statutory tax rate of the jurisdiction of the event.

Adjusted EBITDA Reconciliation

(\$ In Millions)

Cubic Transportation Systems	Years Ended September 30,		
	2019	2018	2017
Sales	\$ 849.8	\$ 670.7	\$ 578.6
Operating income	\$ 77.2	\$ 60.4	\$ 39.8
Depreciation and amortization	30.7	12.0	8.8
Noncontrolling interest in income of VIE	(8.9)	-	-
Acquisition related expenses, excluding amortization	8.3	0.5	(0.2)
Restructuring costs	3.2	0.4	0.4
Adjusted EBITDA	\$ 110.5	\$ 73.3	\$ 48.8
Adjusted EBITDA margin	13.0%	10.9%	8.4%

Cubic Mission Solutions	Years Ended September 30,		
	2019	2018	2017
Sales	\$ 328.8	\$ 207.0	\$ 168.9
Operating income (loss)	\$ 7.8	\$ (0.1)	\$ (9.3)
Depreciation and amortization	23.3	22.4	23.8
Acquisition related expenses, excluding amortization	3.3	3.7	(0.1)
Restructuring costs	-	0.2	-
Adjusted EBITDA	\$ 34.4	\$ 26.2	\$ 14.4
Adjusted EBITDA margin	10.5%	12.7%	8.5%

Cubic Global Defense	Years Ended September 30,		
	2019	2018	2017
Sales	\$ 317.9	\$ 325.2	\$ 360.2
Operating income	\$ 23.0	\$ 16.6	\$ 28.1
Depreciation and amortization	6.8	8.5	10.4
Acquisition related expenses, excluding amortization	1.7	(0.1)	-
Gain on sale of fixed assets	(2.0)	-	-
Restructuring costs	3.3	1.3	0.9
Adjusted EBITDA	\$ 32.8	\$ 26.3	\$ 39.4
Adjusted EBITDA margin	10.3%	8.1%	10.9%

Cubic Consolidated	Years Ended September 30,		
	2019	2018	2017
Sales	\$ 1,496.5	\$ 1,202.9	\$ 1,107.7
Net income (loss) from continuing operations attributable to Cubic	\$ 51.1	\$ 8.1	\$ (25.7)
Noncontrolling interest in loss of VIE	(9.8)	(0.3)	-
Provision for income taxes	11.0	7.1	14.6
Interest expense, net	13.9	8.8	14.1
Other non-operating expense (income), net	20.0	0.7	(0.4)
Operating income	\$ 86.2	\$ 24.4	\$ 2.6
Depreciation and amortization	64.7	46.6	48.0
Noncontrolling interest in EBITDA of VIE	(8.9)	-	-
Acquisition related expenses, excluding amortization	13.4	4.5	(0.2)
Strategic and IT system resource planning expenses	8.3	24.1	34.4
(Gain) loss on sale of fixed assets	(32.5)	-	0.4
Restructuring costs	15.4	5.0	2.3
Adjusted EBITDA	\$ 146.6	\$ 104.6	\$ 87.5
Adjusted EBITDA margin	9.8%	8.7%	7.9%

Liquidity and Capital Resources

Operating activities from continuing operations used cash of \$31.9 million in fiscal 2019, provided cash of \$8.6 million in fiscal 2018, and used cash of \$3.0 million in fiscal 2017. As further described below, our operating cash flows have been significantly impacted by uses of cash related to our investment in software systems, accounting for recent business acquisitions, the payment terms on some of our larger customer contracts, and by the impacts of our consolidation of a VIE.

Cash used in connection with the design and development of our new ERP system as well as information technology process and supply chain redesign totaled \$16.1 million in fiscal 2019. Certain costs incurred in the development of internal-use software and software applications, including external direct costs of materials and services and applicable compensation costs of employees devoted to specific software development, are capitalized as computer software assets. Costs incurred outside of the application development stage, or that do not meet the capitalization requirements, are expensed as incurred. Of the \$16.1 million of cash used in 2019 in these efforts, \$8.2 million was recognized as expense and is reflected in our 2019 cash flows used in operations, while \$7.9 million was capitalized and is included in 2019 purchases of property, plant and equipment in investing cash flows. Cash used in connection with ERP design and development and information technology and supply chain redesign totaled \$33.6 million in 2018. Of this amount, \$24.1 million was recognized as expense and is reflected in our 2018 cash flows from operations, and \$9.5 million was capitalized and is included in 2018 purchases of property, plant and equipment in investing cash flows. Cash used in connection with ERP design and development and information technology and supply chain redesign totaled \$51.1 million in 2017. Of this amount, \$34.4 million was recognized as expense and is reflected in our 2017 cash flows from operations, and \$16.7 million was capitalized and is included in 2017 purchases of property, plant and equipment in investing cash flows.

Under purchase accounting rules, certain cash flows for business acquisitions are considered “purchase consideration”. In our statement of cash flows, cash paid for purchase consideration is classified as cash used in investing activities. However, there are a number of transactions related to business acquisitions that are expensed as incurred and that are included in operating cash flows when paid. Costs that are expensed in connection with business acquisitions include retention bonus expense and due diligence and consulting costs incurred in connection with the acquisitions. Business acquisition costs expensed in fiscal 2019 and fiscal 2018 totaled \$13.4 million and \$4.4 million, respectively. There were no significant net business acquisition costs expensed in 2017.

The changes in operating cash flows between 2017, 2018 and 2019 were also impacted by the terms of some of our largest customer contracts. Our contract terms with our customers can have a significant impact on our operating cash flows. Contract terms, including payment terms on our long-term development contracts, are customized for each contract based upon negotiations with the respective customer. The customized payment terms on long-term development projects also often include payment milestones based upon such items as the delivery of components of systems, passing specific system design reviews with the customer, or other events defined by the contracts. These milestone payments can vary significantly based upon the negotiated terms of the contracts. Changes in the amount of unbilled accounts receivable and contract assets are reflective of the difference between when costs are incurred and when we are entitled to receive milestone payments.

Investing activities from continuing operations used cash of \$458.8 million in 2019, \$47.1 million in 2018 and \$43.7 million in 2017. In 2019, cash used in investing activities from continuing operations included \$237.2 million of cash paid related to the acquisition of Trafficware and \$86.8 million of cash paid related to the acquisition of GRIDSMART in our CTS segment, \$61.9 million of cash paid related to the acquisition of Nuvotronics in our CMS segment, and \$8.0 million of payments of holdback amounts made to the former owners of DTECH. We also invested \$60.7 million in non-marketable equity securities including \$50.0 million in Pixia, a private software company based in Herndon, Virginia, in 2019. In the third quarter of fiscal 2019 we received net proceeds on the sale of land and buildings in San Diego, California and Orlando, Florida totaling \$44.9 million. In 2019, cash used in investing activities included capital expenditures of \$49.1 million, including \$7.9 million of capitalized software costs described above.

Cash used in investing activities during fiscal 2018 included \$16.3 million in purchase consideration paid for acquisitions of businesses in our CMS segment, and capital expenditures of \$31.7 million, including \$7.5 million of capitalized software costs described above.

Cash used in investing activities during fiscal 2017 included \$16.8 million in purchase consideration paid for acquisitions of businesses, and capital expenditures of \$36.9 million, including \$16.7 million of capitalized software costs described above. Cash used in investing activities in 2017 was partially offset by \$12.7 million of net proceeds from sales or maturities of marketable securities.

Financing activities provided cash of \$448.5 million in 2019 and used cash of \$31.7 million and \$196.1 million in 2018 and 2017, respectively. Financing activities for fiscal year 2019 included the proceeds of net short-term borrowings of \$195.5 million as well as the borrowings on the non-recourse debt of our consolidated VIE described below. Financing activities in 2019 also included \$215.8 million of net proceeds from our underwritten public offering of 3,795,000 shares of our common stock at a price to the public of \$60.00 per share, which we completed in December 2018. We used the net proceeds from the offering to repay a portion of our outstanding borrowings under our revolving credit agreement, which was used to finance the acquisition of Trafficware, and the remainder for general corporate purposes. Financing activities for fiscal year 2018 and 2017 consisted primarily of net principal repayments of \$55.0 million and \$185.0 million, respectively, on short-term borrowings. Also, as further described below, because we consolidate Boston AFC 2.0 OpCo. LLC (OpCo) into Cubic's financial statements, any payments from OpCo to Cubic are excluded from our cash flows provided by operating activities in our Consolidated Statements of Cash Flows.

In March 2018, Cubic and John Laing, an unrelated company that specializes in contracting under public-private partnerships (P3), jointly formed Boston AFC 2.0 HoldCo LLC (HoldCo). Also in March 2018, HoldCo created a wholly owned entity, OpCo which entered into a contract with the Massachusetts Bay Transit Authority (MBTA) for the financing, development, and operation of a next-generation fare payment system in Boston (the MBTA Contract). We have consolidated OpCo into our financial statements.

The MBTA Contract consists of a design and build phase of approximately three years and an operate and maintain phase of approximately ten years. The design and build phase is planned to be completed in 2021 and the operate and maintain phase will span from 2021 through 2031. MBTA will make fixed payments of \$558.5 million, adjusted for incremental transaction-based fees, inflation, and performance penalties, to OpCo in connection with the MBTA Contract over the ten-year operate and maintain phase. All of OpCo's contractual responsibilities regarding the design and development and the operation and maintenance of the fare system have been subcontracted to Cubic by OpCo. Cubic will receive fixed payments of \$427.6 million, adjusted for incremental transaction-based fees, inflation, and performance penalties under its subcontract with OpCo.

Upon creation of the P3 Venture, OpCo entered into a credit agreement with a group of financial institutions (the OpCo Credit Agreement) which includes a long-term debt facility and a revolving credit facility. The long-term debt facility allows for draws up to a maximum amount of \$212.4 million; draws may only be made during the design and build phase of the MBTA Contract. The long-term debt facility, including interest and fees incurred during the design and build phase, is required to be repaid on a fixed monthly schedule over the operate and maintain phase of the MBTA Contract. At September 30, 2019, the outstanding balance on the long-term debt facility was \$62.0 million, which is presented net of unamortized deferred financing costs of \$8.8 million. OpCo's borrowings are reflected as cash used in financing activities in our Consolidated Statements of Cash Flows.

The OpCo Credit Agreement contains a number of covenants which require that OpCo and Cubic maintain progress on the delivery of the MBTA Contract within a specified timeline and budget and provide regular reporting on such progress. The OpCo Credit Agreement also contains a number of customary events of default including, but not limited to, the delivery of a customized fare collection system to MBTA by a pre-determined date. Failure to meet such delivery date will result in OpCo, and Cubic via its subcontract with OpCo, incurring penalties due to the lenders.

In 2019, 2018 and 2017, respectively, we repurchased \$3.7 million, \$2.4 million and \$2.4 million of common stock in connection with our stock-based compensation plan. Dividends paid to shareholders amounted to \$8.4 million (\$0.27 cents per share) in 2019 and \$7.3 million (\$0.27 cents per share) in 2018 and 2017.

The change in exchange rates between foreign currencies and the U.S. dollar resulted in a decrease of \$1.8 million to our cash balance as of September 30, 2019 compared to September 30, 2018, a decrease of \$2.9 million to our cash balance as of September 30, 2018 compared to September 30, 2017, and an increase of \$9.7 million to our cash balance as of September 30, 2017 compared to September 30, 2016.

We have a committed revolving credit agreement with a group of financial institutions in the amount of \$800.0 million which is scheduled to expire in April 2024 (Revolving Credit Agreement). Under the terms of the Revolving Credit Agreement, the company may elect that the debts comprising each borrowing bear interest generally at a rate equal to (i) London Interbank Offer Rate (“LIBOR”) based upon tenor plus a margin that fluctuates between 1.00% and 2.00%, as determined by the company’s Leverage Ratio (as defined in the Revolving Credit Agreement) as set forth in the company’s most recently delivered compliance certificate or (ii) the Alternate Base Rate (defined as a rate equal to the highest of (a) the Prime Rate (b) the NYFRB rate plus 0.50% (c) the Adjusted LIBOR Rate plus 1.00%), plus a margin that fluctuates between 0.00% and 1.00%, as determined by the company’s Leverage Ratio as set forth in its most recently delivered compliance certificate. The available line of credit is reduced by any letters of credit issued under the Revolving Credit Agreement. As of September 30, 2019, there were \$195.5 million of borrowings under this agreement and there were letters of credit outstanding totaling \$31.5 million, which reduce the available line of credit to \$573.0 million.

As of September 30, 2019, we had letters of credit and bank guarantees outstanding totaling \$39.9 million, which includes the \$31.5 million of letters of credit on the Revolving Credit Agreement described above and \$8.4 million of letters of credit issued under other facilities. The total of \$39.9 million of letters of credit and bank guarantees includes \$34.4 million that guarantees either our performance or customer advances under certain contracts and financial letters of credit of \$5.5 million which primarily guarantee our payment of certain self-insured liabilities.

Our Revolving Credit Agreement and note purchase and private shelf agreement each contain a number of customary covenants, including requirements for Cubic to maintain certain interest coverage and leverage ratios and restrictions on Cubic’s and certain of its subsidiaries’ abilities to, among other things, incur additional debt, create liens, consolidate or merge with any other entity, or transfer or sell substantially all of their assets, in each case subject to certain exceptions and limitations. These agreements also contain customary events of default, including, without limitation: (a) failure by Cubic to pay principal or interest on the Notes when due; (b) failure by Cubic or certain of its subsidiaries to comply with the covenants in the agreements; (c) failure of the representations and warranties made by Cubic or certain of its subsidiaries to be correct in any material respect; (d) cross-defaults with other indebtedness of Cubic or certain of its subsidiaries resulting in the acceleration of the maturity thereof; (e) certain bankruptcy and insolvency events with respect to Cubic or certain of its subsidiaries; (f) failure by Cubic or certain of its subsidiaries to satisfy certain final judgments when due; and (g) a change in control of Cubic, in each case subject to certain exceptions and limitations. The occurrence of any event of default under these agreements may result in all of the indebtedness then outstanding becoming immediately due and payable.

We maintain a cash account with a bank in the U.K. for which the funds are restricted as to use. The account is required to secure the customer’s interest in cash deposited in the account to fund our activities related to our performance under a fare collection services contract in the United Kingdom. The balance in the account as of September 30, 2019 was \$19.5 million and is classified as restricted cash in our Consolidated Balance Sheets.

The accumulated deficit in other comprehensive loss increased a total of \$29.1 million in 2019 primarily due to an increase in the recorded liability for our pension plans. Unrealized translation adjustments contributed \$11.3 million of this deficit but these increases were partially offset by \$1.7 million of changes in the fair value of cash flow hedges.

Our financial condition remains strong with net working capital of \$195.2 million and a current ratio of 1.4 to 1 at September 30, 2019. We expect that cash on hand and our Revolving Credit Agreement will be adequate to meet our working capital requirements for the foreseeable future. Our total debt to capital ratio at September 30, 2019 was 20%. Our cash is invested primarily in highly liquid bank deposits and government instruments in the U.S., U.K., New Zealand and Australia.

In the normal course of our business, we may sell trade receivables to financial institutions as a cash management technique. We do not retain financial or legal obligations for these receivables that would result in material losses. Our ongoing involvement is limited to the remittance of customer payments to the financial institutions with respect to the sold trade receivables; therefore, our sold trade receivables are not included in our Consolidated Balance Sheet in any period presented. As of September 30, 2019, we sold \$31.1 million of outstanding trade receivables to financial institutions. The cash received for the sale of trade receivables is included in cash provided by operating activities in our Consolidated Statements of Cash Flows.

As of September 30, 2019, virtually all of the \$85.3 million of our cash, cash equivalents and restricted cash, excluding cash held by our consolidated VIE, was held by our foreign subsidiaries, primarily in the U.K., New Zealand and Australia.

The following is a schedule of our contractual obligations outstanding as of September 30, 2019:

	Total	Less than 1 Year	1 - 3 years (in millions)	4 - 5 years	After 5 years
Short-term borrowings	\$ 195.5	\$ 195.5	\$ —	\$ —	\$ —
Long-term debt, including current portion	200.0	10.7	71.4	71.4	46.5
Interest payments	25.3	7.0	11.1	5.9	1.3
Operating leases	113.9	18.1	32.3	25.6	37.9
Deferred compensation	12.2	1.3	2.6	1.9	6.4
	<u>\$ 546.9</u>	<u>\$ 232.6</u>	<u>\$ 117.4</u>	<u>\$ 104.8</u>	<u>\$ 92.1</u>

As of September 30, 2019, we had approximately \$0.9 million of recorded liabilities and related interest and penalties pertaining to uncertain tax positions which are excluded from the table above. None of these liabilities and related interest and penalties are expected to be paid within one year. We are unable to make a reasonable estimate as to when cash settlement with the tax authorities might occur due to the uncertainties related to these tax matters. For more information on our uncertain tax positions, see Note 13 to the Consolidated Financial Statements in Item 8 of this Form 10-K. The table above also excludes estimated minimum funding requirements for retirement plans as set forth by statutory requirements. For further information about future minimum contributions for these plans, see Note 15 to the Consolidated Financial Statements in Item 8 of this Form 10-K.

The terms of the purchase agreements in certain of our recent business acquisitions provide that we will pay the sellers contingent consideration should the acquired companies meet specified goals. As of September 30, 2019, the maximum future contingent consideration that would be payable if all such goals were met is \$27.3 million. However, we are unable to make a reasonable estimate as to the timing and magnitude of such future payments.

Backlog

	September 30, 2019	September 30, 2018
	(in millions)	
Total backlog		
Cubic Transportation Systems	\$ 2,953.3	\$ 3,544.9
Cubic Mission Solutions	103.7	77.0
Cubic Global Defense	344.0	442.6
Total	<u>\$ 3,401.0</u>	<u>\$ 4,064.5</u>

As reflected in the table above, total backlog decreased \$663.5 million from September 30, 2018 to September 30, 2019. The decrease in backlog is primarily due to progression of work in 2019 on four large contracts awarded to CTS in fiscal 2018. In addition, we recorded a net decrease to backlog of \$104.5 million on October 1, 2018 for the impact of the adoption of ASC 606. Changes in exchange rates between the prevailing currency in our foreign operations and the U.S. dollar as of September 30, 2019 decreased backlog by \$79.7 million compared to September 30, 2018.

Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements (as defined by the applicable regulations of the SEC) that are reasonably likely to have a current or future material effect on our financial condition, results of operations, liquidity, capital expenditures or capital resources.

Recent Accounting Pronouncements

See “Recent Accounting Pronouncements” in Note 1 of the Consolidated Financial Statements in Item 8 of this Form 10-K, which are hereby incorporated by reference.

Critical Accounting Policies, Estimates and Judgments

Our financial statements are prepared in accordance with accounting principles that are generally accepted in the United States. The preparation of these financial statements requires us to make estimates and judgments 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. We continually evaluate our estimates and judgments, the most critical of which are those related to revenue recognition, income taxes, valuation of goodwill, purchased intangibles, accounting for business combinations, and pension costs. We base our estimates and judgments on historical experience and other factors that we believe to be reasonable under the circumstances. Materially different results can occur as circumstances change and additional information becomes known.

Besides the estimates identified above that are considered critical, we make many other accounting estimates in preparing our financial statements and related disclosures. All estimates, whether or not deemed critical, affect reported amounts of assets, liabilities, revenues and expenses, as well as disclosures of contingent assets and liabilities. These estimates and judgments are also based on historical experience and other factors that are believed to be reasonable under the circumstances. Materially different results can occur as circumstances change and additional information becomes known, even for estimates and judgments that are not deemed critical.

Revenue Recognition

We adopted Accounting Standards Update (ASU) 2014-09, *Revenue from Contracts with Customers* (commonly known as ASC 606), effective October 1, 2018 using the modified retrospective transition method. In accordance with the modified retrospective transition method, our Consolidated Statement of Operations for the year ended September 30, 2019 and our Consolidated Balance Sheet as of September 30, 2019 are presented under ASC 606, while our Consolidated Statement of Operations for the years ended September 30, 2018 and 2017 and our Consolidated Balance Sheet as of September 30, 2018 are presented under ASC 605, *Revenue Recognition*, the accounting standard in effect for periods ending prior to October 1, 2018. The cumulative effect of the change in accounting for periods prior to October 1, 2018 was recognized through retained earnings at the date of adoption.

We generate revenue from the sale of integrated solutions such as mass transit fare collection systems, air and ground combat training systems, and products with C4ISR capabilities. A significant portion of our revenues are generated from long-term fixed-price contracts with customers that require us to design, develop, manufacture, modify, upgrade, test and integrate complex systems according to the customer’s specifications. We also generate revenue from services we provide, such as the operation and maintenance of fare systems for mass transit customers and the support of specialized military training exercises mainly for international customers. Our contracts are primarily with the U.S. government, state and local municipalities, international government customers, and international local municipal transit agencies. We classify sales as products or services in our Consolidated Statements of Operations based on the attributes of the underlying contracts.

We account for a contract when it has approval and commitment from both parties, the rights of the parties are identified, payment terms are identified, the contract has commercial substance and collectability of consideration is probable. For certain contracts that meet the foregoing requirements, primarily international direct commercial sale contracts, we are required to obtain certain regulatory approvals. In these cases where regulatory approval is required in addition to

approval from both parties, we recognize revenue based on the likelihood of obtaining timely regulatory approvals based upon all known facts and circumstances.

To determine the proper revenue recognition method, we evaluate each contractual arrangement to identify all performance obligations. A performance obligation is a promise in a contract to transfer a distinct good or service to the customer. The majority of our contracts have a single performance obligation because the promise to transfer the individual good or service is not separately identifiable from other promises within the contract and is, therefore, not distinct. These contractual arrangements either require the use of a highly specialized engineering, development and manufacturing process to provide goods according to customer specifications or represent a bundle of contracted goods and services that are integrated and together represent a combined output, which may include the delivery of multiple units.

Some of our contracts have multiple performance obligations, primarily (i) related to the provision of multiple goods or services or (ii) due to the contract covering multiple phases of the product lifecycle (for instance: development and engineering, production, maintenance and support). For contracts with more than one performance obligation, we allocate the transaction price to the performance obligations based upon their relative standalone selling prices. For such contracts we evaluate whether the stated selling prices for the products or services represent their standalone selling prices. In cases where a contract requires a customized good or service, our primary method used to estimate the standalone selling price is the expected cost plus a margin approach. In cases where we sell a standard product or service offering, the standalone selling price is based on an observable standalone selling price. A number of our contracts with the U.S. government, including contracts under the U.S. Department of Defense's Foreign Military Sales program (FMS Contracts), are subject to the Federal Acquisition Regulations (FAR) and the price is typically based on estimated or actual costs plus a reasonable profit margin. As a result of these regulations, the standalone selling price of products or services in our contracts with the U.S. government and FMS Contracts are typically equal to the selling price stated in the contract. Therefore, we typically do not need to allocate (or reallocate) the transaction price to multiple performance obligations in our contracts with the U.S. government.

The majority of our sales are from performance obligations satisfied over time. Sales are recognized over time when control is continuously transferred to the customer during the contract or the contracted good does not have alternative use to us. For U.S. government contracts, the continuous transfer of control to the customer is supported by contract clauses that provide for (i) progress or performance-based payments or (ii) the unilateral right of the customer to terminate the contract for its convenience, in which case we have the right to receive payment for costs incurred plus a reasonable profit for products and services that do not have alternative uses to us. Our contracts with international governments and local municipal transit agencies contain similar termination for convenience clauses, or we have a legally enforceable right to receive payment for costs incurred and a reasonable profit for products or services that do not have alternative uses to us.

For those contracts for which control transfers over time, revenue is recognized based on the extent of progress towards completion of the performance obligation. The selection of the method to measure progress towards completion requires judgment and is based on the nature of the products or services to be provided. For our design and build type contracts, we generally use the cost-to-cost measure of progress because it best depicts the transfer of control to the customer which occurs as we incur costs on our contracts. Under the cost-to-cost measure of progress, the extent of progress towards completion is measured based on the ratio of costs incurred to date to the total estimated costs at completion of the performance obligation. Revenues, including estimated fees or profits, are recorded proportionally as costs are incurred. Contract costs include material, labor and subcontracting costs, as well as an allocation of indirect costs, and are generally expensed as incurred for these contracts. For contracts with the U.S. government, general and administrative costs are included in contract costs; however, for purposes of revenue measurement, general and administrative costs are not included in contract costs for any other customers.

Sales from performance obligations satisfied at a point in time are typically for standard goods and are recognized when the customer obtains control, which is generally upon delivery and acceptance. Costs of sales are recorded in the period in which revenue is recognized.

We record sales under cost-reimbursement-type contracts as we incur the costs. For cost-reimbursement-type contracts with the U.S. government, the FAR provides guidance on the types of costs that will be reimbursed in establishing the contract price.

Sales under service contracts are generally recognized as services are performed or value is provided to our customers. We measure the delivery of value to our customers using a number of metrics including ridership, units of work performed, and costs incurred. We determine which metric represents the most meaningful measure of value delivery based on the nature of the underlying service activities required under each individual contract. In certain circumstances we recognize revenue based on the right to bill when such amounts correspond to the value being delivered in a billing cycle. Certain of our transportation systems service contracts contain service level penalties or bonuses, which we recognize in each period incurred or earned. These contract penalties or bonuses are generally incurred or earned on a monthly basis; however, certain contracts may be based on a quarterly or annual evaluation. Sales under service contracts that do not contain measurable units of work performed are recognized on a straight-line basis over the contractual service period, unless evidence suggests that the revenue is earned, or obligations fulfilled, in a different manner. Costs incurred under these service contracts are generally expensed as incurred.

Due to the nature of the work required to be performed on many of our performance obligations, the estimation of total revenue and cost at completion is complex, subject to many variables and requires significant judgment. It is common for our long-term contracts to contain bonuses, penalties, transactional variable based fees, or other provisions that can either increase or decrease the transaction price. These variable amounts generally are incurred or earned upon certain performance metrics, program milestones, transactional based activities and other similar contractual events. We estimate variable consideration at the most likely amount to which we expect to be entitled. We include estimated amounts in the transaction price to the extent it is probable that a significant reversal of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is resolved. Our estimates of variable consideration and determination of whether to include estimated amounts in the transaction price are based largely on an assessment of our anticipated performance and all information (historical, current and forecasted) that is reasonably available to us.

Billing timetables and payment terms on our contracts vary based on a number of factors, including the contract type. Typical payment terms under fixed-price design and build type contracts provide that the customer pays either performance-based payments based on the achievement of contract milestones or progress payments based on a percentage of costs we incur. For the majority of our service contracts, we generally bill on a monthly basis which corresponds with the satisfaction of our monthly performance obligation under these contracts. We recognize a liability for payments received in excess of revenue recognized, which is presented as a contract liability on the balance sheet. The portion of payments retained by the customer until final contract settlement is not considered a significant financing component because the intent is to protect the customer from our failure to adequately complete some or all of the obligations under the contract. Payments received from customers in advance of revenue recognition are not considered to be significant financing components because they are used to meet working capital demands that can be higher in the early stages of a contract. For certain of our multiple-element arrangements, the contract specifies that we will not be paid upon the delivery of certain performance obligations, but rather we will be paid when subsequent performance obligations are satisfied. Generally, in these cases we have determined that a separate financing component exists as a performance obligation under the contract. In these instances, we allocate a portion of the transaction price to this financing component. We determine the value of the embedded financing component by discounting the repayment of the financed amount over the implied repayment term using the effective interest method. This discounting methodology uses an implied interest rate which reflects the credit quality of the customer and represents an interest rate that would be similar to what we would offer the customer in a separate financing transaction. Unpaid principal and interest amounts associated with the financed performance obligation and the value of the embedded financing component are presented as long-term contracts financing receivables in our consolidated balance sheet. We recognize the allocated transaction price of the financing component as interest income over the implied financing term.

For fixed-price and cost-reimbursable contracts, we present revenues recognized in excess of billings as contract assets on the balance sheet. Amounts billed and due from our customers under both contract types are classified as receivables on the balance sheet.

We only include amounts representing contract change orders, claims or other items in the contract value when we believe the rights and obligations become enforceable. Contract modifications routinely occur to account for changes in contract specifications or requirements. In most cases, contract modifications are for goods or services that are not distinct and, therefore, are accounted for as part of the existing contract. Transaction price estimates include additional consideration for submitted contract modifications or claims when we believe there is an enforceable right to the modification or claim, the amount can be reliably estimated, and its realization is reasonably assured. Amounts representing modifications accounted for as part of the existing contract are included in the transaction price and recognized as an adjustment to sales on a cumulative catch-up basis.

