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

FORM 10-K

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

For the fiscal year ended December 31, 2018

Commission File Number: 001-31588

COMMUNICATIONS SYSTEMS, INC.

(Exact name of registrant as specified in its charter)

Minnesota	**41-0957999**
(State or other jurisdiction of incorporation or organization)	(Federal Employer Identification No.)

10900 Red Circle Drive, Minnetonka, MN 55343
(Address of principal executive offices and zip code)

Registrant's telephone number, including area code: (952) 996-1674

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

Title of each class	**Name of each exchange on which registered**
Common Stock, $.05 par value	**NASDAQ**
Preferred Stock Purchase Rights	

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 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 if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☒

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or 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 ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). YES ☐ NO ☒

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. ☐

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the Registrant was approximately $27,188,000 based upon the closing sale price of the Company's common stock on the Nasdaq Capital Market on June 30, 2018.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act. YES ☐ NO ☒

As of March 1, 2019 there were outstanding 9,171,913 shares of the Registrant's common stock.

Documents Incorporated by Reference: Portions of the Company's Proxy Statement for its Annual Meeting of Shareholders to be held on May 22, 2019 are incorporated by reference into Part III of this Form 10-K.

PART I

ITEM 1. BUSINESS

(a) GENERAL DEVELOPMENT OF BUSINESS

Communications Systems, Inc. (herein collectively referred to as "CSI," "our," "we" or the "Company") is a Minnesota corporation organized in 1969 that operates directly and through its subsidiaries located in the United States (U.S.) and the United Kingdom (U.K.). CSI is principally engaged through its Transition Networks, Inc. ("Transition Networks" or "Transition") subsidiary and business unit in the manufacture and sale of core media conversion products, Ethernet switches, and other connectivity and data transmission products, and through its Suttle, Inc. ("Suttle") subsidiary and business unit in the manufacture and sale of connectivity infrastructure products for broadband and voice communications. Through its JDL Technologies, Inc. ("JDL Technologies" or "JDL") business unit, CSI provides technology solutions including virtualization, managed services, wired and wireless network design and implementation, and hybrid cloud infrastructure and deployment. Through its Net2Edge Limited ("Net2Edge") U.K.-based business unit, the Company develops, manufactures and sells products that enable telecommunications carriers to connect legacy networks to high-speed services.

The Company maintains a website at www.commsystems.com. Our annual reports on Form 10-K, our quarterly reports on Form 10-Q and our periodic reports on Form 8-K (and any amendments to these reports) are available free of charge by linking from our website to the Securities and Exchange Commission website.

(b) FINANCIAL INFORMATION ABOUT INDUSTRY SEGMENTS

The Company classifies its businesses into the following four segments:

- *Transition Networks* designs and markets media conversion products, Ethernet switches, and other connectivity and data transmission products;
- *Suttle* manufactures connectivity infrastructure products for broadband and voice communications;
- *JDL Technologies* is an IT managed services provider and value-added reseller; and
- *Net2Edge* develops, manufactures and sells products to transmit packetized voice and data across networks and between copper-wired and fiber optic equipment.

Non-allocated general and administrative expenses are separately accounted for as "Other" in the Company's segment reporting. Intersegment revenues are eliminated upon consolidation. Further information regarding these segments, including customer and industry concentration, is set forth in Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" and in Note 11 of the Notes to Consolidated Financial Statements under Item 8.

(c) NARRATIVE DESCRIPTION OF BUSINESS

(1) <u>Information Regarding Business Segments</u>

(i) <u>Transition Networks, Inc.</u>

Transition Networks, Inc., based in Minnetonka, Minnesota, designs, assembles and markets media converters, NIDs, network interface cards (NICs), Ethernet switches, Small Form Factor Pluggable modules (SFP), and other connectivity products under the Transition Networks brand name. Transition sells its products through distributors, resellers, integrators, and original equipment manufacturers ("OEMs"). These media converters, NIDs, and Ethernet Switch products allow network operators to transmit voice and data across networks and between copper-wired and fiber-optic equipment. Sales by Transition Networks were $36,470,000 in 2018 compared to $38,541,000 in 2017. International sales accounted for 15% of Transition's sales, or $5,411,000 in 2018, compared to $7,280,000, or 19% of Transition's sales in 2017.

Products

Transition Networks designs, assembles and sells media converter devices, NIDs, Ethernet switches and other connectivity products that enable customers to transmit voice and data across networks and between systems using different types of media (for example, between copper and fiber). These products assist customers in resolving challenges in the areas of bandwidth constraints, security risks, and distance limitations as networks extend from local area to wide area networks and adapt to ever increasing end-user demands. As enterprise networks continue to change and evolve, our solutions enable customers to both integrate fiber optics into their existing infrastructure as their networks grow, and to extend advanced data services to their customers at remote locations, including supporting wireless networks and backhaul requirements. Many of our products incorporate features to perform advanced levels of fault management and diagnostics to troubleshoot fiber optic and copper network infrastructure. Our growing Power-over-Ethernet (PoE) products support remote devices such as cameras and wireless access points by passing electrical power along with data on Ethernet cabling, eliminating the need for local power in hard-to-reach locations.

Transition Networks products support a wide variety of protocols, including: 10 Gigabit Ethernet, Gigabit Ethernet, Fast Ethernet, Ethernet, T1/E1, T3/E3, DS1/DS3, RS232, RS485, OC3, OC12, among others. Transition Networks develops product hardware and software internally, and expenses the related costs as they are incurred. In connection with the sale of its hardware products, Transition Networks provides its customers with a variety of software management options including Network Management System (NMS) software for providing superior provisioning and monitoring of its Ethernet switches and other managed devices. Transition has been developing and marketing Ethernet-based networking products for over 30 years. Transition Networks continues to develop products that address the enterprise, service provider, industrial, government, and security markets. Increasingly, Transition Networks Power-over-Ethernet products are used in smart building environments, intelligent transportation applications, and in security and surveillance networks.

Manufacturing and Sources of Supply

Transition Networks uses contract manufacturers to manufacture its products in different geographical locations, in addition to OEM partners through which the Company sources product and markets under its own name. In 2018, 65% of the total value of Transition Networks' products was manufactured in or sourced from Asia, 27% was manufactured in the US, and the remaining 8% was produced in Mexico. Offshore sources of supply are subject to certain risks, including political risk.

Markets and Marketing

Transition Networks' products are used in a broad array of markets including federal government, enterprise, service provider, industrial, security and surveillance markets. Transition Networks has a broad customer base that uses its products in a variety of applications.

The line of Ethernet switches (both POE and non-POE) is used in last-mile access, backhaul, wiring closets and at end-user stations. These are sold into security networks, intelligent transportation applications, smart buildings, corporate enterprise networks and other Internet of Things applications domestically and abroad. The media conversion product line is used in several applications. The ION and Point System™ chassis-based modular systems are used primarily in telecommunications closets for high-density applications or when multiple protocols need to be supported. Stand-alone media converters are used typically at customer premises or for lower density applications. The Carrier Ethernet NID line of products addresses the high quality access requirements for both business services and wireless backhaul data communications and telecommunications applications.

Marketing primarily consists of direct marketing using a sales force, tradeshows, trade magazine advertising, on-line advertising, website, email, social media and public relations activities. Transition Networks also provides and participates in advertising and cooperative marketing campaigns with distribution partners.

The “Transition Networks” brand name is important to the Company’s business. The Company believes the Transition Networks name is well known in the marketplace and with trade advertising.

Research and Development

Transition Networks develops products for the federal government, enterprise, service provider, security and industrial markets. This includes developing converters for emerging protocols and existing protocols in new markets, as well as new industry standards. Some of these products include remote management devices built on the IEEE® 802.3AH, 802.3AG, ITU-T Y.1731 standards, Metro Ethernet Forum (MEF)® standards, and Power Over Ethernet devices based on the IEEE® 802.3AF and IEEE® 802.3AT standards. Some design efforts are paced by the development of critical components such as integrated circuits and optical transceivers.

Research and development consists primarily of designing, prototyping, and testing of equipment and supplies associated with developing new products and enhancing existing products. Research and development costs are expensed when incurred and were $2,664,000 in 2018 compared to $2,454,000 in 2017.

Transition Networks’ conducts its research and development operations in the United States, at its Minnetonka, Minnesota headquarters location. While this U.S. location has primary engineering and product development responsibility, Transition Networks occasionally uses third party design services and Original Design Manufacturers (“ODM”) to support specific product design requirements.

Competition

Transition Networks faces strong competition across its entire product line. A large number of competitors exist for high volume products in the Fast Ethernet and Gigabit Ethernet families, as well as the NIDs. Low-cost competitors from China and Taiwan are strongest in (i) Asian, (ii) European, Middle Eastern, and African (“EMEA”) and (iii) South American markets. Transition Networks also faces new competitors as it enters new markets for industrial products, security market, and higher performance devices for the service provider market.

Order Book

Outstanding customer orders for Transition Networks products were approximately $1,470,000 at March 1, 2019 and $2,607,000 at March 1, 2018. Transition Networks orders are fulfilled on a relatively short-term basis and therefore the Company does not consider the order book as a significant indicator of longer term future results.

(ii) Suttle, Inc.

Suttle, based in Minnetonka, Minnesota, manufactures and markets a broad range of products that support broadband and telephone service under the Suttle brand name in the United States and internationally. Products are deployed in the last mile of the carrier network as well as inside the premise/enterprise to meet the unique needs of hybrid/fiber/copper networks. The Company’s customer-oriented approach provides right-sized solutions that leverage existing infrastructure and protect investments as markets and technologies grow and change. With over 100 years of knowledge and experience, Suttle is a reliable partner, delivering innovative, flexible, easy-to-use solutions, lower cost of ownership, and solid customer support. The Company manufactures 71% of its products at its plant in Hector, Minnesota. The other 29% are purchased from offshore contract manufacturers. Segment sales were $23,410,000 in 2018 and $32,384,000 in 2017.

Products

Suttle’s products include Structured Cabling Products (enclosure systems to support premise distribution of broadband and other connectivity networks), FTTx Products (fiber optic management and connectivity solutions for access and premise networks), Modular Connecting Products (connecting products for copper telecommunications networks) and DSL Products (products that support broadband connectivity to copper networks).

Products for the Edge of the Network:

Suttle's solutions for the last mile of the carrier's network, i.e. the "Edge," are designed to operate in challenging environments yet be easily accessible, extend the life of the existing network, enhance data speeds, and prevent loss of bandwidth at the point of use.

Suttle products are designed to work indoor and outdoor and feature flexibility and scalability in real world applications for both copper and fiber networks. Suttle's FutureLink™ solutions offer a range of products, including terminals, as well as patch-and-splice and splitter enclosures.

Products for the Connected Home/Business:

Suttle sells service distribution products for cost-effective solutions using existing and new structured wiring. These products reduce installation time and labor costs, and increase the provider's return on investment. In addition to reducing a service provider's up-front costs, Suttle's high throughput solutions help eliminate potential bottlenecks to "future-proof" the installation, reducing future costs.

Suttle's MediaMAX™ brand products enable reliable brownfield and greenfield inside premise connectivity to meet the increasing demand for wired and wireless high-speed service throughout the home and business. Designed to optimize installation cost while maximizing coverage and bandwidth at the point of use for multiple deployment topologies, this brand includes a premise connectivity and distribution system, featuring plastic modular enclosures and tool-less, snap-in modules to minimize wireless interference. MediaMAX™ brand products replace Suttle's SOHO™ brand products, which had been Suttle's primary premise distribution products for approximately the last 10 years.

Another key feature of the MediaMAX brand products is installation cost and time saving tool-less technology available in jacks and modules. Rounding out the inside the premise/enterprise offering are faceplates and wall plates that accommodate hybrid/fiber, copper and coax connections for higher speed, tool-less connectivity and lower cost of ownership.

Markets and Marketing

Suttle markets its outside plant and premise distribution products globally to telecommunications companies, service providers, residential builders, and low-voltage installers through distributors and the Company' sales staff. Suttle has a solid history of offering long-term solutions to some of the largest global providers by understanding customers' needs and providing innovative solutions coupled with strong customer support. Suttle reaches its targeted customers through a variety of marketing media including trade shows, associations, advertising, social media, and the Suttle website, SuttleSolutions.com, which emphasizes our focus on end-to-end customer oriented solutions for communication service providers.

Customers

Suttle's customers include telephone, CATV, internet service providers, residential builders and contractors as well as enterprise networks. The Company's major telephone company customers include AT&T, CenturyLink and Verizon. Suttle serves these major telephone companies directly by Suttle's sales staff and through a select group of distributors. Sales (including DSL) to the major telephone companies, as a group, both directly and through distribution, represented 83% of Suttle's sales in 2018 and 90% in 2017.

Other customers include smaller telephone companies, electrical/low-voltage contractors, home builders, and a nationwide network of distributors. Suttle serves these customers primarily through distributors, but also directly through its sales staff. Sales to cable customers and OEMs are made through Suttle' nationwide network of distributors and through Suttle's sales staff. Sales to OEMs and other distributors were 9% of Suttle's sales in 2018 and 8% in 2017. Sales to international customers and other customers represented 8% of Suttle's sales in 2018 and 2% in 2017.

Competition

Suttle encounters strong competition in all its product lines and competes primarily on the basis of the broad lines of products offered, product performance, quality, price, delivery, and customer support. Some distributors of Suttle's products also market products for one or more of Suttle's competitors.

Manufacturing and Sources of Supply

Suttle manufactures its products using plastic or metal parts, wire sub-assemblies, fasteners, brackets, electronic circuit boards, and other components, most of which are fabricated by Suttle. There are multiple sources of supply for the materials and components and Suttle is not dependent upon any single supplier. Although Suttle has not generally experienced significant problems in obtaining its required supplies, from time to time it experiences spot shortages and longer order lead times are required from its offshore suppliers.

Research and Development

Suttle continually seeks to understand the needs of its customers and both develops new products for evolving customer requirements and enhances existing products to improve its existing product line. For competitive reasons, including duplication of its designs by foreign apparatus manufacturers, Suttle has adopted a policy to seek patent protection on innovative new products. Suttle filed five patent applications in 2016, filed two patent applications in 2017, and did not file for any patent applications in 2018.

Research and development consists primarily of designing, prototyping, and testing of equipment and supplies associated with developing new products and enhancing existing products. Research and development costs are expensed when incurred and were $244,000 in 2018 compared to $528,000 in 2017.

Suttle and Suttle Solutions are important trademarks. Suttle supports these brand names by trade advertising and believes they are well known in the marketplace. Other important trademarks include FutureLink™ brand for the last mile and MDU solutions; MediaMAX™ panels, modules, jacks and wall plates; SpeedStar™ for passive premise connectivity; and CorroShield® brand gel that prevents network corrosion.

Order Book

Suttle manufactures its products both on a make-to-order basis and on the basis of customer forecasts. Outstanding customer orders at March 1, 2019 were approximately $1,985,000 compared to approximately $2,849,000 at March 1, 2018. New orders are generally filled within 60 days. Suttle does not believe its order book is a significant indicator of longer term future results.

(iii) JDL Technologies, Inc.

JDL Technologies, Inc., based in Fort Lauderdale, Florida, is a managed service provider and value-added reseller supplying information technology ("IT") solutions focused on (a) IT managed services, which include (i) network design, deployment and integration; (ii) cloud hosted and virtualized services; and (iii) remote support and management from our managed services operation center and (b) project revenue which includes IT services project engagements. JDL's 2018 sales were $5,134,000 compared to 2017 sales of $11,210,000. Project revenue totaled $3,005,000 in 2018 or 59% of JDL sales compared to $8,532,000 in 2017 or 76% of JDL sales. Managed service revenues decreased to $2,129,000 in 2018 from $2,678,000 in 2017.

Markets and Marketing

JDL differentiates itself from its competitors by continuously adapting to changes in available IT services, ensuring it continues to provide new and innovative solutions to its clients and prospective clients. This ensures JDL remains well qualified to help clients with their use of technology and IT resources to meet business objectives and regulatory requirements.

JDL partners with clients to provide complete support for their information technology environments, from servers to software applications, from the network-level down to the desktop level. Under a typical managed services agreement, JDL maintains corporate IT, resolves issues, supports the client's user community, and adds value to the client's business by enabling the client to focus on its core competencies. JDL's key avenues for delivering on this commitment—and its competitive advantages—include JDL's on-premise managed services operations center and secure, state-of-the-art hosted datacenter. The managed services operations center leverages the best available tools, applications, practices and resources to deliver a consistent, quality customer experience. JDL holds the MSP Trustmark credential from CompTIA and is a member of the MSP Alliance.

JDL's portfolio of technology solutions reflects the regular introduction of new technologies and delivery methodologies and the increasing demand among businesses for innovative solutions to strengthen their competitive edge and address prevailing IT challenges. With its team of professionally certified engineers, more than 250 years of technical experience, and talented leadership, JDL Technologies develops IT solutions that effectively meet these demands. To sustain its leading-edge position, JDL also maintains robust partnerships with strategic manufacturers and is a 3CX VoIP Gold Partner, HP Enterprise Gold Partner, Microsoft Partner, eMDs Solution Provider and Citrix Solutions Service Provider.

Customers

In 2018, JDL Technologies aggressively targeted its primary vertical markets, healthcare and commercial business, through its JDL HealthTech™ and JDL TechWatch™ brands.

Healthcare:
Under the JDL HealthTech brand, JDL continues to serve as a trusted partner to its healthcare clients, offering an array of services that address HIPAA Security Rule and Privacy Rule compliance requirements, including its flagship cloud-based service, HIPAA FastTrack. JDL's managed services practice supports clients ranging from single-office providers, to multi-location regional specialists, to their regulated suppliers and business associates.

Commercial:
JDL Technologies provides support and service to a diverse commercial client set under its JDL TechWatch brand. In 2018, JDL placed increased emphasis on an expanded set of security solutions layered on top of its Cloud Based IT Managed Services. This enabled JDL to provide an even more secure total solution that included security awareness testing and training of client end users which is increasingly important as threats to an organizations security are focused more and more on end users as the weakest link.

Education:
JDL Technologies continues to support a multi-year project to provide wireless network services and datacenter upgrades for several hundred public K-12 schools in Florida. The education vertical remains an important element of JDL's overall market strategy.