In addition, we are subject to audits of incurred costs related to many of our U.S. government contracts. These audits could produce different results than we have estimated for revenue recognized on our cost-based contracts with the U.S. government; however, our experience has been that our costs are acceptable to the government.

Contract Estimates

Use of the cost-to-cost or other similar methods of revenue recognition requires us to make reasonably dependable estimates regarding the revenue and cost associated with the design, manufacture and delivery of our products and services. Revisions or adjustments to estimates of the transaction price, estimated costs at completion and estimated profit or loss of a performance obligation are often required as work progresses under a contract, as experience is gained, as facts and circumstances change and as new information is obtained, even though the scope of work required under the contract may not change. In determining the estimated costs at completion, we have to make assumptions regarding labor productivity and availability, the complexity of the work to be performed, the availability of materials, estimated increases in wages and prices for materials, performance by our subcontractors, and the availability and timing of funding from our customer, among other variables. Revisions or adjustments to our estimated transaction price and estimated costs at completion may also be required if contract modifications occur. The revisions in contract estimates, if significant, can materially affect our results of operations and cash flows, and in some cases result in liabilities to complete contracts in a loss position. Based upon our history, we believe we have the ability to make reasonable estimates for these items. We have accounting policies and controls in place to address these, as well as other contractual and business arrangements to properly account for long-term contracts, and we continue to monitor and improve such policies, controls, and arrangements. For other information on such policies, controls and arrangements, see our discussion in Item 9A of this Form 10-K.

Products and services provided under long-term, fixed-price contracts represented approximately 97% of our sales for 2019. Because of the significance of the judgments and estimation processes, it is likely that materially different amounts could be recorded if we used different assumptions or if our underlying circumstances were to change. For example, if underlying assumptions were to change such that our estimated profit rate at completion for all fixed-price contracts accounted for under the cost-to-cost percentage-of-completion method was higher or lower by one percentage point, our 2019 operating income would have increased or decreased by approximately \$6.5 million. When adjustments in estimated contract revenues or estimated costs at completion are required, any changes from prior estimates are recognized by recording adjustments in the current period for the inception-to-date effect of the changes on current and prior periods using the cumulative catch-up method of accounting. When estimates of total costs to be incurred on a contract exceed total estimates of revenue to be earned, a provision for the entire loss on the contract is recorded in the period the loss is determined.

The aggregate impact of net changes in contract estimates are presented in the table below (amounts in thousands).

	<u>Years Ended September 30,</u>		
	<u>2019</u>	<u>2018</u>	<u>2017</u>
Operating income (loss)	\$ (2,235)	\$ (6,986)	\$ 5,737
Net income (loss) from continuing operations	(2,351)	(5,146)	3,208
Diluted earnings per share	(0.08)	(0.19)	0.12

For other information on accounting policies we have in place for recognizing sales and profits and the impact of our adoption of ASC 606, see our discussion under “Revenue Recognition” in Note 1 to the Consolidated Financial Statements.

Income Taxes

The asset and liability approach is used to recognize deferred tax assets and liabilities for the expected future tax consequences of temporary differences between the carrying amounts and the tax bases of assets and liabilities. Tax law and rate changes are reflected in income in the period such changes are enacted. We record a valuation allowance to reduce deferred tax assets to the amount that is more likely than not to be realized pursuant to relevant accounting guidance. If sufficient positive evidence arises in the future, any existing valuation allowance could be reversed as appropriate, decreasing income tax expense in the period that such conclusion is reached. We include interest and penalties related to income taxes, including unrecognized tax benefits, within the income tax provision.

Our income tax returns are based on calculations and assumptions that are subject to examination by the Internal Revenue Service and other tax authorities. In addition, the calculation of our tax liabilities involves dealing with uncertainties in the application of complex tax regulations. We recognize liabilities for uncertain tax positions based on a two-step process. The first step is to evaluate the tax position for recognition by determining if the weight of available evidence indicates that it is more likely than not that the position will be sustained on audit, including resolution of related appeals or litigation processes, if any. The second step is to measure the tax benefit as the largest amount that is more than 50% likely of being realized upon settlement. While we believe we have appropriate support for the positions taken on our tax returns, we regularly assess the potential outcomes of examinations by tax authorities in determining the adequacy of the provision for income taxes. We continually assess the likelihood and amount of potential adjustments and adjust the income tax provision, income taxes payable and deferred taxes in the period in which the facts that give rise to a revision become known.

Prior to the Tax Act, we provided deferred taxes on all undistributed foreign earnings, as we did not consider these amounts permanently reinvested. Under the transition to a modified territorial tax system, all previously untaxed undistributed foreign earnings are subject to a transition tax charge at reduced rates and future repatriations of foreign earnings will generally be exempt from U.S. tax. We will continue to provide applicable deferred taxes based on the tax liability or withholding taxes that would be due upon repatriation of the undistributed foreign earnings.

Purchased Intangibles

We generally fund acquisitions using a combination of cash on hand and with the proceeds of debt. Assets acquired and liabilities assumed in connection with an acquisition are recorded at their fair values determined by management as of the date of acquisition. The excess of the transaction consideration over the fair value of the net assets acquired is recorded as goodwill. We amortize intangible assets acquired as part of business combinations over their estimated useful lives unless their useful lives are determined to be indefinite. For certain business combinations, we utilize independent valuations to assist us in estimating the fair value of purchased intangibles. Our purchased intangibles primarily relate to contracts and programs acquired and customer relationships, which are amortized over periods of 15 years or less. The determination of the value and useful life of purchased intangibles is judgmental in nature and, therefore, the amount of annual amortization expense we record is affected by these judgments. For example, if the weighted average amortization period for our purchased intangibles was one year less than we have determined, our 2019 amortization expense would have increased by approximately \$2.0 million.

Valuation of Goodwill

Goodwill balances by reporting unit are as follows:

September 30,	2019	2018	2017
		(in millions)	
Cubic Transportation Systems	\$ 254.6	\$ 49.8	\$ 50.9
Cubic Mission Solutions	181.4	138.1	—
Cubic Global Defense	142.1	145.7	270.7
Total goodwill	<u>\$ 578.1</u>	<u>\$ 333.6</u>	<u>\$ 321.6</u>

Goodwill represents the purchase price paid in excess of the fair value of net tangible and intangible assets acquired. Goodwill is not amortized but is subject to an impairment test at a reporting unit level on an annual basis and when circumstances indicate that an impairment is more-likely-than-not. Such circumstances that might indicate an impairment is more-likely-than-not include a significant adverse change in the business climate for one of our reporting units or a decision to dispose of a reporting unit or a significant portion of a reporting unit. The test for goodwill impairment is a two-step process. The first step of the test is performed by comparing the fair value of each reporting unit to its carrying amount, including recorded goodwill. If the carrying amount of a reporting unit exceeds its fair value, the second step is performed to measure the amount of the impairment, if any, by comparing the implied fair value of goodwill to its carrying amount. Any resulting impairment would be recorded in the current period.

Determining the fair value of a reporting unit for purposes of the goodwill impairment test or for changes in our operating structure is judgmental in nature and involves the use of estimates and assumptions. These estimates and assumptions could have a significant impact on whether or not an impairment charge is recognized and also the magnitude of any such charge. Estimates of fair value are primarily determined using discounted cash flows and market multiples from publicly traded comparable companies. These approaches use significant estimates and assumptions including projected future cash flows, discount rate reflecting the inherent risk in future cash flows, perpetual growth rate and determination of appropriate market comparables.

We evaluate our reporting units when changes in our operating structure occur, and if necessary, reassign goodwill using a relative fair value allocation approach. As described in Note 18 to our Consolidated Financial Statements in Item 8 of this Form 10-K, beginning on October 1, 2017, we concluded that CMS became a separate operating segment. In conjunction with the changes to reporting units, we reassigned goodwill between CGD and CMS based on their relative fair values as of October 1, 2017. We estimated the fair value of CGD and CMS at October 1, 2017 based upon market multiples from publicly traded comparable companies in addition to discounted cash flows models for CMS and for a combination of CGD and CMS based on discrete financial forecasts developed by management for planning purposes. Cash flows beyond the discrete forecasts were estimated based on projected growth rates and financial ratios, influenced by an analysis of historical ratios and by calculating a terminal value at the end of the discrete financial forecasts. For the October 1, 2017 valuations, future cash flows were discounted to present value using a discount rate of 13% for our CMS reporting unit and 11% for the combination of our CGD and CMS reporting units.

For the first step of our fiscal 2019 annual impairment test, we estimated the fair value of CTS based upon market multiples from publicly traded comparable companies and for CGD and CMS, we estimated the fair value based upon a combination of market multiples from publicly traded comparable companies and discounted cash flow models. The discounted cash flows were based on discrete three-year financial forecasts developed by management for planning purposes. Cash flows beyond the discrete forecasts were estimated based on projected growth rates and financial ratios, influenced by an analysis of historical ratios and by calculating a terminal value at the end of the three-year forecasts. The future cash flows were discounted to present value using a discount rate of 15% for CGD and 12.5% for CMS. The results of our 2019 annual impairment test indicated that the estimated fair value for our CTS and CGD reporting units exceeded their carrying amounts by over 100%, while the estimated fair value of our CMS reporting unit exceeded its carrying amount by over 60%.

Unforeseen negative changes in future business or other market conditions for any of our reporting units including margin compression or loss of business, could cause recorded goodwill to be impaired in the future. Also, changes in

estimates and assumptions we make in conducting our goodwill assessment could affect the estimated fair value of our reporting units and could result in a goodwill impairment charge in a future period.

Pension Costs

The measurement of our pension obligations and costs is dependent on a variety of assumptions used in our valuations. These assumptions include estimates of the present value of projected future pension payments to plan participants, taking into consideration the likelihood of potential future events such as salary increases and demographic experience. These assumptions may have an effect on the amount and timing of future contributions.

The assumptions used in developing the required estimates include the following key factors:

- Discount rates
- Inflation
- Salary growth
- Expected return on plan assets
- Retirement rates
- Mortality rates

The discount rate represents the interest rate that is used to determine the present value of future cash flows currently expected to be required to settle pension obligations. We base the discount rate assumption on investment yields available at year-end on high quality corporate long-term bonds. Our inflation assumption is based on an evaluation of external market indicators. The salary growth assumptions reflect our long-term actual experience in relation to the inflation assumption. The expected return on plan assets reflects asset allocations, our historical experience, our investment strategy and the views of investment managers and large pension sponsors. Mortality rates are based on published mortality tables. Retirement rates are based primarily on actual plan experience. The effects of actual results differing from our assumptions are accumulated and amortized over future periods and, therefore, generally affect our recognized expense in such future periods.

Changes in the above assumptions can affect our financial statements, although the relatively small size of our defined benefit pension plans limits the impact any individual assumption changes would have on earnings. For example, if the assumed rate of return on pension assets was 25 basis points higher or lower than we have assumed, our 2019 net earnings would have increased or decreased by approximately \$0.6 million, assuming all other assumptions were held constant.

Holding all other assumptions constant, an increase or decrease of 25 basis points in the discount rate assumption for 2019 would increase or decrease net earnings for 2020 by approximately \$0.5 million, and would have decreased or increased the amount of the benefit obligation recorded at September 30, 2019, by approximately \$9.9 million.

Item 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Interest Rate Risk

At times we invest in money market instruments and short-term marketable debt securities whose return is tied to short-term interest rates being offered at the time the investment is made. We maintain short-term borrowing arrangements in the U.S. and U.K. which are also tied to short-term rates (the U.S. dollar LIBOR rate and the Bank of England Base Rate). We also have senior unsecured notes payable to insurance companies which have fixed coupon interest rates. See Note 11 to the Consolidated Financial Statements for more information.

Interest income earned on our short-term investments is affected by changes in the general level of interest rates in the U.S., the U.K., Australia and New Zealand. These income streams are generally not hedged. Interest expense incurred under the short-term borrowing arrangements is affected by changes in the general level of interest rates in the U.S. and U.K. The expense related to these cost streams is usually not hedged since it is either payable within three months and/or immediately callable by the lender at any time. Interest expense incurred under the long-term notes payable is not

affected by changes in any interest rate because it is fixed. We believe that we are not significantly exposed to interest rate risk at this point in time.

Foreign Currency Exchange Risk

In the ordinary course of business, we enter into firm sale and purchase commitments denominated in many foreign currencies. We have a policy to hedge those commitments greater than an equivalent value of \$50,000 by using foreign currency forward and option contracts that are denominated in currencies other than the functional currency of the subsidiary responsible for the commitment, typically the British pound, Canadian dollar, Singapore dollar, Euro, New Zealand dollar and Australian dollar. These contracts are designed to be effective hedges regardless of the direction or magnitude of any foreign currency exchange rate change, because they result in an equal and opposite income or cost stream that offsets the change in the value of the underlying commitment. See Note 1 to the Consolidated Financial Statements for more information on our foreign currency translation and transaction accounting policies.

Investments in our foreign subsidiaries in the U.K., Australia, New Zealand and Canada are not hedged. We generally have control over the timing and amount of earnings repatriation, if any, and expect to use this control to mitigate foreign currency exchange risk.

Item 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA.

CUBIC CORPORATION
CONSOLIDATED STATEMENTS OF OPERATIONS
(amounts in thousands, except per share data)

	Years Ended September 30,		
	2019	2018	2017
Net sales:			
Products	\$ 1,011,069	\$ 704,941	\$ 681,559
Services	485,406	497,957	426,150
	<u>1,496,475</u>	<u>1,202,898</u>	<u>1,107,709</u>
Costs and expenses:			
Products	732,137	472,698	473,670
Services	332,923	362,694	305,653
Selling, general and administrative expenses	270,064	258,644	240,196
Research and development	50,132	52,398	52,652
Amortization of purchased intangibles	42,106	27,064	30,245
(Gain) loss on sale of property, plant and equipment	(32,510)	—	405
Restructuring costs	15,386	5,018	2,260
	<u>1,410,238</u>	<u>1,178,516</u>	<u>1,105,081</u>
Operating income	86,237	24,382	2,628
Other income (expenses):			
Interest and dividend income	6,519	1,615	953
Interest expense	(20,453)	(10,424)	(15,027)
Other income (expense), net	(19,957)	(687)	364
Income (loss) from continuing operations before income taxes	52,346	14,886	(11,082)
Income tax provision	<u>11,040</u>	<u>7,093</u>	<u>14,658</u>
Income (loss) from continuing operations	41,306	7,793	(25,740)
Net income (loss) from discontinued operations	(1,423)	4,243	14,531
Net income (loss)	<u>39,883</u>	<u>12,036</u>	<u>(11,209)</u>
Less noncontrolling interest in loss of VIE	<u>(9,811)</u>	<u>(274)</u>	<u>—</u>
Net income (loss) attributable to Cubic	<u>\$ 49,694</u>	<u>\$ 12,310</u>	<u>\$ (11,209)</u>
Amounts attributable to Cubic:			
Net income (loss) from continuing operations	51,117	8,067	(25,740)
Net income (loss) from discontinued operations	(1,423)	4,243	14,531
Net income (loss) attributable to Cubic	<u>\$ 49,694</u>	<u>\$ 12,310</u>	<u>\$ (11,209)</u>
Net income (loss) per share:			
Basic			
Continuing operations attributable to Cubic	\$ 1.68	\$ 0.30	\$ (0.95)
Discontinued operations	\$ (0.05)	\$ 0.16	\$ 0.54
Basic earnings per share attributable to Cubic	<u>\$ 1.63</u>	<u>\$ 0.45</u>	<u>\$ (0.41)</u>
Diluted			
Continuing operations attributable to Cubic	\$ 1.67	\$ 0.29	\$ (0.95)
Discontinued operations	\$ (0.05)	\$ 0.16	\$ 0.54
Diluted earnings per share attributable to Cubic	<u>\$ 1.62</u>	<u>\$ 0.45</u>	<u>\$ (0.41)</u>
Weighted average shares used in per share calculations:			
Basic	30,495	27,229	27,106
Diluted	30,606	27,351	27,106

See accompanying notes.

CUBIC CORPORATION

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(in thousands)

	Years Ended September 30,		
	2019	2018	2017
Net income (loss)	\$ 39,883	\$ 12,036	\$ (11,209)
Other comprehensive income (loss):			
Adjustment to pension liability, net of tax	(19,481)	5,540	13,180
Foreign currency translation	(11,286)	(8,126)	1,440
Change in unrealized gains/losses from cash flow hedges:			
Change in fair value of cash flow hedges, net of tax	3,103	34	(1,071)
Adjustment for net gains/losses realized and included in net income, net of tax	(1,386)	929	(358)
Total change in unrealized gains/losses realized from cash flow hedges, net of tax	1,717	963	(1,429)
Total other comprehensive income (loss)	(29,050)	(1,623)	13,191
Total comprehensive income	10,833	10,413	1,982
Noncontrolling interest in comprehensive loss of consolidated VIE, net of tax	(9,811)	(274)	—
Comprehensive income attributable to Cubic, net of tax	\$ 20,644	\$ 10,687	\$ 1,982

See accompanying notes.

CUBIC CORPORATION
CONSOLIDATED BALANCE SHEETS
(in thousands)

	September 30,	
	2019	2018
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 65,800	\$ 111,834
Cash in consolidated VIE	347	374
Restricted cash	19,507	17,400
Restricted cash in consolidated VIE	9,967	10,000
Accounts receivable:		
Long-term contracts	127,406	393,691
Allowance for doubtful accounts	(1,392)	(1,324)
	<u>126,014</u>	<u>392,367</u>
Contract assets	349,559	—
Recoverable income taxes	7,754	91
Inventories	106,794	84,199
Assets held for sale	—	8,177
Other current assets	38,534	43,705
Other current assets in consolidated VIE	33	—
Total current assets	<u>724,309</u>	<u>668,147</u>
Long-term contracts receivables	—	6,134
Long-term contracts financing receivables	36,285	—
Long-term contracts financing receivables in consolidated VIE	115,508	—
Long-term capitalized contract costs	—	84,924
Long-term capitalized contract costs in consolidated VIE	—	1,258
Property, plant and equipment, net	144,969	117,546
Deferred income taxes	4,098	4,713
Goodwill	578,097	333,626
Purchased intangibles, net	165,613	73,533
Other assets	76,872	14,192
Other assets in consolidated VIE	1,419	810
Total assets	<u>\$ 1,847,170</u>	<u>\$ 1,304,883</u>

See accompanying notes.

CUBIC CORPORATION

CONSOLIDATED BALANCE SHEETS—continued
(in thousands)

	September 30,	
	2019	2018
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Short-term borrowings	\$ 195,500	\$ —
Trade accounts payable	180,773	125,414
Trade accounts payable in consolidated VIE	25	165
Contract liabilities	46,170	—
Customer advances	—	75,941
Accrued compensation	58,343	65,277
Other current liabilities	36,670	52,956
Other current liabilities in consolidated VIE	191	—
Income taxes payable	773	8,586
Current portion of long-term debt	10,714	—
Current liabilities of discontinued operations	—	—
Total current liabilities	<u>529,159</u>	<u>328,339</u>
Long-term debt	189,110	199,793
Long-term debt in consolidated VIE	61,994	9,056
Accrued pension liability	25,386	7,802
Deferred compensation	11,040	11,476
Income taxes payable	937	2,406
Deferred income taxes	4,554	2,689
Other noncurrent liabilities	22,817	19,113
Other noncurrent liabilities in consolidated VIE	21,605	13
Commitments and contingencies		
Shareholders' equity:		
Preferred stock, no par value:		
Authorized--5,000 shares		
Issued and outstanding--none	—	—
Common stock, no par value:		
Authorized--50,000 shares		
40,124 issued and 31,178 outstanding at September 30, 2019		
36,201 issued and 27,255 outstanding at September 30, 2018	274,472	45,008
Retained earnings	862,948	801,834
Accumulated other comprehensive loss	(139,693)	(110,643)
Treasury stock at cost - 8,945 shares	(36,078)	(36,078)
Shareholders' equity related to Cubic	<u>961,649</u>	<u>700,121</u>
Noncontrolling interest in VIE	18,919	24,075
Total shareholders' equity	<u>980,568</u>	<u>724,196</u>
Total liabilities and shareholders' equity	<u>\$ 1,847,170</u>	<u>\$ 1,304,883</u>

See accompanying notes.

CUBIC CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	Years Ended September 30,		
	2019	2018	2017
Operating Activities:			
Net income (loss)	\$ 39,883	\$ 12,036	\$ (11,209)
Net (income) loss from discontinued operations	1,423	(4,243)	(14,531)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation and amortization	64,742	46,600	48,045
Share-based compensation expense	15,488	7,515	5,012
Change in fair value of contingent consideration	(1,005)	1,029	(3,878)
(Gain) loss on sale of property, plant and equipment	(32,510)	—	405
Gain on sale of investment in real estate	—	(1,474)	—
Deferred income taxes	(3,363)	(6,860)	(917)
Net pension benefit	(1,337)	(2,770)	(1,046)
Excess tax benefits from equity incentive plans	—	—	(35)
Changes in operating assets and liabilities, net of effects from acquisitions			
Accounts receivable	44,473	(34,762)	(45,443)
Contract assets	(83,697)	—	—
Inventories	(31,544)	3,023	(18,867)
Prepaid expenses and other current assets	5,317	(15,455)	7,286
Long-term financing receivables	(56,575)	—	—
Long-term capitalized contract costs	—	(29,552)	8,911
Accounts payable and other current liabilities	27,792	30,423	13,389
Contract liabilities	(15,359)	21,566	7,383
Income taxes	(17,268)	(361)	8,240
Other items, net	11,689	(18,126)	(5,756)
NET CASH PROVIDED BY (USED IN) OPERATING ACTIVITIES FROM CONTINUING OPERATIONS	(31,851)	8,589	(3,011)
NET CASH PROVIDED BY OPERATING ACTIVITIES FROM DISCONTINUED OPERATIONS	—	10,376	27,747
NET CASH PROVIDED BY (USED IN) OPERATING ACTIVITIES	(31,851)	18,965	24,736
Investing Activities:			
Acquisition of businesses, net of cash acquired	(393,908)	(16,322)	(16,830)
Purchases of marketable securities	—	—	(19,121)
Proceeds from sales or maturities of marketable securities	—	—	31,868
Proceeds from sale of property, plant and equipment	44,891	—	—
Purchases of property, plant and equipment	(49,084)	(31,696)	(36,916)
Proceeds from sale of investment in real estate	—	2,400	—
Purchase of non-marketable debt and equity securities	(60,694)	(1,500)	(2,700)
NET CASH USED IN INVESTING ACTIVITIES FROM CONTINUING OPERATIONS	(458,795)	(47,118)	(43,699)
NET CASH PROVIDED BY INVESTING ACTIVITIES FROM DISCONTINUED OPERATIONS	—	133,795	1,217
NET CASH PROVIDED BY (USED IN) INVESTING ACTIVITIES	(458,795)	86,677	(42,482)
Financing Activities:			
Proceeds from short-term borrowings	898,000	269,770	130,780
Principal payments on short-term borrowings	(702,500)	(324,770)	(315,780)
Principal payments on long-term debt	—	—	(978)
Proceeds from long-term borrowings in consolidated VIE	50,162	13,196	—
Deferred financing fees	(1,907)	—	—
Deferred financing fees in consolidated VIE	—	(4,778)	—
Proceeds from stock issued under employee stock purchase plan	1,832	1,517	2,234
Purchase of common stock	(3,688)	(2,449)	(2,444)

Dividends paid	(8,414)	(7,355)	(7,341)
Excess tax benefits from equity incentive plans	—	—	35
Contingent consideration payments related to acquisitions of businesses	(820)	(1,156)	(2,625)
Equity contribution from Boston VIE partner	—	24,349	—
Proceeds from equity offering, net	215,832	—	—
NET CASH PROVIDED BY (USED IN) FINANCING ACTIVITIES	<u>448,497</u>	<u>(31,676)</u>	<u>(196,119)</u>
Effect of exchange rates on cash	<u>(1,838)</u>	<u>(2,935)</u>	<u>9,667</u>
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	(43,987)	71,031	(204,198)
Cash, cash equivalents and restricted cash at the beginning of the period	<u>139,608</u>	<u>68,577</u>	<u>272,775</u>
CASH, CASH EQUIVALENTS AND RESTRICTED CASH AT THE END OF THE PERIOD	<u>\$ 95,621</u>	<u>\$ 139,608</u>	<u>\$ 68,577</u>
Supplemental disclosure of non-cash investing and financing activities:			
Liability recognized in connection with the acquisition of Nuvotronics, net	\$ 4,900	\$ —	\$ —
Liability recognized in connection with the acquisition of Shield Aviation, net	\$ —	\$ 6,248	\$ —
Liability recognized in connection with the acquisition of Deltenna, net	\$ —	\$ —	\$ 1,327
Liability recognized in connection with the acquisition of Vocality, net	\$ —	\$ —	\$ 271

See accompanying notes.

CUBIC CORPORATION
CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY
(in thousands, except per share amounts)

	Common Stock	Retained Earnings	Accumulated Other Comprehensive Loss	Treasury Stock	Noncontrolling Interest in VIE	Number of Shares Outstanding
October 1, 2016	\$ 32,756	\$ 813,035	\$ (119,817)	\$ (36,078)	\$ —	26,992
Net loss	—	(11,209)	—	—	—	—
Other comprehensive income, net of tax	—	—	13,191	—	—	—
Stock issued under equity incentive plans	—	—	—	—	—	158
Stock issued under employee stock purchase plan	2,234	—	—	—	—	32
Purchase of common stock	(2,444)	—	—	—	—	(55)
Stock-based compensation	5,269	—	—	—	—	—
Tax expense from equity incentive plans	35	—	—	—	—	—
Cash dividends paid -- \$.27 per share of common stock	—	(7,341)	—	—	—	—
September 30, 2017	37,850	794,485	(106,626)	(36,078)	—	27,127
Net income (loss)	—	12,310	—	—	(274)	—
Other comprehensive loss, net of tax	—	—	(1,623)	—	—	—
Stock issued under equity incentive plans	—	—	—	—	—	158
Stock issued under employee stock purchase plan	1,517	—	—	—	—	26
Purchase of common stock	(2,449)	—	—	—	—	(56)
Stock-based compensation	8,090	—	—	—	—	—
Equity contribution of noncontrolling interest	—	—	—	—	24,349	—
Cumulative effect of accounting standard adoption	—	2,394	(2,394)	—	—	—
Cash dividends paid -- \$.27 per share of common stock	—	(7,355)	—	—	—	—
September 30, 2018	45,008	801,834	(110,643)	(36,078)	24,075	27,255
Net income (loss)	—	49,694	—	—	(9,811)	—
Other comprehensive loss, net of tax	—	—	(29,050)	—	—	—
Stock issued under equity incentive plans	—	—	—	—	—	145
Stock issued under employee stock purchase plan	1,832	—	—	—	—	32
Purchase of common stock	(3,688)	—	—	—	—	(49)
Stock-based compensation	15,488	—	—	—	—	—
Cumulative effect of accounting standard adoption	—	19,834	—	—	4,655	—
Stock issued under equity offering, net	215,832	—	—	—	—	3,795
Cash dividends paid -- \$.27 per share of common stock	—	(8,414)	—	—	—	—
September 30, 2019	<u>\$ 274,472</u>	<u>\$ 862,948</u>	<u>\$ (139,693)</u>	<u>\$ (36,078)</u>	<u>\$ 18,919</u>	<u>31,178</u>

See accompanying notes.

CUBIC CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

September 30, 2019

NOTE 1—SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Organization and Nature of the Business: We design, integrate and operate systems, products and services focused in the transportation, command, control, communication, computers, intelligence, surveillance and reconnaissance (C4ISR), and training markets. We offer integrated payment and information systems, expeditionary communications, cloud-based computing and intelligence delivery, as well as training and readiness solutions.

Through September 30, 2017 our principal lines of business were transportation systems and services, defense systems, and defense services. On May 31, 2018, we sold the Cubic Global Defense Services (CGD Services) business. In March 2018, all of the criteria were met for the classification of CGD Services as a discontinued operation. As a result, the operating results, assets, liabilities, and cash flows of CGD Services have been classified as discontinued operations and have been excluded from amounts described below. In addition, we concluded that Cubic Mission Solutions became a separate operating and reportable segment beginning on October 1, 2017. As a result, we now operate in three reportable business segments: Cubic Transportation Systems (CTS), Cubic Global Defense Systems (CGD), and Cubic Mission Solutions (CMS).

Refer to “Note 3 – Acquisitions and Divestitures” for additional information about the sale of CGD Services and the related discontinued operation classification and “Note 18 – Business Segment Information” for additional information on the separate disclosure of operating and reportable segment information for CMS.

Principles of Consolidation: The consolidated financial statements include the accounts of Cubic Corporation, subsidiaries we control, and variable interest entities (VIEs) for which Cubic is the primary beneficiary. All significant intercompany balances and transactions have been eliminated in consolidation.

Foreign Currency Transactions and Translation: Our reporting currency is the U.S. dollar. Assets and liabilities of foreign subsidiaries are translated at the spot rate in effect at the applicable reporting date, and our Consolidated Statements of Operations are translated at the average exchange rates in effect during the applicable periods. The resulting unrealized cumulative translation adjustments are recorded as a component of other comprehensive income (loss) in our Consolidated Statements of Comprehensive Income. Cash flows from our operations in foreign countries are translated at the average rate for the applicable period. The effect of exchange rates on cash balances held in foreign currencies are separately reported in our Consolidated Statements of Cash Flows.

Transactions denominated in currencies other than our own subsidiaries’ functional currencies are recorded based on exchange rates at the time such transactions arise. Changes in exchange rates with respect to amounts recorded in our Consolidated Balance Sheets related to such transactions result in transaction gains and losses that are reflected in our Consolidated Statements of Operations as a component of other income (expense). Total transaction gains and losses, which are related primarily to advances to foreign subsidiaries and advances between foreign subsidiaries amounted to a gain of \$0.7 million in 2019, a loss of \$2.2 million in 2018, and a gain of \$0.7 million in 2017.

Use of Estimates: The preparation of financial statements in conformity with U.S. generally accepted accounting principles (GAAP) requires us to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Significant estimates include the estimated total costs at completion of our long-term contracts, estimated loss contingencies, estimated self-insurance liabilities, estimated discounted future cash flows of our reporting units used for goodwill impairment testing and estimated future cash flows for our long-lived asset impairment testing, estimated discounted cash flows used for valuation of intangible assets and contingent consideration in business combinations, and estimated rates of return and discount rates related to our defined benefit pension plans. Actual results could differ from our estimates.

Revenue Recognition: Effective October 1, 2018, we adopted Accounting Standards Update (ASU) 2014-09, *Revenue from Contracts with Customers*, as amended (commonly known as ASC 606), using the modified retrospective transition

method. The adoption of ASC 606 resulted in a change in our significant accounting policy regarding revenue recognition, and resulted in changes in our accounting policies regarding contract estimates, backlog, inventory, contract assets, long-term capitalized contract costs, and contract liabilities as described below.

The cumulative effect of applying the standard was an increase of \$24.5 million to shareholders' equity as of October 1, 2018. In accordance with the modified retrospective transition method, our Consolidated Statement of Operations for the year ended September 30, 2019 and our Consolidated Balance Sheet as of September 30, 2019 are presented under ASC 606, while our Consolidated Statement of Operations for the years ended September 30, 2018 and 2017 and our Consolidated Balance Sheet as of September 30, 2018 are presented under ASC 605, *Revenue Recognition*, the accounting standard in effect for periods ending prior to October 1, 2018. See Note 2 for disclosure of the impact of the adoption of ASC 606 on our Consolidated Statements of Operations for the year ended September 30, 2019 and our Consolidated Balance Sheets as of October 1, 2018 and September 30, 2019.

We generate revenue from the sale of integrated solutions such as mass transit fare collection systems, air and ground combat training systems, and products with C4ISR capabilities. A significant portion of our revenues are generated from long-term fixed-price contracts with customers that require us to design, develop, manufacture, modify, upgrade, test and integrate complex systems according to the customer's specifications. We also generate revenue from services we provide, such as the operation and maintenance of fare systems for mass transit customers and the support of specialized military training exercises mainly for international customers. Our contracts are primarily with the U.S. government, state and local municipalities, international government customers, and international local municipal transit agencies. We classify sales as products or services in our Consolidated Statements of Operations based on the attributes of the underlying contracts.

We account for a contract when it has approval and commitment from both parties, the rights of the parties are identified, payment terms are identified, the contract has commercial substance and collectability of consideration is probable. For certain contracts that meet the foregoing requirements, primarily international direct commercial sale contracts, we are required to obtain certain regulatory approvals. In these cases where regulatory approval is required in addition to approval from both parties, we recognize revenue based on the likelihood of obtaining timely regulatory approvals based upon all known facts and circumstances.

To determine the proper revenue recognition method, we evaluate each contractual arrangement to identify all performance obligations. A performance obligation is a promise in a contract to transfer a distinct good or service to the customer. The majority of our contracts have a single performance obligation because the promise to transfer the individual good or service is not separately identifiable from other promises within the contract and is therefore, not distinct. These contractual arrangements either require the use of a highly specialized engineering, development and manufacturing process to provide goods according to customer specifications or represent a bundle of contracted goods and services that are integrated and together represent a combined output, which may include the delivery of multiple units.

Some of our contracts have multiple performance obligations, primarily (i) related to the provision of multiple goods or services or (ii) due to the contract covering multiple phases of the product lifecycle (for instance: development and engineering, production, maintenance and support). For contracts with more than one performance obligation, we allocate the transaction price to the performance obligations based upon their relative standalone selling prices. For such contracts we evaluate whether the stated selling prices for the products or services represent their standalone selling prices. In cases where a contract requires a customized good or service, our primary method used to estimate the standalone selling price is the expected cost plus a margin approach. In cases where we sell a standard product or service offering, the standalone selling price is based on an observable standalone selling price. A number of our contracts with the U.S. government, including contracts under the U.S. Department of Defense's Foreign Military Sales program (FMS Contracts), are subject to the Federal Acquisition Regulations (FAR) and the price is typically based on estimated or actual costs plus a reasonable profit margin. As a result of these regulations, the standalone selling price of products or services in our contracts with the U.S. government and FMS Contracts are typically equal to the selling price stated in the contract. Therefore, we typically do not need to allocate (or reallocate) the transaction price to multiple performance obligations in our contracts with the U.S. government.

The majority of our sales are from performance obligations satisfied over time. Sales are recognized over time when control is continuously transferred to the customer during the contract or the contracted good does not have alternative use to us. For U.S. government contracts, the continuous transfer of control to the customer is supported by contract clauses that provide for (i) progress or performance-based payments or (ii) the unilateral right of the customer to terminate the contract for its convenience, in which case we have the right to receive payment for costs incurred plus a reasonable profit for products and services that do not have alternative uses to us. Our contracts with international governments and local municipal transit agencies contain similar termination for convenience clauses, or we have a legally enforceable right to receive payment for costs incurred and a reasonable profit for products or services that do not have alternative uses to us.

For those contracts for which control transfers over time, revenue is recognized based on the extent of progress towards completion of the performance obligation. The selection of the method to measure progress towards completion requires judgment and is based on the nature of the products or services to be provided. For our design and build type contracts, we generally use the cost-to-cost measure of progress because it best depicts the transfer of control to the customer which occurs as we incur costs on our contracts. Under the cost-to-cost measure of progress, the extent of progress towards completion is measured based on the ratio of costs incurred to date to the total estimated costs at completion of the performance obligation. Revenues, including estimated fees or profits, are recorded proportionally as costs are incurred. Contract costs include material, labor and subcontracting costs, as well as an allocation of indirect costs, and are generally expensed as incurred for these contracts. For contracts with the U.S. government, general and administrative costs are included in contract costs; however, for purposes of revenue measurement, general and administrative costs are not considered contract costs for any other customers.

Sales from performance obligations satisfied at a point in time are typically for standard goods and are recognized when the customer obtains control, which is generally upon delivery and acceptance. Costs of sales are recorded in the period in which revenue is recognized.

We record sales under cost-reimbursement-type contracts as we incur the costs. For cost-reimbursement-type contracts with the U.S. government, the FAR provides guidance on the types of costs that will be reimbursed in establishing the contract price.

Sales under service contracts are generally recognized as services are performed or value is provided to our customers. We measure the delivery of value to our customers using a number of metrics including ridership, units of work performed, and costs incurred. We determine which metric represents the most meaningful measure of value delivery based on the nature of the underlying service activities required under each individual contract. In certain circumstances we recognize revenue based on the right to bill when such amounts correspond to the value being delivered in a billing cycle. Certain of our transportation systems service contracts contain service level penalties or bonuses, which we recognize in each period incurred or earned. These contract penalties or bonuses are generally incurred or earned on a monthly basis; however, certain contracts may be based on a quarterly or annual evaluation. Sales under service contracts that do not contain measurable units of work performed are recognized on a straight-line basis over the contractual service period, unless evidence suggests that the revenue is earned, or obligations fulfilled, in a different manner. Costs incurred under these service contracts are generally expensed as incurred.

Due to the nature of the work required to be performed on many of our performance obligations, the estimation of total revenue and cost at completion is complex, subject to many variables and requires significant judgment. It is common for our long-term contracts to contain bonuses, penalties, transactional variable based fees, or other provisions that can either increase or decrease the transaction price. These variable amounts generally are incurred or earned upon certain performance metrics, program milestones, transactional based activities and other similar contractual events. We estimate variable consideration at the most likely amount to which we expect to be entitled. We include estimated amounts in the transaction price to the extent it is probable that a significant reversal of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is resolved. Our estimates of variable consideration and determination of whether to include estimated amounts in the transaction price are based largely on an assessment of our anticipated performance and all information (historical, current and forecasted) that is reasonably available to us.

Billing timetables and payment terms on our contracts vary based on a number of factors, including the contract type. Typical payment terms under fixed-price design and build type contracts provide that the customer pays either performance-based payments based on the achievement of contract milestones or progress payments based on a percentage of costs we incur. For the majority of our service contracts, we generally bill on a monthly basis which corresponds with the satisfaction of our monthly performance obligation under these contracts. We recognize a liability for payments received in excess of revenue recognized, which is presented as a contract liability on the balance sheet. The portion of payments retained by the customer until final contract settlement is not considered a significant financing component because the intent is to protect the customer from our failure to adequately complete some or all of the obligations under the contract. Payments received from customers in advance of revenue recognition are not considered to be significant financing components because they are used to meet working capital demands that can be higher in the early stages of a contract. For certain of our multiple-element arrangements, the contract specifies that we will not be paid upon the delivery of certain performance obligations, but rather we will be paid when subsequent performance obligations are satisfied. Generally, in these cases we have determined that a separate financing component exists as a performance obligation under the contract. In these instances, we allocate a portion of the transaction price to this financing component. We determine the value of the embedded financing component by discounting the repayment of the financed amount over the implied repayment term using the effective interest method. This discounting methodology uses an implied interest rate which reflects the credit quality of the customer and represents an interest rate that would be similar to what we would offer the customer in a separate financing transaction. Unpaid principal and interest amounts associated with the financed performance obligation and the value of the embedded financing component are presented as long-term contracts financing receivables in our consolidated balance sheet. We recognize the allocated transaction price of the financing component as interest income over the implied financing term.

For fixed-price and cost-reimbursable contracts, we present revenues recognized in excess of billings as contract assets on the balance sheet. Amounts billed and due from our customers under both contract types are classified as receivables on the balance sheet.

We only include amounts representing contract change orders, claims or other items in the contract value when we believe the rights and obligations become enforceable. Contract modifications routinely occur to account for changes in contract specifications or requirements. In most cases, contract modifications are for goods or services that are not distinct and, therefore, are accounted for as part of the existing contract. Transaction price estimates include additional consideration for submitted contract modifications or claims when we believe there is an enforceable right to the modification or claim, the amount can be reliably estimated, and its realization is reasonably assured. Amounts representing modifications accounted for as part of the existing contract are included in the transaction price and recognized as an adjustment to sales on a cumulative catch-up basis.

In addition, we are subject to audits of incurred costs related to many of our U.S. government contracts. These audits could produce different results than we have estimated for revenue recognized on our cost-based contracts with the U.S. government; however, our experience has been that our costs are acceptable to the government.

Contract Estimates: Use of the cost-to-cost or other similar methods of revenue recognition requires us to make reasonably dependable estimates regarding the revenue and cost associated with the design, manufacture and delivery of our products and services. Revisions or adjustments to estimates of the transaction price, estimated costs at completion and estimated profit or loss of a performance obligation are often required as work progresses under a contract, as experience is gained, as facts and circumstances change and as new information is obtained, even though the scope of work required under the contract may not change. Revisions or adjustments may also be required if contract modifications occur. The impact of revisions in profit or loss estimates are recognized on a cumulative catch-up basis in the period in which the revisions are made. The revisions in contract estimates, if significant, can materially affect our results of operations and cash flows, and in some cases result in liabilities to complete contracts in a loss position. The aggregate impact of net changes in contract estimates are presented in the table below (amounts in thousands).

	Years Ended September 30,		
	2019	2018	2017
Operating income (loss)	\$ (2,235)	\$ (6,986)	\$ 5,737
Net income (loss) from continuing operations	(2,351)	(5,146)	3,208
Diluted earnings per share	(0.08)	(0.19)	0.12

Backlog: Backlog (i.e., unfulfilled or remaining performance obligations) represents the sales we expect to recognize for our products and services for which control has not yet transferred to the customer. It is comprised of both funded backlog (firm orders for which funding is authorized and appropriated) and unfunded backlog. Unexercised contract options and indefinite delivery indefinite quantity (IDIQ) contracts are not included in backlog until the time the option or IDIQ task order is exercised or awarded. For our cost-reimbursable and fixed-priced-incentive contracts, the estimated consideration we expect to receive pursuant to the terms of the contract may exceed the contractual award amount. The estimated consideration is determined at the outset of the contract and is continuously reviewed throughout the contract period. In determining the estimated consideration, we consider the risks related to the technical, schedule and cost impacts to complete the contract and an estimate of any variable consideration. Periodically, we review these risks and may increase or decrease backlog accordingly. As of September 30, 2019, our ending backlog was \$3.401 billion. We expect to recognize approximately 30% of our September 30, 2019 backlog over the next 12 months and approximately 45% over the next 24 months as revenue, with the remainder recognized thereafter.

Disaggregation of Revenue: See Note 18 for information regarding our sales by customer type, contract type and geographic region for each of our segments. We believe those categories best depict how the nature, amount, timing and uncertainty of our revenue and cash flows are affected by economic factors.

Cash Equivalents: We consider highly liquid investments with maturity of three months or less when purchased to be cash equivalents. Cash and cash equivalents excludes \$29.5 million and \$27.4 million of restricted cash at September 30, 2019 and 2018, respectively, which for purposes of our consolidated statements of cash flows, is included in cash, cash equivalents and restricted cash.

Restricted Cash: Restricted cash represents cash that is restricted as to usage for legal or contractual reasons. Restricted cash is classified either as current or noncurrent, depending upon the date of the lapse of the respective restriction.

Accounts Receivable: Receivables consist of billed amounts due from our customers. Due to the nature of our customers, we generally do not require collateral. We have limited exposure to credit risk as we have historically collected substantially all of our receivables. We generally require minimal allowance for doubtful accounts for our customers, which amounted to \$1.4 million and \$1.3 million as of September 30, 2019 and September 30, 2018, respectively.

Contract Assets: Contract assets include unbilled amounts typically resulting from sales under contracts when the percentage-of-completion cost-to-cost method of revenue recognition is utilized and revenue recognized exceeds the amount billed to the customer. Contract assets are classified as current assets and, in accordance with industry practice, include amounts that may be billed and collected beyond one year due to the long-cycle nature of many of our contracts.

Inventories: We state our inventories at the lower of cost or market. We determine cost using the first-in, first-out (FIFO) method, which approximates current replacement cost. We value our work in process at the actual production and engineering costs incurred to date, including applicable overhead. Any inventoried costs in excess of estimated realizable value are immediately charged to cost of sales.

Long-term capitalized contract costs: Through September 30, 2018, and prior to the adoption of ASC 606 long-term capitalized contract costs included costs incurred on contracts to develop and manufacture transportation systems for customers for which customer payments and revenue recognition did not begin until the customers began operating the systems. Upon adoption of ASC 606, revenue recognition and cost recognition are no longer deferred in these situations and therefore we no longer have long-term capitalized contract costs.

Property, Plant and Equipment: We carry property, plant and equipment at cost. We provide depreciation in amounts sufficient to amortize the cost of the depreciable assets over their estimated useful lives. Generally, we use straight-line

methods for depreciable real property over estimated useful lives or the term of the underlying lease, if shorter than the estimated useful lives, for leasehold improvements. We use accelerated methods (declining balance and sum-of-the-years-digits) for machinery and equipment over their estimated useful lives.

Certain costs incurred in the development of internal-use software and software applications, including external direct costs of materials and services and applicable compensation costs of employees devoted to specific software development, are capitalized as computer software costs. Costs incurred outside of the application development stage are expensed as incurred. The amounts capitalized are included in property, plant and equipment and are depreciated on a straight-line basis over the estimated useful life of the software, which ranges from three to seven years. No depreciation expense is recorded until the software is ready for its intended use.

Goodwill and Purchased Intangibles: We evaluate goodwill for potential impairment annually as of July 1, or when circumstances indicate that the carrying amount may not be recoverable. The test is performed by comparing the fair value of each of our reporting units to its carrying amount, including recorded goodwill. If the carrying amount exceeds the fair value, we measure impairment by comparing the implied fair value of goodwill to its carrying amount, and any impairment determined would be recorded in the current period. Our purchased intangible assets are subject to amortization. In cases that we determine that a pattern in which the intangible asset will be consumed can be reliably determined we use an amortization method that best matches that expected pattern. If we believe that such a pattern cannot be reliably determined, we use a straight-line method of amortization.

Impairment of Long-Lived Assets: We generally evaluate the carrying values of long-lived assets other than goodwill for impairment only if events or changes in facts and circumstances indicate that carrying values may not be recoverable. If we determined there was any impairment, we would measure it by comparing the fair value of the related asset to its carrying value and record the difference in the current period. Fair value is generally determined by identifying estimated discounted cash flows to be generated by those assets. We have not recorded any impairment of long-lived assets for the years ended September 30, 2019, 2018 or 2017.

Recognizing assets acquired and liabilities assumed in a business combination: Acquired assets and assumed liabilities are recognized in a business combination on the basis of their fair values at the date of acquisition. We assess fair value, which is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date, using a variety of methods including income approaches such as present value techniques or cost approaches such as the estimation of current selling prices and replacement values. Fair value of the assets acquired and liabilities assumed, including intangible assets and contingent payments, are measured based on the assumptions and estimations with regards to the variable factors such as the amount and timing of future cash flows for the asset or liability being measured, appropriate risk-adjusted discount rates, nonperformance risk, or other factors that market participants would consider. Upon acquisition, we determine the estimated economic lives of the acquired intangible assets for amortization purposes, which are based on the underlying expected cash flows of such assets. Adjustments to inventory are based on the fair market value of inventory and amortized into income based on the period in which the underlying inventory is sold. Adjustments to deferred revenue are based on the fair value of the deferred revenue and amortized into income over the underlying deferred revenue period. Goodwill is an asset representing the future economic benefits arising from other assets acquired in a business combination that are not individually identified and separately recognized. Actual results may vary from projected results and assumptions used in the fair value assessments.

Contract Liabilities: Contract liabilities (formerly referred to as customer advances prior to the adoption of ASC 606) include advance payments and billings in excess of revenue recognized. Contract liabilities are classified as current based on our contract operating cycle and reported on a contract-by-contract basis, net of revenue recognized, at the end of each reporting period.

Contingencies: We establish reserves for loss contingencies when, in the opinion of management, the likelihood of liability is probable and the extent of such liability is reasonably estimable. Estimates, by their nature, are based on judgment and currently available information and involve a variety of factors, including the type and nature of the litigation, claim or proceeding, the progress of the matter, the advice of legal counsel, our defenses and our experience in similar cases or proceedings as well as our assessment of matters, including settlements, involving other defendants in

similar or related cases or proceedings. We may increase or decrease our legal reserves in the future, on a matter-by-matter basis, to account for developments in such matters.

Derivative Financial Instruments: All derivatives are recorded at fair value, however, the classification of gains and losses resulting from changes in the fair values of derivatives are dependent on the intended use of the derivative and its resulting designation. If a derivative is designated as a fair value hedge, then a change in the fair value of the derivative is offset against the change in the fair value of the underlying hedged item and only the ineffective portion of the hedge, if any, is recognized in cost of sales. If a derivative is designated as a cash flow hedge, then the effective portion of a change in the fair value of the derivative is recognized as a component of accumulated other comprehensive income (loss) until the underlying hedged item is recognized in cost of sales, or the forecasted transaction is no longer probable of occurring. If a derivative does not qualify as a highly effective hedge, a change in fair value is immediately recognized in earnings. We formally document hedging relationships for all derivative hedges and the underlying hedged items, as well as the risk management objectives and strategies for undertaking the hedge transactions.

Defined Benefit Pension Plans: Some of our employees are covered by defined benefit pension plans. The net periodic cost of our plans is determined using several actuarial assumptions, the most significant of which are the discount rate and the long-term rate of return on plan assets. We recognize on a plan-by-plan basis the funded status of our defined benefit pension plans as either an asset or liability on our balance sheets, with a corresponding adjustment to accumulated other comprehensive income (loss), net of tax, in shareholders' equity. The funded status is measured as the difference between the fair value of the plan assets and the benefit obligation of the plan.

Comprehensive Income (Loss): Other comprehensive income (loss), which is comprised of unrealized gains and losses on foreign currency translation adjustments, unrealized gains and losses on cash flow hedges, net of tax, unrealized gains and losses on available-for-sale securities, net of tax and pension liability adjustments, net of tax is included in our Consolidated Statement of Comprehensive Income as other comprehensive income (loss).

Research and Development (R&D): We record the cost of company-sponsored R&D activities as the expenses are incurred. The cost of engineering and product development activities incurred in connection with the performance of work on our contracts is included in cost of sales as they are directly related to contract performance.

Stock-Based Compensation: Restricted stock units (RSUs) are granted to eligible employees and directors and represent rights to receive shares of common stock at a future date if vesting occurs. We have three general categories of awards: RSUs with time-based vesting, RSUs with performance-based vesting, and RSUs with performance and market-based vesting. Compensation expense for all RSUs is measured at fair value at the grant date and recognized based upon the number of RSUs that ultimately vest. We determine the fair value of RSUs based on the closing market price of our common stock on the grant date. The grant date of the performance-based RSUs takes place when the grant is authorized and the specific achievement goals are communicated. See Note 16 for further information on our stock based compensation plans.

Income Taxes: Our provision for income taxes includes federal, state, local and foreign income taxes. We provide deferred income taxes on temporary differences between assets and liabilities for financial reporting and tax purposes as measured by enacted tax rates we expect to apply when the temporary differences are settled or realized. Tax law and rate changes are reflected in income in the period such changes are enacted. We establish valuation allowances for deferred tax assets when the amount of future taxable income we expect is not likely to support the realization of the temporary differences. After the enactment of the Tax Cuts and Jobs Act of 2017 (Tax Act), we have provided for deferred taxes on unremitted earnings, as applicable. We include interest and penalties related to income taxes, including unrecognized tax benefits, within the income tax provision. Accounting Standards Codification (ASC) 740-20 requires total income tax expense or benefit to be allocated among continuing operations, discontinued operations, extraordinary items, other comprehensive income and items charged directly to shareholders' equity.

Net Income (Loss) Per Share: Basic net income (loss) per share (EPS) is computed by dividing the net income (loss) attributable to Cubic for the period by the weighted average number of common shares outstanding during the period, including vested RSUs.

In periods with a net income from continuing operations attributable to Cubic, diluted EPS is computed by dividing the net income for the period by the weighted average number of common and common equivalent shares outstanding during the period. Common equivalent shares consist of dilutive RSUs. Dilutive RSUs are calculated based on the average share price for each fiscal period using the treasury stock method. For RSUs with performance-based vesting, no common equivalent shares are included in the computation of diluted EPS until the related performance criteria have been met. For RSUs with performance and market-based vesting, no common equivalent shares are included in the computation of diluted EPS until the performance criteria have been met, and once the criteria are met the dilutive restricted stock units are calculated using the treasury stock method, modified by the multiplier that is calculated at the end of the accounting period as if the vesting date was at the end of the accounting period. The multiplier on RSUs with performance and market-based vesting is further described in Note 16.

In periods with a net loss from continuing operations attributable to Cubic, common equivalent shares are not included in the computation of diluted EPS, because to do so would be anti-dilutive.

The weighted-average number of shares outstanding used to compute net income (loss) per common share were as follows (in thousands):

	<u>Years Ended September 30,</u>		
	<u>2019</u>	<u>2018</u>	<u>2017</u>
Weighted average shares - basic	30,495	27,229	27,106
Effect of dilutive securities	111	122	—
Weighted average shares - diluted	<u>30,606</u>	<u>27,351</u>	<u>27,106</u>
Number of anti-dilutive securities	—	—	967

Recent Accounting Pronouncements:

Recently Adopted Accounting Pronouncements

On December 22, 2017 the U.S. government enacted the Tax Act. Due to the complexity of the Tax Act, the SEC issued guidance in Staff Accounting Bulletin (SAB) 118 which clarified the accounting for income taxes under ASC 740 if certain information was not yet available, prepared or analyzed in reasonable detail to complete the accounting for income tax effects of the Tax Act. SAB 118 provided for a measurement period of up to one year after the enactment of the Tax Act, during which time the required analyses and accounting must be completed. During fiscal year 2018, we recorded provisional amounts for the income tax effects of the changes in tax law and tax rates, as reasonable estimates were determined by management during this period. The SAB 118 measurement period subsequently ended on December 22, 2018. Although we no longer consider these amounts to be provisional, the determination of the Tax Act's income tax effects may change following future legislation or further interpretation of the Tax Act based on the publication of recently proposed U.S. Treasury regulations and guidance from the Internal Revenue Service and state tax authorities.

In November 2016, the Financial Accounting Standards Board (FASB) issued ASU 2016-18, *Restricted Cash*, which requires amounts generally described as restricted cash and restricted cash equivalents be included with cash and cash equivalents when reconciling the total beginning and ending amounts for the periods shown on the statement of cash flows. ASU 2016-18 was adopted by us beginning October 1, 2018. The application of this ASU did not impact our Consolidated Statements of Operations or our Consolidated Balance Sheets, but resulted in a retrospective change in the presentation of restricted cash, including the inclusion of our restricted cash balances within the beginning and ending amounts of cash and cash equivalents in our Statements of Cash Flows. In addition, changes in the total of cash, cash equivalents and restricted cash are now reflected in our Statements of Cash Flows for all periods presented.

Recent Accounting Pronouncements – Not Yet Adopted

In February 2016, the FASB issued ASU 2016-02, *Leases*. 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) a lease liability,

which is a lessee's obligation to make lease payments arising from a lease, measured on a discounted basis; and (b) 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. The ASU will be effective for us beginning October 1, 2019 and will be adopted on a modified retrospective transition basis for leases existing at, or entered into after, the beginning of the earliest comparative period presented in the financial statements. We expect to elect the practical expedients which provide that entities need not reassess whether existing contracts contain a lease, lease classification of existing leases, or the treatment of initial direct costs on existing leases. We are substantially complete with our review of lease contracts, evaluating other contracts for potentially embedded leases, implementing a new lease accounting and administration software solution, and establishing new processes and internal controls. Upon adoption, we expect to record a right of use asset of approximately \$80 million and a lease liability of approximately \$88 million. We do not expect material changes to the recognition of lease expense in our consolidated statements of income.