Products and Services

As a managed service provider and value-added reseller, JDL Technologies specializes in delivering technology solutions that free organizations to focus on the strategic business activities critical to their financial success. JDL's technology solutions encompass an extensive range of networking, virtualization, cloud and infrastructure services, most of which are available under JDL managed services contracts. As technology continues its move to the cloud, JDL aggressively markets its portfolio of cloud-based service offerings to healthcare and commercial business. Its HIPAA FastTrack and Security FastTrack services, available in the JDL Cloud powered by Citrix, have won awards for product innovation, just as JDL Technologies has been recognized in the industry as a leading Managed Service Provider. JDL engineers are trained and certified in the newest cloud and other technology solutions.

Managed Services:
JDL Technologies continues to refine its Managed Services offering as the industry matures taking it from a traditional remote management model to a hosted service offering that grants JDL greater control, enables tighter service level agreements and increases margins. JDL serves a diverse base of clients with locations throughout the United States, offering managed service programs designed specifically for the healthcare and commercial markets. These robust programs meet HIPAA compliance standards and, while the majority of clients are supported remotely, independent of geographic borders, JDL is also able to provide on-site network management and help desk support for key enterprise clients in the South Florida and Atlanta, Georgia markets. JDL's managed services include network management, availability assurance, event alerting and incident management services; server, workstation, mobile device and other asset management services; security services including software patching, firewall, antivirus, antimalware and intrusion detection and prevention services; help desk support for client users; SIP trunking, voice over IP and office management services; migration, conversion and vendor management; and technical consulting services and training.

Cloud Solutions:
With widespread adoption of cloud solutions on the rise, JDL continues to focus on these solutions as our growth potential. Wireless as a service, infrastructure as a service, and Citrix as a service (sold as JDL FastTrack) are among JDL's the most successful cloud offerings, with others including backup, storage, voice over IP, firewall and email as cloud or hosted services. The benefits to clients are numerous and include vertical and horizontal scalability, internal bandwidth conservation, and simplification of IT management within client organizations, while JDL benefits from substantial economies of scale and standardization. All JDL cloud offerings are billable as monthly recurring revenue under its managed service model, and JDL is committed to bringing the benefits of cloud services to all clients.

Network Services:
JDL's roots are in network services, and these services remain central to its role as a managed service provider and value-added reseller. The JDL team has extensive experience and professional certifications in assessing, designing and implementing wired and wireless networks as well as entire technology infrastructures. Networking services also include network infrastructure as a service, network design and deployment, network and endpoint security, network tuning and device installation/configuration services.

Virtualization:
Using virtualization across an organization's IT environment delivers greater agility, mobility and efficiency. JDL's virtualization engineers assess, design, deploy, and manage virtualization programs that are designed to ensure user access to any workload, anytime, anywhere, on any device. JDL's virtualization services encompass desktops, servers, applications, storage, and any combination thereof, including connectivity and software licensing. As JDL clients continue to adopt virtualization, they experience the economies of scale, reduced capital requirements, enhanced security, and disaster recovery protections that are inherent in virtualized environments.

Competition

The Managed Services Market continues to promise significant growth over the next several years, making it a highly competitive industry. In response to these pressures, JDL's focus is to quickly adapt to the changing needs of its clients through the adoption and productizing of new IT Service technologies as they become available. An example of this would be the addition of several security services to the JDL portfolio in 2018 including end user phish training and assessment services, system vulnerability testing and Multifactor Authentication tools for securing application access. By ensuring JDL continuously evaluates the services we offer with a focus on the changing market, we are able to provide a better range of services to our clients and prospects while increasing their reliance upon us as their IT service provider.

Order Book

Outstanding customer orders and contracts for JDL products and services were approximately $1,203,000 at March 1, 2019 and $1,344,000 at March 1, 2018. The Company does not consider current outstanding orders and contracts as a significant indicator of longer term future results.

(iv) Net2Edge

Net2Edge Limited, based in Basingstoke, Hampshire, United Kingdom, designs, manufactures and markets Carrier Ethernet based Network Access Devices and software under the Liberator™ brand name. Net2Edge™ uses a direct sales model and also markets its products through approved partners and integrators. Net2Edge's physical products allow network operators to transmit packetized voice and data across networks and between copper-wired and fiber-optic equipment. Sales by Net2Edge were $1,700,000 in 2018 and $1,079,000 in 2017.

Products

Net2Edge designs, assembles and sells Ethernet based switches based around the international MEF standards. Those products range from legacy over packet interfaces such as Serial, TDM or ISDN and Native Ethernet from 1G to 10G. Net2Edge targets these products at telecommunications service providers as Network Interface Devices. By design, the products transmit data from the subscriber enterprise to the provider edge, usually a router. The products are sophisticated, carrying multiple services with definable quality of service metrics over fiber optic paths. These products assist in resolving challenges in the areas of bandwidth constraints, security risks, and distance limitations as networks extend from local area to wide area networks and adapt to ever increasing end-user demands. As enterprise networks continue to change and evolve, our solutions enable customers to integrate multiple services into their existing infrastructure. All Net2Edge products incorporate features for performing advanced levels of fault management and automated provisioning minimizing the administrative burden of the operator.

Net2Edge products support a wide variety of protocols, including: 10 Gigabit Ethernet, Gigabit Ethernet, Fast Ethernet, Ethernet, T1/E1, DS3, Circuit Emulation Services (TDM or ISDN over Ethernet or IP), RS232, RS485, OC3, OC12, GFast and more. Net2Edge develops product hardware and software internally, and expenses the related costs as they are incurred.

Manufacturing and Sources of Supply

Net2Edge uses contract manufacturers to manufacture its products in the UK. Because some of Net2Edge's offshore sources of supply are subject to risks, including political, communication and logistic risk, when possible, Net2Edge takes steps to ensure it has multiple suppliers to ensure business continuity.

Markets and Marketing

Net2Edge products are used in a broad array of market sectors including the Government, Enterprise, Utility, Industrial, and Surveillance markets. Net2Edge has a growing international customer base outside the United Kingdom and customers use its products in a variety of applications.

Net2Edge's marketing primarily consists of direct marketing using a sales force, tradeshows, trade magazine advertising, on-line advertising, website, email, social media, and public relations activities. Net2Edge also participates in advertising and cooperative marketing campaigns with its partners.

The Company's "Net2Edge" brand name is important to its business. The Company regularly supports this brand name by trade advertising and intends for it to become well known in the marketplace.

Research and Development

Net2Edge develops products for the service provider market including products for emerging protocols and existing protocols in new markets, as well as new industry standards. These products include remote management devices built on the IEEE® 802.3AH, 802.3AG, ITU-T Y.1731 standards, Metro Ethernet Forum ("MEF")® and MEF 2.0 standards. Some design efforts are paced by the development of critical components such as integrated circuits, System On Chip ("SOC") silicon and optical transceivers.

Research and development consists primarily of designing, prototyping, testing equipment and supplies associated with enhancing existing products and developing new products. Research and development costs are expensed when incurred and were $878,000 in 2018 and $657,000 in 2017.

Net2Edge conducts its research and development operations out of its Basingstoke, United Kingdom headquarters location. While this UK location has primary engineering and product development responsibility, Net2Edge will occasionally use third party design services and ODMs to support specific product design requirements.

Competition

Net2Edge faces strong competition across its entire product line. A large number of competitors exist for high volume products. There are low cost competitors from China and Taiwan and established competitors from the USA and Canada.

Order Book

Outstanding customer orders for Net2Edge products were approximately $1,105,000 at March 1, 2019 and $1,031,000 at March 1, 2018. Net2Edge orders are fulfilled on a relatively short-term basis and therefore the Company does not consider the order book as a significant indicator of longer term future results.

(2) Employment Levels

As of March 1, 2019 the Company employed 241 people. Of this number, 94 were employed by Suttle, 88 by Transition Networks, Inc., 23 by JDL Technologies, Inc., 19 by Net2Edge in the U.K., and 17 corporate general and administrative positions.

(3) Executive Officers of Registrant

The executive officers of the Company and their ages at March 1, 2019 are set forth below. See Item 9B of this Form 10-K for additional information on the Company's management.

Name	Age	Position[1]
Roger H.D. Lacey	68	Executive Chairman of the Company's Board and Chief Executive Officer[2]
Mark D. Fandrich	57	Group Business President, Treasurer and Chief Financial Officer [3]
Scott Otis	57	Group Business President & General Manager, Transition Networks, Inc. [4]
Scott Fluegge	49	President and General Manager, JDL Technologies, Inc [5]
Kristin A. Hlavka	37	Corporate Controller [6]

1 Additional footnotes indicate when officers began serving in their current capacity. Executive officers serve at the pleasure of the Board of Directors.

2 Mr. Lacey has served as the Company's Chief Executive Officer since February 2015 and has served as the Executive Chairman of the Company's Board of Directors since December 2018. Additional information about Mr. Lacey's background will be contained in the 2019 Proxy Statement.

3 Mr. Fandrich was appointed Chief Financial Officer in August 2016, and effective January 1 2019, was named Group President of the Suttle and JDL Technologies business segments. From July 2015 to August 2016, he served as Vice President of Finance of Suttle, Inc. From April 2004 to July 2015, he was Corporate Controller for The Bergquist Company, a global supplier of thermal interface material.

4 Mr. Otis was appointed General Manager of Transition Networks in September 2013, and effective January 1, 2019, was named Group President of the Transition Networks and Net2Edge operating segments. From December 2010 to June 2011 he served as Vice President, Operations - Professional Services for TE Connectivity, Inc. Prior to December 2010, he was the Vice President, Marketing and Business Development – ADC Professional Services.

5 Mr. Fluegge was appointed Vice President and General Manager of JDL Technologies in December 2011, and was named President and General Manager in September 2013. Prior to this, he was the Vice President of Workload Automation at GSS AMERICA / GSS INFOTECH / INFOSPECTRUM CONSULTING.

6 Ms. Hlavka was appointed Corporate Controller in May 2011. From July 2008 to April 2011, she served as the Assistant Corporate Controller. Prior to July 2008, she was an auditor for Deloitte and Touche LLP.

(d) FINANCIAL INFORMATION ABOUT FOREIGN AND DOMESTIC OPERATIONS AND EXPORT SALES

Financial information about domestic and foreign operations and export sales may be obtained by reference to Note 11 of the “Notes to Consolidated Financial Statements” under Item 8 herein.

ITEM 1A. RISK FACTORS

Forward Looking Statements

Certain statements contained in this Annual Report on Form 10-K are “forward-looking” statements within the meaning of and in reliance on the Private Securities Litigation Reform Act of 1995, which provides a “safe harbor” for forward-looking statements. Actual events and results may differ materially from those expressed or forecasted in forward-looking statements due to a number of factors. The principal important risk factors that could cause our actual performance and future events and actions to differ materially from these forward-looking statements include, but are not limited to, the risk factors discussed below.

Risks Related to Our Business

The primary markets we serve are highly competitive, and our ability to compete requires continual focus on delivering high-quality, competitively priced products and services and the regular introduction of new products and services that meet evolving customer requirements.

Competition in the markets for enterprise networks and voice and data communications products is intense. Our ability to compete with other manufacturers and marketers of these products depends primarily on our engineering, OEM/ODM relationships, manufacturing, and marketing skills; the price, quality and reliability of our products; our delivery and service capabilities; and our control of operating expenses. Our JDL subsidiary experiences intense competition from other providers of IT products and services. We have experienced, and anticipate continuing to experience, pricing pressures from our customers as well as our competitors. The markets we serve are characterized by rapid technological advances and evolving industry standards. These markets can be significantly affected by new product introductions and marketing activities of industry participants. Some of our current competitors and potential competitors have greater financial, technological, manufacturing, marketing, and personnel resources than we. These current and future competitors may be able to identify new markets and develop new products that are superior to those we develop. They may also adapt new technologies faster, devote greater resources to research and development, promote products more aggressively, and price products more competitively than we. We cannot ensure that competition will not intensify or that we will be able to compete effectively in the markets in which we compete.

Our gross margins have fluctuated year to year, and we face many challenges in maintaining acceptable margins.

Gross margins among our products and services vary and are subject to fluctuation from quarter to quarter and year to year. The factors that may affect our gross margins adversely are numerous and include:

- Changes in customer, geographic, or product mix;
- Our ability to reduce product costs
- Royalties related to technology licensing
- Increases in material or labor costs
- Expediting costs incurred to meet customer delivery requirements

- Excess inventory and inventory carrying charges
- Tariffs on imported products
- Obsolescence charges
- Changes in shipment volume
- Changes in component pricing
- Changes in OEM/ODM pricing
- Increased price competition
- Changes in distribution channels
- Lower margins on competitive-bid contracts
- Increased warranty cost and
- Our ability to manage the impact of foreign currency exchange rate fluctuations.

Consolidation among our customers has occurred and further consolidation may occur, resulting in the loss of some customers and reducing revenue during the pendency of business combinations and related integration activities.

We believe future consolidation may occur among our customers as they attempt to increase market share and achieve greater economies of scale. Consolidation has affected our business as our customers focus on completing business combinations and integrating their operations. In some instances, customers integrating large-scale acquisitions have reduced their purchases of our products as they integrate.

The business effect on us of significant customer mergers is likely to be unclear until sometime after these transactions are completed. After a consolidation occurs, a customer may choose to reduce the number of vendors from which it purchases equipment and may choose one of our competitors as its preferred vendor. We cannot ensure that we will continue to supply equipment to the surviving communications service provider after a business combination is completed.

We cannot guarantee the ability of the Special Committee of our Board of Directors to develop strategic options for the Company and the Company's ability to implement these strategies.

In May of 2018 the Company announced it had initiated a strategic review of the Company's businesses to explore opportunities for enhancing shareholder value and had engaged an investment banking firm to advise it in this process. Failure to develop a growth strategy and reduce its operating losses could result in continuing operating losses and lack of shareholder confidence, which could negatively impact cash flow and the trading price of our common stock.

Our information technology systems may be exposed to various cybersecurity risks and other disruptions that could impair our ability to operate, adversely affect our business, and damage our brand and reputation. Risks are particularly acute in the cloud-based technologies that we and other third parties operate and that form a part of our solutions.

We rely extensively on our information technology systems or on third-parties for services including our enterprise resource planning ("ERP") system, banking, payroll, shipping, and e-mail systems to conduct business. We also collect, store and transmit sensitive data, including proprietary business information and personally identifiable information of our customers, suppliers and employees.

Despite our investment in our information technology systems and data security program, the implementation of security measures to protect our data and infrastructure against breaches and other cyber threats, and our use of internal processes and controls designed to protect the security and availability of our systems, our information technology and communication systems may be vulnerable to cybersecurity risks such as computer viruses, hacking, malware, denial of service attacks, cyber terrorism, circumvention of security systems, malfeasance, breaches due to employee error, natural disasters, telecommunications failure, at our facilities or at third-party locations.

The General Data Protection Regulation, or GDPR, took effect on May 25, 2018, in the European Union and introduced direct compliance obligations for data controllers and data processors. National Data Protection Agencies, or NDPAs, are now able to impose fines for violations ranging from 2% to 4% of annual worldwide turnover, or 10 million to 20 million euro, whichever is greater. NDPAs have the power to carry out audits, request information, and obtain access to premises. Businesses must be able to demonstrate that the personal data of any data subject can be lawfully processed on one of the six specified grounds. The GDPR adopts a risk-based approach to compliance, under which businesses bear responsibility for assessing the degree of risk that their processing activities pose to data subjects. Businesses are required to perform data protection impact assessments before any processing that uses new technology and is likely to result in a high risk to data subjects. The GDPR requires businesses to maintain records of their processing activities. Clear rules around data breach notifications and the processing of personal data in such a manner that the personal data can no longer be attributed to a specific individual have been set out by the GDPR. In addition, under the GDPR, data subjects have new rights, for example, the right to request that businesses delete their personal data (the right to be forgotten); to object to their personal data being processed; and to obtain a copy of their personal data within a set time frame.

Complying with these varying requirements could cause us to incur substantial costs or require us to change our business practices in a manner adverse to our business. Any failure, or perceived failure, by us to comply with any regulatory requirements or international privacy or consumer protection-related laws and regulations could result in proceedings or actions against us by governmental entities or others, subject us to significant penalties and negative publicity and adversely affect us. In addition, as noted above, we are subject to the possibility of security breaches, which themselves may result in a violation of these laws.

Any failure, breach or unauthorized access to our or third-party systems could result in the loss of confidential, sensitive or proprietary information, interruptions in our service or production or otherwise our ability to conduct business operations, and could result in potential reductions in revenue and profits, damage to our reputation or liability. There can be no assurance that our protective measures will prevent or timely detect security breaches that could have a significant impact on our business, reputation, operating results and financial condition.

In addition, our JDL Technologies subsidiary provides IT services for the Company internally and for third party customers. As we continue to direct a portion of our JDL sales efforts toward Cloud solutions, we expect to store, convey and potentially process increasing amounts of data produced by customer devices. This data may include confidential or proprietary information, intellectual property or personally identifiable information of our customers or other third parties with whom they do business. It is important that we maintain solutions and related infrastructure that are perceived by our customers and other parties with whom we do business as providing a reasonable level of reliability and security. Despite any available security measures and other precautions that we deploy, the infrastructure and transmission methods we use directly or through third-parties, may be vulnerable to interception, attack or other disruptive problems. Continued high-profile data breaches at other companies evidence an external environment that is becoming increasingly hostile to information security. Improper disclosure of data or perception that our data security is insufficient could harm our reputation, give rise to legal proceedings, and subject our company to liability under laws that protect data, any of which could result in increased costs and loss of revenue.

If a cyberattack or other security incident were to allow unauthorized access to or modification of our customers' data or our own data, whether due to a failure with our systems or related systems operated by third parties, we could suffer damage to our brand and reputation. The costs we would incur to address and fix these incidents would increase our expenses. These types of security incidents could also lead to lawsuits, regulatory investigations and increased legal liability, including in some cases contractual costs related to customer notification and fraud monitoring. Further, as regulatory focus on privacy and data security issues continues to increase and worldwide laws and regulations concerning the protection of information become more complex, the potential risks and costs of compliance to our business will intensify.

Our financial results could be adversely affected if one or more of our key customers substantially reduces orders for our products.

Traditionally, we have derived a large portion of our revenues from a relatively small number of customers, with our top ten customers accounting for 65%, and 70% of net sales for 2018 and 2017, respectively. In fiscal 2018, one Transition Networks' customer accounted for 11% of consolidated sales. In fiscal 2018 and 2017, one Suttle customer accounted for approximately 10% of consolidated sales. In fiscal 2017, a JDL customer accounted for 9.9% of our consolidated sales. The loss of or a substantial reduction in purchases by any one or more of our top customers could have a material adverse effect on our business, financial position and results of operations.