In August 2017, the FASB issued ASU 2017-12, *Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities*, which aims to improve the financial reporting of hedging relationships to better portray the economic results of an entity's risk management activities in its financial statements. The amendments in this ASU are intended to better align an entity's risk management activities and financial reporting for hedging relationships through changes to both the designation and measurement guidance for qualifying hedging relationships and the presentation of hedge results. To satisfy that objective, the amendments expand and refine hedge accounting for both non-financial and financial risk components, and align the recognition and presentation of the effects of the hedging instrument and the hedged item in the financial statements. Additionally, the amendments (1) permit hedge accounting for risk components in hedging relationships involving non-financial risk and interest rate risk; (2) change the guidance for designating fair value hedges of interest rate risk and for measuring the change in fair value of the hedged item in fair value hedges of interest rate risk; (3) continue to allow an entity to exclude option premiums and forward points from the assessment of hedge effectiveness; and (4) permit an entity to exclude the portion of the change in fair value of a currency swap that is attributable to a cross-currency basis spread from the assessment of hedge effectiveness. The amendments in this ASU are effective for us in our annual period beginning October 1, 2019 and interim periods within that year. We do not expect the adoption of this standard to have a significant impact on our consolidated financial statements.

In January 2017, the FASB issued ASU 2017-04, *Simplifying the Test for Goodwill Impairment*. This standard removes the second step of the goodwill impairment test, where a determination of the fair value of individual assets and liabilities of a reporting unit was needed to measure the goodwill impairment. Under this updated standard, goodwill impairment will now be the amount by which a reporting unit's carrying amount exceeds its fair value, not to exceed the carrying amount of goodwill. The guidance will be effective for us in our fiscal year beginning October 1, 2020 with early adoption permitted. Adoption of ASU 2017-04 will have no immediate impact on our consolidated financial statements and would only have the potential to impact the amount of any goodwill impairment recorded after the adoption of the ASU. We are currently evaluating whether to adopt the guidance early.

In August 2018, the FASB issued ASU 2018-13, *Fair Value Measurement - Disclosure Framework (Topic 820)*. The updated guidance modifies the disclosure requirements on fair value measurements. The amendments in this accounting standard update are effective for us in our annual period beginning October 1, 2020 and interim periods within that annual period. Early adoption is permitted for any removed or modified disclosures. We do not expect the adoption of this standard to have a significant impact on our consolidated financial statements.

In August 2018, the FASB issued ASU 2018-14, *Defined Benefit Plan - Disclosure Framework (Topic 715)*, which modifies the disclosure requirements for employers that sponsor defined benefit pension or other postretirement benefit plans. The guidance removes disclosures that are no longer considered cost beneficial, clarifies the specific requirements of disclosures and adds disclosure requirements identified as relevant. The amendments in this accounting standard update are effective for us in our annual period beginning October 1, 2020. Early adoption is permitted. We do not expect the adoption of this standard to have a significant impact on our consolidated financial statements.

NOTE 2—IMPLEMENTATION OF THE NEW REVENUE RECOGNITION STANDARD

In May 2014, the FASB issued ASU 2014-09, *Revenue from Contracts with Customers*, as amended (commonly referred to as ASC 606), which replaces numerous requirements in U.S. GAAP, including industry-specific requirements, and provides companies with a single revenue recognition model for recognizing revenue from contracts with customers and significantly expands the disclosure requirements for revenue arrangements. The new standard, as amended, was effective for us beginning on October 1, 2018.

As discussed in Note 1, we adopted ASC 606 using the modified retrospective transition method. Results for reporting periods beginning after September 30, 2018 are presented under ASC 606, while prior period comparative information has not been restated and continues to be reported in accordance with ASC 605, the accounting standard in effect for periods ending prior to October 1, 2018.

Based on contracts in process at September 30, 2018, upon adoption of ASC 606 we recorded a net increase to shareholder's equity of \$24.5 million, which includes the acceleration of net sales of approximately \$114.9 million and the related cost of sales of \$90.4 million. The adjustment to shareholder's equity primarily relates to multiple element transportation contracts that previously required the deferral of revenue and costs during the design and build phase, as the collection of all customer payments occurs during the subsequent operate and maintain phase. Under ASC 606, deferral of such revenue and costs is not appropriate. In addition, the adjustment to shareholder's equity is attributed to contracts previously accounted for under the units-of-delivery method, which are now recognized under ASC 606 earlier in the performance period as costs are incurred, as opposed to when the units are delivered under ASC 605. In accordance with the modified retrospective transition provisions of ASC 606, we will not recognize any of the accelerated net sales and related cost of sales through October 1, 2018 in our Consolidated Statements of Operations for any historical or future period.

We made certain presentation changes to our Consolidated Balance Sheet on October 1, 2018 to comply with ASC 606. The component of accounts receivable that consisted of unbilled contract receivables as reported under ASC 605 has been reclassified as contract assets under ASC 606, after certain adjustments described below. The adoption of ASC 606 resulted in an increase in unbilled contract receivables (referred to as contract assets under ASC 606) primarily from converting contracts previously applying the units-of-delivery method to the cost-to-cost method with a corresponding reduction in inventoried contract costs. Additionally, the adoption of ASC 606 resulted in an increase in unbilled receivables from converting multiple element transportation contracts that previously deferred all revenue and costs during the design and build phase, with a corresponding reduction in long-term capitalized contract costs. Advance payments and deferred revenue, previously primarily classified in customer advances, are now presented as contract liabilities.

The table below presents the cumulative effect of the changes made to our Consolidated Balance Sheet as of October 1, 2018 due to the adoption of ASC 606 (in thousands):

	September 30, 2018 Under ASC 605	Adjustments Due to ASC 606	October 1, 2018 As Adjusted Under ASC 606
ASSETS			
Current assets:			
Cash and cash equivalents	\$ 111,834	\$ —	\$ 111,834
Cash in consolidated VIE	374	—	374
Restricted cash	17,400	—	17,400
Restricted cash in consolidated VIE	10,000	—	10,000
Accounts receivable, net	392,367	(236,743)	155,624
Contract assets	—	272,210	272,210
Recoverable income taxes	91	—	91
Inventories	84,199	(22,511)	61,688
Assets held for sale	8,177	—	8,177
Other current assets	43,705	—	43,705
Total current assets	<u>668,147</u>	<u>12,956</u>	<u>681,103</u>
Long-term contracts receivables	6,134	(6,134)	—
Long-term contracts financing receivables	—	56,228	56,228
Long-term contracts financing receivables in consolidated VIE	—	38,990	38,990
Long-term capitalized contract costs	84,924	(84,924)	—
Long-term capitalized contract costs in consolidated VIE	1,258	(1,258)	—
Property, plant and equipment, net	117,546	—	117,546
Deferred income taxes	4,713	389	5,102
Goodwill	333,626	—	333,626
Purchased intangibles, net	73,533	—	73,533
Other assets	14,192	—	14,192
Other assets in consolidated VIE	810	—	810
Total assets	<u>\$ 1,304,883</u>	<u>\$ 16,247</u>	<u>\$ 1,321,130</u>
LIABILITIES AND SHAREHOLDERS' EQUITY			
Current liabilities:			
Short-term borrowings	\$ —	\$ —	\$ —
Trade accounts payable	125,414	(3,011)	122,403
Trade accounts payable in consolidated VIE	165	—	165
Contract liabilities	—	70,127	70,127
Customer advances	75,941	(75,941)	—
Accrued compensation and other current liabilities	118,233	583	118,816
Income taxes payable	8,586	—	8,586
Total current liabilities	<u>328,339</u>	<u>(8,242)</u>	<u>320,097</u>
Long-term debt	199,793	—	199,793
Long-term debt in consolidated VIE	9,056	—	9,056
Accrued pension liability	7,802	—	7,802
Deferred compensation	11,476	—	11,476
Income taxes payable	2,406	—	2,406
Deferred income taxes	2,689	—	2,689
Other noncurrent liabilities	19,113	—	19,113
Other noncurrent liabilities in consolidated VIE	13	—	13
Shareholders' equity:			
Common stock	45,008	—	45,008
Retained earnings	801,834	19,834	821,668
Accumulated other comprehensive loss	(110,643)	—	(110,643)
Treasury stock at cost	(36,078)	—	(36,078)
Shareholders' equity related to Cubic	<u>700,121</u>	<u>19,834</u>	<u>719,955</u>
Noncontrolling interest in VIE	24,075	4,655	28,730
Total shareholders' equity	<u>724,196</u>	<u>24,489</u>	<u>748,685</u>
Total liabilities and shareholders' equity	<u>\$ 1,304,883</u>	<u>\$ 16,247</u>	<u>\$ 1,321,130</u>

The table below presents how the adoption of ASC 606 affected our Consolidated Statement of Operations for the twelve months ended September 30, 2019 (in thousands, except per share data):

	Twelve months ended September 30, 2019		
	Under ASC 605	Effect of ASC 606	As Reported Under ASC 606
Net sales:			
Products	\$ 902,913	\$ 108,156	\$ 1,011,069
Services	484,363	1,043	485,406
	<u>1,387,276</u>	<u>109,199</u>	<u>1,496,475</u>
Costs and expenses:			
Products	638,621	93,516	732,137
Services	332,923	—	332,923
Selling, general and administrative expenses	269,266	798	270,064
Research and development	50,132	—	50,132
Amortization of purchased intangibles	42,106	—	42,106
Gain on sale of fixed assets	(32,510)	—	(32,510)
Restructuring costs	15,386	—	15,386
	<u>1,315,924</u>	<u>94,314</u>	<u>1,410,238</u>
Operating income	71,352	14,885	86,237
Other income (expenses):			
Interest and dividend income	394	6,125	6,519
Interest expense	(20,453)	—	(20,453)
Other income (expense), net	(19,957)	—	(19,957)
Income from continuing operations before income taxes	31,336	21,010	52,346
Income tax provision (benefit)	11,059	(19)	11,040
Income from continuing operations	20,277	21,029	41,306
Net loss from discontinued operations	(1,423)	—	(1,423)
Net income	18,854	21,029	39,883
Less noncontrolling interest in loss of VIE	(22,076)	12,265	(9,811)
Net income attributable to Cubic	<u>\$ 40,930</u>	<u>\$ 8,764</u>	<u>\$ 49,694</u>
Amounts attributable to Cubic:			
Net income from continuing operations	42,353	8,764	51,117
Net loss from discontinued operations	(1,423)	—	(1,423)
Net income attributable to Cubic	<u>\$ 40,930</u>	<u>\$ 8,764</u>	<u>\$ 49,694</u>
Net income per share:			
Basic earnings per share attributable to Cubic	\$ 1.34	\$ 0.29	\$ 1.63
Diluted earnings per share attributable to Cubic	\$ 1.34	\$ 0.29	\$ 1.62

The table below quantifies the impact of adopting ASC 606 on segment net sales and operating income (loss) for the twelve months ended September 30, 2019 (in thousands):

	Twelve months ended September 30, 2019		
	Under ASC 605	Effect of ASC 606	As Reported Under ASC 606
Sales:			
Cubic Transportation Systems	\$ 787,936	\$ 61,843	\$ 849,779
Cubic Mission Solutions	327,139	1,632	328,771
Cubic Global Defense	272,201	45,724	317,925
Total sales	<u>\$ 1,387,276</u>	<u>\$ 109,199</u>	<u>\$ 1,496,475</u>
Operating income:			
Cubic Transportation Systems	\$ 65,974	\$ 11,259	\$ 77,233
Cubic Mission Solutions	7,244	515	7,759
Cubic Global Defense	19,858	3,111	22,969
Unallocated corporate expenses	(21,724)	—	(21,724)
Total operating income	<u>\$ 71,352</u>	<u>\$ 14,885</u>	<u>\$ 86,237</u>

The table below presents how the impact of the adoption of ASC 606 affected certain line items on our Consolidated Balance Sheet at September 30, 2019 (in thousands):

	Under ASC 605	Effect of ASC 606	As Reported Under ASC 606
ASSETS			
Current assets:			
Cash and cash equivalents	\$ 65,800	\$ —	\$ 65,800
Cash in consolidated VIE	347	—	347
Restricted cash	19,507	—	19,507
Restricted cash in consolidated VIE	9,967	—	9,967
Accounts receivable, net	399,639	(273,625)	126,014
Contract assets	—	349,559	349,559
Recoverable income taxes	6,725	1,029	7,754
Inventories	158,713	(51,919)	106,794
Assets held for sale	—	—	—
Other current assets	38,534	—	38,534
Other current assets in consolidated VIE	33	—	33
Total current assets	<u>699,265</u>	<u>25,044</u>	<u>724,309</u>
Long-term contracts receivables	3,077	(3,077)	—
Long-term contracts financing receivables	—	36,285	36,285
Long-term contracts financing receivables in consolidated VIE	—	115,508	115,508
Long-term capitalized contract costs	136,804	(136,804)	—
Long-term capitalized contract costs in consolidated VIE	2,545	(2,545)	—
Property, plant and equipment, net	144,969	—	144,969
Deferred income taxes	4,098	—	4,098
Goodwill	578,097	—	578,097
Purchased intangibles, net	165,613	—	165,613
Other assets	76,872	—	76,872
Other assets in consolidated VIE	1,419	—	1,419
Total assets	<u>\$ 1,812,759</u>	<u>\$ 34,411</u>	<u>\$ 1,847,170</u>
LIABILITIES AND SHAREHOLDERS' EQUITY			
Current liabilities:			
Short-term borrowings	\$ 195,500	\$ —	\$ 195,500
Trade accounts payable	182,671	(1,898)	180,773
Trade accounts payable in consolidated VIE	25	—	25
Contract liabilities	—	46,170	46,170
Customer advances	56,001	(56,001)	—
Accrued compensation	58,343	—	58,343
Other current liabilities	36,670	—	36,670
Other current liabilities in consolidated VIE	191	—	191
Income taxes payable	152	621	773
Current portion of long-term debt	10,714	—	10,714
Total current liabilities	<u>540,267</u>	<u>(11,108)</u>	<u>529,159</u>
Long-term debt	189,110	—	189,110
Long-term debt in consolidated VIE	61,994	—	61,994
Accrued pension liability	25,386	—	25,386
Deferred compensation	11,040	—	11,040
Income taxes payable	937	—	937
Deferred income taxes	4,554	—	4,554
Other noncurrent liabilities	22,817	—	22,817
Other noncurrent liabilities in consolidated VIE	21,605	—	21,605
Shareholders' equity:			
Common stock	274,472	—	274,472
Retained earnings	834,349	28,599	862,948
Accumulated other comprehensive loss	(139,693)	—	(139,693)
Treasury stock at cost	(36,078)	—	(36,078)
Shareholders' equity related to Cubic	<u>933,050</u>	<u>28,599</u>	<u>961,649</u>
Noncontrolling interest in VIE	1,999	16,920	18,919
Total shareholders' equity	<u>935,049</u>	<u>45,519</u>	<u>980,568</u>
Total liabilities and shareholders' equity	<u>\$ 1,812,759</u>	<u>\$ 34,411</u>	<u>\$ 1,847,170</u>

NOTE 3—ACQUISITIONS AND DIVESTITURES

Sale of CGD Services

On April 18, 2018, we entered into a stock purchase agreement with Nova Global Supply & Services, LLC (Purchaser), an entity affiliated with GC Valiant, LP, under which we agreed to sell our CGD Services business to the Purchaser. We concluded that the sale of the CGD Services business met all of the required conditions for discontinued operations presentation in the second quarter of fiscal 2018. Consequently, in the second quarter of fiscal 2018, we recognized a \$6.9 million loss within discontinued operations, which was calculated as the excess of the carrying value of the net assets of CGD Services less the estimated sales price in the stock purchase agreement less estimated selling costs.

The sale closed on May 31, 2018. In accordance with the terms of the stock purchase agreement, the Purchaser agreed to pay us \$135.0 million in cash upon the closing of the transaction, adjusted for the estimated working capital of CGD Services at the date of the sale compared to a working capital target. In the third quarter of fiscal 2018, we received \$133.8 million in connection with the sale and we recorded a receivable from the Purchaser for the estimated amount due related to the working capital settlement. The balance of this receivable was \$3.7 million at September 30, 2018. During fiscal 2019, we worked with the Purchaser and revised certain estimates related to the working capital settlement. In connection with the revision of these estimates, we reduced the receivable from the Purchaser by \$1.4 million and recognized a corresponding loss on the sale of CGD Services in fiscal 2019. Certain remaining working capital settlement estimates, primarily related to the fair value of accounts receivable, have not yet been settled with the Purchaser.

In addition to the amounts described above, we are eligible to receive an additional cash payment of \$3.0 million based on the achievement of pre-determined earn-out conditions related to the award of certain government contracts. No amount has been recorded as a receivable related to the potential achievement of earn-out conditions based upon our assessment of the probability of achievement of the required conditions.

The operations and cash flows of CGD Services are reflected in our Consolidated Statements of Operations and Consolidated Statements of Cash Flows as discontinued operations through May 31, 2018, the date of the sale. The following table presents the composition of net income from discontinued operations, net of taxes (in thousands):

	Years Ended September 30,		
	2019	2018	2017
Net sales	\$ —	\$ 262,228	\$ 378,152
Costs and expenses:			
Cost of sales	—	235,279	342,819
Selling, general and administrative expenses	—	11,365	17,487
Amortization of purchased intangibles	—	1,373	2,752
Restructuring costs	—	7	208
Other income	—	(15)	(46)
Earnings from discontinued operations before income taxes	—	14,219	14,932
Net loss on sale	1,423	6,131	—
Income tax provision	—	3,845	401
Net income (loss) from discontinued operations	<u>\$ (1,423)</u>	<u>\$ 4,243</u>	<u>\$ 14,531</u>

Business Acquisitions

PIXIA Corp.

On June 27, 2019, we paid cash of \$50.0 million to purchase 20% of the outstanding capital stock of PIXIA Corp (Pixia), a private software company based in Herndon, Virginia, which provides high performance advanced data indexing, warehousing, processing and dissemination software solutions for large volumes of imagery data within traditional or cloud-based architectures.

We account for our investment in Pixia using the equity method of accounting. In accordance with ASC 323, *Investments – Equity Method and Joint Ventures*, we accounted for the basis difference between the cost of our investment in Pixia and our equity share of Pixia’s net assets as if Pixia was a consolidated subsidiary. At the date of our investment, we calculated the fair value of our share of Pixia’s identifiable intangible assets as \$17.0 million, which will be amortized in other expense over a weighted average remaining useful life of approximately five years. The remaining identifiable intangible assets subject to amortization was \$15.4 million as of September 30, 2019. Our share of the remaining basis difference of \$32.3 million is identified as goodwill and will not be amortized.

We recognize our interest in Pixia’s operating results less the amortization of our share of Pixia’s intangible assets within other income (expense) in our Consolidated Statements of Operations. The net amount we recognized in fiscal 2019 for our interest in Pixia’s operating results less the amortization of our share of Pixia’s intangible assets was \$1.2 million. We also received a dividend of \$2.0 million, which was recognized as a reduction in our investment in Pixia. At September 30, 2019 our investment in Pixia amounted to \$49.2 million and is recorded within other assets on our Consolidated Balance Sheet.

Our purchase agreement with Pixia includes an option to purchase the remaining 80% of its capital stock for \$200.0 million, which we exercised in November 2019. We expect our acquisition of the remaining capital stock of Pixia to close in February 2020.

DeLerrok Inc.

During fiscal years 2018 and 2019, we invested \$1.5 million and \$5.0 million, respectively, to purchase a total of 17.5% of the outstanding common stock of DeLerrok Inc. (DeLerrok), a private technology company based in Vista, California, that specializes in electronic fare collection systems. We elected the measurement alternative provided by ASC 321, *Investments – Equity Securities*, and recorded our investment in DeLerrok at cost, adjusted for observable price changes or any impairments, within other assets on our Consolidated Balance Sheet. At September 30, 2019, our investment in DeLerrok amounted to \$6.5 million. We did not recognize any income or loss from our investment in DeLerrok in fiscal 2018 or fiscal 2019.

Our purchase agreement includes an option to purchase the remaining 82.5% of DeLerrok’s common stock, which we exercised in November 2019. We will pay cash of \$36.4 million at closing which will be funded from borrowings under Cubic’s existing credit facilities, and up to an additional \$2.0 million if DeLerrok’s sales exceed certain levels in the future. We expect our acquisition of the remaining common stock of DeLerrok to close in December 2019.

Consolidated Business Acquisitions

Each of the following acquisitions has been treated as a business combination for accounting purposes. The results of operations of each acquired business has been included in our consolidated financial statements since the respective date of each acquisition.

Nuvotronics, Inc.

In March 2019, we acquired all of the outstanding capital stock of Nuvotronics, Inc. (Nuvotronics), a provider of microfabricated radio frequency (RF) products. Based in Durham, North Carolina, Nuvotronics' patented PolyStrata technology enables the design and production of uniquely packaged RF devices, such as antennas, filters, and combiners, all of which are components in Cubic's advanced technology product offerings. Nuvotronics is expected to provide synergies from combining its capabilities with our existing CMS business.

Nuvotronics' sales and results of operations included in our operating results were as follows (in millions):

	Years Ended September 30,		
	2019	2018	2017
Sales	\$ 7.4	\$ —	\$ —
Operating loss	(6.9)	—	—
Net loss after taxes	(6.9)	—	—

Nuvotronics' operating results above included the following amounts (in millions):

	Years Ended September 30,		
	2019	2018	2017
Amortization	\$ 1.2	\$ —	\$ —
Acquisition-related expenses	3.0	—	—

The acquisition-date fair value of consideration is \$66.8 million, which is comprised of net cash paid of \$61.5 million, plus the estimated fair value of contingent consideration of \$4.9 million, plus a \$0.4 million estimated payable due to the sellers for the difference between the net working capital acquired and the targeted working capital amounts. The acquisition was financed primarily with proceeds from draws on our line of credit. Under the purchase agreement, we will pay the sellers up to \$8.0 million of contingent consideration if Nuvotronics meets certain gross profit goals for the 12-month periods ended December 31, 2020 and December 31, 2021. The contingent consideration liability will be re-measured to fair value at each reporting date until the contingencies are resolved and any subsequent changes in fair value are recognized in earnings.

The following table summarizes the estimated fair values of the assets acquired and liabilities assumed at the acquisition date (in millions):

Technology	\$ 22.7
Trade name	1.5
Backlog	1.4
Non-compete agreements	0.5
Customer relationships	0.6
Accounts receivable and contract assets	2.6
Fixed assets	2.7
Accounts payable and accrued expenses	(1.8)
Deferred taxes	(3.2)
Other net assets acquired (liabilities assumed)	(0.6)
Net identifiable assets acquired	26.4
Goodwill	40.4
Net assets acquired	<u>\$ 66.8</u>

The estimated fair values of assets acquired and liabilities assumed, including purchased intangibles, are preliminary estimates pending the finalization of our valuation analyses and the receipt of further information from the seller regarding its assets and liabilities. The estimated fair values of purchased intangibles were determined using the valuation methodology deemed to be the most appropriate for each type of asset being valued. The trade name valuation

used the relief from royalty method, the customer relationships valuation used the with-and-without valuation method, and the technology and backlog valuations used the excess earnings method.

The intangible assets are being amortized using straight-line methods based on the expected period of undiscounted cash flows that will be generated by the assets, over an average useful life of nine years from the date of acquisition.

The goodwill resulting from the acquisition consists primarily of the synergies expected from combining the operations of Nuvotronics with our existing CMS business, and strengthening our capability of developing and integrating products in our CMS portfolio. The goodwill also includes the value of the assembled workforce that became our employees following the close of the acquisition. The amount recorded as goodwill is allocated to our CMS segment and is not expected to be deductible for tax purposes.

The estimated amortization expense related to the intangible assets recorded in connection with our acquisition of Nuvotronics is as follows (in millions):

Year Ended September 30,		
	2020	\$ 4.0
	2021	3.0
	2022	3.0
	2023	2.9
	2024	2.7
	Thereafter	10.1

GRIDSMART Technologies, Inc.

In January 2019, we acquired all of the outstanding capital stock of GRIDSMART Technologies, Inc. (GRIDSMART), a provider of differentiated video tracking solutions to the Intelligent Traffic Systems market. Based in Knoxville, Tennessee, GRIDSMART specializes in video detection at the intersection utilizing advanced image processing, computer vision modeling and machine learning along with a single camera solution providing best-in-class data for optimizing the flow of people and traffic through intersections. GRIDSMART is expected to provide synergies from combining its capabilities with our existing CTS business.

GRIDSMART's sales and results of operations included in our operating results were as follows (in millions):

	Years Ended September 30,		
	2019	2018	2017
Sales	\$ 20.6	\$ —	\$ —
Operating income	0.9	—	—
Net income after taxes	0.9	—	—

GRIDSMART's operating results above included the following amounts (in millions):

	Years Ended September 30,		
	2019	2018	2017
Amortization	\$ 4.0	\$ —	\$ —
Acquisition-related expenses	2.9	—	—

The acquisition-date fair value of consideration is \$86.8 million. The acquisition was financed primarily with proceeds from draws on our line of credit.

The following table summarizes the estimated fair values of the assets acquired and liabilities assumed at the acquisition date (in millions):

Technology	\$ 25.7
Customer relationships	3.6
Trade name	2.4
Inventory	4.3
Accounts receivable	1.7
Accounts payable and accrued expenses	(1.9)
Deferred taxes	(3.3)
Other net assets acquired	0.6
Net identifiable assets acquired	33.1
Goodwill	53.7
Net assets acquired	<u>\$ 86.8</u>

The estimated fair values of assets acquired and liabilities assumed, including purchased intangibles, are preliminary estimates pending the finalization of our valuation analyses, including the filing of pre-acquisition income tax returns. The estimated fair values of purchased intangibles were determined using the valuation methodology deemed to be the most appropriate for each type of asset being valued. The trade name valuation used the relief from royalty method, the customer relationships valuation used the with-and-without valuation method, and the technology and backlog valuations used the excess earnings method.

The intangible assets are being amortized using straight-line methods based on the expected period of undiscounted cash flows that will be generated by the assets, over an average useful life of approximately eight years from the date of acquisition.

The goodwill resulting from the acquisition consists primarily of the synergies expected from combining the operations of GRIDSMART with our existing CTS business, and strengthening our capability of developing and integrating products in our CTS portfolio. The goodwill also includes the value of the assembled workforce that became our employees following the close of the acquisition. The amount recorded as goodwill is allocated to our CTS segment and is not expected to be deductible for tax purposes.

The estimated amortization expense related to the intangible assets recorded in connection with our acquisition of GRIDSMART is as follows (in millions):

Year Ended September 30,		\$	
	2020		5.3
	2021		3.9
	2022		3.5
	2023		3.5
	2024		3.5
	Thereafter		8.1

Advanced Traffic Solutions Inc.

In October 2018, we acquired all of the outstanding capital stock of Advanced Traffic Solutions Inc. (Trafficware), a provider of intelligent traffic solutions for the transportation industry based in Sugar Land, Texas. Trafficware provides a fully integrated suite of software, Internet of Things devices, and hardware solutions that optimize the flow of motorist and pedestrian traffic. Trafficware is expected to provide synergies from combining its capabilities with our existing CTS business.

Trafficware's sales and results of operations included in our operating results were as follows (in millions):

	Years Ended September 30,		
	2019	2018	2017
Sales	\$ 53.8	\$ —	\$ —
Operating loss	(11.0)	—	—
Net loss after taxes	(11.0)	—	—

Trafficware's operating results above included the following amounts (in millions):

	Years Ended September 30,		
	2019	2018	2017
Amortization	\$ 15.3	\$ —	\$ —
Acquisition-related expenses	5.2	—	—

The acquisition-date fair value of consideration is \$237.2 million. The acquisition was financed primarily with proceeds from draws on our line of credit.

The following table summarizes the fair values of the assets acquired and liabilities assumed at the acquisition date (in millions):

Technology	\$ 43.3
Customer relationships	21.9
Backlog	4.8
Trade name	4.6
Accounts receivable	10.4
Inventory	9.9
Accounts payable and accrued expenses	(8.9)
Other net assets acquired (liabilities assumed)	(2.0)
Net identifiable assets acquired	84.0
Goodwill	153.2
Net assets acquired	<u>\$ 237.2</u>

The fair values of purchased intangibles were determined using the valuation methodology deemed to be the most appropriate for each type of asset being valued. The trade name valuation used the relief from royalty method, the customer relationships valuation used the with-and-without valuation method, and the technology and backlog valuations used the excess earnings method.

The intangible assets are being amortized using straight-line methods based on the expected period of undiscounted cash flows that will be generated by the assets, over an average useful life of seven years from the date of acquisition.

The goodwill resulting from the acquisition consists primarily of the synergies expected from combining the operations of Trafficware with our existing CTS business, and strengthening our capability of developing and integrating products in our CTS portfolio. The goodwill also includes the value of the assembled workforce that became our employees following the close of the acquisition. The amount recorded as goodwill is allocated to our CTS segment and is not expected to be deductible for tax purposes.

The estimated amortization expense related to the intangible assets recorded in connection with our acquisition of Trafficware is as follows (in millions):

Year Ended September 30,		
	2020	\$ 11.4
	2021	11.4
	2022	11.4
	2023	6.4
	2024	5.9
	Thereafter	12.9

Shield Aviation, Inc.

In July 2018, we acquired the assets of Shield Aviation (Shield), based in San Diego, California, a provider of autonomous aircraft systems (AAS) for intelligence, surveillance and reconnaissance services. The addition of Shield expands our C4ISR portfolio for our CMS segment and will provide our customers with a rapidly deployable, medium AAS that offers unique mission enabling capabilities. We already provide the data link as well as the command and control link for the Shield AAS.

Shield's sales and results of operations included in our operating results were as follows (in millions):

	Years Ended September 30,		
	2019	2018	2017
Sales	\$ —	\$ —	\$ —
Operating loss	(5.3)	(0.8)	—
Net loss after taxes	(5.3)	(0.6)	—

Shield's operating results above included the following amounts (in millions):

	Years Ended September 30,		
	2019	2018	2017
Amortization	\$ 0.8	\$ 0.1	\$ —
Loss (gain) for changes in fair values of contingent consideration	(1.8)	0.2	—

The acquisition-date fair value of consideration is \$12.8 million, which is comprised of the fair value of contingent consideration of \$5.6 million, extinguishment of secured loans and warrants due from Shield of \$5.2 million, cash paid of \$1.3 million, plus additional consideration to be paid in the future of \$0.7 million. Under the purchase agreement, we will pay the sellers up to \$10.0 million of contingent consideration if Shield meets certain sales goals from the date of acquisition through July 31, 2025. The contingent consideration liability will be re-measured to fair value at each reporting date until the contingencies are resolved and any subsequent changes in fair value are recognized in earnings.

The acquisition of Shield was paid for with funds from existing cash resources. The following table summarizes the fair values of the assets acquired and liabilities assumed at the acquisition date (in millions):

Technology	\$ 6.0
Other net assets acquired	<u>0.3</u>
Net identifiable assets acquired	6.3
Goodwill	<u>6.5</u>
Net assets acquired	<u>\$ 12.8</u>

The technology asset valuation used the excess earnings method and is being amortized using the straight-line method over eight years, which is based on the expected period of cash flows that will be generated by the asset.

The goodwill resulting from the acquisition consists primarily of the synergies expected from combining the operations of Shield with our existing CMS business, and strengthening our capability of developing and integrating products and services in our CMS portfolio. The goodwill also includes the value of the assembled workforce that became our employees following the close of the acquisition. The amount recorded as goodwill is allocated to our CMS segment and is expected to be deductible for tax purposes.

The amortization expense related to the intangible assets recorded in connection with our acquisition of Shield is as follows (in millions):

Year Ended September 30,		
	2020	\$ 0.8
	2021	0.8
	2022	0.8
	2023	0.8
	2024	0.8
	Thereafter	1.4

MotionDSP

In October 2017 we paid cash of \$4.7 million to purchase 49% of the outstanding capital stock of MotionDSP, a private artificial intelligence software company based in Burlingame, California, which specializes in real-time video enhancement and computer vision analytics. On February 21, 2018, we paid net cash of \$4.8 million to purchase the remaining outstanding capital stock of MotionDSP. The addition of MotionDSP enhances the capabilities in real-time video processing of our CMS business and expands our customer base in the public safety and other adjacent markets.

MotionDSP's sales and results of operations included in our operating results since its consolidation in our financial statements were as follows (in millions):

	Years Ended September 30,		
	2019	2018	2017
Sales	\$ 1.5	\$ 0.6	\$ —
Operating loss	(0.6)	(2.7)	—
Net loss after taxes	(0.6)	(1.9)	—

MotionDSP's operating results above included the following amounts (in millions):

	Years Ended September 30,		
	2019	2018	2017
Amortization	\$ 0.7	\$ 0.4	\$ —
Acquisition-related expenses	0.4	0.8	0.2

The acquisition of MotionDSP was paid for with funds from existing cash resources. The following table summarizes the fair values of the assets acquired and liabilities assumed at the acquisition date (in millions):

Customer relationships	\$ 0.2
Technology	4.5
Trade name	0.1
Accounts payable and accrued expenses	(0.3)
Other noncurrent liabilities	(0.8)
Other net liabilities assumed	(0.9)
Net identifiable assets acquired	<u>2.8</u>
Goodwill	6.7
Net assets acquired	<u>\$ 9.5</u>

The fair values of purchased intangibles were determined using the valuation methodology deemed to be the most appropriate for each type of asset being valued. The trade name valuation used the relief from royalty method, the customer relationships valuation used the with-and-without valuation method, and the technology valuation used the excess earnings method.

The intangible assets are being amortized using straight-line methods based on the expected cash flows from the assets, over a useful life of seven years from the date of acquisition.

The goodwill resulting from the acquisition was deemed to consist primarily of the synergies expected from combining the operations of MotionDSP with our CMS operating segment, enhancing our capabilities in real-time video processing and computer vision analytics of our CMS portfolio, as well as the value of the assembled workforce that became our employees following the close of the acquisition. The amount recorded as goodwill in connection with the acquisition of MotionDSP is not expected to be deductible for tax purposes.

The estimated amortization expense related to the intangible assets recorded in connection with our acquisition of MotionDSP is as follows (in millions):

Year Ended September 30,	
2020	\$ 0.7
2021	0.7
2022	0.7
2023	0.7
2024	0.6
Thereafter	0.2

Pro forma information

The following unaudited pro forma information presents our consolidated results of operations as if Nuvotronics, GRIDSMART, Trafficware, Shield, and MotionDSP had been included in our consolidated results since October 1, 2017 (in millions):

	Years Ended September 30,	
	2019	2018
Net sales	\$ 1,510.8	\$ 1,297.6
Net income (loss)	\$ 45.1	\$ (5.0)

The pro forma information includes adjustments to give effect to pro forma events that are directly attributable to the acquisitions and have a continuing impact on operations including the amortization of purchased intangibles and the elimination of interest expense for the repayment of debt. No adjustments were made for transaction expenses, other items that do not reflect ongoing operations or for operating efficiencies or synergies. The pro forma financial information is not necessarily indicative of what the consolidated financial results of our operations would have been had the acquisitions been completed on October 1, 2017, and it does not purport to project our future operating results.

NOTE 4—VARIABLE INTEREST ENTITIES

In accordance with ASC 810, *Consolidation*, we assess our partnerships and joint ventures at inception, and when there are changes in relevant factors to determine if any meet the qualifications of a variable interest entity (VIE). We consider a partnership or joint venture a VIE if it has any of the following characteristics: (a) the total equity investment is not sufficient to permit the entity to finance its activities without additional subordinated financial support, (b) characteristics of a controlling financial interest are missing (either the ability to make decisions through voting or other rights, the obligation to absorb the expected losses of the entity or the right to receive the expected residual returns of the entity), or (c) the voting rights of the equity holders are not proportional to their obligations to absorb the expected losses of the entity and/or their rights to receive the expected residual returns of the entity, and substantially all of the entity's activities either involve or are conducted on behalf of an investor that has disproportionately few voting rights.

We perform a qualitative assessment of each VIE to determine if we are its primary beneficiary. We conclude that we are the primary beneficiary and consolidate the VIE if we have both (a) the power to direct the activities that most significantly impact the VIE's economic performance and (b) the obligation to absorb losses or the right to receive benefits from the VIE that could potentially be significant to the VIE. We consider the VIE design, the contractual agreements that define the ownership structure, distribution of profits and losses, risks, responsibilities, indebtedness, voting rights and board representation of the respective parties in determining if we are the primary beneficiary. We also consider all parties that have direct or implicit variable interests when determining whether we are the primary beneficiary. As required by ASC 810, our primary beneficiary assessment is continuously performed.

In March 2018, Cubic and John Laing, an unrelated company that specializes in contracting under public-private partnerships (P3), jointly formed Boston AFC 2.0 HoldCo LLC (HoldCo). Also in March 2018, HoldCo created a wholly owned entity, Boston AFC 2.0 OpCo. LLC (OpCo) which entered into a contract with the Massachusetts Bay Transit Authority (MBTA) for the financing, development, and operation of a next-generation fare payment system in Boston (the MBTA Contract). HoldCo is 90% owned by John Laing and 10% owned by Cubic. Collectively, HoldCo and OpCo are referred to as the P3 Venture. Based on our assessment under ASC 810, we have concluded that OpCo and HoldCo are VIE's and that we are the primary beneficiary of OpCo. Consequently, we have consolidated the financial statements of OpCo within Cubic's consolidated financial statements. We have concluded that we are not the primary beneficiary of HoldCo, and thus we have not consolidated the financial statements of HoldCo within Cubic's consolidated financial statements.

The MBTA Contract consists of a design and build phase of approximately three years and an operate and maintain phase of approximately ten years. The design and build phase is planned to be completed in 2021 and the operate and maintain phase will span from 2021 through 2031. MBTA will make fixed payments of \$558.5 million, adjusted for incremental transaction-based fees, inflation, and performance penalties, to OpCo in connection with the MBTA Contract over the ten-year operate and maintain phase. All of OpCo's contractual responsibilities regarding the design

and development and the operation and maintenance of the fare system have been subcontracted to Cubic by OpCo. Cubic will receive fixed payments of \$427.6 million, adjusted for incremental transaction-based fees, inflation, and performance penalties under its subcontract with OpCo.

Upon creation of the P3 Venture, John Laing made a loan to HoldCo of \$24.3 million in the form of a bridge loan that is intended to be converted to equity in the future in accordance with its equity funding responsibilities. Concurrently, HoldCo made a corresponding equity contribution to OpCo in the same amount which is included within equity of Noncontrolling interest in VIE in Cubic's consolidated financial statements. Also, upon creation of the P3 Venture, Cubic issued a letter of credit for \$2.7 million to HoldCo in accordance with Cubic's equity funding responsibilities. HoldCo is able to draw on the Cubic letter of credit in certain liquidity instances, but no amounts have been drawn on this letter of credit through September 30, 2019.

Upon creation of the P3 Venture, OpCo entered into a credit agreement with a group of financial institutions (the OpCo Credit Agreement) which includes a long-term debt facility and a revolving credit facility. The long-term debt facility allows for draws up to a maximum amount of \$212.4 million; draws may only be made during the design and build phase of the MBTA Contract. The long-term debt facility, including interest and fees incurred during the design and build phase, is required to be repaid on a fixed monthly schedule over the operate and maintain phase of the MBTA Contract. The long-term debt facility bears interest at variable rates of LIBOR plus 1.3% and LIBOR plus 1.55% over the design and build and operate and maintain phases of the MBTA Contract, respectively. At September 30, 2019, the outstanding balance on the long-term debt facility was \$62.0 million, which is presented net of unamortized deferred financing costs of \$8.8 million. The revolving credit facility allows for draws up to a maximum amount of \$13.9 million and is only available to be drawn on during the operate and maintain phase of the MBTA Contract. OpCo's debt is nonrecourse with respect to Cubic and its subsidiaries. The fair value of the long-term debt facility approximates its carrying amount.

The OpCo Credit Agreement contains a number of covenants which require that OpCo and Cubic maintain progress on the delivery of the MBTA Contract within a specified timeline and budget and provide regular reporting on such progress. The OpCo Credit Agreement also contains a number of customary events of default including, but not limited to, the delivery of a customized fare collection system to MBTA by a pre-determined date. Failure to meet such delivery date will result in OpCo, and Cubic via its subcontract with OpCo, to incur penalties due to the lenders.

OpCo has entered into pay-fixed/receive-variable interest rate swaps with a group of financial institutions to mitigate variable interest rate risk associated with its long-term debt. The interest rate swaps contain forward starting notional principal amounts which align with OpCo's expected draws on its long-term debt facility. At September 30, 2019 and 2018, the outstanding notional principal amounts on open interest rate swaps were \$137.4 million and \$38.6 million, respectively. The fair value of OpCo's interest rate swaps was \$21.6 million at September 30, 2019, and is recorded as a liability in other long-term liabilities in our consolidated balance sheets. The interest rate swaps had no significant fair value at September 30, 2018. OpCo's interest rate swaps have not been designated as effective hedges, and as such unrealized gains/losses are included in other income (expense), net. Unrealized losses as a result of changes in the fair value of OpCo's interest rate swaps totaled \$21.6 million in fiscal 2019. There was no significant unrealized gain or loss in fiscal 2018 related to the change in fair value of the interest rate swaps. See Note 5 for a description of the measurement of fair value of derivative financial instruments, including OpCo's interest rate swaps.

OpCo holds a restricted cash balance which is required by the MBTA Contract to allow for the delivery of future change orders and unplanned expansions as directed by MBTA.

The assets and liabilities of OpCo that are included in our Consolidated Balance Sheets at September 30, 2019 and 2018 are as follows:

	September 30,	
	2019	2018
	(in thousands)	
Cash	\$ 347	\$ 374
Restricted cash	9,967	10,000
Other current assets	33	—
Long-term capitalized contract costs	—	33,818
Long-term contracts financing receivable	115,508	—
Other noncurrent assets	1,419	810
Total assets	\$ 127,274	\$ 45,002
Trade accounts payable	\$ 25	\$ 165
Accrued compensation and other current liabilities	191	—
Due to Cubic	25,143	11,724
Other long-term liabilities	21,605	13
Long-term debt	61,994	9,056
Total liabilities	\$ 108,958	\$ 20,958
Total Cubic equity	(603)	(304)
Noncontrolling interests	18,919	24,348
Total liabilities and owners' equity	\$ 127,274	\$ 45,002

The assets of OpCo are restricted for OpCo's use and are not available for the general operations of Cubic. OpCo's debt is non-recourse to Cubic. Cubic's maximum exposure to loss as a result of its equity interest in the P3 Venture is limited to the \$2.7 million outstanding letter of credit, which will be converted to a cash contribution upon completion of the design and build phase of the MBTA Contract.

Prior to the adoption of ASC 606, Cubic and OpCo were precluded from recognizing revenue on the MBTA Contract because MBTA was not required to make payments to OpCo until the operate and maintain phase of the contract began. During this time period Cubic and OpCo were capitalizing costs associated with designing and building the system for MBTA. Upon the adoption of ASC 606, Cubic and OpCo are now permitted to recognize revenue related to the MBTA contract and therefore costs are now recognized as incurred and are no longer capitalized.

The revenue, operating income, and other income (expense), net of OpCo that are included in our Consolidated Statements of Operations are as follows (in thousands):

	Years Ended September 30,		
	2019	2018	2017
Revenue	\$ 11,211	\$ —	\$ —
Operating income	9,923	—	—
Other income (expense), net	(21,592)	—	—
Interest income	3,704	—	—
Interest expense	(2,946)	—	—

NOTE 5—FAIR VALUE OF FINANCIAL INSTRUMENTS

The valuation techniques required to determine fair value are based upon observable and unobservable inputs. Observable inputs reflect market data obtained from independent sources, while unobservable inputs reflect internal market assumptions. The two types of inputs create the following fair value hierarchy:

- Level 1 - Quoted prices for identical instruments in active markets.

- Level 2 - Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations whose inputs are observable or whose significant value drivers are observable.
- Level 3 - Significant inputs to the valuation model are unobservable.

The following table presents assets and liabilities measured and recorded at fair value on our balance sheets on a recurring basis (in thousands):

	September 30, 2019				September 30, 2018			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Assets								
Cash equivalents	\$ —	\$ —	\$ —	\$ —	\$ 9,000	\$ —	\$ —	\$ 9,000
Current derivative assets	—	2,635	—	2,635	—	1,803	—	1,803
Noncurrent derivative assets	—	859	—	859	—	314	—	314
Total assets measured at fair value	\$ —	\$ 3,494	\$ —	\$ 3,494	\$ 9,000	\$ 2,117	\$ —	\$ 11,117
Liabilities								
Current derivative liabilities	—	529	—	529	—	1,657	—	1,657
Noncurrent derivative liabilities	—	228	—	228	—	75	—	75
Contingent consideration to seller of H4 Global	—	—	1,073	1,073	—	—	665	665
Contingent consideration to seller of Deltenna	—	—	1,787	1,787	—	—	1,081	1,081
Contingent consideration to seller of Shield	—	—	3,814	3,814	—	—	5,618	5,618
Contingent consideration to seller of Nuvotronics	—	—	4,200	4,200	—	—	—	—
Contingent consideration to seller of TeraLogics - revenue targets	—	—	—	—	—	—	1,750	1,750
Total liabilities measured at fair value	\$ —	\$ 757	\$ 10,874	\$ 11,631	\$ —	\$ 1,732	\$ 9,114	\$ 10,846

Derivative financial instruments are measured at fair value, the material portions of which are based on active or inactive markets for identical or similar instruments or model-derived valuations whose inputs are observable. Where model-derived valuations are appropriate, we use the applicable credit spread as the discount rate. Credit risk related to derivative financial instruments is considered minimal and is managed by requiring high credit standards for counterparties and through periodic settlements of positions.

The fair value of contingent consideration liabilities to the sellers of businesses that we have acquired are revalued to their fair value each period and any increase or decrease is recorded into selling, general and administrative expense. Any changes in the assumed timing and amount of the probability of payment scenarios could impact the fair value.

At September 30, 2019, we have the following remaining contingent consideration arrangements with the sellers of companies which we acquired:

- *H4 Global*: Payments of up to \$2.7 million of contingent consideration based upon the value of contracts entered into over the five-year period ending September 30, 2020.
- *Deltenna*: Payments of up to \$6.6 million of contingent consideration if Deltenna meets certain sales goals from the date of acquisition through the fiscal year ending September 30, 2022.
- *Shield*: Payments of up to \$10.0 million of contingent consideration if Shield meets certain sales goals from the date of acquisition through July 31, 2025.
- *Nuvotronics*: Payments of up to \$8.0 million of contingent consideration if Nuvotronics meets certain gross profit goals for the 12-month periods ended December 31, 2020 and December 31, 2021.

In addition, we have a contingent consideration arrangement with the Purchaser of our CGD Services business under which we are eligible to receive a cash payment of \$3.0 million if the Purchaser is awarded certain government contracts in the future.

The maximum remaining payout to the sellers of H4 Global is \$2.7 million at September 30, 2019, and is based upon the value of contracts entered into over the five-year period ending September 30, 2020. The fair value of the H4 Global contingent consideration was estimated using a probability weighted approach. Subject to the terms and conditions of the H4 Global purchase agreement, contingent consideration will be paid over a five-year term that commenced on October 1, 2015 and ends on September 30, 2020. The payments will be calculated based on the award of certain contracts during the specified period. The fair value of the contingent consideration was determined by applying probabilities to different scenarios and summing the present value of any future payments.

The fair value of Deltenna contingent consideration was primarily valued using the real option approach. Under this approach, each payment was modeled using long digital options written on the underlying revenue metric. The strike price for each option is the respective revenue as specified in the related agreement, and the spot price is calibrated to the revenue forecast by calculating the present value of the corresponding projected revenues using a risk-adjusted discount rate. The volatility for the underlying revenue metrics was based upon analysis of comparable guideline public companies and was 36% as of September 30, 2019 and 53% as of September 30, 2018. The selected discount rate was 11% as of September 30, 2019 and 11.5% as of September 30, 2018.

The fair value of the Shield contingent consideration was estimated based on Monte Carlo simulations. Under the purchase agreement, we will pay the sellers up to \$10.0 million if Shield meets certain sales goals from the date of acquisition through July 31, 2025. The fair value of the contingent consideration was determined based upon a probability distribution of values based on 1,000,000 simulation trials. Key inputs for the simulation include projected revenues, assumed discount rates for projected revenues and cash flows, and volatility. The volatility and revenue risk adjustment factors were determined based on analysis of publicly traded comparable companies and as of September 30, 2019 were 18.0% and 13.1%, respectively, and as of September 30, 2018 were 20.0% and 14.5%, respectively. The discount rate used was based on our expected borrowing rate under our financing arrangements, which was determined to be 3.6% at September 30, 2019 and 3.9% at September 30, 2018.

The fair value of the Nuvotronics contingent consideration was estimated based on Monte Carlo simulations. Under the purchase agreement, we will pay the sellers up to \$8.0 million if Nuvotronics meets certain gross profit goals for the 12-month periods ended December 31, 2020 and December 31, 2021. The fair value of the contingent consideration was determined based upon a probability distribution of values based on 1,000,000 simulation trials. Key inputs for the simulation include projected gross profits, assumed discount rates for projected gross profits, and gross profit volatility. The volatility factor used as of September 30, 2019 was 12.4% and was determined based on analysis of publicly traded comparable companies. The discount rate used as of September 30, 2019 was 7.4%, which was based on our risk-free rate of return adjusted for our gross profit required risk premium.

The inputs to each of the contingent consideration fair value models include significant unobservable inputs and therefore represent Level 3 measurements within the fair value hierarchy. Significant judgment is employed in determining the appropriateness of these assumptions as of the acquisition dates and each subsequent period.

Accordingly, changes in the assumptions described above can materially impact the amount of contingent consideration expense we record in any period.

As of September 30, 2019, the following table summarizes the change in fair value of our Level 3 contingent consideration liabilities (in thousands):

	H4 Global	Deltenna	Shield	Nuvotronics	TeraLogics (Contract Extensions)	TeraLogics (Revenue Targets)	Total
Balance as of September 30, 2017	\$ 591	\$ 1,376	\$ —	\$ —	\$ 800	\$ 2,450	\$ 5,217
Initial measurement recognized at acquisition	—	—	5,618	—	—	—	5,618
Cash paid to seller	—	—	—	—	(1,000)	(1,750)	(2,750)
Total remeasurement (gain) loss recognized in earnings	74	(295)	—	—	200	1,050	1,029
Balance as of September 30, 2018	\$ 665	\$ 1,081	\$ 5,618	\$ —	\$ —	\$ 1,750	\$ 9,114
Initial measurement recognized at acquisition	—	—	—	4,900	—	—	4,900
Cash paid to seller	(385)	—	—	—	—	(1,750)	(2,135)
Total remeasurement (gain) loss recognized in earnings	793	706	(1,804)	(700)	—	—	(1,005)
Balance as of September 30, 2019	\$ 1,073	\$ 1,787	\$ 3,814	\$ 4,200	\$ —	\$ —	\$ 10,874

We carry certain financial instruments, including accounts receivable, short-term borrowings, accounts payable and accrued liabilities at cost, which we believe approximates fair value because of the short-term maturity of these instruments.

In fiscal 2019, we invested \$5.0 million in Franklin Blackhorse, L.P., a limited partnership investment fund that invests in early stage, privately owned companies in the military, commercial, and disruptive technology sectors. We account for our investment using the equity method of accounting. For the year ended September 30, 2019, we recognized earnings of \$0.3 million representing our share of the fund's operating results, which is included in other income (expense) in our Consolidated Statements of Operations. We recorded a \$5.3 million investment within other assets in our Consolidated Balance Sheet at September 30, 2019.

The fair value of long-term debt is calculated by discounting the value of the note based on market interest rates for similar debt instruments, which is a Level 2 technique. The following table presents the estimated fair value and carrying value of our long-term debt (in millions):

	September 30,	
	2019	2018
Fair value	\$ 203.3	\$ 193.7
Carrying value	\$ 200.0	\$ 200.0

We did not have any significant non-financial assets or liabilities measured at fair value on a non-recurring basis in 2019, 2018, or 2017 other than assets and liabilities acquired in business acquisitions described in Note 3 and the restricted stock units that were granted in the first quarter of fiscal 2019 that contain performance and market-based vesting criteria described in Note 16.

NOTE 6—CONTRACT ASSETS AND LIABILITIES

Contract assets include unbilled amounts typically resulting from sales under contracts when the percentage-of-completion cost-to-cost method of revenue recognition is utilized and revenue recognized exceeds the amount billed to the customer. Contract liabilities (formerly referred to as customer advances prior to the adoption of ASC 606) include advance payments and billings in excess of revenue recognized. Contract assets and contract liabilities were as follows (in thousands):

	<u>September 30, 2019</u>	<u>October 1, 2018</u>
Contract assets	\$ 349,559	\$ 272,210
Contract liabilities	\$ 46,170	\$ 70,127

Contract assets increased \$77.3 million during the twelve months ended September 30, 2019, due to the recognition of revenue related to the satisfaction or partial satisfaction of performance obligations during the twelve months ended September 30, 2019 for which we have not yet billed. There were no significant impairment losses related to our contract assets during the twelve months ended September 30, 2019.

Contract liabilities decreased \$24.0 million during the twelve months ended September 30, 2019, due to revenue recognition in excess of payments received on these performance obligations. During the twelve-month period ended September 30, 2019, we recognized \$62.4 million of our contract liabilities at October 1, 2018 as revenue. We expect our contract liabilities to be recognized as revenue over the next twelve months.

NOTE 7—ACCOUNTS RECEIVABLE

The components of accounts receivable are as follows (in thousands):

	<u>September 30,</u>	
	<u>2019</u>	<u>2018</u>
Accounts receivable		
Billed	\$ 127,406	\$ 156,948
Unbilled	—	242,877
Allowance for doubtful accounts	(1,392)	(1,324)
Total accounts receivable	126,014	398,501
Less estimated amounts not currently due	—	(6,134)
Current accounts receivable	<u>\$ 126,014</u>	<u>\$ 392,367</u>

Amounts billed include \$60.3 million and \$80.5 million due on U.S. federal government contracts at September 30, 2019 and 2018, respectively. As further described in Note 2, effective October 1, 2018, the component of accounts receivable that consisted of unbilled contract receivables as reported under ASC 605 has been reclassified as contract assets under ASC 606.

In our normal course of business, we may sell trade receivables to financial institutions as a cash management technique. We do not retain financial or legal obligations for these receivables that would result in material losses. Our ongoing involvement is limited to the remittance of customer payments to the financial institutions with respect to the sold trade receivables; therefore, our sold trade receivables are not included in our Consolidated Balance Sheet in any period presented. As of September 30, 2019, we sold \$31.1 million of outstanding trade receivables to financial institutions.

NOTE 8—INVENTORIES

Inventories consist of the following (in thousands):

	September 30,	
	2019	2018
Finished products	\$ 10,905	\$ 7,099
Work in process and inventoried costs under long-term contracts	46,951	63,169
Materials and purchased parts	48,938	23,710
Customer advances	—	(9,779)
Net inventories	<u>\$ 106,794</u>	<u>\$ 84,199</u>

At September 30, 2019, work in process and inventoried costs under long-term contracts includes approximately \$5.8 million in costs incurred outside the scope of work or in advance of a contract award compared to \$0.9 million at September 30, 2018. We believe it is probable that we will recover the costs inventoried at September 30, 2019, plus a profit margin, under contract change orders or awards within the next year.

Costs we incur for certain U.S. federal government contracts include general and administrative costs as allowed by government cost accounting standards. The amounts remaining in inventory at September 30, 2019 and 2018 were \$0.5 million and \$2.0 million, respectively.

NOTE 9—PROPERTY, PLANT AND EQUIPMENT

Significant components of property, plant and equipment are as follows (in thousands):

	September 30,	
	2019	2018
Land and land improvements	\$ 7,348	\$ 13,132
Buildings and improvements	48,191	57,959
Machinery and other equipment	107,297	81,727
Software	108,526	84,631
Leasehold improvements	17,064	11,991
Construction and internal-use software development in progress	16,814	12,888
Accumulated depreciation and amortization	<u>(160,271)</u>	<u>(144,782)</u>
	<u>\$ 144,969</u>	<u>\$ 117,546</u>

In fiscal 2019, we entered into agreements related to the construction and leasing of two buildings on our existing corporate campus in San Diego, California. Under these agreements, a financial institution will own the buildings, and we will lease the property for a term of five years upon their completion.

In the third quarter of fiscal 2019 we sold the land and buildings comprising our separate CTS campus in San Diego. We have entered into a lease with the buyer of this campus and CTS employees will continue to occupy this separate campus until the new buildings on our corporate campus are ready for occupancy in fiscal 2021. In the third quarter of fiscal 2019 we also sold land and buildings in Orlando, Florida and we are entering a lease for new space in Orlando to accommodate our employees and operations in Orlando. In connection with the sale of these real estate campuses we received total net proceeds of \$44.9 million and recognized net gains on the sales totaling \$32.5 million.