Our market is subject to rapid technological change and, to compete effectively, we must continually introduce new products that achieve market acceptance.

The enterprise network and communications equipment industry is characterized by rapid technological changes, evolving industry standards, changing market conditions, short product life cycles, rapidly changing customer requirements, and frequent new product and service introductions and enhancements. The introduction of products using new technologies or the adoption of new industry standards can make our existing products, or products under development, obsolete or unmarketable. Our future success will depend on our ability to enhance our existing products, to introduce new products to meet changing customer requirements and emerging technologies, and to demonstrate the performance advantages and cost-effectiveness of our products over competing products. Our failure to modify our products to support new alternative technologies or failure to achieve widespread customer acceptance of these modified products could cause us to lose market share and cause our revenues to decline.

We may not predict technological trends or the success of new products in the enterprise network and communications equipment markets accurately. New product development often requires forecasting of market trends, development and implementation of new technologies and processes and capital commitments. We do not know whether other new products we develop will gain market acceptance or result in profitable sales.

Some competitors have greater engineering and product development resources. Although we expect to continue to invest significant resources in product development activities, our efforts to achieve and maintain profitability will require us to be selective and focused with our research and development expenditures. If we fail to anticipate or respond in a cost-effective and timely manner to technological developments, changes in industry standards or customer requirements, or if we experience any significant delays in product development or introduction, our business, operating results and financial condition could be affected adversely.

We may experience delays in developing and marketing product enhancements or new products that respond to technological change, evolving industry standards and changing customer requirements. We cannot ensure that we will not experience difficulties that could delay or prevent the successful development, introduction, and marketing of these products or product enhancements, or that our new products and product enhancements will adequately meet the requirements of the marketplace and achieve any significant or sustainable degree of market acceptance in existing or additional markets. In addition, the future introductions or announcements of products by us or one of our competitors embodying new technologies or changes in industry standards or customer requirements could render our then-existing products obsolete or unmarketable. We cannot ensure that the introduction or announcement of new product offerings by us or one or more of our competitors will not cause customers to defer their purchase of our existing products, which could cause our revenues to decline.

Our business units are dependent upon federal government spending.

Our JDL Technologies and Transition Networks business units are involved in projects that receive much of their funding from the United States federal government. To the extent that federal government spending is delayed or curtailed by government actions, our revenues and operating results may be adversely affected.

We evaluate and frequently pursue acquisitions, but we may not successfully close these acquisitions and, if these acquisitions are completed, we may have difficulty integrating the acquired businesses with our existing operations.

We regularly consider the acquisition of complementary companies and product lines. We cannot, however, ensure that we will be able to find appropriate candidates for acquisitions, reach agreement to acquire them, or obtain any required shareholder or regulatory approvals needed to close strategic acquisitions, despite the effort and management attention invested.

The impact of future acquisitions on our business, operating results and financial condition is uncertain. In the case of businesses we may acquire in the future, we may have difficulty assimilating these businesses and their products, services, technologies and personnel into our operations. These difficulties could disrupt our ongoing business, distract our management and workforce, increase our expenses and materially adversely affect our operating results and financial condition. Also, we may not be able to retain key management and other critical employees after an acquisition. We may also acquire unanticipated liabilities. In addition to these risks, we may not realize all of the anticipated benefits of these acquisitions.

Our operating results fluctuate from quarter to quarter.

Our operating results are difficult to predict and may fluctuate significantly from quarter to quarter. Fluctuations in our quarterly operating results may be caused by many factors, including the following:

- the volume and timing of customer orders and our ability to fulfill those orders in a timely manner
- the overall level of capital expenditures by our customers
- work stoppages and other developments affecting the operations of our customers
- our ability to obtain new customers and customer contracts
- the timing of our revenue recognition
- the timing of our new product and service introductions
- the availability of products and services we need from our suppliers
- market acceptance of new and enhanced versions of our products and services
- variations in the mix of products and services we sell
- the timing of federal and state government funding of projects
- the location and utilization of our production capacity and employees and
- the availability and cost of key components of our products.

Our expense levels are based in part on expectations of future revenues. If revenue levels in a particular quarter are lower than expected, our operating results will be affected adversely.

We depend on OEM/ODM relationships and on limited-source suppliers and any disruptions in these relationships may cause damage to our customer relationships.

We procure all parts and certain services involved in the production of our products from, and subcontract much of our product manufacturing to outside firms that specialize in these services. Although most of the components of our products are available from multiple vendors, we have several single-source supplier relationships, either because alternative sources are not available or because the relationship is advantageous to us. We cannot ensure that our suppliers will be able to meet our future requirements for products and components in a timely fashion. In addition, the availability of many of these components to us is dependent in part on our ability to provide our suppliers with accurate forecasts of our future requirements. Delays or lost sales could be caused by other factors beyond our control, including defects in the quality of components or products supplied by others.

We are dependent upon our senior management and other critical employees.

Like all companies, our success depends on the efforts and abilities of our senior management personnel and other critical employees, including those in sales, marketing and product development functions. Our ability to attract, retain and motivate these employees is critical to our success. In addition, because we may acquire one or more businesses in the future, our success may depend, in part, upon our ability to retain and integrate our own personnel with personnel from acquired entities that are necessary to the continued success or the successful integration of the acquired businesses.

Managing our inventory is complex and may include write-downs of excess or obsolete inventory.

Managing our inventory of components and finished products is complicated by a number of factors, including the need to maintain a significant inventory of finished goods for orders we anticipate but do not receive. These issues may cause us to purchase and maintain significant amounts of inventory. If this inventory is not used as expected based on anticipated requirements, it may become excess or obsolete. The existence of excess or obsolete inventory can result in sales price reductions or inventory write-downs, which could adversely affect our business and results of operations.

We face risks associated with expanding our sales outside of the United States.

We believe that our future growth depends in part upon our ability to increase sales in international markets. These sales are subject to a variety of risks, including fluctuations in currency exchange rates, tariffs, import restrictions and other trade barriers, unexpected changes in regulatory requirements, longer accounts receivable payment cycles, potentially adverse tax consequences, and export license requirements. In addition, we are subject to the risks inherent in conducting business internationally, including political and economic instability and unexpected changes in diplomatic and trade relationships. We cannot ensure that one or more of these factors will not have a material adverse effect on our business strategy and financial condition.

Our failure to achieve and maintain effective internal controls could limit our ability to detect and prevent fraud and thereby adversely affect our business and stock price.

We have incurred, and expect to continue to incur, significant continuing costs, including accounting fees and staffing costs, to maintain compliance with the internal control requirements of the Sarbanes-Oxley Act of 2002. Expansion of our business, particularly internationally, would require ongoing changes to our internal control systems, processes and information systems. In addition, if we complete future acquisitions, our ability to integrate operations of the acquired company could affect our continued compliance with the internal control requirements of the Sarbanes-Oxley Act.

We maintain internal controls to generate reliable financial reports. All internal control systems, no matter how well designed, have inherent limitations. Even those systems determined to be effective can provide only reasonable assurance with respect to the consolidated financial system preparation and presentation. Our inability to maintain an effective control environment may cause investors to lose confidence in our reported financial information, which could in turn have a material adverse effect on our stock price.

While reviewing our internal controls over financial reporting for the year ended December 31, 2017, we determined we had a material weakness in internal controls related to the impairment analysis of long-lived assets due to (i) our failure to review, in sufficient detail, our analysis and the basis for our conclusion that our goodwill was not impaired, and (ii) our failure to review, in sufficient detail, our analysis and the basis for our conclusion that the fixed assets at one of our business units were not impaired. To address the above, in 2018 we designed, implemented and tested new review controls to value our business units to ensure that long-lived asset impairment analyses are completed in a timely manner and in enough detail to operate at a sufficient level of precision to identify improper assumptions. We concluded that we had remediated this material weakness at December 31, 2018.

Product defects or the failure of our products to meet specifications could cause us to lose customers and revenue or to incur unexpected expenses.

If our products do not meet our customers' performance requirements, our customer relationships may suffer. Also, our products may contain defects or fail to meet product specifications. Any failure or poor performance of our products could result in:

- delayed market acceptance of our products
- delayed product shipments
- unexpected expenses and diversion of resources to replace defective products or identify and correct the source of errors
- damage to our reputation and our customer relationships
- delayed recognition of sales or reduced sales, and
- product liability claims or other claims for damages that may be caused by any product defects or performance failures.

Our sales and operations may continue to be adversely affected by current global economic conditions.

Over the past several years, financial markets globally have experienced periods of extreme disruption. These have included, among other things, extreme volatility in securities prices, severely diminished liquidity and credit availability, ratings downgrades of some investments and declining valuations of others, tariffs on imports and exports. The frequency, severity and duration of these disruptions in the financial markets and the global economy are unknown. We cannot ensure that there will not be a further deterioration in financial markets and in business conditions generally. These economic developments have adversely affected our business in a number of ways and will likely continue to adversely affect our business during the foreseeable future.

Risks Related to Our Common Stock

Our stock price has been volatile historically and the price of our common stock may fluctuate significantly in the future.

The trading price of our common stock has been and may continue to be subject to wide fluctuations. Our stock price may fluctuate in response to a number of events and factors, such as quarterly variations in operating results, announcements of technological innovations or new products by us or our competitors, the operating and stock price performance of other companies that investors may deem comparable to us, and new reports relating to trends in our markets or general economic conditions.

In addition, the stock market in general, and prices for companies in our industry in particular, have experienced extreme volatility that often has been unrelated to the operating performance of these companies. These broad market and industry fluctuations may adversely affect the price of our common stock, regardless of our operating performance.

Anti-takeover provisions in our charter documents, our shareholder rights agreement and Minnesota law could prevent or delay a change in control of our company.

Provisions of our articles of incorporation and bylaws, our shareholder rights agreement (also known as a "poison pill") and Minnesota law may discourage, delay or prevent a merger or acquisition that a shareholder may consider favorable, and could limit the price that investors are willing to pay for our common stock. These provisions include the following:

- advance notice requirements for shareholder proposals
- authorization for our Board of Directors to issue preferred stock without shareholder approval
- authorization for our Board of Directors to issue preferred stock purchase rights upon a third party's acquisition of 16.5% or more of our outstanding shares of common stock;
- limitations on business combinations with interested shareholders and
- a super majority vote by shareholders is required to approve certain corporate actions, including merger transactions.

Some of these provisions may discourage a future acquisition of our company even though our shareholders would receive an attractive value for their shares, or a significant number of our shareholders believe such a proposed transaction would be in their best interest.

The payment and amount of future dividends is subject to Board of Director discretion and to various risks and uncertainties.

The payment and amount of future quarterly dividends is within the discretion of the Board of Directors and will depend on factors the Board deems relevant at the time declaration of a dividend is considered. These factors include, but are not limited to: available cash; management's expectations regarding future performance and free cash flow; alternative uses of cash to fund R&D expenditures and capital expenditures required to fund future growth; and, the effect of various risks and uncertainties described in this "Risk Factors" section.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

CSI conducts administrative, manufacturing and engineering functions at the following facilities:

- The Company owns a 105,000 square foot building in Minnetonka, Minnesota where its executive and administrative offices are located. Transition Networks uses this facility for its warehouse, assembly, engineering and administrative operations. JDL Technologies uses this facility for some administrative operations. Suttle uses this facility for its sales, marketing and product development. In August of 2018, the Company entered into an agreement to sell its Minnetonka headquarters. There are several contingencies because of the due diligence to be completed by the buyer. If the sale proceeds, the Company expects the closing would occur in the second half of 2019 or early in 2020.

- The Company owns three buildings in Hector, Minnesota totaling 109,000 square feet of manufacturing space situated on approximately 5 acres for its Suttle operations.

- JDL leases 3,700 square feet of office space in Fort Lauderdale, Florida.

- Net2Edge leases 5,500 square feet of office space in Basingstoke, Hampshire, U.K.

CSI believes these facilities will be adequate to accommodate its administrative, manufacturing and distribution needs for the foreseeable future.

ITEM 3. LEGAL PROCEEDINGS

The Company is subject to claims and lawsuits that have been filed in the ordinary course of business. From time to time, the Company brings suit against others to enforce contract rights or property rights, or to collect debts in the ordinary course of business. Management believes that the resolution or settlement of any pending litigation will not have a material adverse effect on the results of operations or liquidity of the Company.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT’S COMMON EQUITY AND RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASE OF EQUITY SECURITIES

Market Information

The Company’s common stock trades on the Nasdaq Capital Market under the trading symbol JCS.

Holders

At March 1, 2019 there were approximately 520 registered holders of record of Communications Systems, Inc. common stock.

Information Regarding Equity Compensation Plans

The following table presents information about the Company's equity compensation plans, under which equity securities of the Company are authorized for issuance, as of December 31, 2018:

Securities Authorized for Issuance Under Equity Compensation Plans

Plan Category (1)	Number of shares of common stock to be issued upon exercise of outstanding options, warrants and rights	Weighted-average exercise price of outstanding options warrants and rights	Number of shares of common stock available for future issuance under equity compensation plans (excluding shares in column (a))
Equity compensation plans approved by security holders:			
1992 Stock Plan-Nonemployee Director Plan	36,000	$ 10.78	—
1990 Employee Stock Purchase Plan	13,421	$ 1.73	23,591
2011 Executive Incentive Compensation Plan	1,614,558	$ 6.96	676,887
Equity compensation plans not approved by security holders:			

None

(1) The Company does not have individual compensation arrangements involving the grant of options, warrants and rights, but only grants equity awards under shareholder-approved plans.

Five-year Performance Graph

Not applicable because the Company is a smaller reporting company.

Recent Sales of Unregistered Securities

None.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

None.

ITEM 6. SELECTED FINANCIAL DATA

The following selected financial data has been derived from our consolidated financial statements and should be read in conjunction with the Consolidated Financial Statements and related notes thereto set forth in Item 8 and with "Management's Discussion and Analysis of Financial Condition and Results of Operations" included in Item 7 of this Annual Report on Form 10-K.

COMMUNICATIONS SYSTEMS, INC. AND SUBSIDIARIES
SELECTED FINANCIAL INFORMATION
(in thousands, except per share amounts)

	Year Ended December 31				
	2018	2017	2016	2015	2014
Selected Income Statement Data					
Sales	$ 65,763	$ 82,323	$ 99,353	$ 107,670	$ 119,071
Cost of sales	44,456	61,487	72,771	76,123	76,913
Gross Profit	21,307	20,836	26,582	31,547	42,158
Costs and Expenses:					
Selling, general and administrative expenses	27,501	28,699	35,186	40,830	38,628
Additional minimum pension liability adjustments[1]	—	—	(4,148)	—	—
Pension settlement costs	—	—	—	1,222	—
Impairment loss	—	1,617	—	—	—
Restructuring expense	364	2,285	—	—	238
Total operating expenses	27,865	32,601	31,038	42,052	38,866
Operating (Loss) Income	(6,558)	(11,765)	(4,456)	(10,505)	3,292
Other (Expense) Income, Net[1]	171	(95)	(3,400)	104	(112)
(Loss) Income Before Income Taxes	(6,387)	(11,860)	(7,856)	(10,401)	3,180
Income Tax (Benefit) Expense	405	(34)	257	(753)	1,219
Net (Loss) Income	$ (6,792)	$ (11,826)	$ (8,113)	$ (9,648)	$ 1,961
Basic Net (Loss) Income Per Share	$ (0.75)	$ (1.32)	$ (0.92)	$ (1.11)	$ 0.23
Diluted Net (Loss) Income Per Share	$ (0.75)	$ (1.32)	$ (0.92)	$ (1.11)	$ 0.23
Cash Dividends Declared Per Share	$ 0.14	$ 0.16	$ 0.40	$ 0.64	$ 0.64
Weighted Average Diluted Shares Outstanding	9,109	8,943	8,832	8,720	8,640
Selected Balance Sheet Data					
Total Assets	$ 53,321	$ 58,146	$ 73,177	$ 87,916	$ 100,286
Property, Plant and Equipment, Net	10,962	12,625	15,719	17,468	18,153
Long-term Liabilities	28	15	176	290	1,271
Stockholders' Equity	41,653	49,171	61,633	72,185	86,020

[1] As part of the settlement of our pension plan, the Company recorded $4.1 million in pension liability gains previously recorded in accumulated other comprehensive income within operating expenses during 2016. Additionally, in 2016 the Company recognized $4.2 million in foreign currency translation losses within Other (Expense) Income due to the substantial liquidation of our Austin Taylor subsidiary in the U.K.

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

Overview

Communications Systems, Inc. provides physical connectivity infrastructure products and services for global deployments of broadband networks through the following business units:

Transition Networks
With over 30 years of growth and expertise in hardware and software development, Transition Networks offers customers the ability to affordably integrate the benefits of fiber optics into any data network, in any application, and in any environment. Offering support for multiple protocols, any interface, and a multitude of hardware platforms, Transition Networks' portfolio gives customers the power to deliver and manage network traffic reliably over fiber. Transition Networks distributes hardware-based connectivity solutions through a network of resellers in over 90 countries.

Suttle
Founded in 1910, Suttle provides network solutions that meet service providers' needs at the edge of the network and inside the home/business. Suttle's product portfolio incorporates technology that leverages existing infrastructure and lays the foundation for future growth. Products are designed to comply with the most stringent industry standards. Quality management systems are ISO 9001 and TL9000 certified. Suttle's newest brands are FutureLink™ and MediaMAX™. FutureLink™ provides high-speed connectivity solutions in the last mile of a network. The FutureLink™ Stackable Fiber Interface Terminal (SFIT)—among other platforms that feature grow-as-you-go capability—is part of Suttle's FTTx solution. MediaMAX™ is designed for gigabit services for the connected home/business. MediaMAX™ optimizes installation cost while maximizing coverage and high-bandwidth.

JDL Technologies
JDL Technologies provides technology services and infrastructure to the commercial, healthcare and education market segments. JDL's portfolio of technology solutions includes managed services, virtualization and cloud solutions, wired and wireless network design and implementation services, and converged infrastructure configuration and deployment. JDL has provided many of these technology services to one of the largest school districts in the US for more than a decade, and also provides these services to a number of commercial and healthcare clients.