As a part of our efforts to upgrade our current information systems, early in fiscal 2015 we purchased new enterprise resource planning (ERP) software and began the process of designing and configuring this software and other software applications to manage our operations.

Costs incurred in the development of internal-use software and software applications, including external direct costs of materials and services and applicable compensation costs of employees devoted to specific software development, are

capitalized as computer software costs. Costs incurred outside of the application development stage, or that are types of costs that do not meet the capitalization requirements, are expensed as incurred. Amounts capitalized are included in property, plant and equipment and are amortized on a straight-line basis over the estimated useful life of the software, which ranges from three to seven years. No amortization expense is recorded until the software is ready for its intended use.

Through September 30, 2019 we have incurred costs of \$138.9 million related to the purchase and development of our ERP system, including \$3.1 million, \$22.5 million, and \$40.6 million of costs incurred during fiscal years 2019, 2018 and 2017, respectively. We have capitalized \$1.6 million, \$7.5 million, and \$16.7 million of qualifying software development costs as internal-use software development in progress during fiscal years 2019, 2018, and 2017, respectively. We have recognized expense for \$1.5 million, \$15.0 million, and \$23.9 million of these costs in fiscal years 2019, 2018, and 2017, respectively, for costs that did not qualify for capitalization. Amounts that were expensed in connection with the development of these systems are classified within selling, general and administrative expenses in the Consolidated Statements of Operations.

Various components of our ERP system became ready for their intended use and were placed into service at various times from fiscal 2016 through fiscal 2019. As each component became ready for its intended use, the component's costs were transferred into completed software and we began amortizing these costs over their seven-year estimated useful life using the straight-line method. We continue to capitalize costs associated with the development of other ERP components that are not yet ready for their intended use.

Our provisions for depreciation of plant and equipment and amortization of leasehold improvements and software amounted to \$22.6 million, \$19.5 million and \$17.8 million in 2019, 2018 and 2017, respectively. Generally, we use straight-line methods for depreciable real property over estimated useful lives ranging from 15 to 39 years or for leasehold improvements, the term of the underlying lease if shorter than the estimated useful lives. We typically use accelerated methods (declining balance) for machinery and equipment and software other than our ERP system over estimated useful lives ranging from 5 to 10 years.

NOTE 10—GOODWILL AND PURCHASED INTANGIBLE ASSETS

Changes in goodwill for the two years ended September 30, 2019 are as follows (in thousands):

	<u>Cubic Transportation Systems</u>	<u>Cubic Mission Solutions</u>	<u>Cubic Global Defense</u>	<u>Total</u>
Net balances at September 30, 2017	\$ 50,870	\$ —	\$ 270,692	\$ 321,562
Reassignment on October 1, 2017	—	125,321	(125,321)	—
Acquisitions (see Note 2)	—	13,085	665	13,750
Foreign currency exchange rate changes	(1,084)	(279)	(323)	(1,686)
Net balances at September 30, 2018	49,786	138,127	145,713	333,626
Reassignment on April 1, 2019	—	3,428	(3,428)	—
Acquisitions	206,988	40,392	—	247,380
Foreign currency exchange rate changes	(2,182)	(523)	(204)	(2,909)
Net balances at September 30, 2019	<u>\$ 254,592</u>	<u>\$ 181,424</u>	<u>\$ 142,081</u>	<u>\$ 578,097</u>

As described in Note 18, we concluded that CMS became a separate operating segment beginning on October 1, 2017. In conjunction with the changes to reporting units, we reassigned goodwill between CGD and CMS based on their relative fair values on October 1, 2017.

In July 2017, we acquired Deltenna, a wireless infrastructure company specializing in the design and delivery of radio and antenna communication solutions. Deltenna's operations were included in our CGD reporting unit upon its acquisition. On April 1, 2019, we reorganized our reporting structure to include Deltenna in our CMS reporting unit and reassigned \$3.4 million of goodwill from CGD to CMS based upon its relative fair value. Since its acquisition, Deltenna's sales, operating results, and cash flows have not been significant to our consolidated results. As such, reportable segment information has not been restated for this change in the composition of our reportable segments.

We complete our annual goodwill impairment test each year as of July 1 separately for our CTS, CGD and CMS reporting units.

The test for goodwill impairment is a two-step process. The first step of the test is performed by comparing the fair value of each reporting unit to its carrying amount, including recorded goodwill. If the carrying amount of a reporting unit exceeds its fair value, the second step is performed to measure the amount of the impairment, if any, by comparing the implied fair value of goodwill to its carrying amount. Any resulting impairment determined would be recorded in the current period.

For our 2019 impairment test, the estimated fair value of all three of our reporting units exceeded their respective carrying amounts. As such, there was no impairment of goodwill in 2019.

Significant management judgment is required in the forecast of future operating results that are used in our impairment analysis. The estimates we used are consistent with the plans and estimates that we use to manage our business. Although we believe our underlying assumptions supporting these assessments are reasonable, if our forecasted sales and margin growth rates, timing of growth, or the discount rate vary from our forecasts, we may be required to perform interim analyses in fiscal 2020 that could expose us to material impairment charges in the future.

Purchased Intangible Assets: The table below summarizes our purchased intangible assets (in thousands):

	September 30, 2019			September 30, 2018		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Contract and program intangibles	\$ 181,903	\$ (138,497)	\$ 43,406	\$ 151,965	\$ (112,399)	\$ 39,566
Other purchased intangibles	155,608	(33,401)	122,207	52,851	(18,884)	33,967
Total	<u>\$ 337,511</u>	<u>\$ (171,898)</u>	<u>\$ 165,613</u>	<u>\$ 204,816</u>	<u>\$ (131,283)</u>	<u>\$ 73,533</u>

Total amortization expense for 2019, 2018 and 2017 was \$42.1 million, \$27.1 million and \$30.2 million, respectively.

The table below shows our expected amortization of purchased intangibles as of September 30, 2019, for each of the next five years and thereafter (in thousands):

	Transportation Systems	Cubic Mission Solutions	Total
2020	\$ 17,553	\$ 18,884	\$ 36,437
2021	16,025	14,429	30,454
2022	15,470	11,304	26,774
2023	10,353	9,151	19,504
2024	9,797	7,179	16,976
Thereafter	21,531	13,937	35,468
	<u>\$ 90,729</u>	<u>\$ 74,884</u>	<u>\$ 165,613</u>

NOTE 11—FINANCING ARRANGEMENTS

Long-term debt consists of the following (in thousands):

September 30,	2019	2018
Series A senior unsecured notes payable to a group of insurance companies, interest fixed at 3.35%	\$ 50,000	\$ 50,000
Series B senior unsecured notes payable to a group of insurance companies, interest fixed at 3.35%	50,000	50,000
Series C senior unsecured notes payable to a group of insurance companies, interest fixed at 3.70%	25,000	25,000
Series D senior unsecured notes payable to a group of insurance companies, interest fixed at 3.93%	75,000	75,000
	<u>200,000</u>	<u>200,000</u>
Less unamortized debt issuance costs	(175)	(207)
Less current portion	<u>(10,714)</u>	<u>—</u>
	<u>\$ 189,111</u>	<u>\$ 199,793</u>

Maturities of long-term debt for each of the five years in the period ending September 30, 2024, are as follows: 2020 — \$10.7 million; 2021 — \$35.7 million; 2022 — \$35.7 million; 2023 — \$35.7 million; 2024 — \$35.7 million.

In March 2013, we entered into a note purchase and private shelf agreement pursuant to which we issued \$100.0 million of senior unsecured notes, bearing interest at a rate of 3.35% and maturing on March 12, 2025. Pursuant to the agreement, on July 17, 2015, we issued an additional \$25.0 million of senior unsecured notes, bearing interest at a rate of 3.70% and maturing on March 12, 2025. Interest payments on the notes issued in 2013 and 2015 are due semi-annually and principal payments are due from 2021 through 2025. On February 2, 2016 we revised the note purchase agreement and we issued an additional \$75.0 million of senior unsecured notes bearing interest at 3.93% and maturing on March 12, 2026. Interest payments on these notes are due semi-annually and principal payments are due from 2020 through 2026.

The agreement pertaining to the aforementioned notes also contained a provision that the coupon rate would increase by a further 0.50% should the company's leverage ratio exceed a certain level.

We have a committed revolving credit agreement with a group of financial institutions in the amount of \$800.0 million which is scheduled to expire in April 2024 (Revolving Credit Agreement). Under the terms of the Revolving Credit Agreement, the company may elect that the debts comprising each borrowing bear interest generally at a rate equal to (i) London Interbank Offer Rate ("LIBOR") based upon tenor plus a margin that fluctuates between 1.00% and 2.00%, as determined by the company's Leverage Ratio (as defined in the Revolving Credit Agreement) as set forth in the company's most recently delivered compliance certificate or (ii) the Alternate Base Rate (defined as a rate equal to the highest of (a) the Prime Rate (b) the NYFRB rate plus 0.50% (c) the Adjusted LIBOR Rate plus 1.00%), plus a margin that fluctuates between 0.00% and 1.00%, as determined by the company's Leverage Ratio as set forth in its most recently delivered compliance certificate. At September 30, 2019, the weighted average interest rate on outstanding borrowings under the Revolving Credit Agreement was 3.90%. Debt issuance and modification costs of \$1.9 million were incurred in connection with an April 2019 amendment to the Revolving Credit Agreement which increased permitted borrowings from \$400.0 million to \$800.0 million. Costs incurred in connection with establishment of and amendments to this credit agreement are recorded in other assets on our Consolidated Balance Sheets, and are being amortized as interest expense using the effective interest method over the stated term of the Revolving Credit Agreement. At September 30, 2019, our total debt issuance costs have an unamortized deferred financing balance of \$1.2 million. The available line of credit is reduced by any letters of credit issued under the Revolving Credit Agreement. As of September 30, 2019, there were \$195.5 million of borrowings under this agreement and there were letters of credit outstanding totaling \$31.5 million, which reduce the available line of credit to \$573.0 million. The \$31.5 million of letters of credit includes both financial letters of credit and performance guarantees.

Interest paid amounted to \$16.8 million, \$10.0 million and \$14.8 million in fiscal 2019, 2018 and 2017, respectively.

As of September 30, 2019, we had letters of credit and bank guarantees outstanding totaling \$39.9 million, which includes the \$31.5 million of letters of credit on the Revolving Credit Agreement described above and \$8.4 million of letters of credit issued under other facilities. The total of \$39.9 million of letters of credit and bank guarantees includes \$34.4 million that guarantees either our performance or customer advances under certain contracts and financial letters of credit of \$5.5 million which primarily guarantee our payment of certain self-insured liabilities. We have never had a drawing on a letter of credit instrument, nor are any anticipated; therefore, we estimate the fair value of these instruments to be zero.

We have entered into a short-term borrowing arrangement in the U.K. in the amount of £20.0 million British pounds (equivalent to approximately \$24.6 million) to help meet the short-term working capital requirements of our subsidiary. At September 30, 2019, no amounts were outstanding under this borrowing arrangement.

We maintain a cash account with a bank in the United Kingdom for which the funds are restricted as to use. The account is required to secure the customer's interest in cash deposited in the account to fund our activities related to our performance under a fare collection services contract in the United Kingdom. The balance in the account as of September 30, 2019 was \$19.5 million and is classified as restricted cash in our Consolidated Balance Sheets.

The terms of certain of our lending and credit agreements include provisions that require and/or limit, among other financial ratios and measurements, the permitted levels of debt, coverage of cash interest expense, and under certain circumstances, payments of dividends or other distributions to shareholders. As of September 30, 2019, these agreements have no restrictions on distributions to shareholders, subject to certain tests in these agreements.

In December 2018, we completed an underwritten public offering of 3,795,000 shares of our common stock, including the exercise of the underwriters' option to purchase additional shares. All shares were offered by us at a price to the public of \$60.00 per share. Net proceeds were \$215.8 million, after deducting underwriting discounts and commissions and offering expenses of \$11.9 million. We used the net proceeds to repay a portion of our outstanding borrowings under the Revolving Credit Agreement which was used to finance the acquisition of Trafficware and for general corporate purposes.

Our self-insurance arrangements are limited to certain workers' compensation plans, automobile liability and product liability claims. Under these arrangements, we self-insure only up to the amount of a specified deductible for each claim. Self-insurance liabilities included in accrued compensation and other current liabilities on the balance sheet amounted to \$7.4 million and \$8.6 million as of September 30, 2019 and 2018, respectively.

NOTE 12—COMMITMENTS

We lease certain office, manufacturing and warehouse space, vehicles, and other office equipment under non-cancelable operating leases expiring in various years through 2030. These leases, some of which may be renewed for periods up to 10 years, generally require us to pay all maintenance, insurance and property taxes. Several leases are subject to periodic adjustment based on price indices or cost increases. Rental expense (net of sublease income of \$0.2 million in 2019, \$0.2 million in 2018 and \$0.2 million in 2017) for all operating leases amounted to \$13.3 million, \$11.6 million and \$10.5 million in 2019, 2018 and 2017, respectively. Future minimum payments, net of minimum sublease income, under non-cancelable operating leases with initial terms of one year or more consist of the following for the next five years and thereafter, as of September 30, 2019 (in thousands):

2020	\$ 18,121
2021	17,218
2022	15,097
2023	13,250
2024	12,311
Thereafter	37,926
	<u>\$ 113,923</u>

NOTE 13—INCOME TAXES

On December 22, 2017, the U.S. government enacted the Tax Act, which includes provisions for Global Intangible Low-Tax Income (GILTI) under which taxes on foreign income are imposed on the excess of a deemed return on tangible assets of foreign subsidiaries. Consistent with accounting guidance, we have elected to account for the tax on GILTI as a period cost and thus have not adjusted any net deferred tax assets of our foreign subsidiaries in connection with the Tax Act.

Due to the complexity of the Tax Act, the Securities and Exchange Commission issued guidance in SAB 118 which clarified the accounting for income taxes under ASC 740 if certain information was not yet available, prepared or analyzed in reasonable detail to complete the accounting for income tax effects of the Tax Act. SAB 118 provided for a measurement period of up to one year after the enactment of the Tax Act, during which time the required analyses and accounting must be completed. During fiscal year 2018, we recorded provisional amounts for the income tax effects of the changes in tax law and tax rates, as reasonable estimates were determined by management during this period. These amounts did not change in fiscal year 2019.

The SAB 118 measurement period ended on December 22, 2018. Although we no longer consider these amounts to be provisional, the determination of the Tax Act's income tax effects may change following future legislation or further interpretation of the Tax Act based on the publication of recently proposed U.S. Treasury regulations and guidance from the Internal Revenue Service and state tax authorities.

Income (loss) from continuing operations before income taxes includes the following components (in thousands):

	Years Ended September 30,		
	2019	2018	2017
	(in thousands)		
United States	\$ (535)	\$ (51,049)	\$ (70,566)
Foreign	52,881	65,935	59,484
Total	<u>\$ 52,346</u>	<u>\$ 14,886</u>	<u>\$ (11,082)</u>

Significant components of the provision (benefit) for income taxes from continuing operations are as follows:

	Years Ended September 30,		
	2019	2018	2017
	(in thousands)		
Current:			
Federal	\$ (710)	\$ (4,775)	\$ (4,070)
State	2,898	976	878
Foreign	10,523	19,882	13,869
Total current	12,711	16,083	10,677
Deferred:			
Federal	(4,553)	(7,874)	2,257
State	(135)	482	569
Foreign	3,017	(1,598)	1,155
Total deferred	(1,671)	(8,990)	3,981
Provision for income taxes	\$ 11,040	\$ 7,093	\$ 14,658

The reconciliation of income tax computed at the U.S. federal statutory tax rate to income tax expense is as follows:

	Years Ended September 30,		
	2019	2018	2017
	(in thousands)		
Tax expense at U.S. statutory rate	\$ 10,992	\$ 3,124	\$ (3,877)
State income taxes, net of federal tax effect	1,416	(237)	(923)
Nondeductible expenses	1,720	1,186	(185)
Change in reserve for tax contingencies	(1,468)	(1,047)	(4,435)
Change in deferred tax asset valuation allowance	(10,007)	8,784	17,374
Foreign rate differential (1)	2,149	5,684	9,912
Tax credits	(4,767)	(2,656)	(3,459)
Impact of U.S. Tax Reform	—	(7,053)	—
Global Intangible Low-Tax Income	8,182	—	—
Stock Based Compensation	(448)	59	16
Non-controlling interest in equity arrangements	1,802	99	—
Other	1,469	(850)	235
Provision for income taxes	\$ 11,040	\$ 7,093	\$ 14,658

⁽¹⁾In 2018, we recorded \$3.5 million of tax expense related to foreign earnings which were not permanently reinvested prior to the enactment of the U.S. Tax Act. After enactment, certain foreign earnings are taxed at higher statutory rates than the U.S. which results in \$2.1 million of incremental tax expense in 2019. In 2017, we provided for deferred taxes on all cumulative unremitted foreign earnings, as the earnings were no longer considered permanently reinvested resulting in a charge of \$9.5 million.

Significant components of our deferred tax assets and liabilities are as follows:

	September 30,	
	2019	2018
	(in thousands)	
Deferred tax assets:		
Accrued employee benefits	\$ 11,409	\$ 8,285
Allowances for loss contingencies	3,561	3,518
Deferred compensation	3,071	3,272
Intangible assets	—	1,361
Inventory valuation	8,036	1,154
Long-term contracts	6,995	7,751
Prepaid and accrued expenses	1,816	1,229
Retirement benefits	4,967	1,398
Tax credit carryforwards	33,118	35,137
Loss carryforwards	36,248	29,097
Other	818	264
Total gross deferred tax assets	<u>110,039</u>	<u>92,466</u>
Valuation allowance	<u>(69,098)</u>	<u>(81,838)</u>
Total deferred tax assets	<u>40,941</u>	<u>10,628</u>
Deferred tax liabilities:		
Debt obligation basis difference	(4,582)	—
Deferred revenue	(12,135)	(2,351)
Intangible assets	(18,592)	—
Property, plant and equipment	(4,524)	(5,079)
Unremitted earnings	(977)	(823)
Other	(587)	(351)
Total deferred tax liabilities	<u>(41,397)</u>	<u>(8,604)</u>
Net deferred tax asset (liability)	<u>\$ (456)</u>	<u>\$ 2,024</u>

The deferred tax assets and liabilities for fiscal 2019 and 2018 include amounts related to various acquisitions. The total change in deferred tax assets and liabilities in fiscal 2019 includes changes that are recorded to other comprehensive income (loss), retained earnings and goodwill.

We calculate deferred tax assets and liabilities based on differences between financial reporting and tax bases of assets and liabilities and measure them using the enacted tax rates and laws that we expect will be in effect when the differences reverse.

At September 30, 2019, we have federal and state income tax credit carryforwards (in thousands) which begin to expire as follows:

U.S. foreign tax credits	\$ 14,535	2027
U.S. research and development tax credits	14,439	2035
State research and development tax credits	25,748	Do not expire

We have federal, state and foreign capital and net operating losses (in thousands) which begin to expire as follows:

U.S. net operating loss carryforwards	\$ 127,013	2033
U.S. capital loss carryforwards	5,451	2023
State loss carryforwards	55,619	2021
State capital loss carryforwards	23,038	2023
Foreign net operating loss carryforwards	13,548	Do not expire

During 2015, we evaluated our net U.S. deferred income taxes, which included an assessment of the cumulative income or loss over the prior three-year period and future periods and concluded that a valuation allowance was required. After consideration of our recent history of U.S. losses, we continue to maintain a valuation allowance on net U.S. deferred tax assets as of September 30, 2019.

As of September 30, 2019, a total valuation allowance of \$69.1 million has been established against U.S. deferred tax assets, certain foreign operating losses and other foreign assets. For fiscal 2019, the valuation allowance decreased by \$12.7 million, of which \$10.0 million was recorded as a net tax benefit in our Consolidated Statement of Operations, offset by amounts recorded through acquisition accounting and to other components of income.

The non-cash charge to increase or decrease a valuation allowance does not have any impact on our cash flows, nor does such an allowance preclude us from using loss carryforwards or other deferred tax assets in the future. Until we re-establish a pattern of continuing profitability, in accordance with the applicable accounting guidance, U.S. income tax expense or benefit related to the recognition of deferred tax assets in the Consolidated Statement of Operations for future periods will be offset by decreases or increases in the valuation allowance with no net effect on the Consolidated Statement of Operations. If sufficient positive evidence arises in the future, any existing valuation allowance could be reversed as appropriate, decreasing income tax expense in the period that such conclusion is reached.

Prior to the Tax Act, we provided deferred taxes on all undistributed foreign earnings, as we did not consider these amounts permanently reinvested. Under the transition to a modified territorial tax system, all previously untaxed undistributed foreign earnings are subject to a transition tax charge at reduced rates and future repatriations of foreign earnings will generally be exempt from U.S. tax. We will continue to provide applicable deferred taxes based on the tax liability or withholding taxes that would be due upon repatriation of the undistributed foreign earnings. As of September 30, 2019, we have recorded a deferred tax liability of \$1.0 million related to future taxes on our unremitted foreign earnings.

Accounting for Uncertainty in Income Taxes

During fiscal 2019 and 2018, the aggregate changes in our total gross amount of unrecognized tax benefits are summarized as follows:

	<u>September 30,</u>	
	<u>2019</u>	<u>2018</u>
	(in thousands)	
Balance at beginning of year	\$ 9,942	\$ 13,248
Additions (reductions) for tax positions taken in prior years	8,458	(80)
Recognition of benefits from expiration of statutes	(776)	(1,770)
Additions for tax positions related to the current year	951	713
Reductions for tax positions related to acquisitions	—	(2,169)
Balance at end of year	<u>\$ 18,575</u>	<u>\$ 9,942</u>

At September 30, 2019 and 2018, the amount of unrecognized tax benefits that, if recognized, would affect the effective tax rate was \$0.7 million and \$1.8 million, respectively. During fiscal year 2020, it is reasonably possible that resolution of reviews by taxing authorities, both domestic and foreign, could be reached with respect to an immaterial amount of net unrecognized tax benefits depending on the timing of examinations or expiration of statutes of limitations, either because our tax positions are sustained or because we agree to the disallowance and pay the related income tax. We

recognize interest and/or penalties related to income tax matters in income tax expense. The amount of net interest and penalties recognized as a component of income tax expense during fiscal 2019 and 2018 were not material.

We are subject to ongoing audits from various taxing authorities in the jurisdictions in which we do business. As of September 30, 2019, the fiscal years open under the statute of limitations in significant jurisdictions include 2016 through 2019 in the U.S. We believe we have adequately provided for uncertain tax issues we have not yet resolved with federal, state and foreign tax authorities. Although not more likely than not, the most adverse resolution of these issues could result in additional charges to earnings in future periods. Based upon a consideration of all relevant facts and circumstances, we do not believe the ultimate resolution of uncertain tax issues for all open tax periods will have a material adverse effect upon our financial condition or results of operations.

Cash amounts paid for income taxes, net of refunds received, were \$28.7 million, \$15.7 million and \$1.6 million in 2019, 2018 and 2017, respectively.

NOTE 14—DERIVATIVE INSTRUMENTS AND HEDGING ACTIVITIES

In order to manage our exposure to fluctuations in interest and foreign currency exchange rates we utilize derivative financial instruments such as forward starting swaps and foreign currency forwards for periods typically up to five years. We do not use any derivative financial instruments for trading or other speculative purposes.

All derivatives are recorded at fair value, however, the classification of gains and losses resulting from changes in the fair values of derivatives are dependent on the intended use of the derivative and its resulting designation. If a derivative is designated as a fair value hedge, then a change in the fair value of the derivative is offset against the change in the fair value of the underlying hedged item and only the ineffective portion of the hedge, if any, is recognized in earnings. If a derivative is designated as a cash flow hedge, then the effective portion of a change in the fair value of the derivative is recognized as a component of accumulated other comprehensive income (loss) until the underlying hedged item is recognized in earnings, or the forecasted transaction is no longer probable of occurring. If a derivative does not qualify as a highly effective hedge, any change in fair value is immediately recognized in earnings. We formally document all hedging relationships for all derivative hedges and the underlying hedged items, as well as the risk management objectives and strategies for undertaking the hedge transactions. We classify the fair value of all derivative contracts as current or noncurrent assets or liabilities, depending on the realized and unrealized gain or loss position of the hedged contract at the balance sheet date, and the timing of future cash flows. The cash flows from derivatives treated as hedges are classified in the Consolidated Statements of Cash Flows in the same category as the item being hedged.

The following table shows the notional principal amounts of our outstanding derivative instruments as of September 30, 2019 and 2018 (in thousands):

	Notional Principal	
	September 30, 2019	September 30, 2018
Instruments designated as accounting hedges:		
Foreign currency forwards	\$ 143,164	\$ 169,406
Interest rate swaps	95,000	—
Instruments not designated as accounting hedges:		
Foreign currency forwards	\$ 24,220	\$ 27,909

Included in the amounts not designated as accounting hedges at September 30, 2019 and 2018 were foreign currency forwards with notional principal amounts of \$14.0 million and \$14.7 million, respectively, that have been designed to manage exposure to foreign currency exchange risks, and for which the gains or losses of the changes in fair value of the forwards has approximately offset an equal and opposite amount of gains or losses related to the foreign currency exposure. Unrealized gains of \$0.0 million and \$0.2 million were recognized in other income (expense), net for the fiscal years ended September 30, 2019 and 2018, respectively, related to foreign currency forward contracts not designated as accounting hedges.

During fiscal 2019, we entered into agreements related to the construction and leasing of two buildings on our existing corporate campus in San Diego. This will allow us to consolidate virtually all of our San Diego operations in a single location and accommodate the expected growth of our business. Under these agreements a financial institution will own the buildings, and we will lease the property for a term of five years upon their completion. In conjunction with these agreements, we entered into pay-variable/receive-fixed interest rate swaps with a group of financial institutions to mitigate variable interest rate risk associated with these future lease obligations. The interest rate swaps contain forward starting notional principal amounts which align with our expected lease payments. These interest rate swaps were designated as effective cash flow hedges at September 30, 2019, and as such, unrealized gains/losses are included in accumulated other comprehensive income (loss). Unrealized gains as a result of changes in the fair value of the interest rate swaps were \$0.2 million for the year ended September 30, 2019.

The notional principal amounts for outstanding derivative instruments provide one measure of the transaction volume outstanding and do not represent the amount of our exposure to credit or market loss. Credit risk represents our gross exposure to potential accounting loss on derivative instruments that are outstanding or unsettled if all counterparties failed to perform according to the terms of the contract, based on then-current interest or currency exchange rates at each respective date. Our exposure to credit loss and market risk will vary over time as a function of interest and currency exchange rates. The amount of credit risk from derivative instruments and hedging activities was not material for the fiscal years ended September 30, 2019 and 2018. Although the table above reflects the notional principal amounts of our foreign exchange instruments, it does not reflect the gains or losses associated with the exposures and transactions that the foreign exchange instruments are intended to hedge. The amounts ultimately realized upon settlement of these financial instruments, together with the gains and losses on the underlying exposures, will depend on actual market conditions during the remaining life of the instruments.

We generally enter into master netting arrangements, which reduce credit risk by permitting net settlement of transactions with the same counterparty. We present our derivative assets and derivative liabilities at their gross fair values. We did not have any derivative instruments with credit-risk related contingent features that would require us to post collateral as of September 30, 2019 or 2018.

The table below presents the fair value of our derivative financial instruments that qualify for hedge accounting as well as their classification in the Consolidated Balance Sheets (in thousands):

	Balance Sheet Location	Fair Value	
		September 30, 2019	September 30, 2018
Asset derivatives:			
Foreign currency forwards	Other current assets	\$ 2,635	\$ 1,803
Foreign currency forwards	Other assets	619	314
Forward starting swap	Other assets	240	—
		<u>\$ 3,494</u>	<u>\$ 2,117</u>
Liability derivatives:			
Foreign currency forwards	Other current liabilities	\$ 529	\$ 1,657
Foreign currency forwards	Other noncurrent liabilities	228	75
Total		<u>\$ 757</u>	<u>\$ 1,732</u>

The tables below present gains and losses recognized in other comprehensive income (loss) related to derivative financial instruments designated as cash flow hedges, as well as the amount of gains and losses reclassified into earnings (in thousands):

Derivative Type	September 30, 2019		September 30, 2018	
	Gains (losses) recognized in OCI	Gains (losses) reclassified into earnings - Effective Portion	Gains (losses) recognized in OCI	Gains (losses) reclassified into earnings - Effective Portion
Foreign currency forwards	\$ 4,344	\$ 1,945	\$ (45)	\$ (1,239)

The amount of unrealized gains and losses from derivative instruments and hedging activities classified as not highly effective did not have a material impact on the results of operations for the years ended September 30, 2019 or 2018. The amount of estimated unrealized net gains from cash flow hedges which are expected to be reclassified to earnings in the next twelve months is \$1.5 million, net of income taxes.

NOTE 15—PENSION, PROFIT SHARING AND OTHER BENEFIT PLANS

Deferred Compensation Plan

We have a non-qualified deferred compensation plan offered to a select group of highly compensated employees. The plan provides participants with the opportunity to defer a portion of their compensation in a given plan year. The liabilities associated with the non-qualified deferred compensation plan are included in other noncurrent liabilities in our Consolidated Balance Sheets and totaled \$11.0 million and \$11.5 million at September 30, 2019 and 2018, respectively.

In the past we have made contributions to a rabbi trust to provide a source of funds for satisfying a portion of these deferred compensation liabilities. The total carrying value of the assets set aside to fund deferred compensation liabilities as of September 30, 2019 and 2018 were \$6.6 million and \$6.4 million, respectively, which were comprised entirely of life insurance contracts. The carrying value of the life insurance contracts is based on the cash surrender value of the policies. Changes in the carrying value of the deferred compensation liability, and changes in the carrying value of the assets held in the rabbi trust are reflected in our Consolidated Statements of Operations.

Defined Contribution Plans

We have profit sharing and other defined contribution retirement plans that provide benefits for most U.S. employees. Certain of these plans require us to match a portion of eligible employee contributions up to specified limits. These plans also allow for additional company contributions at the discretion of the Board of Directors. We also have a defined contribution plan for European employees that were formerly eligible for the European defined benefit plan described below. Under this plan, we match a portion of the eligible employee contributions up to limits specified in the plan. Company contributions to defined contribution plans aggregated \$19.4 million, \$16.8 million and \$16.8 million in 2019, 2018 and 2017, respectively.

Employee Stock Purchase Plan

We sponsor a noncompensatory Employee Stock Purchase Plan, which allows eligible employees to purchase common stock of the Company at a discount rate of 5% of the market price per share on the last trading day of the offering period. Annual employee contributions are limited to \$25,000, are voluntary, and made through a bi-weekly payroll deduction.

Defined Benefit Pension Plans

Certain employees in the U.S. are covered by a noncontributory defined benefit pension plan for which benefits were frozen as of December 31, 2006 (curtailment). The effect of the U.S. plan curtailment is that no new benefits have been accrued after that date. Approximately one-half of our European employees are covered by a contributory defined benefit pension plan for which benefits were frozen as of September 30, 2010. Although the effect of the European plan curtailment is that no new benefits will accrue after September 30, 2010, the plan is a final pay plan, which means that benefits will be adjusted for increases in the salaries of participants until their retirement or departure from the company. The European plan was amended in 2014 to reduce the amount of participant compensation used in computing the pension liability for certain participants. U.S. and European employees hired subsequent to the dates of the curtailment of the respective plans are not eligible for participation in the defined benefit plans.

Our funding policy for the defined benefit pension plans provides that contributions will be at least equal to the minimum amounts mandated by statutory requirements. Based on our known requirements for the U.S. and European

plans, as of September 30, 2019, we expect to make contributions of approximately \$6.1 million in 2020. September 30 is used as the measurement date for these plans.

Changes in actuarial assumptions of our defined benefit pension plans are recorded in accumulated other comprehensive income (loss). The unrecognized amounts recorded in accumulated other comprehensive income (loss) will be subsequently recognized as net periodic pension cost, consistent with our historical accounting policy for amortizing those amounts. The unrecognized actuarial gain or loss included in accumulated other comprehensive income (loss) at September 30, 2019 and expected to be recognized in net pension cost during fiscal 2020 is a loss of \$4.0 million (\$3.2 million net of income tax). The unrecognized actuarial loss incurred in fiscal year 2019 was \$32.1 million, which was primarily driven by a decrease in discount rates used in the calculation of the net benefit obligation. No plan assets are expected to be returned to us in fiscal 2020.

The projected benefit obligation, accumulated benefit obligation and fair value of plan assets for the defined benefit pension plans were as follows (in thousands):

	<u>September 30,</u>	
	<u>2019</u>	<u>2018</u>
Projected benefit obligation	\$ 246,697	\$ 222,332
Accumulated benefit obligation	246,697	222,332
Fair value of plan assets	221,311	214,530

The following table sets forth changes in the projected benefit obligation and fair value of plan assets and the funded status for these defined benefit plans (in thousands):

	September 30,	
	2019	2018
Change in benefit obligations:		
Net benefit obligation at the beginning of the year	\$ 222,332	\$ 235,097
Service cost	590	606
Interest cost	7,617	7,529
Actuarial (gain) loss	32,067	(9,449)
Gross benefits paid	(8,141)	(8,034)
Foreign currency exchange rate changes	(7,768)	(3,417)
Net benefit obligation at the end of the year	<u>246,697</u>	<u>222,332</u>
Change in plan assets:		
Fair value of plan assets at the beginning of the year	214,530	209,722
Actual return on plan assets	17,794	11,998
Employer contributions	4,842	5,117
Gross benefits paid	(8,141)	(8,034)
PBGC Premium paid	(177)	(286)
Administrative expenses	(541)	(698)
Foreign currency exchange rate changes	(6,996)	(3,289)
Fair value of plan assets at the end of the year	<u>221,311</u>	<u>214,530</u>
Unfunded status of the plans	(25,386)	(7,802)
Unrecognized net actuarial loss	70,095	48,081
Net amount recognized	<u>\$ 44,709</u>	<u>\$ 40,279</u>
Amounts recognized in Accumulated OCI		
Liability adjustment to OCI	\$ (70,095)	\$ (48,081)
Deferred tax asset	11,667	7,365
Valuation allowance on deferred tax asset	(1,172)	610
Accumulated other comprehensive loss	<u>\$ (59,600)</u>	<u>\$ (40,106)</u>

The components of net periodic pension cost (benefit) were as follows (in thousands):

	Years Ended September 30,		
	2019	2018	2017
Service cost	\$ 590	\$ 606	\$ 617
Interest cost	7,617	7,529	7,091
Expected return on plan assets	(11,990)	(14,120)	(12,928)
Amortization of actuarial loss	2,098	2,777	3,700
Administrative expenses	348	438	474
Net pension benefit	<u>\$ (1,337)</u>	<u>\$ (2,770)</u>	<u>\$ (1,046)</u>

	Years Ended September 30,		
	2019	2018	2017
Weighted-average assumptions used to determine benefit obligation at September 30:			
Discount rate	2.5%	3.6%	3.3%
Rate of compensation increase	3.1%	3.3%	3.2%
Weighted-average assumptions used to determine net periodic benefit cost for the years ended September 30:			
Discount rate	3.6%	3.3%	3.0%
Expected return on plan assets	5.7%	6.8%	6.8%
Rate of compensation increase	3.3%	3.2%	3.1%

The long-term rate of return assumption represents the expected average rate of earnings on the funds invested or to be invested to provide for the benefits included in the benefit obligations. That assumption is determined based on a number of factors, including historical market index returns, the anticipated long-term asset allocation of the plans, historical plan return data, plan expenses, and the potential to outperform market index returns.

We have the responsibility to formulate the investment policies and strategies for the plans' assets. Our overall policies and strategies include: maintain the highest possible return commensurate with the level of assumed risk, and preserve benefit security for the plans' participants.

We do not direct the day-to-day operations and selection process of individual securities and investments and, accordingly, we have retained the professional services of investment management organizations to fulfill those tasks. The investment management organizations have investment discretion over the assets placed under their management. We provide each investment manager with specific investment guidelines by asset class.

The target ranges for each major category of the plans' assets at September 30, 2019 are as follows:

Asset Category	Allocation Range
Equity securities	20% to 55%
Debt securities	25% to 75%
Cash	0% to 55%
Real estate	0% to 10%

Our defined benefit pension plans invest in cash and cash equivalents, equity securities, fixed income securities, pooled separate accounts and common collective trusts. Our plans also invest in diversified growth funds that hold underlying investments in equities, fixed-income securities, commodities, and real estate. The following table presents the fair value of the assets of our defined benefit pension plans by asset category and their level within the fair value hierarchy (in thousands). See Note 5 for a description of each level within the fair value hierarchy.

All assets measured at the net asset value (NAV) practical expedient in the table below are invested in pooled separate accounts or common collective trusts which do not have publicly quoted prices. The fair value of the pooled separate accounts and common collective trusts are determined based on the NAV of the underlying investments. The fair value of the underlying investments held by the pooled separate accounts and common collective trusts, other than real estate investments, is generally based upon quoted prices in active markets. The fair value of the underlying investments comprised of real estate properties is determined through an appraisal process which uses valuation methodologies including comparisons to similar real estate and discounting of income streams.

	September 30, 2019				September 30, 2018			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Plan assets held at fair value:								
Cash equivalents	\$ 2,908	\$ —	\$ —	\$ 2,908	\$ 19,314	\$ —	\$ —	\$ 19,314
Plan assets held at net asset value practical expedient*:								
Equity Funds				100,302				107,424
Fixed Income Funds				105,651				73,533
Diversified Growth Funds				8,886				14,259
Real Estate Funds				3,564				—
Total assets held at net asset value practical expedient:				\$ 218,403				\$ 195,216
Total Plan Assets				\$ 221,311				\$ 214,530

* Plan assets measured at fair value using NAV (or its equivalent) as a practical expedient have not been categorized in the fair value hierarchy.

The pension plans held no direct positions in Cubic Corporation common stock as of September 30, 2019 and 2018.

We expect to pay the following pension benefit payments (in thousands):

2020	\$ 9,067
2021	9,140
2022	9,306
2023	9,324
2024	9,693
2024-2028	52,750

NOTE 16—STOCKHOLDERS' EQUITY

Long-Term Equity Incentive Plan

Under our long-term equity incentive program we have provided participants with three general categories of grant awards: RSUs with time-based vesting, RSUs with performance-based vesting, and RSUs with performance and market-based vesting.

Each RSU with time-based vesting or performance-based vesting represents a contingent right to receive one share of our common stock. Each RSU with performance and market-based vesting represents a contingent right to receive up to 1.25 shares of our common stock. Dividend equivalent rights accrue with respect to the RSUs as dividends are paid on our common stock and vest proportionately with the RSUs to which they relate. Vested shares are delivered to the recipient following each vesting date.

The RSUs granted with time-based vesting generally vest in four equal installments on each of the four October 1 dates following the grant date, subject to the recipient's continued service through such vesting date.

The performance-based RSUs granted to participants vest over three-year performance periods based on Cubic's achievement of performance goals established by the Compensation Committee over the performance periods, subject to the recipient's continued service through the end of the respective performance periods. For the performance-based RSUs granted prior to September 30, 2018, the vesting is contingent upon Cubic meeting vesting criteria over the performance period, including revenue growth targets, earnings growth targets, and return on equity targets. The level at

which Cubic performs against scalable targets over the performance periods will determine the percentage of the RSUs that will ultimately vest.

In fiscal 2019, the Compensation Committee granted RSUs which contained both performance and market-based vesting criteria. The performance and market-based RSUs granted to participants vest over three-year performance periods based on Cubic’s achievement of revenue growth targets and earnings growth targets subject to the recipient’s continued service through the end of the respective performance periods. The level at which Cubic performs against scalable targets over the performance periods impact the percentage of the RSUs that will ultimately vest. For these RSUs, Cubic’s relative total stock return (TSR) as compared to the Russell 2000 Index (Index) over the performance period will result in a multiplier for the number of RSUs that will vest. If the TSR performance exceeds the performance of the Index based on a scale established by the Compensation Committee, the multiplier will result in up to an additional 25% of RSUs vesting at the end of the performance period. If the TSR performance is below the performance of the Index based on a scale established by the Compensation Committee, the multiplier would result in a reduction of up to 25% of these RSUs vesting at the end of the performance period.

During fiscal 2019, the Compensation Committee amended the long-term equity incentive program to provide accelerated vesting for retirement age participants. Under this amendment, participants who are 60 years of age, and whose age plus years of service equals or exceeds 70 are eligible for accelerated vesting of their RSUs. Participants who have reached the retirement age criteria must generally provide a one-year notice of retirement to the Company. For participants who have reached the retirement age criteria, expense is recognized over the adjusted service period.

The grant date fair value of each RSU with time-based vesting or performance-based vesting is the fair market value of one share of our common stock at the grant date.

The grant date fair value of each RSU with performance and market-based vesting was calculated using a Monte Carlo simulation valuation method. Under this method, the prices of the Index and our common stock were simulated through the end of the performance period. The correlation matrix between our common stock and the index as well as our stock and the Index’s return volatilities were developed based upon an analysis of historical data. The following table includes the assumptions used for the valuation of the RSUs with performance and market-based vesting that were granted during fiscal 2019:

RSUs granted during the year ended September 30, 2019

Date of grant	November 21, 2018	April 1, 2019
Grant date fair value	\$67.40	\$59.29
Performance period begins	November 21, 2018	April 1, 2019
Performance period ends	September 30, 2021	September 30, 2021
Risk-free interest rate	2.8%	2.8%
Expected volatility	34%	34%

At September 30, 2019, the total number of unvested RSUs that are ultimately expected to vest, after consideration of expected forfeitures and estimated vesting of performance-based RSUs, is 366,913 RSUs with time-based vesting, 112,942 RSUs with performance-based vesting, and 174,105 RSUs with performance and market-based vesting.

The following table summarizes our RSU activity:

	Unvested Restricted Stock Units with Service-Based Vesting	
	Number of Shares	Weighted Average Grant-Date Fair Value
Unvested at September 30, 2017	366,331	\$ 45.99
Granted	165,271	61.06
Vested	(147,832)	46.86
Forfeited	(17,310)	48.62
Unvested at September 30, 2018	366,460	\$ 52.31
Granted	239,874	63.25
Vested	(145,409)	50.76
Forfeited	(38,831)	54.67
Unvested at September 30, 2019	422,094	\$ 58.84

	Unvested Restricted Stock Units with Performance-Based Vesting	
	Number of Shares	Weighted Average Grant-Date Fair Value
Unvested at September 30, 2017	678,856	\$ 46.59
Granted	179,162	61.40
Vested	—	—
Forfeited	(222,390)	48.46
Unvested at September 30, 2018	635,628	\$ 50.11
Granted	—	—
Vested	—	—
Forfeited	(320,366)	44.63
Unvested at September 30, 2019	315,262	\$ 55.67

	Unvested Restricted Stock Units with Performance and Market-Based Vesting	
	Number of Shares	Weighted Average Grant-Date Fair Value
Unvested at September 30, 2017	—	\$ —
Granted	—	—
Vested	—	—
Forfeited	—	—
Unvested at September 30, 2018	—	\$ —
Granted	237,616	66.79
Vested	—	—
Forfeited	(10,214)	67.40
Unvested at September 30, 2019	227,402	\$ 66.77

As of September 30, 2019, approximately 1,637,274 shares remained available for future grants under our long-term equity incentive plan. On October 1, 2019, 148,995 RSUs vested.

We recorded non-cash compensation expense related to stock-based awards as follows (in thousands):

	Years Ended September 30,		
	2019	2018	2017
Cost of sales	\$ 1,766	\$ 1,096	\$ 338
Selling, general and administrative	13,722	6,419	4,674
	<u>\$ 15,488</u>	<u>\$ 7,515</u>	<u>\$ 5,012</u>

As of September 30, 2019, there was \$39.7 million of unrecognized compensation expense related to unvested RSUs. Based upon the expected forfeitures and the expected vesting of performance-based RSUs, the aggregate fair value of RSUs expected to ultimately vest is \$40.0 million, which is expected to be recognized over a weighted-average period of 1.7 years and includes the RSUs that vested on October 1, 2019.

We estimate forfeitures at the time of grant and revise those estimates in subsequent periods on a cumulative basis in the period the estimated forfeiture rate changes for all stock-based awards when significant events occur. We consider our historical experience with employee turnover as the basis to arrive at our estimated forfeiture rate. The forfeiture rate was estimated to be 12.5% per year as of September 30, 2019. To the extent the actual forfeiture rate is different from what we have estimated, compensation expense related to these awards will be different from our expectations.

NOTE 17—LEGAL MATTERS

In August 2019, a transit authority asserted loss of revenue due to alleged accidental undercharging of their customers for specific transactions by a fare system which we operate for them and has requested a corresponding recoupment from us. Based upon our investigation into this matter, we believe this matter will not have a materially adverse effect on our financial position, results of operations, or cash flows. No liability for this claim has been recorded as of September 30, 2019.

We consider all other current legal matters to be ordinary proceedings incidental to our business. We believe the outcome of these proceedings will not have a materially adverse effect on our financial position, results of operations, or cash flows.

NOTE 18—BUSINESS SEGMENT INFORMATION

We define our operating segments and reportable segments based on the way our chief executive officer, who we have concluded is our chief operating decision maker, manages our operations for purposes of allocating resources and assessing performance and we continually reassess our operating segment and reportable segment designation based upon these criteria. Through September 30, 2017, our company was aligned in our CGD and CTS operating segments, which were also our reportable segments. In 2016, we formalized the structure of our CMS business unit within our CGD operating segment. CMS combines and integrates our C4ISR and secure communications operations. Through September 30, 2017, we concluded that CMS was not a separate operating segment based upon factors including the nature of information presented to our chief executive officer and Board of Directors and the consequential level at which certain resource allocations and performance assessments were made. In the first quarter of fiscal 2018, we began providing additional financial information to our chief executive officer and Board of Directors at the CMS level, which allowed greater resource allocation decisions and performance assessments to be made at that level. As such, we concluded that CMS became a separate operating segment beginning on October 1, 2017. Applicable prior period amounts have been adjusted retrospectively to reflect the reportable segment change.

We evaluate performance and allocate resources based on total segment operating income or loss. The accounting policies of the reportable segments are the same as those described in the summary of significant accounting policies. Intersegment sales and transfers are immaterial and are eliminated in consolidation.

Our reportable segments are business units that offer different products and services. Operating results for each segment are reported separately to senior corporate management to make decisions as to the allocation of corporate resources and to assess performance.

Business segment financial data is as follows (in millions):

	Years Ended September 30,		
	2019	2018	2017
Sales:			
Cubic Transportation Systems	\$ 849.8	\$ 670.7	\$ 578.6
Cubic Mission Solutions	328.8	207.0	168.9
Cubic Global Defense	317.9	325.2	360.2
Total sales	<u>\$ 1,496.5</u>	<u>\$ 1,202.9</u>	<u>\$ 1,107.7</u>
Operating income (loss):			
Cubic Transportation Systems	\$ 77.2	\$ 60.4	\$ 39.8
Cubic Mission Solutions	7.8	(0.1)	(9.3)
Cubic Global Defense	23.0	16.6	28.1
Unallocated corporate expenses	(21.8)	(52.5)	(56.0)
Total operating income	<u>\$ 86.2</u>	<u>\$ 24.4</u>	<u>\$ 2.6</u>
Assets:			
Cubic Transportation Systems	\$ 825.8	\$ 390.2	\$ 335.1
Cubic Mission Solutions	437.9	352.9	390.5
Cubic Global Defense	394.2	360.1	280.1
Corporate	189.3	201.7	156.4
Discontinued Operations	—	—	174.2
Total assets	<u>\$ 1,847.2</u>	<u>\$ 1,304.9</u>	<u>\$ 1,336.3</u>
Depreciation and amortization:			
Cubic Transportation Systems	\$ 30.7	\$ 12.0	\$ 8.8
Cubic Mission Solutions	23.3	22.4	23.8
Cubic Global Defense	6.8	8.5	10.4
Corporate	3.9	3.7	5.0
Total depreciation and amortization	<u>\$ 64.7</u>	<u>\$ 46.6</u>	<u>\$ 48.0</u>
Capital expenditures:			
Cubic Transportation Systems	\$ 6.6	\$ 3.2	\$ 6.9
Cubic Mission Solutions	11.1	2.1	1.7
Cubic Global Defense	4.5	9.4	5.9
Corporate	26.9	17.0	22.4
Total expenditures for long-lived assets	<u>\$ 49.1</u>	<u>\$ 31.7</u>	<u>\$ 36.9</u>
Years ended September 30,			
Long-lived assets, net:			
United States	\$ 128.4	\$ 106.7	\$ 100.6
United Kingdom	5.9	5.7	11.7
Other foreign countries	10.7	12.0	7.3
Total long-lived assets, net	<u>\$ 145.0</u>	<u>\$ 124.4</u>	<u>\$ 119.6</u>

CGD and CMS segment sales include \$468.8 million, \$365.8 million and \$327.8 million in 2019, 2018 and 2017, respectively, of sales to U.S. government agencies. CTS segment sales include \$158.5 million and \$147.3 million in 2018 and 2017, respectively, of sales under various contracts with our customer, Transport for London. No other customer accounts for 10% or more of our revenues for any periods presented.

Disaggregation of Total Net Sales: We disaggregate our sales from contracts with customers by end customer, contract type, deliverable type and revenue recognition method for each of our segments, as we believe these factors affect the nature, amount, timing, and uncertainty of our revenue and cash flows.

Sales by Geographic Region (in millions):

	Years Ended September 30,		
	2019	2018	2017
United States	\$ 956.6	\$ 627.8	\$ 522.8
United Kingdom	218.2	240.7	219.4
Australia	163.5	166.7	175.6
Far East/Middle East	74.0	86.4	112.7
Other	84.2	81.3	77.2
Total sales	<u>\$ 1,496.5</u>	<u>\$ 1,202.9</u>	<u>\$ 1,107.7</u>

Sales by End Customer: We are the prime contractor for the vast majority of our sales. The table below presents total net sales disaggregated by end customer (in millions):

	Years Ended September 30,		
	2019	2018	2017
U.S. Federal Government and State and Local Municipalities	\$ 938.8	\$ 639.5	\$ 522.6
Other	557.7	563.4	585.1
Total sales	<u>\$ 1,496.5</u>	<u>\$ 1,202.9</u>	<u>\$ 1,107.7</u>

Sales by Contract Type: Substantially all of our contracts are fixed-price type contracts. Sales included in Other contract types represent cost plus and time and material type contracts.

On a fixed-price type contract, we agree to perform the contractual statement of work for a predetermined sales price. On a cost-plus type contract, we are paid our allowable incurred costs plus a profit which can be fixed or variable depending on the contract's fee arrangement up to predetermined funding levels determined by the customer. On a time-and-material type contract, we are paid on the basis of direct labor hours expended at specified fixed-price hourly rates (that include wages, overhead, allowable general and administrative expenses and profit) and materials at cost. The table below presents total net sales disaggregated by contract type (in millions):

	Years Ended September 30,		
	2019	2018	2017
Fixed Price	\$ 1,452.4	\$ 1,146.2	\$ 1,036.9
Other	44.1	56.7	70.8
Total sales	<u>\$ 1,496.5</u>	<u>\$ 1,202.9</u>	<u>\$ 1,107.7</u>

Sales by Deliverable Type: The table below presents total net sales disaggregated by the type of deliverable, which is determined by us at the performance obligation level (in millions):

	Years Ended September 30,		
	2019	2018	2017
Product	\$ 1,011.1	\$ 704.9	\$ 681.6
Service	485.4	498.0	426.1
Total sales	\$ 1,496.5	\$ 1,202.9	\$ 1,107.7

Revenue Recognition Method: The table below presents total net sales disaggregated based on the revenue recognition method applied (in millions):

	September 30,
	2019
Point in Time	\$ 347.4
Over Time	1,149.1
Total sales	\$ 1,496.5

NOTE 19—RESTRUCTURING

In 2019, we initiated projects to restructure and modify our supply chain strategy, functional responsibilities, methods, capabilities, processes and rationalize suppliers with the goal of reducing ongoing costs and increasing the efficiencies of our worldwide procurement organization. The majority of the costs associated with these restructuring activities are related to consultants that we have engaged in connection with these efforts, and such costs have been recognized by our corporate entity. The total costs of this restructuring project are expected to exceed amounts incurred to date by \$0.9 million and these efforts are expected to be completed early in fiscal 2020. Also, in fiscal 2019 our CTS and CGD segments incurred restructuring charges, consisting primarily of employee severance costs related to headcount reductions initiated to optimize our cost positions. The total costs of each of these restructuring plans initiated thus far are not expected to be significantly greater than the charges incurred to date.

Our fiscal 2018 restructuring activities related primarily to expenses incurred by our corporate entity to establish a North American shared services center. Our fiscal 2017 restructuring activities included corporate efforts to increase the centralization and efficiency of our manufacturing processes, as well as restructuring charges incurred by our CGD businesses related to the elimination of a level of management in the CGD simulator business.

Restructuring charges incurred by our business segments were as follows (in millions):

	Years Ended September 30,		
	2019	2018	2017
Restructuring costs:			
Cubic Transportation Systems	\$ 3.2	\$ 0.4	\$ 0.4
Cubic Mission Solutions	—	0.2	—
Cubic Global Defense	3.3	1.3	0.9
Unallocated corporate expenses	8.9	3.1	1.0
Total restructuring costs	\$ 15.4	\$ 5.0	\$ 2.3

The following table presents a rollforward of our restructuring liability as of September 30, 2019, which is included within accrued compensation and other current liabilities within our Consolidated Balance Sheet, (in millions):

	Restructuring Liability	
	Employee Separation and other	Consulting Costs
Balance as of October 1, 2017	\$ 1.0	\$ —
Accrued costs	4.2	0.8
Cash payments	(4.6)	(0.5)
Balance as of September 30, 2018	\$ 0.6	\$ 0.3
Accrued costs	7.5	7.9
Cash payments	(6.1)	(7.4)
Balance as of September 30, 2019	\$ 2.0	\$ 0.8

Certain restructuring costs are based upon estimates. Actual amounts paid may ultimately differ from these estimates. If additional costs are incurred or recognized amounts exceed costs, such changes in estimates will be recognized when incurred.

NOTE 20—SUMMARY OF QUARTERLY RESULTS OF OPERATIONS (UNAUDITED)

The following is a summary of our quarterly results of operations for the fiscal years ended September 30, 2019 and 2018:

Fiscal 2019	Three Months Ended				Year Ended September 30
	September 30	June 30	March 31	December 31	
	(in thousands, except per share data)				
Net sales	\$ 471,198	\$ 382,679	\$ 337,339	\$ 305,259	\$ 1,496,475
Operating income (loss)	58,619	34,725	(6,541)	(566)	86,237
Net income (loss)	41,763	23,910	(9,392)	(6,587)	49,694
Net income (loss) per share, basic	1.39	0.77	(0.30)	(0.23)	1.63
Net income (loss) per share, diluted	1.38	0.77	(0.30)	(0.23)	1.62

Fiscal 2018	Three Months Ended				Year Ended September 30
	September 30	June 30	March 31	December 31	
	(in thousands, except per share data)				
Net sales	\$ 379,709	\$ 296,212	\$ 278,586	\$ 248,391	\$ 1,202,898
Operating income (loss)	27,673	10,290	(1,679)	(11,902)	24,382
Net income (loss)	17,816	6,291	(2,011)	(9,786)	12,310
Net income (loss) per share, basic	0.65	0.23	(0.07)	(0.36)	0.45
Net income (loss) per share, diluted	0.65	0.23	(0.07)	(0.36)	0.45

The following table summarizes the aggregate impact of net changes in contract estimates (amounts in thousands, except per share data):

	Three Months Ended September 30,	
	2019	2018
Operating income (loss)	\$ (1,420)	\$ (4,162)
Net income (loss) from continuing operations	(1,615)	(3,149)
Diluted earnings per share	(0.05)	(0.12)

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Shareholders of Cubic Corporation

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Cubic Corporation as of September 30, 2019 and 2018, and the related consolidated statements of operations, comprehensive income (loss), cash flows and changes in shareholders' equity for each of the three years in the period ended September 30, 2019, 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 as of September 30, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended September 30, 2019, 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 September 30, 2019, 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 November 20, 2019, expressed an unqualified opinion thereon.