Net2Edge
Net2Edge designs, assembles and sells Ethernet based switches based around the international MEF standards. Those products range from legacy over packet interfaces such as Serial, TDM or ISDN and Native Ethernet from 1G to 10G. Net2Edge targets these products at telecommunications service providers as Network Interface Devices. By design, the products transmit data from the subscriber enterprise to the provider edge, usually a router. The products are sophisticated, carrying multiple services with definable quality of service metrics over fiber optic paths. These products assist in resolving challenges in the areas of bandwidth constraints, security risks, and distance limitations as networks extend from local area to wide area networks and adapt to ever increasing end-user demands. As enterprise networks continue to change and evolve, our solutions enable customers to integrate multiples services into their existing infrastructure. All Net2Edge products incorporate features for performing advanced levels of fault management and automated provisioning minimizing the administrative burden of the operator.

Key 2018 Developments

- The Company's 2018 sales were $65.8 million, a 20% decrease from 2017 sales of $82.3 million.
- The Company's 2018 net loss was $6.8 million, or ($0.75) per diluted share, compared to net loss of $11.8 million or ($1.32) per diluted share in fiscal 2017.
- At 2018 year end, the Company had cash, cash equivalents and investments of $11.1 million and positive working capital of $30.7 million compared to cash, cash equivalents and investments of $18.0 million and working capital of $36.5 million at December 31, 2017.
- Transition Networks sales decreased 5% to $36.5 million in 2018 from $38.5 million in 2017. Transition had increased operating income of $1.9 million in 2018, however, compared to operating income of $1.4 million in 2017.

- Suttle sales decreased 28% to $23.4 million in 2018 from $32.4 million in 2017. Suttle incurred $2.3 million in restructuring expense in 2017 related to the planned closure of its Costa Rica facility. Suttle had an operating loss of $5.1 million in 2018 compared to an operating loss of $9.8 million in 2017.

- JDL Technologies sales decreased 54% to $5.1 million in 2018 from $11.2 million in 2017. JDL had an operating loss of $0.6 million in 2018 compared to an operating loss of $0.8 million in 2017, due to a $1.5 million goodwill impairment loss recognized in the second quarter of 2017.

- Net2Edge sales increased 58% to $1.7 million in 2018 from $1.1 million in 2017. Net2Edge had an operating loss of $2.8 million in 2018 compared to an operating loss of $2.6 million in 2017.

Forward Looking Statements

In this report and from time to time, in reports filed with the Securities and Exchange Commission, in press releases, and in other communications to shareholders or the investing public, we may make "forward looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. We may make these forward looking statements concerning possible or anticipated future financial performance, business activities, plans, pending claims, investigations or litigation, which are typically preceded by the words "believes," "expects," "anticipates," "intends" or similar expressions. For these forward-looking statements, the Company claims the protection of the safe harbor for forward-looking statements contained in federal securities laws. Shareholders and the investing public should understand that these forward looking statements are subject to risks and uncertainties that could cause actual performance, activities, anticipated results, outcomes or plans to differ significantly from those indicated in the forward-looking statements. For a detailed discussion of a number of these risk factors, please see Item 1A above.

Critical Accounting Policies

Inventory Valuation: We value inventories at the lower of cost or net realizable value. Reserves for excess and obsolescence are estimated and recorded to reduce the carrying value to estimated net realizable value. The amount of the reserve is determined based on historical usage, projected sales information, plans for discontinued products and other factors. Though management considers these reserves adequate and proper, changes in sales volumes due to unexpected economic or competitive conditions are among the factors that could materially affect the adequacy of this reserve.

Income Taxes: In the preparation of the Company's consolidated financial statements, management calculates income taxes. This includes estimating the Company's current tax liability as well as assessing temporary differences resulting from different treatment of items for tax and book accounting purposes. These differences result in deferred tax assets and liabilities, which are recorded on the balance sheet. These assets and liabilities are analyzed regularly and management assesses the likelihood it will realize these deferred assets from future taxable income. We determine the valuation allowance for deferred income tax benefits based upon the expectation of whether the benefits are more likely than not to be realized. The Company records interest and penalties related to income taxes as income tax expense in the Consolidated Statements of Income.

Revenue Recognition: The Company recognizes revenue when a customer obtains control of promised goods or services. The amount of revenue recognized reflects the consideration that the Company expects to receive in exchange for these goods or services. In the Suttle, Transition Networks and Net2Edge segments, revenue is recognized upon delivery of the Company's connectivity infrastructure and data transmission products. To determine when revenue should be recognized, it is important to determine when the transfer of control has occurred. The Company has determined that control transfers for these products upon shipment or delivery to the customer, in accordance with the agreed upon shipping terms. As such, the timing of revenue recognition occurs at a specific point in time.

The Company has determined that the following performance obligations identified in its JDL Technologies, Inc. business unit are transferred over time: managed services and professional services (time and materials ("T&M") and fixed price). JDL's managed services performance obligation is a bundled solution, a series of distinct services that are substantially the same and that have the same pattern of transfer to the customer and are recognized evenly over the term of the contract. T&M professional services arrangements are measured over time with an input method based on hours expended towards satisfying this performance obligation. Fixed price professional service arrangements under a relatively longer-term service will also be measured over time with an input method based on hours expended.

The Company has also identified the following performance obligations within its JDL Technologies business unit that are recognized at a point in time which include resale of third-party hardware and software, installation, arranging for another party to transfer services to the customer, and certain professional services. The resale of third-party hardware and software is recognized at a point in time, when the goods are shipped or delivered to the customer's location, in accordance with the shipping terms. Installation services are recognized at a point in time when the services are completed. The service the Company provides to arrange for another party to transfer services to the customer is satisfied at a point in time as the Company has transferred control upon the service first being made available to the customer by the third party vendor, which are required to be presented on a net basis. Depending on the nature of the service, certain professional services transfer control at a point in time. The Company evaluates these circumstances on a case by case basis to determine if revenue should be recognized over time or at a point in time.

Results of Operations

2018 Compared to 2017

Consolidated sales were $65,763,000 in 2018, a 20% decrease from sales of $82,323,000 in 2017. Net loss in 2018 was $6,792,000, or ($0.75) per share compared to net loss of $11,826,000 or ($1.32) per share in 2017.

Transition Networks Results

Transition Networks develops, markets, and sells active networking hardware devices. Characteristics of this business include a rapid pace of change in technologies and alternative solutions to our products. Transition Networks derives the majority of its revenues from customer network upgrade projects, which tend not to recur. The core markets for these products are enterprise, service providers, government, and industrial users. Roughly 85% of Transition Networks revenue comes from North America, but we continue to see opportunity for long-term growth outside of North America and we continue to invest resources in sales, marketing, and infrastructure to grow that business.

Transition Networks sales decreased 5% to $36,470,000 in 2018 compared to $38,541,000 in 2017. Transition Networks organizes its sales force by vertical markets and segments its customers geographically. Sales by customer groups in 2018 and 2017 were:

	Transition Networks Sales by Region	
	2018	2017
North America	$ 31,059,000	$ 31,261,000
EMEA	2,017,000	2,314,000
Rest of world ("ROW")	3,394,000	4,966,000
	$ 36,470,000	$ 38,541,000

The following table summarizes Transition Networks' 2018 and 2017 sales by product group:

	Transition Networks Sales by Product Group	
	2018	2017
Media converters	$ 20,226,000	$ 21,670,000
Ethernet switches and adapters	9,694,000	8,699,000
Other products	6,550,000	8,172,000
	$ 36,470,000	$ 38,541,000

Sales in North America decreased 1% or $202,000 in 2018 compared to 2017 due to decreased activity with a major carrier customer, partially offset by strong demand in the federal government sector. International sales decreased $1,869,000, or 26%, due to weakness related to slower adoption of new products. In ROW, some of our customers are now being serviced by our UK-based Net2Edge business unit, which accounted for some of the decline. Sales of media converters decreased 7% or $1,444,000 due to decreased activity at a major carrier customer. Sales of Ethernet switches and adapters increased 11% or $995,000 due to strong activity in the federal government sector. All other products decreased 20% or $1,622,000, due to slower spending from major carrier customers.

Gross margin remained flat at $16,695,000 in 2018 compared to $16,762,000 in 2017. Gross margin as a percentage of sales increased to 46% in 2018 from 43% in 2017 due to improved pricing from suppliers.

Selling, general and administrative expenses decreased 4% to $14,812,000, or 41% of sales, in 2018 from $15,371,000, or 40% of sales in 2017 due to a continued focus on expense management. Operating income was $1,883,000 in 2018 compared to operating income of $1,391,000 in 2017.

Suttle Results

Suttle sales decreased 28% to $23,410,000 in 2018 compared to $32,384,000 in 2017 due to lower sales to Tier 1 service providers from volume declines in legacy products, and a shift in purchasing decisions from Tier 1 telecommunications suppliers to installers. Sales by product groups in 2018 and 2017 were:

	Suttle Sales by Product Group	
	2018	2017
Structured cabling and connecting system products	$ 21,753,000	$ 29,932,000
DSL and other products	1,657,000	2,452,000
	$ 23,410,000	$ 32,384,000

Suttle's sales by customer groups in 2018 and 2017 were:

	Suttle Sales by Customer Group	
	2018	2017
Communication service providers	$ 19,370,000	$ 29,071,000
Distributors	2,095,000	2,557,000
International	1,945,000	756,000
	$ 23,410,000	$ 32,384,000

Sales to the major communication service providers decreased 33% to $19,370,000 in 2018 compared to $29,071,000 in 2017 due to decreased demand for legacy products during the switch to fiber-based network architectures. Sales to these customers accounted for 83% of Suttle's sales in 2018 and 90% in 2017. Sales to distributors decreased 18% due to decreased demand from service providers that are being served by the channel, and accounted for 9% of sales in 2018 compared to 8% in 2017. International sales accounted for 8% of Suttle's 2018 sales and increased 157% compared to 2017 due to the execution of key projects by major service providers in Central America.

Sales of structured cabling and connecting system products decreased 27% primarily due to the changing product mix and the shift in purchasing decisions from Tier 1 telecommunications suppliers to installers. Sales of DSL and other products decreased 32% due to major technology changes implemented by service providers reflected by a switch to fiber-based network architectures.

Suttle's gross margin increased 160% to $3,685,000 in 2018 compared to $1,420,000 in 2017. Gross margin as a percentage of sales increased to 16% in 2018 as compared to 4% in 2017 primarily due to large adjustments in the prior year, including a $417,000 write off of prepaid royalties under a product development agreement and increases to the inventory reserves, driven by Suttle's decision to discontinue certain legacy products. The margin impact of excess and obsolete inventory adjustments was $1,100,000 in 2018 (4.7% of sales) compared to $4,214,000 (13.0% of sales) in 2017.

Selling, general and administrative expenses decreased $507,000, or 6% to $8,393,000, or 36% of sales, in 2018 compared to $8,900,000 in 2017, or 27% of sales, due to reduced research and development expenditures and ongoing expense control measures. Suttle incurred $244,000 and $528,000 in research and development expenses in 2018 and 2017, respectively. Suttle incurred $364,000 in restructuring expense related to organization changes in 2018 as compared to $2,285,000 in 2017 related to the planned closure of its Costa Rica facility.

Suttle had an operating loss of $5,072,000 in 2018 compared to an operating loss of $9,765,000 in 2017.

JDL Technologies, Inc. Results

Sales by JDL Technologies decreased 54% to $5,134,000 in 2018 compared to $11,210,000 in 2017. The following table summarizes JDL's revenues by customer group in 2018 and 2017:

	JDL Revenue by Customer Group	
	2018	2017
Education	$ 2,651,000	$ 8,160,000
Healthcare and commercial clients	2,483,000	3,050,000
	$ 5,134,000	$ 11,210,000

Revenues from the education sector decreased $5,509,000 or 68% in 2018 due to a decrease in the number of network related projects completed during the year and a delay in the approval of the federal funding for the 2017-2018 funding cycle, which were ultimately resolved in the fourth quarter of 2018. Federal and local funding for public school district investments in IT infrastructure and services varies substantially from year to year, and JDL Technologies expects to continue to experience notable swings in quarterly and annual revenues as a result.

Revenue from JDL Technologies' sales to small and medium-sized commercial businesses (SMBs), which are primarily healthcare and commercial clients, decreased by 19% or $567,000 due to the expiration of two large customer contracts late in 2017.

JDL gross margin decreased 53% to $1,304,000 in 2018 compared to $2,773,000 in 2017. Gross margin as a percentage of sales remained flat at 25% in 2018 and 2017.

Selling, general and administrative expenses decreased 11% in 2018 to $1,879,000, or 37% of sales, compared to $2,101,000 in 2017, or 19% of sales due to cost saving measures implemented over the past year. JDL reported an operating loss of $575,000 in 2018 compared to an operating loss of $791,000 in 2017, which included a $1,463,000 goodwill impairment loss recognized in the second quarter of 2017.

JDL Technologies continues to aggressively leverage opportunities to provide managed services, cloud migration and virtualization services, HIPAA-compliant technology services, and other network and infrastructure services to the commercial and healthcare markets. This strategic, multiyear plan to reduce the impact of volatile government funding is beginning to produce results.

Net2Edge Results

Net2Edge's sales increased 58% to $1,700,000 in 2018 compared to $1,079,000 in 2017, due to revenue from established CSI accounts with new higher featured products. Gross margin decreased 29% to $485,000 in 2018 compared to $681,000 in 2017. Gross margin as a percentage of sales decreased to 29% in 2018 from 63% in 2017, due to product mix and additional costs incurred to expedite product shipments. Selling, general and administrative expenses increased 5% to $3,279,000 in 2018 compared to $3,127,000 in 2017 due to increased spending on engineering and research and development on new products. Net2Edge reported an operating loss of $2,794,000 in 2018 compared to a loss of $2,600,000 in 2017, which included a $154,000 impairment loss related to intangible assets during the second quarter of 2017.

Income Taxes

The Company's loss before income taxes was $6,386,000 in 2018 compared to a loss before income taxes of $11,860,000 in 2017. The Company's effective income tax rate was -6% in 2018 compared to 0% in 2017. The 2018 effective rate differed from the standard rate of 21% primarily due to the valuation allowances related to deferred tax assets, along with the impact of state income taxes, foreign tax rate differences, foreign losses not deductible for U.S. income tax purposes, provisions for interest charges for uncertain income tax positions, and write off of prior year USVI refund receivables. See Note 10 for a reconciliation of the standard tax rate to the Company's effective tax rate for 2018 and 2017.

Acquisitions and Dispositions

The Company is a growth-focused manufacturer of telecommunications connecting and networking devices. The Company continually searches for acquisition candidates with products that would enable the Company to better serve its target markets.

Effects of Inflation

Inflation has not had a significant effect on operations in recent years. The Company does not have long-term production or procurement contracts and has historically been able to adjust pricing and purchasing decisions to respond to inflationary pressures.

Liquidity and Capital Resources

As of December 31, 2018, the Company had approximately $11,056,000 in cash, cash equivalents and investments. Of this amount, $8,428,000 was invested in short-term money market funds that are not considered to be bank deposits and are not insured or guaranteed by the FDIC or other government agency. These money market funds seek to preserve the value of the investment at $1.00 per share; however, it is possible to lose money investing in these funds. The remainder in cash and cash equivalents is operating cash.

The Company had working capital of $30,695,000, consisting of current assets of approximately $42,335,000 and current liabilities of $11,640,000 at December 31, 2018 compared to working capital of $36,506,000, consisting of current assets of $45,466,000 and current liabilities of $8,960,000 at the end of 2017.

Cash flow used in operating activities was approximately $4,723,000 in 2018 compared to $3,650,000 provided in 2017. Significant working capital changes from 2017 to 2018 included an increase in inventories of $2.2 million in receivables of $1.2 million, offset by an increase in other accrued liabilities of $1.6 million

Cash provided by investing activities was $4,812,000 in 2018 compared to cash used of $294,000 in 2017, due to proceeds from the sale of investments.

Net cash used by financing activities was $1,417,000 in 2018 compared to $1,361,000 in 2017. Cash dividends paid on common stock increased slightly to $1,493,000 in 2018 ($0.16 per common share) from $1,458,000 in 2017 ($0.16 per common share). Proceeds from common stock issuances, principally shares sold to the Company's Employee Stock Ownership Plan and issued under the Company's Employee Stock Purchase Plan, totaled approximately $104,000 in 2018 and $106,000 in 2017 net of acquisitions of Company stock from employees to satisfy withholding tax obligations related to share-based compensation, under Board and shareholder-approved compensation plans. The Company did not repurchase any shares in 2018 or 2017 under the Board authorized program. At December 31, 2018, Board of Director authority to purchase approximately 411,910 additional shares remained in effect.

The Company has a $15,000,000 credit facility from Wells Fargo Bank. The Company had no outstanding obligations under this credit facility at December 31, 2018 or 2017. The total amount available for borrowings under this credit facility at December 31, 2018 was $9,728,000, based on the borrowing base calculation. Interest on borrowings on the credit line is currently set at LIBOR plus 2.0% (4.5% at December 31, 2018). The credit agreement expires August 12, 2021 and is secured by assets of the Company. In the opinion of management, based on the Company's current financial and operating position and projected future expenditures, the Company has sufficient funds to meet its current anticipated operating and capital expenditure needs.

Contractual Obligation Summary

The following table summarizes our contractual obligations at December 31, 2018 and the effect these obligations are expected to have on our liquidity and cash flow in future periods:

	Less than One Year	1 – 3 Years	3 – 5 Years	More Than 5 Years
Operating leases	$ 106,000	$ 172,000	$ 172,000	$ 293,000
Total	$ 106,000	$ 172,000	$ 172,000	$ 293,000

As of December 31, 2018, the Company had no other material commitments (either cancelable or non-cancelable) for capital expenditures, short or long term debt, capital leases or other purchase commitments related to ongoing operations.

New Accounting Pronouncements

See Note 1 of the "Notes to the Consolidated Financial Statements" under Item 8 herein for a discussion of new accounting standards.

Off Balance Sheet Arrangements

None.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The Company has no freestanding or embedded derivatives. The Company's policy is to not use freestanding derivatives and to not enter into contracts with terms that cannot be designated as normal purchases or sales.

The vast majority of our transactions are denominated in U.S. dollars. Although products sold by our Net2Edge subsidiary are generally denominated in British pounds, Net2Edge sales represented less than 3% of our consolidated net sales in 2018 and 2017. Therefore, fluctuations in foreign currency exchange rates have historically not been material to the Company.

At December 31, 2018, our bank line of credit carried a LIBOR rate plus 2.0%. The Company's investments are money market, certificates of deposit, commercial paper, and corporate notes and bonds types of investments that earn interest at prevailing market rates and as such do not have material risk exposure.