Adoption of New Accounting Standard

As discussed in Notes 1 and 2 to the consolidated financial statements, the Company changed its method of accounting for recognizing revenue from contracts with customers in the year ended September 30, 2019 due to the adoption of ASU No. 2014-09, Revenue from Contracts with Customers, as amended (commonly known as Accounting Standards Codification (ASC) 606). See below for discussion of our related critical audit matter related to the adoption of ASC 606.

Basis for Opinion

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

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

Critical Audit Matters

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

Revenue Recognition – Percentage-of-Completion Method

Description of the Matter As more fully described in Note 1 of the financial statements, for those long-term fixed-price contracts for which control transfers over time, revenue is recognized based on the extent of progress towards completion of the performance obligation. The Company generally accounts for these contracts using the cost-to-cost measure of progress. Under the cost-to-cost measure of progress, the estimation of progress toward completion is subject to many variables and requires significant judgment.

Auditing the Company's estimate of total contract costs at completion is especially challenging due to the judgmental and subjective nature of the estimation of remaining costs to complete, including material, labor and subcontracting costs, among others, unique to each revenue arrangement. In particular, the significant estimation relates to management's judgment in estimating contract costs and evaluating changes in the estimates of costs at completion as circumstances change and as new information is received. The revisions in contract estimates can materially affect the Company's operating results.

How We Addressed the Matter in Our Audit We obtained an understanding, evaluated the design and tested the operating effectiveness of controls over the Company's revenue recognition review process including controls over management's review of the significant assumptions described above. For example, we tested controls over the development of the estimated costs to complete and the review of the estimates by management.

To test the estimate of contract costs to complete, our audit procedures included, among others, testing significant components of the estimate noted above, assessing the completeness of the cost estimates, reviewing changes in the estimates from previous periods and testing underlying data used by management. For example, our procedures included discussing program status with business segment personnel responsible for managing the contractual arrangements, observing project review meetings, inspecting evidence to support the assumptions made by management, performing analyses to compare estimates with historical actuals from similar completed projects, and evaluating the key assumptions utilized in development of the remaining contract costs to complete the arrangement. We also reviewed documentation of management's estimates through the reporting date for evidence of changes that would impact estimates as of the balance sheet date.

Business Combinations – Valuation of Acquired Intangible Assets

Description of the Matter As more fully discussed in Note 3 to the consolidated financial statements, during the year ended September 30, 2019 the Company completed its acquisitions of Advanced Traffic Solutions Inc. (Trafficware), GRIDSMART Technologies, Inc. (GRIDSMART), and Nuvotronics, Inc. (Nuvotronics) (collectively 'the acquired entities') for consideration of \$237.2 million, \$86.8 million, and \$66.8 million, respectively. The transactions were accounted for as business combinations.

Auditing the Company's accounting for its acquisitions of the acquired entities required significant auditor judgment due to the significant estimation uncertainty in determining the fair value of identified intangible assets, which primarily consisted of technology and customer relationships. The significant estimation uncertainty was primarily due to the complexity of the valuation models prepared by management to measure the fair value of the intangible assets and the sensitivity of the respective fair values to the significant underlying assumptions. The significant assumptions used to estimate the value of the intangible assets included discount rates, terminal growth rates, the weighted average cost of capital, and certain assumptions that form the basis of the internal rate of return (e.g., revenue growth rates, expenses, customer attrition rates, and technology replacement rates). These significant assumptions are especially challenging to audit as they are forward looking and could be affected by future economic and market conditions.

How We Addressed the Matter in Our Audit

We obtained an understanding, evaluated the design and tested the operating effectiveness of the Company's internal controls over its valuation of acquired intangible assets. Our tests included controls over the estimation process supporting the recognition and measurement of technology and customer-related intangible assets. We also tested controls around management's review of assumptions used in the valuation models.

To test the estimated fair value of the technology and customer-related intangible assets, we performed audit procedures that included, among other things, evaluating the Company's selection of the valuation methodology, evaluating the methods and significant assumptions used by the Company, and evaluating the completeness and accuracy of the underlying data supporting the significant assumptions and estimates. We involved our valuation specialists to assist with our evaluation of the methodology used by the Company and significant assumptions included in the fair value estimates. For example, our valuation specialists performed independent comparative calculations to estimate the acquired entity's weighted average cost of capital. Additionally, we compared the Company's revenue growth rates to historical actuals, to selected guideline company growth rates in the industry, and to third party analyst expectations for the industry overall.

ASC 606 Revenue from Contracts with Customers Adoption

Description of the Matter

As discussed above and in Notes 1 and 2 of the consolidated financial statements, the Company adopted ASC 606 using the modified retrospective method as of October 1, 2018. The adoption of ASC 606 resulted in a change in significant accounting policy regarding revenue recognition and resulted in changes in accounting policies regarding contract estimates, backlog, inventory, contract assets, long-term capitalized contract costs, and contract liabilities. Implementation required the Company to re-evaluate each of its contracts to determine if there was a change under the new standard.

Auditing the Company's adoption of ASC 606 was especially challenging due to the complex nature of the implementation. In particular, there was complexity resulting from the number of contracts reviewed by management as part of the process and the judgments required to be made during this review, and the materiality of the cumulative adjustment recorded.

How We Addressed the Matter in Our Audit

We obtained an understanding, evaluated the design and tested the operating effectiveness of controls over the Company's adoption of ASC 606 process including controls over management's identification of revenue streams, development of accounting policies for each revenue stream, and computation of the transition adjustment.

To test the Company's adoption of ASC 606, our audit procedures included, among others, testing that revenue contracts were appropriately assigned into revenue streams to evaluate the appropriate revenue recognition model for the transition adjustment by selecting a sample of contracts and agreeing key terms to management's analysis. Additionally, we tested changes in the estimated transaction price, estimated costs, and revenue recognized due to implementing the new standard by selecting a sample of contracts and reperforming management's assessment. Our procedures also included evaluating management's identification and assessment of variable consideration and product or service performance obligations. Additionally, we recalculated the transition adjustment recorded by management.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 1959.

San Diego, CA

November 20, 2019

Item 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE.

None.

Item 9A. CONTROLS AND PROCEDURES

Evaluation of Controls and Procedures

We maintain disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as amended (the Exchange Act)) that are designed to ensure that information required to be disclosed in the reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC and is accumulated and communicated to management, including our Chief Executive Officer (CEO) and Chief Financial Officer (CFO), as appropriate, to allow timely decisions regarding required disclosure.

Management, with participation by our CEO and CFO, has designed our disclosure controls and procedures to provide reasonable assurance of achieving desired objectives. As of September 30, 2019, we carried out an evaluation, under the supervision of and with the participation of our management, including our CEO and CFO, of the effectiveness of the design and operation of our disclosure controls and procedures. Based on the evaluation, as of September 30, 2019, our CEO and CFO have concluded that our disclosure controls and procedures were effective.

Management's Report on Internal Control over Financial Reporting

Internal control over financial reporting refers to the process designed by, or under the supervision of, our CEO and CFO, and effected by our board of directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP, and 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 our assets; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with GAAP, and that our receipts and expenditures are being made only in accordance with authorizations of our management and directors; 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.

Management is responsible for establishing and maintaining adequate internal control over our financial reporting (as defined in Exchange Act Rule 13a-15(f)). In order to evaluate the effectiveness of internal control over financial reporting, as required by Section 404 of the Sarbanes-Oxley Act, under the supervision of and with the participation of our management, including our CEO and CFO, we conducted an assessment based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Our system of internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP. 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.

As permitted by SEC rules, management's assessment of and conclusion on the effectiveness of internal controls over financial reporting excludes an evaluation of the design and operation of internal controls of Advanced Traffic Solutions, GRIDSMART, and Nuvotronics, which we acquired in 2019 and are included in the 2019 consolidated financial statements of the Company and constituted 5.1% and 2.8% of total and net assets, excluding the preliminary value of goodwill and purchased intangibles, respectively, as of September 30, 2019 and 5.8% and 13.5% of revenues and net income attributable to Cubic, respectively, for the year then ended.

Based on our evaluation, management has concluded that our internal control over financial reporting was effective as of September 30, 2019.

The effectiveness of our internal control over financial reporting as of September 30, 2019 has been audited by Ernst & Young LLP, an independent registered public accounting firm, as stated in their report which follows.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting during the quarter ended September 30, 2019 that have materially affected or are reasonably likely to materially affect our internal control over financial reporting.

In the first quarter of fiscal 2020 we will adopt ASU 2016-02, *Leases* (commonly referred to as ASC 842), which was issued by the Financial Accounting Standards Board in February 2016. ASC 842 outlines a comprehensive lease accounting model and supersedes the current lease accounting guidance. Under the new guidance, lessees will be required to recognize a right-of-use asset which represents the lessee's right to use, or control the use of, a specific asset and a lease liability which represents the obligation to make lease payments, for all leases for the lease term. Adoption of the new guidance will affect the balance sheet presentation and expense recognition related to our leases. In fiscal 2019 we designed modifications to our existing internal controls infrastructure, as well as added other processes and internal controls, in order to monitor the transition to the new lease accounting guidance and adherence with the guidance on an ongoing basis. These process and control enhancements are being implemented in the first quarter of fiscal 2020.

Item 9B. OTHER INFORMATION

None.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Shareholders of Cubic Corporation

Opinion on Internal Control over Financial Reporting

We have audited Cubic Corporation's internal control over financial reporting as of September 30, 2019, 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, Cubic Corporation (the Company) maintained in all material respects, effective internal control over financial reporting as of September 30, 2019, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of September 30, 2019 and 2018, and the related consolidated statements of operations, comprehensive income (loss), cash flows and changes in shareholders' equity for each of the three years in the period ended September 30, 2019, and the related notes, and our report dated November 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.

As indicated in the accompanying Management's Report on Internal Control over Financial Reporting, management's assessment of and conclusion on the effectiveness of internal control over financial reporting did not include the internal controls of Advanced Traffic Solutions, GRIDSMART or Nuvotronics, which are included in the 2019 consolidated financial statements of the Company and constituted 5.2% and 2.8% of total and net assets, respectively, excluding the preliminary value of goodwill and purchased intangibles, as of September 30, 2019 and 5.8% and 13.5% of revenues and net income attributable to Cubic, respectively, for the year then ended. Our audit of internal control over financial reporting of the Company also did not include an evaluation of the internal control over financial reporting of Advanced Traffic Solutions, GRIDSMART or Nuvotronics.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

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

detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

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

/s/ Ernst & Young LLP

San Diego, California

November 20, 2019

PART III

Item 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE.

Information regarding directors and executive officers and corporate governance will be included in our definitive Proxy Statement to be filed with the SEC in connection with our 2019 Annual Meeting of Shareholders (the Proxy Statement), and is incorporated herein by reference.

We have adopted a code of ethics that applies to our principal executive officer, principal financial officer, principal accounting officer, controller and persons performing similar functions, which appears on our website at: <http://www.cubic.com/corp1/invest/governance.html>. We intend to disclose future amendments to certain provisions of our code of ethics, or waivers of such provisions granted to one of these specified officers, on our website within four business days following the date of such amendment or waiver.

Item 11. EXECUTIVE COMPENSATION.

Information regarding executive compensation will be included in the Proxy Statement, and is incorporated herein by reference.

Item 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS.

Information regarding security ownership of certain beneficial owners and management and related stockholder matters will be included in the Proxy Statement, and is incorporated herein by reference.

Item 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE.

Information regarding certain relationships and related transactions, and director independence will be included in the Proxy Statement, and is incorporated herein by reference.

Item 14. PRINCIPAL ACCOUNTING FEES AND SERVICES.

Information regarding principal accounting fees and services will be included in the Proxy Statement, and is incorporated herein by reference.

PART IV

Item 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) Documents filed as part of this Report:

(1) The following consolidated financial statements of Cubic Corporation, as referenced in Item 8 of this Form 10-K:

Consolidated Statements of Operations Years ended September 30, 2019, 2018 and 2017	68
Consolidated Statements of Comprehensive Income Years ended September 30, 2019, 2018 and 2017	69
Consolidated Balance Sheets September 30, 2019 and 2018	70
Consolidated Statements of Cash Flows Years ended September 30, 2019, 2018 and 2017	72
Consolidated Statements of Changes in Shareholders' Equity Years ended September 30, 2019, 2018 and 2017	74
Notes to Consolidated Financial Statements September 30, 2019	75

(2) The following consolidated financial statement schedules of Cubic Corporation and subsidiaries:

None are required under the applicable accounting rules and regulations of the SEC.

- (b) Exhibits:
- 2.1 Stock Purchase Agreement dated April 18, 2018, by and among Nova Global Supply & Services, LLC, Cubic Corporation and Cubic Global Defense, Inc. Incorporated by reference to Form 8-K filed April 19, 2018, file No. 001-08931, Exhibit 2.1.
 - 3.1 Amended and Restated Certificate of Incorporation. Incorporated by reference to Form 8-K filed February 19, 2019, file No. 001-08931, Exhibit 3.1.
 - 3.2 Amended and Restated Bylaws. Incorporated by reference to Form 8-K filed November 14, 2018, file No. 001-08931, Exhibit 3.1.
 - 4.1 Form of Common Stock Certificate. Incorporated by reference to Form 10-K for the fiscal year ended September 30, 2012, file No. 001-08931, Exhibit 4.1.
 - 10.1* Amended and Restated Cubic Corporation 2015 Incentive Award Plan. Incorporated by reference to Appendix B to the Definitive Proxy Statement on Schedule 14A filed on January 18, 2019, file No. 001-08931.
 - 10.2* Cubic Corporation Employee Stock Purchase Plan. Incorporated by reference to Appendix B to the Definitive Proxy Statement on Schedule 14A filed on January 13, 2015, file No. 001-08931.
 - 10.3* Form of Time-Based Vesting Restricted Stock Unit Award Grant Notice and Award Agreement under the Cubic Corporation 2015 Incentive Award Plan (for awards granted prior to fiscal year 2020). Incorporated by reference to Form 10-Q for the quarter ended December 31, 2016, file No. 001-08931, Exhibit 10.1.
 - 10.4* Form of Performance-Based Vesting Restricted Stock Unit Award Grant Notice and Award Agreement under the Cubic Corporation 2015 Incentive Award Plan (for awards granted during fiscal year 2019). Incorporated by reference to Form 10-Q for the quarter ended December 31, 2018, file No. 001 08931, Exhibit 10.1.
 - 10.5* Form of Non-Employee Director Restricted Stock Unit Award Grant Notice and Award Agreement under the Cubic Corporation 2015 Incentive Award Plan (for awards granted prior to fiscal year 2020). Incorporated by reference to Form 10-K for the fiscal year ended September 30, 2015, file No. 001-08931, Exhibit 10.5.
 - 10.6* Form of Stock Payment Award under the Amended and Restated Cubic Corporation 2015 Incentive Award Plan. Incorporated by reference to Form 10-Q for the quarter ended March 31, 2019, file No. 001-08931, Exhibit 10.2.
 - 10.7* Amended Transition Protection Plan. Incorporated by reference to Form 10-K for the year ended September 30, 2015, file No. 001-08931, Exhibit 10.6.
 - 10.8* Amendment to Transition Protection Plan, dated May 1, 2018. Incorporated by reference to Form 10-Q for the quarter ended March 31, 2018, file No. 001-08931, Exhibit 10.2.
 - 10.9* Management Incentive Bonus Plan. Incorporated by reference to Form 10-Q for the quarter ended December 31, 2018, file No. 001-08931, Exhibit 10.2.
 - 10.10* Severance Policy for Cubic Employees. Incorporated by reference to Form 10-Q for the quarter ended December 31, 2015, file No. 001-08931, Exhibit 10.2.
 - 10.11* Employment Offer Letter dated June 7, 2017, by and between Cubic Corporation and Anshooman Aga. Incorporated by reference to Form 10-K for the year ended September 30, 2017, file No. 001-08931, Exhibit 10.24.
 - 10.12* Amended and Restated Deferred Compensation Plan dated January 1, 2013. Incorporated by reference to Form 10-Q for the quarter ended December 31, 2012, file No. 001-08931, Exhibit 10.1.
 - 10.13* Indemnity Agreement. Incorporated by reference to Form 8-K filed May 6, 2010, file No. 001-08931, Exhibit 10.1.
 - 10.14 Amended and Restated Note Purchase and Private Shelf Agreement (including the forms of the notes issued thereunder), dated as of February 2, 2016, by and among Cubic Corporation, the Guarantors (as defined therein), PGIM, Inc. and the other purchasers party thereto. Incorporated by reference to Form 8-K filed February 3, 2016, file No. 001-08931, Exhibit 10.2.
 - 10.15 Second Amended and Restated Note Purchase and Private Shelf Agreement (including the forms of the notes issued thereunder), dated as of August 11, 2016, by and among Cubic Corporation, the Guarantors (as defined therein), PGIM, Inc. and the other purchasers party thereto. Incorporated by reference to Form 8-K filed August 11, 2016, file No. 001-08931, Exhibit 10.2.
 - 10.16 First Amendment of Second Amended and Restated Note Purchase and Private Shelf Agreement, dated as of May 4, 2017, by and among Cubic Corporation, PGIM, Inc. and the other purchasers party thereto. Incorporated by reference to Form 10-Q for the quarter ended March 31, 2017, file No. 001-08931, Exhibit 10.2.

- 10.17* Construction and Development Agreement, dated as of February 5, 2010, between Cubic Corporation and Bankers Commercial Corporation. Incorporated by reference to Form 10-Q for the quarter ended March 31 2019, file No. 001-08931, Exhibit 10.3.
- 10.18 Ground Lease, dated as of February 5, 2019, between Cubic Corporation and Bankers Commercial Corporation. Incorporated by reference to Form 10-Q for the quarter ended March 31, 2019, file No. 001-08931, Exhibit, 10.4.
- 10.19 Lease Agreement, dated as of February 5, 2019, between Cubic Corporation and Bankers Commercial Corporation. Incorporated by reference to Form 10-Q for the quarter ended March 31, 2019, file No. 001-08931, Exhibit, 10.5.
- 10.20 Participation Agreement, dated as of February 5, 2019, between Cubic Corporation and Bankers Commercial Corporation, MUFG Bank, LTD and MUFG Union Bank, N.A. Incorporated by reference to Form 10-Q for the quarter ended March 31, 2019, file No. 001-08931, Exhibit, 10.6.
- 10.21 Memorandum of Lease, Fee and Leasehold Deed of Trust, Assignment of Leases and Rents, Security Agreement and Fixture Filing, dated as of February 5, 2019, by and among Cubic Corporation, Bankers Commercial Corporation Chicago Title Company, as deed of trust trustee for the benefit of MUFG Union Bank, N.A. Incorporated by reference to Form 10-Q for the quarter ended March 31, 2019, file No. 001-08931, Exhibit, 10.7.
- 10.22 Fourth Amended and Restated Credit Agreement, dated as of April 30, 2019, by and among Cubic Corporation, JP Morgan Chase Bank, N.A (as administrative agent) and the other lenders party thereto. Incorporated by reference to Form 10-Q for the quarter ended March 31, 2019, file No. 001-08931, Exhibit, 10.8.
- 10.23 Receivables Purchase Agreement, dated as of September 16, 2018, between Cubic Corporation and Bank of the West.
- 10.24 Account Purchase Agreement, dated as of September 27, 2019 between GATR Technologies Inc. and Wells Fargo Bank, N.A.
- 21.1 List of Subsidiaries.
- 23.1 Consent of Independent Registered Public Accounting Firm.
- 31.1 Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
- 31.2 Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
- 32.1 Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350.
- 32.2 Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350.
- 101 Financial statements from the Cubic Corporation Annual Report on Form 10-K for the year ended September 30, 2019, formatted in Inline Extensible Business Reporting Language (iXBRL): (i) Consolidated Statements of Operations, (ii) Consolidated Statements of Comprehensive Income , (iii) Consolidated Balance Sheets, (iv) Consolidated Statements of Cash Flows, (v) Consolidated Statement of Changes in Shareholders' Equity, and (vi) notes to Consolidated Financial Statements.
- 104 Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).

* Indicates management contract or compensatory plan or arrangement

Item 16. FORM 10-K SUMMARY

None

SIGNATURES

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

(Registrant) CUBIC CORPORATION

<u>11/20/19</u>	<u>/s/ Bradley H. Feldmann</u>
Date	BRADLEY H. FELDMANN, Chairman of the Board, President and Chief Executive Officer

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

<u>11/20/19</u>	<u>/s/ Bradley H. Feldmann</u>
Date	BRADLEY H. FELDMANN, Chairman of the Board, President and Chief Executive Officer, Director (Principal Executive Officer)

<u>11/20/19</u>	<u>/s/ David F. Melcher</u>
Date	DAVID F. MELCHER, Lead Independent Director

<u>11/20/19</u>	<u>/s/ Anshooman Aga</u>
Date	ANSHOOMAN AGA, Executive Vice President and Chief Financial Officer (Principal Financial Officer)

<u>11/20/19</u>	<u>/s/ Mark A. Harrison</u>
Date	MARK A. HARRISON, Senior Vice President and Chief Accounting Officer (Principal Accounting Officer)

<u>11/20/19</u>	<u>/s/ Bruce G. Blakley</u>
Date	BRUCE G. BLAKLEY, Director

<u>11/20/19</u>	<u>/s/ Janice M. Hamby</u>
Date	JANICE M. HAMBY, Director

<u>11/20/19</u>	<u>/s/ Prithviraj Banerjee</u>
Date	PRITHVIRAJ BANERJEE, Director

<u>11/20/19</u>	<u>/s/ Steven J. Norris</u>
Date	STEVEN J. NORRIS, Director

<u>11/20/19</u>	<u>/s/ Maureen Breakiron-Evans</u>
Date	MAUREEN BREAKIRON-EVANS, Director

<u>11/20/19</u>	<u>/s/ John H. Warner</u>
Date	JOHN H. WARNER, Director

SUBSIDIARY CORPORATIONS OF CUBIC CORPORATION
PLACE OF INCORPORATION AND PERCENTAGE OWNED

<u>Subsidiary</u>	<u>Place of Incorporation</u>	<u>Percentage Owned</u>
CTS — NORDIC AKTIEBOLAG	Sweden	100%
CUBIC (UK) LIMITED	United Kingdom	100%
CUBIC DE MEXICO, S.A de C.V.	Mexico	100%
CUBIC DEFENCE AUSTRALIA PTY LIMITED	Australia	100%
CUBIC DEFENCE NEW ZEALAND LIMITED	New Zealand	100%
CUBIC DEFENCE UK LTD	United Kingdom	100%
CUBIC DEFENSE APPLICATIONS, INC.	California	100%
CUBIC DEFENSE WLL	Qatar	49%
CUBIC DEFENSE DOHA FOR TRADING AND CONTRACTING WLL	Qatar	49%
CUBIC FIELD SERVICES CANADA LIMITED	Canada	100%
CUBIC HOLDINGS LTD.	New Zealand	100%
CUBIC ITALIA S.R.L.	Italy	100%
CUBIC ITS, INC.	Texas	100%
CUBIC SURFACE TRANSPORTATION SYSTEMS LIMITED	United Kingdom	100%
CUBIC TECHNOLOGIES DENMARK APS	Denmark	100%
CUBIC TECHNOLOGIES SINGAPORE PTE LTD	Singapore	100%
CUBIC TRANSPORTATION SYSTEMS (AUSTRALIA) PTY LIMITED	Australia	100%
CUBIC TRANSPORTATION SYSTEMS (DEUTSCHLAND) GmbH	Germany	100%
CUBIC TRANSPORTATION SYSTEMS (INDIA) PVT LIMITED	India	100%
CUBIC TRANSPORTATION SYSTEMS CANADA, LTD	Canada	100%
CUBIC TRANSPORTATION SYSTEMS LIMITED	United Kingdom	100%
CUBIC TRANSPORTATION SYSTEMS, INC.	California	100%
EMIRATES TRAINING TECHNOLOGY LLC	UAE	49%
GATR TECHNOLOGIES, INC.	Alabama	100%

<u>Subsidiary</u>	<u>Place of Incorporation</u>	<u>Percentage Owned</u>
GRIDSMART TECHNOLOGIES, INC.	Delaware	100%
ISR SYSTEMS, INC.	Delaware	100%
NUVOTRONICS, INC.	Delaware	100%

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the following Registration Statements:

- (1) Registration Statement (Form S-3 No. 333-226908) of Cubic Corporation,
- (2) Registration Statement (Form S-8 No. 333-233076) pertaining to the Cubic Corporation 2015 Incentive Award Plan,
- (3) Registration Statement (Form S-8 No. 333-204615) pertaining to the Cubic Corporation 2015 Incentive Award Plan and Cubic Corporation Employees Stock Purchase Plan,
- (4) Registration Statement (Form S-8 No. 333-187386) pertaining to the Cubic Corporation 2005 Equity Incentive Plan, Cubic Corporation Employees' Profit Sharing Plan and Cubic Applications, Inc. 401(k) Retirement Plan, and
- (5) Registration Statement (Form S-8 No. 333-127493) pertaining to the Cubic Corporation Employees' Profit-Sharing Plan, the Cubic Applications, Inc. 401(k) Retirement Plan and the Cubic Corporation 1998 Stock Option Plan;

of our reports dated November 20, 2019, with respect to the consolidated financial statements of Cubic Corporation and the effectiveness of internal control over financial reporting of Cubic Corporation included in this Annual Report (Form 10-K) of Cubic Corporation for the year ended September 30, 2019.

/s/ Ernst & Young LLP

San Diego, California
November 20, 2019

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER PURSUANT TO SECTION 302 OF THE SARBANES-
OXLEY ACT OF 2002**

I, Bradley H. Feldmann, certify that:

1. I have reviewed this annual report on Form 10-K of Cubic Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ Bradley H. Feldmann

Bradley H. Feldmann

President and Chief Executive Officer

Date: November 20, 2019

**CERTIFICATION OF CHIEF FINANCIAL OFFICER PURSUANT TO SECTION 302 OF THE SARBANES-
OXLEY ACT OF 2002**

I, Anshooman Aga, certify that:

1. I have reviewed this annual report on Form 10-K of Cubic Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ Anshooman Aga

Anshooman Aga
Executive Vice President and Chief Financial Officer

Date: November 20, 2019

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350**

The undersigned, in his capacity as an officer of Cubic Corporation (the “Registrant”) hereby certifies, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to such officer’s knowledge:

- (1) The annual report of the Registrant on Form 10-K for the period ended September 30, 2019, (the “Report”), which accompanies this certification, fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Registrant.

/s/ Bradley H. Feldmann

Bradley H. Feldmann

President and Chief Executive Officer

Date: November 20, 2019

**CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350**

The undersigned, in his capacity as an officer of Cubic Corporation (the “Registrant”) hereby certifies, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to such officer’s knowledge:

- (1) The annual report of the Registrant on Form 10-K for the period ended September 30, 2019, (the “Report”), which accompanies this certification, fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Registrant.

/s/ Anshooman Aga

Anshooman Aga

Executive Vice President and Chief Financial Officer

Date: November 20, 2019

Trademarks

The Cubic logo, NextCity™, NextBus®, NextTraining™, and NextMission™ are trademarks of Cubic.

Annual Report Design

Kramer Design | kramerdesign.com

This annual report contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 that are subject to the safe harbor created by such Act. Forward-looking statements include, among others, statements about our expectations regarding future events or our future financial and/or operating performance. These statements are often, but not always, made through the use of words or phrases such as “may,” “will,” “anticipate,” “estimate,” “plan,” “project,” “continuing,” “ongoing,” “expect,” “believe,” “intend,” “predict,” “potential,” “opportunity” and similar words or phrases or the negatives of these words or phrases. These statements involve risks, estimates, assumptions and uncertainties that could cause actual results to differ materially from those expressed in these statements. Please refer to the risk factors contained in our SEC filings available at www.sec.gov, including our most recent Annual Report on Form 10-K and Quarterly Reports on Form 10-Q, for some of the factors that may cause actual results to differ materially from those expressed in any forward-looking statements. You should not place undue reliance on any forward looking statements, which speak only as of the date hereof, and, except as required by law, we undertake no obligation to update any forward-looking statement to reflect events or circumstances after the date hereof.



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cubic.com