Based on the Company's operations, in the opinion of management, the Company is not exposed to material future losses due to market risk.

The Company used the U.S. dollar as its functional currency in Costa Rica. The Company closed its facility in 2017. Accordingly, the Company believes its risk of material loss due to fluctuations in foreign currency markets to be small, primarily resulting from its Net2Edge operations and sales.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

(a) FINANCIAL STATEMENTS

REPORT OF MANAGEMENT

The management of Communications Systems, Inc. and its subsidiary companies is responsible for the integrity and objectivity of the financial statements and other financial information contained in the annual report. The financial statements and related information were prepared in accordance with accounting principles generally accepted in the United States of America and include amounts that are based on management's informed judgments and estimates.

In fulfilling its responsibilities for the integrity of financial information, management maintains accounting systems and related controls. These controls provide reasonable assurance, at appropriate costs, that assets are safeguarded against losses and that financial records are reliable for use in preparing financial statements. Management recognizes its responsibility for conducting the Company's affairs according to the highest standards of personal and corporate conduct.

The Audit and Finance Committee of the Board of Directors, comprised solely of outside directors, meets with the independent auditors and management periodically to review accounting, auditing, financial reporting and internal control matters. The independent auditors have free access to this committee, without management present, to discuss the results of their audit work and their opinion on the adequacy of internal financial controls and the quality of financial reporting.

/s/ Roger H.D. Lacey	/s/ Mark D. Fandrich
Roger H.D. Lacey	Mark D. Fandrich
Chief Executive Officer	Chief Financial Officer

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the shareholders and the board of directors of Communications Systems, Inc.:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Communications Systems, Inc. and subsidiaries (the “Company”) as of December 31, 2018 and 2017, the related consolidated statements of loss and comprehensive loss, changes in stockholders’ equity, and cash flows, for each of the two years in the period ended December 31, 2018, and the related notes (collectively referred to as the “consolidated financial statements”). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of their operations and their cash flows for each of the two years in the period ended December 31, 2018, in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s consolidated financial statements based on our audit. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (“PCAOB”) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audit we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audit also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Baker Tilly Virchow Krause, LLP

We have served as the Company’s auditor since 2017.
Minneapolis, Minnesota
March 8, 2019

COMMUNICATIONS SYSTEMS, INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS

		December 31 2018		December 31 2017
ASSETS				
CURRENT ASSETS:				
Cash and cash equivalents	$	11,056,426	$	12,453,663
Investments		—		5,540,744
Trade accounts receivable, less allowance for doubtful accounts of $136,000 and $106,000, respectively		13,401,042		12,183,217
Inventories		16,175,616		13,984,428
Prepaid income taxes		148,036		493,834
Other current assets		1,553,972		810,532
TOTAL CURRENT ASSETS		42,335,092		45,466,418
PROPERTY, PLANT AND EQUIPMENT, net		10,962,239		12,624,730
OTHER ASSETS:				
Deferred income taxes		19,068		38,136
Other assets		4,765		16,977
TOTAL OTHER ASSETS		23,833		55,113
TOTAL ASSETS	$	53,321,164	$	58,146,261
LIABILITIES AND STOCKHOLDERS' EQUITY				
CURRENT LIABILITIES:				
Accounts payable	$	5,394,981	$	4,554,683
Accrued compensation and benefits		2,892,199		2,422,083
Other accrued liabilities		3,168,049		1,586,473
Dividends payable		184,541		397,151
TOTAL CURRENT LIABILITIES		11,639,770		8,960,390
LONG TERM LIABILITIES:				
Long-term compensation plans		—		11,079
Uncertain tax positions		28,267		4,065
TOTAL LONG-TERM LIABILITIES		28,267		15,144
COMMITMENTS AND CONTINGENCIES (Footnote 7)				
STOCKHOLDERS' EQUITY				
Preferred stock, par value $1.00 per share; 3,000,000 shares authorized; none issued Common stock, par value $.05 per share; 30,000,000 shares authorized; 9,158,438 and 8,973,708 shares issued and outstanding, respectively		457,922		448,685
Additional paid-in capital		42,680,499		42,006,750
Retained earnings (accumulated deficit)		(734,001)		7,328,671
Accumulated other comprehensive loss		(751,293)		(613,379)
TOTAL STOCKHOLDERS' EQUITY		41,653,127		49,170,727
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	$	53,321,164	$	58,146,261

The accompanying notes are an integral part of the consolidated financial statements.

COMMUNICATIONS SYSTEMS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF LOSS AND COMPREHENSIVE LOSS

	Year Ended December 31	
	2018	**2017**
Sales	$ 65,762,946	$ 82,322,618
Cost of sales	44,455,697	61,486,379
Gross profit	21,307,249	20,836,239
Operating expenses:		
Selling, general and administrative expenses	27,501,691	28,699,138
Impairment loss	—	1,617,389
Restructuring expense	363,676	2,284,541
Total operating expenses	27,865,367	32,601,068
Operating loss	(6,558,118)	(11,764,829)
Other income (expenses):		
Investment and other income	299,555	52,992
Loss on sale of assets	(89,550)	(76,870)
Interest and other expense	(38,355)	(71,428)
Other income (expense), net	171,650	(95,306)
Loss from operations before income taxes	(6,386,468)	(11,860,135)
Income tax expense (benefit)	405,267	(34,503)
Net loss	(6,791,735)	(11,825,632)
Other comprehensive (loss) income, net of tax:		
Unrealized gains/(losses) on available-for-sale securities	1,061	(4,566)
Foreign currency translation adjustment	(138,975)	77,848
Total other comprehensive (loss) income	(137,914)	73,282
Comprehensive loss	$ (6,929,649)	$ (11,752,350)
Basic net loss per share:	$ (0.75)	$ (1.32)
Diluted net loss per share:	$ (0.75)	$ (1.32)
Weighted Average Basic Shares Outstanding	9,108,777	8,942,523
Weighted Average Dilutive Shares Outstanding	9,108,777	8,942,523

The accompanying notes are an integral part of the consolidated financial statements.

COMMUNICATIONS SYSTEMS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY

	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital	Retained Earnings (Accumulated Deficit)	Accumulated Other Comprehensive Income (Loss)	Total
BALANCE AT DECEMBER 31, 2016	8,877,379	$ 443,869	$ 41,279,281	$ 20,596,203	$ (686,661)	$ 61,632,692
Net loss	—	—	—	(11,825,632)	—	(11,825,632)
Issuance of common stock under Employee Stock Purchase Plan	23,660	1,183	103,100	—	—	104,283
Issuance of common stock to Employee Stock Ownership Plan	47,248	2,362	216,396	—	—	218,758
Issuance of common stock under Executive Stock Plan	27,471	1,374	—	—	—	1,374
Share based compensation	—	—	417,489	—	—	417,489
Other share retirements	(2,050)	(103)	(9,516)	1,007	—	(8,612)
Shareholder dividends ($0.16 per share)	—	—	—	(1,442,907)	—	(1,442,907)
Other comprehensive loss	—	—	—	—	73,282	73,282
BALANCE AT DECEMBER 31, 2017	8,973,708	448,685	42,006,750	7,328,671	(613,379)	49,170,727
Net loss				(6,791,735)		(6,791,735)
Issuance of common stock under Employee Stock Purchase Plan	29,614	1,481	100,507	—	—	101,988
Issuance of common stock to Employee Stock Ownership Plan	119,632	5,982	419,908	—	—	425,890
Issuance of common stock under Executive Stock Plan	43,501	2,175	—	—	—	2,175
Share based compensation	—	—	190,721	—	—	190,721
Other share retirements	(8,017)	(401)	(37,387)	9,325	—	(28,463)
Shareholder dividends ($0.14 per share)	—	—	—	(1,280,262)	—	(1,280,262)
Other comprehensive loss	—	—	—	—	(137,914)	(137,914)
BALANCE AT DECEMBER 31, 2018	9,158,438	$ 457,922	$ 42,680,499	$ (734,001)	$ (751,293)	$ 41,653,127

The accompanying notes are an integral part of the consolidated financial statements.

COMMUNICATIONS SYSTEMS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31	
	2018	**2017**
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net loss	$ (6,791,735)	$ (11,825,632)
Adjustments to reconcile net loss to net cash (used in) provided by operating activities:		
Depreciation and amortization	2,214,848	3,186,458
Share based compensation	190,721	417,489
Deferred taxes	19,068	(91,134)
Impairment loss	—	1,617,389
Loss on sale of assets	89,550	582,317
Changes in assets and liabilities:		
Trade accounts receivables	(1,237,986)	2,393,310
Inventories	(2,249,296)	8,268,676
Prepaid income taxes	343,381	908,513
Other assets	(749,785)	595,869
Accounts payable	944,052	(2,499,232)
Accrued compensation and benefits	888,376	482,324
Other accrued liabilities	1,591,872	(283,628)
Income taxes payable	24,202	(102,799)
Net cash (used in) provided by operating activities	(4,722,732)	3,649,920
CASH FLOWS FROM INVESTING ACTIVITIES:		
Capital expenditures	(763,627)	(773,367)
Purchases of investments	(6,580,917)	(6,043,715)
Proceeds from the sale of fixed assets	33,763	219,888
Proceeds from the sale of investments	12,122,722	6,303,681
Net cash provided by (used in) investing activities	4,811,941	(293,513)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Cash dividends paid	(1,492,871)	(1,458,298)
Proceeds from issuance of common stock, net of shares withheld	75,700	97,045
Net cash used in financing activities	(1,417,171)	(1,361,253)
EFFECT OF FOREIGN EXCHANGE RATE CHANGES ON CASH	(69,275)	15,235
NET (DECREASE) INCREASE IN CASH AND CASH EQUIVALENTS	(1,397,237)	2,010,389
CASH AND CASH EQUIVALENTS AT BEGINNING OF YEAR	12,453,663	10,443,274
CASH AND CASH EQUIVALENTS AT END OF YEAR	$ 11,056,426	$ 12,453,663
SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION:		
Income taxes refunded	$ (32,596)	$ (693,113)
Interest paid	38,030	38,851
Dividends declared not paid	184,541	397,151
Capital expenditures in accounts payable	—	90,623

The accompanying notes are an integral part of the consolidated financial statements.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Description of business: Communications Systems, Inc. (herein collectively called “CSI,” “our” or the “Company”) is a Minnesota corporation organized in 1969 that operates directly and through its subsidiaries located in the United States and the United Kingdom. CSI is principally engaged through its Suttle business unit in the manufacture and sale of connectivity infrastructure products for broadband and voice communications and through its Transition Networks business unit in the manufacture and sale of core media conversion products, Ethernet switches, and other connectivity and data transmission products. Through its JDL Technologies business unit the Company provides technology solutions including virtualization, managed services, wired and wireless network design and implementation, HIPAA-compliant IT services, and converged infrastructure configuration and deployment. Through its Net2Edge business unit, the Company enables telecommunications carriers to connect legacy networks to high-speed networks and services.

The Company classifies its businesses into four segments that correspond to these four business units. Non-allocated general and administrative expenses are separately accounted for as “Other” in the Company’s segment reporting. Intersegment revenues are eliminated upon consolidation.

Principles of consolidation: The consolidated financial statements include the accounts of the Company and its subsidiaries. All intercompany transactions and accounts have been eliminated.

Use of estimates: The presentation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. The Company uses estimates based on the best information available in recording transactions and balances resulting from operations. Actual results could differ from those estimates. The Company’s estimates consist principally of reserves for doubtful accounts, sales returns, warranty costs, asset impairment evaluations, accruals for compensation plans, self-insured medical and dental accruals, lower of cost or market inventory adjustments, provisions for income taxes and deferred taxes and depreciable lives of fixed assets.

Cash equivalents: For purposes of the consolidated statements of cash flows, the Company considers all highly liquid investments with a maturity of three months or less at the time of purchase to be cash equivalents. As of December 31, 2018, the Company had $11,056,000 in cash and cash equivalents. Of this amount, $8,428,000 was invested in short-term money market funds that are not considered to be bank deposits and are not insured or guaranteed by the federal deposit insurance company (FDIC) or other government agency. These money market funds seek to preserve the value of the investment at $1.00 per share; however, it is possible to lose money investing in these funds. The remainder is operating cash and certificates of deposit which are fully insured through the FDIC.

Investments: Investments consist of certificates of deposit, corporate notes and bonds, and commercial paper that are traded on the open market and are classified as available-for-sale. Available-for-sale investments are reported at fair value with unrealized gains and losses excluded from operations and reported as a separate component of stockholders’ equity, net of tax (see Accumulated other comprehensive loss below).

Inventories: Inventories are stated at the lower of cost or net realizable value. Cost is determined by the first-in, first-out method. Provision to reduce inventories to the lower of cost or net realizable value is made based on a review of excess and obsolete inventories, estimates of future sales, examination of historical consumption rates and the related value of component parts.

Property, plant and equipment: Property, plant and equipment are recorded at cost. Depreciation is computed using the straight-line method. Depreciation included in cost of sales and selling, general and administrative expenses for continuing operations was $2,203,000 and $3,156,000 for 2018 and 2017, respectively. Maintenance and repairs are charged to operations and additions or improvements are capitalized. Items of property sold, retired or otherwise disposed of are removed from the asset and accumulated depreciation accounts and any gains or losses on disposal are reflected in operations.

Intangible Assets: Intangible assets with indefinite useful lives are not amortized, but are tested at least annually for impairment.

Recoverability of long-lived assets: The Company reviews its long-lived assets periodically when impairment indicators exist as required under generally accepted accounting principles. Potential impairment is determined by comparing the carrying value of the assets with expected net cash flows expected to be provided by operating activities of the business or related products. If the sum of the expected future net cash flows is less than the carrying value, an impairment loss would be measured by comparing the amount by which the carrying value exceeds the fair value of the asset.

Warranty: The Company reserves for the estimated cost of product warranties at the time revenue is recognized. We estimate the costs of our warranty obligations based on our warranty policy or applicable contractual warranty, historical experience of known product failure rates, and use of materials and service delivery costs incurred in correcting product failures. Management reviews the estimated warranty liability on a quarterly basis to determine its adequacy.

The following table presents the changes in the Company's warranty liability, included in other accrued liabilities in the consolidated balance sheets, for the years ended December 31, 2018 and 2017, which relate to normal product warranties and a five-year obligation to provide for potential future liabilities for certain network equipment sales:

	Year Ended December 31	
	2018	**2017**
Beginning balance	$ 603,000	$ 600,000
Amounts charged to expense	77,000	93,000
Actual warranty costs paid	(86,000)	(90,000)
Ending balance	$ 594,000	$ 603,000

Accumulated other comprehensive loss: The components of accumulated other comprehensive loss are as follows:

	Foreign Currency Translation	**Unrealized (loss)/gain on securities**	**Accumulated Other Comprehensive Loss**
December 31, 2017	$ (625,000)	$ 12,000	$ (613,000)
Net current period change	(139,000)	1,000	(138,000)
December 31, 2018	$ (764,000)	$ 13,000	$ (751,000)

Revenue recognition: The Company's manufacturing operations (Suttle, Transition Networks and Net2Edge) recognize revenue upon delivery of the Company's connectivity infrastructure and data transmission products. To determine when revenue should be recognized, it is important to determine when the transfer of control has occurred. The Company has determined that control transfers for these products upon shipment or delivery to the customer, in accordance with the agreed upon shipping terms. As such, the timing of revenue recognition occurs at a specific point in time. Sales are made directly to customers and through distributors. Payment terms for distributors are consistent with the terms of the Company's direct customers. The Company records a provision for sales returns, sales incentives and warranty costs at the time of the sale based on historical experience and current trends.

The Company has determined that the following performance obligations identified in its JDL Technologies, Inc. business unit are transferred over time: managed services and professional services (time and materials ("T&M") and fixed price). JDL's managed services performance obligation is a bundled solution, a series of distinct services that are substantially the same and that have the same pattern of transfer to the customer and are recognized evenly over the term of the contract. T&M professional services arrangements are measured over time with an input method based on hours expended towards satisfying this performance obligation. Fixed price professional service arrangements under a relatively longer-term service will also be measured over time with an input method based on hours expended.

The Company has also identified the following performance obligations within its JDL Technologies business unit that are recognized at a point in time which include resale of third-party hardware and software, installation, arranging for another party to transfer services to the customer, and certain professional services. The resale of third-party hardware and software is recognized at a point in time, when the goods are shipped or delivered to the customer's location, in accordance with the shipping terms. Installation services are recognized at a point in time when the services are completed. The service the Company provides to arrange for another party to transfer services to the customer is satisfied at a point in time as the Company has transferred control upon the service first being made available to the customer by the third party vendor, which are required to be presented on a net basis. Depending on the nature of the service, certain professional services transfer control at a point in time. The Company evaluates these circumstances on a case by case basis to determine if revenue should be recognized over time or at a point in time. See Note 2 for further discussion regarding the adoption of the new revenue recognition standard.

Research and development: Research and development costs consist of outside testing services, equipment and supplies associated with enhancing existing products and developing new products. Research and development costs are expensed when incurred and totaled $3,786,000 in 2018 and $3,639,000 in 2017.

Employee Retirement Benefits: The Company has an Employee Savings Plan (401(k)) and matches a percentage of employee contributions up to six percent of compensation. Contributions to the plan in 2018 and 2017 were $450,000 and $450,000, respectively.

Net income per share: Basic net income per common share is based on the weighted average number of common shares outstanding during each year. Diluted net income per common share adjusts for the dilutive effect of potential common shares outstanding. The Company's only potential common shares outstanding are stock options and shares associated with the long-term incentive compensation plans, which resulted in no dilutive effect for 2018 and 2017. The Company calculates the dilutive effect of outstanding options and unvested shares using the treasury stock method. Due to the net loss in 2018 and 2017, there was no dilutive impact from outstanding stock options or unvested shares. Options totaling 1,320,492 would have been excluded from the calculation of diluted earnings per share for year ended December 31, 2018, because the exercise price was greater than the average market price of common stock during the year and deferred stock awards totaling 265,491 shares would not have been included because of unmet performance conditions. Options totaling 1,144,159 would have been excluded from the calculation of diluted earnings per share for year ended December 31, 2017, because the exercise price was greater than the average market price of common stock during the year and deferred stock awards totaling 181,224 shares would not have been included because of unmet performance conditions.

Share based compensation: The Company accounts for share based compensation awards on a fair value basis. The estimated grant date fair value of each stock-based award is recognized in income over the requisite service period (generally the vesting period). The estimated fair value of each option is calculated using the Black-Scholes option-pricing model.

Accounting standards issued:
In February 2016, the FASB issued ASU 2016-02, "Leases (Topic 842)", which amends existing guidance and requires an entity to recognize both assets and liabilities arising from financing and operating leases, along with additional qualitative and quantitative disclosures. The new standard is effective for fiscal years beginning after December 15, 2018, including interim periods within that reporting period, and early adoption is permitted. On January 1, 2019, agreements historically disclosed as operating leases are expected to be recognized on the balance sheet. The Company has engaged a third-party consultant to assist with our assessment of the expected impact of the new standard. The Company does not expect adoption of the new standard to have a material effect on the Company's consolidated financial statements.

In June 2016, FASB issued ASU 2016-13, "Financial Instruments - Credit Losses (Topic 326), Measurement of Credit Losses on Financial Instruments." The amendments in this update replace the incurred loss impairment methodology in current U.S. GAAP with a methodology that reflects expected credit losses. This ASU is intended to provide financial statement users with more decision-useful information about expected credit losses and is effective for annual periods and interim periods for those annual periods beginning after December 15, 2019, which for us is the first quarter ending March 31, 2020. Entities may early adopt beginning after December 15, 2018. We are currently evaluating the impact of the adoption of ASU 2016-13 on our consolidated financial statements.

Accounting standards adopted:
In May 2014, the FASB issued ASU 2014-09, "Revenue from Contracts with Customers." The new guidance replaced all current U.S. GAAP guidance on this topic and eliminated all industry-specific guidance. According to the new guidance, revenue is recognized when promised goods or services are transferred to customers in an amount that reflects the consideration the Company expects to receive in exchange for those goods or services. The guidance is effective for interim and annual reporting periods beginning after December 15, 2017. The Company adopted the accounting standard effective January 1, 2018 using the modified retrospective transition approach. Please see Note 2 for the required disclosures related to the impact of adopting this standard and a discussion of the Company's updated policies related to revenue recognition and accounting for costs to obtain and fulfill a customer contract.

In August 2016, the FASB issued new accounting guidance regarding the classification of cash receipts and payments in the Statement of Cash Flows. This guidance is intended to reduce diversity in practice in how certain cash receipts and cash payments are presented and classified in the Consolidated Statement of Cash Flows by providing guidance on eight specific cash flow issues. The Company adopted this standard as of January 1, 2018 with no material impact to its Consolidated Statement of Cash Flows.

In May 2017, FASB issued ASU 2017-09, "Compensation-Stock Compensation (Topic 718): Scope of Modification Accounting." This ASU provides guidance about which changes to the terms or conditions of a share-based payment award require an entity to apply modification accounting. The amendments in this update should be applied prospectively to an award modified on or after the adoption date. This ASU is effective for annual periods and interim periods within those annual periods beginning after December 15, 2017. The Company adopted the accounting standard effective January 1, 2018 with no material impact to its consolidated financial statements.

NOTE 2 – REVENUE RECOGNITION

The Company adopted ASC 606, "Revenue from Contracts with Customers," on January 1, 2018 using the modified retrospective method for all contracts not completed as of the date of adoption. The reported results for 2018 reflect the application of ASC 606 guidance while the reported results for 2017 were prepared under the guidance of ASC 605, "Revenue Recognition" (ASC 605), which is also referred to herein as "legacy GAAP" or the "previous guidance". The adoption of ASC 606 represents a change in accounting principle that will more closely align revenue recognition with the delivery of the Company's goods and services and will provide financial statement readers with enhanced disclosures. In accordance with ASC 606, revenue is recognized when a customer obtains control of promised goods or services. The amount of revenue recognized reflects the consideration that the Company expects to receive in exchange for these goods or services.

Transition Networks & Suttle, Inc.

The Company's Transition Networks business unit sells media converter devices, NIDs, Ethernet switches and other connectivity products that make it possible to transmit telecommunications signals across networks and between systems using various types of media. Transition sells its products through distributors, resellers, integrators, and OEMs.

The Company's Suttle business unit manufactures and markets a broad range of products that support broadband and telephone service under the Suttle brand name in the United States and internationally. Suttle markets its outside plant and premise distribution products globally to telecommunications companies, service providers, residential builders, and low-voltage installers through distributors and the Company's sales staff. Suttle's customers include telephone, CATV, internet service providers, distributors, and enterprise networks.

The Company has determined that revenue recognition for its Transition Networks and Suttle business units occurs upon delivery of the Company's connectivity infrastructure and data transmission products. To determine when revenue should be recognized, it is important to determine when the transfer of control has occurred. The Company has determined that control transfers for these products upon shipment or delivery to the customer, in accordance with the agreed upon shipping terms. As such, the timing of revenue recognition occurs at a specific point in time.

JDL Technologies, Inc.

The Company's JDL Technologies, Inc. business unit is a managed service provider and a value-added reseller supplying IT solutions focused on IT service and support management; network design, deployment and integration; cloud, hosted and virtualized services; and network operations center management. Major technology solutions include networking, virtualization, cloud and infrastructure services, most of which are available under JDL managed service contracts.

The Company has determined that the following performance obligations identified in its JDL Technologies, Inc. business unit are transferred over time: managed services and professional services (time and materials ("T&M") and fixed price). JDL's managed services performance obligation is a bundled solution, a series of distinct services that are substantially the same and that have the same pattern of transfer to the customer and are recognized evenly over the term of the contract. T&M professional services arrangements are measured over time with an input method based on hours expended towards satisfying this performance obligation. Fixed price professional service arrangements under a relatively longer-term service will also be measured over time with an input method based on hours expended.

The Company has also identified the following performance obligations within its JDL Technologies business unit that are recognized at a point in time which include resale of third-party hardware and software, installation, arranging for another party to transfer services to the customer, and certain professional services. The resale of third-party hardware and software is recognized at a point in time, when the goods are shipped or delivered to the customer's location, in accordance with the shipping terms. Installation services are recognized at a point in time when the services are completed. The service the Company provides to arrange for another party to transfer services to the customer is satisfied at a point in time as the Company has transferred control upon the service first being made available to the customer by the third party vendor, which are required to be presented on a net basis. Depending on the nature of the service, certain professional services transfer control at a point in time. The Company evaluates these circumstances on a case by case basis to determine if revenue should be recognized over time or at a point in time.

Net2Edge Limited

The Company's Net2Edge division manufactures and markets Ethernet based network access devices. The Company principally sells its products through approved partners and integrators outside the United States. The Company has determined that the performance obligation in the Net2Edge division is recognized at a point in time, upon the delivery of its connectivity infrastructure and data transmission products.

Significant Judgments

To determine the transaction price, the Company estimates the amount of variable consideration at the outset of the contract, depending on the facts and circumstances relative to the contract. The Company may provide credits or incentives to its customers, which are accounted for as either variable consideration or consideration payable to the customer. The Company estimates product returns based on historical return rates. The Company constrains (reduces) the estimates of variable consideration such that it is probable that a significant revenue reversal of previously recognized revenue will not occur throughout the life of the contract. When determining if variable consideration should be constrained, management considers whether there are factors outside the Company's control that could result in a significant reversal of revenue. In making these assessments, the Company considers the likelihood and magnitude of a potential reversal of revenue. The Company will assess if any incentives it offers to its customer is a consideration payable. The Company accounts for consideration payable to a customer as a reduction of the transaction price, and therefore, of revenue. For contracts with more than one performance obligation, the consideration is allocated between separate products and services based on their stand-alone selling prices. Judgment is required to determine standalone selling prices for each distinct performance obligation. The Company generally determines standalone selling prices based on the actual prices charged to customers and has an established range of amounts that fall within stand-alone selling price for its distinct performance obligations. The Company evaluates this range quarterly.

Financial Statement Impact of Adopting ASC 606

The Company adopted ASC 606 using the modified retrospective method. The cumulative effect of applying the new guidance to all contracts with customers that were not completed as of January 1, 2018 would require an adjustment to the opening balance of retained earnings as of the adoption date. As a result of applying the modified retrospective method to adopt the new revenue guidance, the Company determined that there were no significant adjustments to be made to its consolidated balance sheet as of January 1, 2018.

Costs to Obtain or Fulfill a Contract

In addition to the new revenue recognition guidance, "Other Assets and Deferred Costs" (ASC 340-40), was added to provide guidance on the accounting for certain costs to obtain and fulfill contracts (or, in some cases, an anticipated contract) with a customer. ASC 340-40 is applicable only to incremental contract costs, those that an entity would not have incurred if the contract had not been obtained, and requires the capitalization of these costs as well as provides guidance on the amortization and impairment considerations. The Company elects the practical expedient and expenses certain costs to obtain contracts when applicable. There were no material costs to obtain a contract in the year ended December 31, 2018.

Impact of New Revenue Guidance on Financial Statement Line Items

The following table compares the reported condensed consolidated balance sheet, statement of loss and comprehensive loss and cash flows, as of and for the year ended December 31, 2018, to the pro-forma amounts had the previous guidance been in effect:

	As of December 31, 2018		
	As Reported	**Balances without adoption of ASC 606**	**Effect of Change Higher/(Lower)**
Trade accounts receivable	$ 13,401,000	$ 11,778,000	$ 1,623,000
Inventories	16,176,000	17,008,000	(832,000)
Other current assets	1,554,000	722,000	832,000
Other accrued liabilities	3,168,000	1,545,000	1,623,000

	Year Ended December 31, 2018		
	As Reported	**Balances without adoption of ASC 606**	**Effect of Change Higher/(Lower)**
Revenue	$ 65,763,000	$ 66,352,000	$ (589,000)
Gross Profit	21,307,000	21,896,000	(589,000)
Selling, general and administrative expenses	27,502,000	28,091,000	(589,000)
Operating Loss	(6,558,000)	(6,558,000)	—

Transaction Price Allocated to Future Performance Obligations

To determine the allocation of the transaction price and amounts allocated to the performance obligations, the Company first determined the standalone selling price for each distinct performance obligation in the contract in order to determine the allocations of the transaction price in proportion to the standalone selling price for each performance obligation in the contract in accordance with ASC 606-10-32-31 and 32-33. Judgment is required to determine standalone selling price for each distinct performance obligation. The Company generally determines standalone selling prices based on the actual prices charged to customers and has an established range of amounts that fall within stand-alone selling price for its distinct performance obligations. The Company will evaluate this range quarterly.

Practical Expedients and Exemptions

The Company adopted various practical expedients and policy elections related to the accounting for significant finance components, sales taxes, shipping and handling, costs to obtain a contract and immaterial promised goods or services, which will mitigate certain impacts of adopting this new standard. The practical expedient to disclose the unfulfilled performance obligations was not made as they are expected to be fulfilled within one year.

Disaggregation of revenue

Revenues are recognized when control of the promised goods or services is transferred to our customers, in an amount that best reflects the consideration we expect to receive in exchange for those goods or services. In accordance with ASC 606-10-50-5, the following tables present how we disaggregate our revenues, which is different for each segment.

For Transition Networks, we analyze revenue by region and product group, which is as follows for the years ended December 31, 2018 and 2017:

	Transition Networks Revenue by Region	
	2018	**2017**
North America	$ 31,059,000	$ 31,261,000
Rest of World	2,017,000	2,314,000
Europe, Middle East, Africa (“EMEA”)	3,394,000	4,966,000
	$ 36,470,000	$ 38,541,000

	Transition Networks Revenue by Product Group	
	2018	2017
Media converters	$ 20,226,000	$ 21,670,000
Ethernet switches and adapters	9,694,000	8,699,000
Other products	6,550,000	8,172,000
	$ 36,470,000	$ 38,541,000

For Suttle, we analyze revenues by product and customer group, which is as follows for the years ended December 31, 2018 and 2017:

	Suttle Revenue by Product Group	
	2018	2017
Structured cabling and connecting system products	$ 21,753,000	$ 29,932,000
DSL and other products	1,657,000	2,452,000
	$ 23,410,000	$ 32,384,000

	Suttle Revenue by Customer Group	
	2018	2017
Communication service providers	$ 19,370,000	$ 29,071,000
International	2,095,000	2,557,000
Distributors	1,945,000	756,000
	$ 23,410,000	$ 32,384,000

For JDL, we analyze revenue by customer group, which is as follows for the years ended December 31, 2018 and 2017:

	JDL Revenue by Customer Group	
	2018	2017
Education	$ 2,651,000	$ 8,160,000
Healthcare and commercial clients	2,483,000	3,050,000
	$ 5,134,000	$ 11,210,000

The Company does not currently analyze revenue for Net2Edge on a disaggregated basis. Revenues from Net2Edge were $1,700,000 and $1,079,000 for the years ended December 31, 2018 and 2017, respectively.

Contract Balances

The Company does not have material costs to obtain a contract or material contract liabilities.

NOTE 3 –CASH EQUIVALENTS AND INVESTMENTS

The following tables show the Company's cash equivalents and available-for-sale securities' amortized cost, gross unrealized gains, gross unrealized losses and fair value by significant investment category recorded as cash equivalents or short and long term investments as of December 31, 2018 and December 31, 2017:

December 31, 2018

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value	Cash Equivalents	Short-Term Investments	Long-Term Investments
Cash equivalents:							
Money Market funds	$ 8,428,000	$ —	$ —	$ 8,428,000	$ 8,428,000	$ —	$ —
Total	$ 8,428,000	$ —	$ —	$ 8,428,000	$ 8,428,000	$ —	$ —

December 31, 2017

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value	Cash Equivalents	Short-Term Investments	Long-Term Investments
Cash equivalents:							
Money Market funds	$ 6,193,000	$ —	$ —	$ 6,193,000	$ 6,193,000	$ —	$ —
Subtotal	6,193,000	—	—	6,193,000	6,193,000	—	—
Investments:							
Commercial Paper	997,000	—	—	997,000	—	997,000	—
Corporate Notes/Bonds	4,545,000	—	(1,000)	4,544,000	—	4,544,000	—
Subtotal	5,542,000	—	(1,000)	5,541,000	—	5,541,000	—
Total	$ 11,735,000	$ —	$ (1,000)	$ 11,734,000	$ 6,193,000	$ 5,541,000	$ —

The Company tests for other than temporary losses on a quarterly basis and has considered the unrealized losses indicated above to be temporary in nature. The Company intends to hold the investments until it can recover the full principal amount and has the ability to do so based on other sources of liquidity. The Company expects such recoveries to occur prior to the contractual maturities. There were no unrealized losses as of December 31, 2018.

The Company did not recognize any gross realized gains or gross realized losses during the years ending December 31, 2018 and 2017, respectively. If the Company had realized gains or losses, they would be included within investment and other income in the accompanying consolidated statements of loss.

NOTE 4 - INVENTORIES

Inventories consist of:

	December 31	
	2018	2017
Finished goods	$ 9,608,000	$ 8,056,000
Raw and processed materials	6,568,000	5,928,000
	$ 16,176,000	$ 13,984,000

NOTE 5 - PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment and the estimated useful lives are as follows:

	Estimated useful life	December 31 2018	December 31 2017
Land		$ 2,968,000	$ 2,951,000
Buildings and improvements	3-40 years	8,914,000	8,867,000
Machinery and equipment	3-15 years	24,105,000	26,597,000
Furniture and fixtures	3-10 years	4,054,000	4,174,000
Construction in progress		126,000	396,000
		40,167,000	42,985,000
Less accumulated depreciation		(29,205,000)	(30,360,000)
		$ 10,962,000	$ 12,625,000

NOTE 6 –GOODWILL AND INTANGIBLE ASSETS

Goodwill is required to be evaluated for impairment on an annual basis and between annual tests upon the occurrence of certain events or circumstances. In January 2017, the FASB issued new accounting guidance simplifying the goodwill impairment test. The new standard eliminates the quantitative goodwill impairment analysis requirement to determine the fair value of individual assets and liabilities of a reporting unit to determine the amount of any goodwill impairment and instead permits an entity to recognize goodwill impairment loss as the excess of a reporting unit's carrying value over the estimated fair value of the reporting unit, to the extent this amount does not exceed the carrying amount of goodwill. The Company chose to adopt this standard early for the annual impairment analysis in 2017. The Company performed the first step of the previous two-step process, which requires that the fair value of the reporting unit be compared to its book value including goodwill. If the fair value is higher than the book value, no impairment is recognized. If the fair value is lower than the book value, an impairment adjustment must be recorded.

The Company performs its annual impairment analysis as of April 1 each year. During 2017, the Company analyzed the reporting unit that had the goodwill and also analyzed the Company as a whole, including the Company's four separate reporting units. Although JDL Technologies had been profitable for the prior eight quarters, the cyclical and unpredictable nature of revenues from its education sector raised issues in forecasting cash flows in future quarters used to estimate the reporting unit's fair value. Based on this analysis of comparing the fair value of each reporting unit to the book value, and comparing the Company's overall book value with its market capitalization, the Company determined that the book value exceeded the overall fair value of the reporting units as well as the Company's overall market value. As a result, the Company recorded a goodwill impairment charge totaling $1,463,000 during the second quarter of 2017.

As part of the overall annual impairment analysis noted above, the Company also reviewed other intangible assets for potential impairment. Based on this analysis, the Company deemed the intangible assets at Net2Edge related to customer relationships to be impaired and recorded a $154,000 impairment loss during the second quarter of 2017.

The Company's identifiable intangible assets with finite lives are being amortized over their estimated useful lives and are included within other assets in the consolidated balance sheets and were as follows:

	December 31, 2018 Gross Carrying Amount	Accumulated Amortization	Impairment Loss	Foreign Currency Translation	Net
Trademarks	$ 98,000	$ (74,000)	$ —	$ (19,000)	$ 5,000
Customer relationships	491,000	(230,000)	(154,000)	(107,000)	—
Technology	229,000	(178,000)	—	(51,000)	—
	$ 818,000	$ (482,000)	$ (154,000)	$ (177,000)	$ 5,000

	December 31, 2017				
	Gross Carrying Amount	Accumulated Amortization	Impairment Loss	Foreign Currency Translation	Net
Trademarks	$ 98,000	$ (66,000)	$ —	$ (15,000)	$ 17,000
Customer relationships	491,000	(230,000)	(154,000)	(107,000)	—
Technology	229,000	(189,000)	—	(40,000)	—
	$ 818,000	$ (485,000)	$ (154,000)	$ (162,000)	$ 17,000

Amortization expense on these identifiable intangible assets was $12,000 and $30,000 in 2018 and 2017 respectively. The amortization expense is included in selling, general and administrative expenses. The estimated future amortization expense for identifiable intangible assets during the next five fiscal years is as follows:

Year Ending December 31:	
2019	$ 2,000
2020	2,000
2021	1,000

NOTE 7 – COMMITMENTS AND CONTINGENCIES

Operating leases: The Company leases land, buildings and equipment under operating leases with original terms from 1 to 5 years. Total rent expense was $255,000 and $474,000 in 2018 and 2017, respectively. At December 31, 2018, the Company was obligated under non-cancelable operating leases to make minimum annual future lease payments as follows:

Year Ending December 31:	
2019	$ 106,000
2020	86,000
2021	86,000
2022	86,000
2023	86,000
Thereafter	293,000
	$ 743,000

Line of credit: The Company has a $15,000,000 credit facility from Wells Fargo Bank. The Company had no outstanding borrowings against the credit facility at December 31, 2018 and 2017. Due to the revolving nature of loans under our credit facility, additional borrowings and periodic repayments and re-borrowings may be made until the maturity date. The total amount available for borrowings under this credit facility at December 31, 2018 was $9,728,000, based on the borrowing base calculation. Interest on borrowings on the credit facility is set at LIBOR plus 2.0% (4.5% at December 31, 2018). The credit agreement expires August 12, 2021 and is secured by assets of the Company. The credit agreement contains financial covenants including a minimum liquidity balance of $10,000,000. Liquidity is defined as the sum of unrestricted cash, marketable securities and the availability on the line of credit.

As of December 31, 2018, the Company had no other material commitments (either cancelable or non-cancelable) for capital expenditures or other purchase commitments related to ongoing operations.

Long-term compensation plans: The Company has a long term incentive plan that provides long-term competitive compensation to enable the Company to attract and retain qualified executive talent and to reward employees for achieving goals and improving company performance. The plan provides grants of "performance units" made at the beginning of performance periods and paid at the end of the period if performance goals are met. Awards were previously made every other year and are paid following the end of the cycle with annual vesting. Payment in the case of retirement, disability or death will be on a pro rata basis. The Company recognized (income)/expense of $(11,000) and $ (5,000) in 2018 and 2017, respectively. Accrual balances for long-term compensation plans at December 31, 2018 and 2017 were $0 and $11,000, respectively. There were no award payouts in 2018 and 2017. Awards under the 2016 to 2018, 2017 to 2019, and 2018 to 2020 plans will be paid out 50% in cash and 50% in stock. The stock portion of these awards are treated as equity plans and included within the Stock Compensation footnote within the Deferred Stock Outstanding section below.

Other contingencies: In the ordinary course of business, the Company is exposed to legal actions and claims and incurs costs to defend against these actions and claims. Company management is not aware of any outstanding or pending legal actions or claims that would materially affect the Company's financial position, results of operations, or cash flows.

NOTE 8 – STOCK COMPENSATION

2011 Executive Incentive Compensation Plan

On March 28, 2011 the Board adopted and on May 19, 2011 the Company's shareholders approved the Company's 2011 Executive Incentive Compensation Plan ("2011 Incentive Plan"). The 2011 Incentive Plan authorizes incentive awards to officers, key employees and non-employee directors in the form of options (incentive and non-qualified), stock appreciation rights, restricted stock, restricted stock units, performance stock units ("deferred stock"), performance cash units, and other awards in stock, cash, or a combination of stock and cash. The 2011 Incentive Plan, as amended, allows the issuance of up to 2,500,000 shares of common stock.

During 2018, stock options covering 278,665 shares were awarded to key executive employees and non-employee directors, which options expire seven years from the date of award and generally vest 25% each year beginning one year after the date of award. The Company also granted deferred stock awards of 163,002 shares to key employees during 2018 under the Company's long-term incentive plan for the 2018 to 2020 period. The actual number of shares of deferred stock, if any, that are ultimately earned by the respective employees will be determined based on achievement against performance goals for each of the three years ending December 31, 2020 and the shares earned will be issued in the first quarter of 2021 to those key employees still with the Company at that time.

At December 31, 2018, 208,555 shares have been issued under the 2011 Incentive Plan, 1,614,558 shares are subject to currently outstanding options, deferred stock awards, and unvested restricted stock units, and 676,887 shares remained available for future issuance under the 2011 Incentive Plan.

Stock Option Plan for Directors

Shares of common stock are reserved for issuance to non-employee directors under options granted by the Company prior to 2011 under its Stock Option Plan for Non-Employee Directors (the "Director Plan"). Under the Director Plan nonqualified stock options to acquire 3,000 shares of common stock were automatically granted to each non-employee director concurrent with annual meetings of shareholders in 2010 and earlier years and vested immediately. The exercise price of options granted was the fair market value of the common stock on the date of the respective shareholder meetings. Options granted under the Director Plan expire 10 years from date of grant. No options have been granted under the Director Plan since 2011 when the Company amended the Director Plan to prohibit future option grants. As of December 31, 2018, there were 36,000 shares subject to outstanding options under the Director Plan.

Stock Options Outstanding

The following table summarizes changes in the number of outstanding stock options under the Director Plan, Stock Plan and the 2011 Incentive Plan during the two years ended December 31, 2018.

	Options	Weighted average exercise price per share	Weighted average remaining contractual term
Outstanding – December 31, 2016	922,930	$ 10.10	4.9 years
Awarded	288,186	4.35	
Exercised	—	—	
Forfeited	(38,457)	11.61	
Outstanding – December 31, 2017	1,172,659	$ 8.63	4.55 years
Awarded	278,665	3.43	
Exercised	—	—	
Forfeited	(70,832)	8.56	
Outstanding – December 31, 2018	1,380,492	7.56	4.18 years
Exercisable at December 31, 2018	920,556	$ 9.14	3.43 years
Expected to vest December 31, 2018	1,380,492	7.56	4.18 years

The fair value of awards issued under the Company's stock option plan is estimated at grant date using the Black-Scholes option-pricing model. The following table displays the assumptions used in the model.

	Year Ended December 31	
	2018	2017
Expected volatility	28.6%	30.4%
Risk free interest rate	2.7%	2.0%
Expected holding period	6 years	6 years
Dividend yield	4.1%	3.7%

Total unrecognized compensation expense was $164,000 as of December 31, 2018, which is expected to be recognized over the next 1.9 years. The aggregate intrinsic value of all outstanding options, exercisable options, and options expected to vest (the amount by which the market price of the stock on the last day of the period exceeded the market price of the stock on the date of grant) was $0 based on the Company's stock price at December 31, 2018. The intrinsic value of options exercised during the year was $0 in 2018 and 2017. There were no stock options exercised in 2018 and 2017. The following table summarizes the status of stock options outstanding at December 31, 2018:

Range of Exercise Prices	Shares	Weighted Average Remaining Option Life	Weighted Average Exercise Price
$2.54 to $5.24	550,734	5.8 years	$ 3.90
$5.25 to $7.49	272,950	4.3 years	6.60
$7.50 to $9.74	18,000	0.4 years	9.73
$9.75 to $11.99	416,745	2.7 years	11.35
$12.00 to $14.15	122,063	1.9 years	12.99

The Company receives an income tax benefit related to the gains received by officers and key employees who make disqualifying dispositions of stock received on exercise of qualified incentive stock options and on non-qualified options. The amount of tax benefit received by the Company was $0 in both 2018 and 2017. The tax benefit amounts have been credited to additional paid-in capital.

Deferred Stock Outstanding

The following table summarizes the changes in the number of deferred stock shares under the Stock Plan and 2011 Incentive Plan over the period from December 31, 2016 to December 31, 2018:

	Shares	Weighted Average Grant Date Fair Value
Outstanding – December 31, 2016	149,260	$ 9.55
Granted	100,239	4.42
Vested	(14,130)	10.61
Forfeited	(44,845)	10.28
Outstanding – December 31, 2017	190,524	6.60
Granted	163,002	3.56
Vested	(29,708)	10.51
Forfeited	(53,752)	5.31
Outstanding – December 31, 2018	270,066	4.48

The grant date fair value is calculated based on the Company's closing stock price as of the grant date. As of December 31, 2018, the total unrecognized compensation expense related to the deferred stock shares was $2,000 and is expected to be recognized over a weighted-average period of 0.2 years.

Restricted Stock Units Outstanding

The following table summarizes the changes in the number of restricted stock units under the 2011 Incentive Plan over the period December 31, 2016 to December 31, 2018:

	Shares	Weighted Average Grant Date Fair Value
Outstanding – December 31, 2016	27,134	8.65
Vested	(13,341)	11.05
Outstanding – December 31, 2017	13,793	6.33
Vested	(13,793)	6.33
Outstanding – December 31, 2018	—	—

The grant date fair value is calculated based on the Company's closing stock price as of the grant date. As of December 31, 2018, the total unrecognized compensation expense related to the restricted stock units was $0.

Compensation Expense

Share-based compensation expense is recognized based on the fair value of awards granted over the vesting period of the award. Share-based compensation expense recognized for 2018 and 2017 was $191,000 and $417,000 before income taxes and $151,000 and $271,000 after income taxes, respectively. Share-based compensation expense is recorded as a part of selling, general and administrative expenses.

Employee Stock Purchase Plan

Under the Company's Employee Stock Purchase Plan ("ESPP"), employees are able to acquire shares of common stock at 85% of the price at the end of each current quarterly plan term. The most recent term ended December 31, 2018. The ESPP is considered compensatory under current rules. At December 31, 2018, after giving effect to the shares issued as of that date, 23,591 shares remain available for purchase under the ESPP.

Employee Stock Ownership Plan (ESOP)

All eligible employees of the Company participate in the ESOP after completing one year of service. Contributions are allocated to each participant based on compensation and vest 20% after two years of service and incrementally thereafter, with full vesting after six years. At December 31, 2018, the ESOP held 784,463 shares of the Company's common stock, all of which have been allocated to the accounts of eligible employees. Contributions to the plan are determined by the Board of Directors and can be made in cash or shares of the Company's stock. The 2018 ESOP contribution was $256,462 for which the Company issued 126,336 shares in March 2019. The 2017 ESOP contribution was $425,890 for which the Company issued 119,632 shares in 2018.

NOTE 9 – COMMON STOCK

PURCHASES OF COMMUNICATIONS SYSTEMS, INC. COMMON STOCK

In October 2008, the Company's Board of Directors authorized the repurchase of shares of the Company's stock pursuant to Exchange Act Rule 10b-18 on the open market, in block trades or in private transactions. At December 31, 2018, 411,910 additional shares could be repurchased under outstanding Board authorizations.

SHAREHOLDER RIGHTS PLAN

On December 23, 2009 the Board of Directors adopted a shareholders' rights plan under which the Board declared a distribution of one right per share of common stock. Each right entitles the holder to purchase 1/100th of a share of a new series of Junior Participating Preferred Stock of the Company at an initial exercise price of $41. The rights expire on December 23, 2019. The rights will become exercisable only following the acquisition by a person or group, without the prior consent of the Board, of 16.5% or more of the Company's voting stock, or following the announcement of a tender offer or exchange offer to acquire an interest of 16.5% or more. If the rights become exercisable, each rightholder will be entitled to purchase, at the exercise price, common stock with a market value equal to twice the exercise price. Should the Company be acquired, each right would entitle the holder to purchase, at the exercise price, common stock of the acquiring company with a market value equal to twice the exercise price. Any rights owned by the acquiring person or group would become void.

NOTE 10 - INCOME TAXES

Income tax (benefit) expense from continuing operations consists of the following:

	Year Ended December 31	
	2018	**2017**
Current year income taxes:		
Federal	$ 3,000	$ (36,000)
State	134,000	56,000
Foreign	249,000	36,000
	386,000	56,000
Deferred income taxes (benefit):		
Federal	$ 19,000	$ (86,000)
State	—	(5,000)
	19,000	(91,000)
	$ 405,000	$ (35,000)

The Company's Austin Taylor Communications, Ltd. unit operated in the United Kingdom (U.K.) and is subject to U.K. rather than U.S. income taxes. Austin Taylor had no activity in 2018 and 2017. At the end of 2018, Austin Taylor's net operating loss carry-forward was $7,462,000. The Company remains uncertain whether it will be able to generate the future income needed to realize the tax benefit of the carry-forward. Accordingly, the Company has continued to maintain its deferred tax valuation allowance against any potential carry-forward benefit from Austin Taylor.

Net2Edge, Ltd., formally known as Transition Networks EMEA, Ltd., operates in the U.K. and is subject to U.K. rather than U.S. income taxes. Net2Edge, Ltd. had pretax losses of $2,772,000 and $2,616,000 in 2018 and 2017, respectively. At the end of 2018, Net2Edge, Ltd.'s net operating loss carry-forward was $7,231,000.

In 2007, Transition Networks China began operations in China and is subject to Chinese taxes rather than U.S. income taxes. Transition Networks China had no activity in 2018 and 2017. At the end of 2018, Transition Networks China's net operating loss carry-forward was $374,000. Due to the history of losses in China, the Company remains uncertain whether it will be able to generate the future income needed to realize the tax benefit of the carry-forward. Accordingly, the Company has continued to maintain its deferred tax valuation reserve against any potential carry-forward benefit. Transition Networks China ceased operations in 2014 and incurred minor non-operating expenditures in 2015 to close the operations. As of 2016, Transition Networks China no longer has any operational activity.

Suttle Costa Rica operated in Costa Rica and was subject to Costa Rica income taxes. In 2005, the Board of Directors of Suttle Costa Rica declared a dividend in the amount of $3,500,000 payable to the Company. The dividend and related "dividend reinvestment plan" qualify under Internal Revenue Code Sec. 965, which allows the Company to receive an 85% dividend-received deduction if the amount of the dividend is reinvested in the United States pursuant to a domestic reinvestment plan. The Company made the required qualified capital expenditures in 2006. No deferred taxes have been provided for the undistributed earnings. As of December 31, 2018, the amount of unremitted earnings outside of the United States was not significant to the Company's liquidity and was available to fund investments abroad. The Company closed its Costa Rica facility in 2017 and no longer has any operational activity in Costa Rica.

Suttle Costa Rica had pretax losses of $45,000 and $1,582,000 in 2018 and 2017. At the end of 2018, Suttle Costa Rica's net operating loss carry-forward was $0.

In April 2016, we received notification from the Internal Revenue Service that they would be performing an examination of our 2012 and 2013 federal consolidated income tax returns. As of December 31, 2017, the examination was complete. The settlement and payment that resulted from the examination did not have a material effect on our results of operations.

The provision for income taxes for continuing operations varied from the federal statutory tax rate as follows:

	Year Ended December 31	
	2018	2017
Tax at U.S. statutory rate	21.0%	35.0%
Surtax exemption	—	(0.2)
State income taxes, net of federal benefit	(0.6)	0.5
Foreign income taxes, net of foreign tax credits	(4.4)	(12.8)
Other nondeductible items	(0.6)	(1.0)
Effect of increase in uncertain tax positions	(0.3)	1.5
Change in valuation allowance	(20.3)	3.1
Change in federal deferred tax rate	—	(25.7)
Expense of prior year tax receivable	(3.9)	—
Other	2.8	(0.1)
Effective tax rate	-6.3%	0.3%

Deferred tax assets and liabilities as of December 31 related to the following:

	2018	2017
Deferred tax assets:		
Allowance for doubtful accounts	$ 25,000	$ 22,000
Inventory	1,718,000	1,836,000
Accrued and prepaid expenses	348,000	245,000
Domestic net operating loss carry-forward	3,425,000	2,240,000
Long-term compensation plans	233,000	238,000
Nonemployee director stock compensation	499,000	454,000
Other stock compensation	19,000	106,000
Intangible assets	275,000	292,000
Foreign net operating loss carry-forwards and credits	2,885,000	3,063,000
Federal and state credits	845,000	857,000
Other	17,000	16,000
Gross deferred tax assets	10,289,000	9,369,000
Valuation allowance	(9,834,000)	(8,713,000)
Net deferred tax assets	455,000	656,000
Deferred tax liabilities		
Depreciation	(436,000)	(618,000)
Net deferred tax liability	(436,000)	(618,000)
Total net deferred tax asset	$ 19,000	$ 38,000

The Company assesses available positive and negative evidence to estimate if sufficient future taxable income will be generated to use the existing deferred tax assets. A significant piece of objective negative evidence evaluated was the cumulative loss incurred over the three-year period ending December 31, 2018. This objective evidence limits the ability to consider other subjective evidence such as the projections for future growth. On the basis of this evaluation, as of December 31, 2018, a valuation allowance of $9,834,000 has been recorded to reflect the portion of the deferred tax asset that is more likely to not be realized. The amount of the deferred tax asset considered realizable, however, could be adjusted if estimates of future taxable income during the carryforward period are reduced or increased or if objective negative evidence in the form of cumulative losses is no longer present and additional weight may be given to subjective evidence such as the Company's projections for growth.

At December 31, 2018, the Company has a federal net operating loss carryforward from 2015 through 2018 activity of approximately $15,264,000 that is available to offset future taxable income and begins to expire in 2035.

During 2015, the Company engaged in a research and development tax credit study for the tax years 2011 to 2014. As a result of this study, the Company claimed $1,554,000 of federal and $1,024,000 of state research and development credits. The Company amended prior year tax returns to claim these credits and offset prior year taxes paid. Credits not used to reduce taxes are available to be carried forward. At December 31, 2018, the Company has an estimated federal research and development credit carryforward of approximately $467,000 and a state research and development credit carryforward of approximately $594,000.

The Company assesses uncertain tax positions in accordance with ASC 740. Under this method, the Company must recognize the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position. The tax benefits recognized in the financial statements from these uncertain tax positions are measured based on the largest benefit that has a greater than fifty percent likelihood of being realized upon ultimate resolution. The Company's practice is to recognize interest and penalties related to income tax matters in income tax expense.

Changes in the Company's uncertain tax positions are summarized as follows:

	2018	2017
Uncertain tax positions – January 1	$ 41,000	$ 207,000
Gross increases - current period tax positions	28,000	—
Settlements	—	(101,000)
Expiration of statute of limitations	(9,000)	(65,000)
Uncertain tax positions – December 31, 2018	$ 60,000	$ 41,000

Included in the balance of uncertain tax positions at December 31, 2018 are $61,000 of tax benefits that if recognized would affect the tax rate. The Company's unrecognized tax benefits will be reduced by $0 in the next twelve months due to statute of limitations expirations. There are no other expected significant changes in the Company's uncertain tax positions in the next twelve months. The Company's income tax liability accounts included accruals for interest and penalties of $0 at December 31, 2018. The Company's 2018 income tax expense decreased by $4,000 due to net decreases for accrued interest and penalties.

The Company's federal and state tax returns and tax returns it has filed in Costa Rica and the United Kingdom are open for review going back to the 2015 tax year.

NOTE 11- INFORMATION CONCERNING INDUSTRY SEGMENTS AND MAJOR CUSTOMERS

The Company classifies its businesses into four segments as follows:

- Transition Networks manufactures media converters, NIDs, NICs, Ethernet switches and other connectivity products that offer the ability to affordably integrate the benefits of fiber optics into any data network;
- Suttle manufactures and markets connectivity infrastructure products for broadband and voice communications;
- JDL Technologies provides technology solutions that address prevalent IT challenges, including virtualization and cloud solutions, managed services, wired and wireless network design and implementation, and converged infrastructure configuration and deployment; and
- Net2Edge develops, manufactures and sells products to transmit packetized voice and data across networks and between copper-wired and fiber optic equipment.

Management has chosen to organize the enterprise and disclose reportable segments based on products and services. Intersegment revenues are eliminated upon consolidation.

Transition Networks manufactures its products in Asia and the United States and makes sales in both the U.S. and international markets. Suttle products are sold principally to U.S. customers. Suttle operates manufacturing facilities in the U.S. JDL Technologies operates in the U.S. and makes sales in the U.S. Net2Edge operates in the U.K. and primarily makes sales in the international markets. Net long-lived assets held in foreign countries were approximately $159,000 and $93,000 at December 31, 2018 and 2017, respectively. Consolidated sales to U.S. customers were approximately 83% and 83% of sales from continuing operations in 2018 and 2017 respectively. In 2018, sales to one of Transition Networks' customers accounted for 11.3% of consolidated sales and sales to one of Suttle's customers accounted for 10.3% of consolidated sales. In 2017, sales to one of Suttle's customers accounted for 10.3% of consolidated sales. At December 31, 2018, Transition Networks had two customers that made up 16% and 14% of consolidated accounts receivable, JDL had one customer that made up 15% of accounts receivable, and Suttle had one customer that made up 14% of consolidated accounts receivable. At December 31, 2017, Suttle had one customer that made up 21% of consolidated accounts receivables and Transition Networks had two customers that made up 17% and 15% of consolidated accounts receivable.

Information concerning the Company's operations in the various segments for the twelve-month periods ended December 31, 2018 and 2017 is as follows:

	Transition Networks	Suttle	JDL Technologies	Net2Edge	Other	Intersegment Eliminations	Total
2018							
Sales	$ 36,470,000	$ 23,410,000	$ 5,134,000	$ 1,700,000	$ —	$ (951,000)	$ 65,763,000
Cost of sales	19,775,000	19,725,000	3,830,000	1,215,000	—	(89,000)	44,456,000
Gross profit	16,695,000	3,685,000	1,304,000	485,000	—	(862,000)	21,307,000
Selling, general and administrative expenses	14,812,000	8,393,000	1,879,000	3,279,000	—	(862,000)	27,501,000
Restructuring expense	—	364,000	—	—	—	—	364,000
Operating (loss) income	1,883,000	(5,072,000)	(575,000)	(2,794,000)	—	—	(6,558,000)
Other income (expense)	(31,000)	(52,000)	3,000	22,000	230,000	—	172,000
Income (loss) before tax	$ 1,852,000	$ (5,124,000)	$ (572,000)	$ (2,772,000)	$ 230,000	$ —	$ (6,386,000)
Depreciation and amortization	$ 420,000	$ 1,551,000	$ 179,000	$ 65,000	$ —	$ —	$ 2,215,000
Capital expenditures	$ 81,000	$ 542,000	$ —	$ 127,000	$ 14,000	$ —	$ 764,000
Assets	$ 19,228,000	$ 12,298,000	$ 2,572,000	$ 1,894,000	$ 17,356,000	$ (27,000)	$ 53,321,000

	Transition Networks	Suttle	JDL Technologies	Net2Edge	Other	Intersegment Eliminations	Total
2017							
Sales	$ 38,541,000	$ 32,384,000	$ 11,210,000	$ 1,079,000	$ —	$ (891,000)	$ 82,323,000
Cost of sales	21,779,000	30,964,000	8,437,000	398,000	—	(91,000)	61,487,000
Gross profit	16,762,000	1,420,000	2,773,000	681,000	—	(800,000)	20,836,000
Selling, general and administrative expenses	15,371,000	8,900,000	2,101,000	3,127,000	—	(800,000)	28,699,000
Impairment	—	—	1,463,000	154,000	—	—	1,617,000
Restructuring expense	—	2,285,000	—	—	—	—	2,285,000
Operating income (loss)	1,391,000	(9,765,000)	(791,000)	(2,600,000)	—	—	(11,765,000)
Other income (expense)	10,000	(123,000)	—	(15,000)	33,000	—	(95,000)
Income (loss) before tax	$ 1,401,000	$ (9,888,000)	$ (791,000)	$ (2,615,000)	$ 33,000	$ —	$ (11,860,000)
Depreciation and amortization	$ 705,000	$ 2,155,000	$ 269,000	$ 57,000	$ —	$ —	$ 3,186,000
Capital expenditures	$ 232,000	$ 397,000	$ 8,000	$ 69,000	$ 67,000	$ —	$ 773,000
Assets	$ 12,543,000	$ 18,359,000	$ 1,073,000	$ 1,229,000	$ 24,969,000	$ (27,000)	$ 58,146,000

NOTE 12 – FAIR VALUE MEASUREMENTS

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Assets and liabilities measured at fair value are classified using the following hierarchy, which is based upon the transparency of inputs to the valuation as of the measurement date:

Level 1 – Observable inputs that reflect unadjusted quoted prices for identical assets or liabilities in active markets that the Company has the ability to access at the measurement date.

Level 2 – Observable inputs such as quoted prices for similar instruments and quoted prices in markets that are not active, and inputs that are directly observable or can be corroborated by observable market data. The types of assets and liabilities included in Level 2 are typically either comparable to actively traded securities or contracts, such as treasury securities with pricing interpolated from recent trades of similar securities, or priced with models using highly observable inputs, such as commodity options priced using observable forward prices and volatilities.

Level 3 – Significant inputs to pricing that have little or no observability as of the reporting date. The types of assets and liabilities included in Level 3 are those with inputs requiring significant management judgment or estimation, such as the complex and subjective models and forecasts used to determine the fair value of financial instruments.

As discussed in Note 6, we tested our goodwill for impairment as of April 1, 2017. As part of this impairment testing, the Company determined the fair value of the net assets of the JDL Technologies reporting unit, based primarily on discounted cash flows and forecasted future operating results, which represent Level 3 inputs. As a result of our analysis, the Company recorded a non-cash impairment charge of $1,463,000 to fully impair goodwill.

Financial assets and liabilities measured at fair value on a recurring basis as of December 31, 2018 and 2017, are summarized below:

	December 31, 2018			
	Level 1	**Level 2**	**Level 3**	**Total Fair Value**
Cash equivalents:				
Money Market funds	$ 8,428,000	$ —	$ —	$ 8,428,000
Total	$ 8,428,000	$ —	$ —	$ 8,428,000

	December 31, 2017			
	Level 1	**Level 2**	**Level 3**	**Total Fair Value**
Cash equivalents:				
Money Market funds	$ 6,193,000	$ —	$ —	$ 6,193,000
Subtotal	6,193,000	—	—	6,193,000
Short-term investments:				
Commercial Paper	—	997,000	—	997,000
Corporate Notes/Bonds	—	4,544,000	—	4,544,000
Subtotal	—	5,541,000	—	5,541,000
Total	$ 6,193,000	$ 5,541,000	$ —	$ 11,734,000

We record transfers between levels of the fair value hierarchy, if necessary, at the end of the reporting period. There were no transfers between levels during 2018 and 2017.

NOTE 13 – RESTRUCTURING CHARGES

During the year ended December 31, 2017, the Company recorded $2,285,000 in restructuring expense. This included severance and related benefits costs due to the restructuring within the Suttle business segment, including costs related to the closure of the Costa Rica facility. The facility was completely closed during 2017. During the year ended December 31, 2018, the Company recorded $364,000 in restructuring expense. This consisted of severance and related benefits costs due to organizational restructuring within the Suttle business segment. The Company paid $0 in restructuring charges during 2018 and had $364,000 in restructuring accruals recorded at December 31, 2018.

NOTE 14 – GENERAL COMMITMENTS

On August 2, 2018, the Company entered into a purchase agreement with Launch Properties, LLC for the sale of the Company's building located at 10900 Red Circle Drive, Minnetonka, MN for $10,000,000. The building currently includes the Company's corporate administrative offices, as well as some operations for Transition Networks, Suttle and JDL Technologies. The closing of the transaction is subject to a number of closing conditions, including the buyer's ability to complete due diligence within 180 days and the buyers ability to obtain regulatory approval for its intended use of the property. The due diligence period lapsed on January 29, 2019 and the buyer met certain required obligations. If the sale proceeds, the Company currently expects the transaction to close in the second half of 2019 or early 2020.

NOTE 15 – SUBSEQUENT EVENTS

The Company has evaluated subsequent events through the date of this filing. We do not believe there are any material subsequent events which would require further disclosure.

(b) SUPPLEMENTAL FINANCIAL INFORMATION

Quarterly Operating Results
(in thousands except per share amounts)
Unaudited

	Quarter Ended			
	March 31	**June 30**	**Sep 30**	**Dec 31**
2018				
Sales	$ 16,774	$ 15,038	$ 15,292	$ 18,659
Operating loss	(1,974)	(2,722)	(1,602)	(260)
Net loss	(1,860)	(2,642)	(1,545)	(745)
Basic net loss per share	$ (0.21)	$ (0.29)	$ (0.17)	$ (0.08)
Diluted net loss per share	$ (0.21)	$ (0.29)	$ (0.17)	$ (0.08)
2017				
Sales	$ 20,800	$ 22,068	$ 20,412	$ 19,043
Operating income (loss)	(1,460)	(4,067)	(4,654)	(1,584)
Net loss	(1,516)	(4,091)	(4,522)	(1,697)
Basic net (loss) income per share	$ (0.17)	$ (0.46)	$ (0.50)	$ (0.19)
Diluted net (loss) income per share	$ (0.17)	$ (0.46)	$ (0.50)	$ (0.19)

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A: CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

In connection with the filing of this Form 10-K, under the supervision and with the participation of our management, including our Chief Executive Officer ("CEO") and Chief Financial Officer ("CFO"), we evaluated the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rule 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934 (the "Exchange Act")) as of December 31, 2018. Based on that evaluation, as detailed below, management concluded that the Company's disclosure controls and procedures are effective.

Management Report on Internal Control over Financial Reporting

The Company's management is responsible for establishing and maintaining adequate internal control over financial reporting, as that term is defined in Rule 13a-15(f) and 15d-15(f) of the Exchange Act. Under the supervision and with the participation of the Company's management, including the CEO and CFO, the Company conducted an evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2018, based on *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (the "Framework"). Based on that evaluation, management concluded that the Company's internal controls and procedures are effective.

Long-lived Asset Impairment Testing. Based on management's testing and evaluation, we determined that we did not design and maintain effective internal control over the step one goodwill impairment testing that we performed in accordance with ASC 350, *Intangibles – Goodwill and Other* as of December 31, 2016, or April 30, 2017, and ASC 360, *Property, Plant, and Equipment*, as of December 31, 2017. Specifically, the Company's review control did not operate at a sufficient level of precision to identify the improper assumptions used in our impairment analyses. We concluded that this lack of review in sufficient detail of the analyses was a material weakness in our internal controls. We wrote off the JDL reporting unit goodwill in the second quarter of 2017 and at December 31, 2017, had no recorded goodwill.

In addition, we performed additional procedures related to the Company's long-lived asset impairment analysis and concluded that our failure to adequately review our impairment analysis in sufficient detail did not result in misstatements within the Company's consolidated financial statements. We concluded, however, that there was a reasonable possibility that a material misstatement in the Company's consolidated financial statements may not have been prevented or detected on a timely basis.

Implemented Remedial Actions in Response to Material Weaknesses

To address the above, we designed and in 2018 implemented and tested new review controls to value our business units to ensure that and long-lived asset impairment analyses are completed in a timely manner and in enough detail to operate at a sufficient level of precision to identify improper assumptions.

Inherent Limitations on Control Systems

Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, will be or have been detected. These inherent limitations include the realities that judgments in decision making can by faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the control. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, controls may become inadequate because of changes in conditions, or the degree of compliance with the policies or procedures may deteriorate.

Changes in Internal Control

Except as noted above, there were no other changes in the Company's internal control over financial reporting that occurred during the Company's most recently completed fiscal quarter that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

This annual report does not include an attestation report of the Company's independent registered public accounting firm regarding internal control over financial reporting. Management's report was not subject to attestation by the Company's registered public accounting firm pursuant to rules of the Securities and Exchange Commission that permit the Company to provide only management's report in this annual report.

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by Item 401 under Regulation S-K, to the extent applicable to the Company's directors, will be set forth under the caption "Election of Directors" in the Company's definitive proxy material for its May 22, 2019 Annual Meeting of Shareholders ("2019 Proxy Materials") and is incorporated herein by reference. The information required with respect to the Company's officers by paragraph (b) of Item 401 is set forth under Item 1(c) (3) of this Form 10-K.

The information required by Item 405 regarding compliance with Section 16 (a) will be set forth under the caption "Section 16(a) Beneficial Ownership Reporting Compliance" in the Company's 2019 Proxy Materials, and is incorporated herein by reference.

Code of Ethics

The Company has adopted a Code of Ethics applicable to all officers of the Company as well as certain other key accounting personnel. A copy of the Code of Ethics can be obtained free of charge upon written request directed to the Company's Assistant Secretary at the executive offices of the Company.

The information required called for by Item 407 regarding corporate governance will be set forth under the caption "Corporate Governance and Board Matters" in the 2019 Proxy Materials and is incorporated herein by reference.

ITEM 11. EXECUTIVE COMPENSATION

The information called for by Item 402 under Regulation S-K, will be set forth under the caption "Executive Compensation" in the Company's 2019 Proxy Materials, and is expressly incorporated herein by reference.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information called for by Item 403 under Regulation S-K will be set forth under the captions "Security Ownership of Certain Beneficial Owners and Management" and "Election of Directors" in the Company's 2019 Proxy Materials, and is incorporated herein by reference.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by Item 404 under Regulation S-K will be set forth under the caption "Certain Relationship and Related Transaction" in the Company's 2019 Proxy Materials, and is incorporated herein by reference.

The information required by Item 407(a) will be set forth in the Company's 2019 Proxy Materials caption "Corporate Governance and Board Matters" and is incorporated herein by reference.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required by Item 14 of Form 10K and 9(e) of Schedule 14A will be set forth under the caption "Principal Accountant Fees and Services" in the Company's 2019 Proxy Materials, and is incorporated herein by reference.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) (1) **Consolidated Financial Statements**

The following Consolidated Financial Statements of Communications Systems, Inc. and subsidiaries appear at pages 30 to 52 herein:

- Report of Independent Registered Public Accounting Firm
- Consolidated Balance Sheets as of December 31, 2018 and 2017
- Consolidated Statements of Loss and Comprehensive Loss for the years ended December 31, 2018, and 2017
- Consolidated Statements of Changes in Stockholders' Equity for the years ended December 31, 2018 and 2017
- Consolidated Statements of Cash Flows for the years ended December 31, 2018 and 2017
- Notes to Consolidated Financial Statements

(a) (2) **Consolidated Financial Statement Schedules**

The schedules are omitted as the required information is inapplicable or the information is presented in the consolidated financial statements or related notes.

(a) (3) **Exhibits**

Regulation S-K Reference	Title of Document	Location
3.1	Articles of Incorporation, as amended	Filed as Exhibit 3.1 to the Form 10-Q for the quarter ended June 30, 2014 and incorporated herein by reference.
3.2	Bylaws, as amended	Filed as Exhibit 3.2 to the Form 10-Q for the quarter ended June 30, 2014 and incorporated herein by reference.

3.3		Amended and Restated Certificate of Designation, Preferences and Rights of Series A Junior Participating Preferred Stock	Filed as Exhibit 4(a) to Form 8-A dated December 28, 2009 and incorporated herein by reference.
10.1		Amended and Restated Credit Agreement dated August 12, 2016 by and among Communications Systems, Inc., JDL Technologies, Inc., Transition Networks, Inc., Suttle, Inc. and Wells Fargo Bank, National Association	Filed as Exhibit 10.1 to the Form 8-K dated August 12, 2016 and incorporated herein by reference.
10.1.1		First Amendment dated September 30, 2016 to Amended and Restated Credit Agreement dated August 12, 2016 by and among Communications Systems, Inc., JDL Technologies, Inc., Transition Networks, Inc., Suttle, Inc. and Wells Fargo Bank, National Association	Filed as Exhibit 10.1 to the Form 10-Q for the quarter ended September 30, 2016 and incorporated herein by reference.
10.2		Amended and Restated Security Agreement dated August 12, 2016 by and among Communications Systems, Inc., JDL Technologies, Inc., Transition Networks, Inc., Suttle, Inc. and Wells Fargo Bank, National Association	Filed as Exhibit 10.2 to the Form 8-K dated August 12, 2016 and incorporated herein by reference.
10.3		Amended and Restated Note dated August 12, 2016 by and among Communications Systems, Inc., JDL Technologies, Inc., Transition Networks, Inc., Suttle, Inc. to Wells Fargo National Bank, National Association	Filed as Exhibit 10.3 to the Form 8-K dated August 12, 2016 and incorporated herein by reference.
10.4	*	Employee Stock Ownership Plan and Trust, effective as of January 1, 2009	Filed as Exhibit 10.3 to the Form 10-K for the year ended December 31, 2011 (2011 Form 10-K) and incorporated herein by reference.
10.4.1	*	First Amendment, dated October 21, 2011, to the Communications Systems, Inc. Employee Stock Ownership Plan and Trust.	Filed as Exhibit 10.3.1 to the 2011 Form 10-K and incorporated herein by reference.
10.4.2	*	Third Amendment, dated December 14, 2012 to the Communications Systems, Inc. Employee Stock Ownership Plan and Trust.	Filed as Exhibit 10.1 to the Form 8-K dated December 14, 2012 and incorporated herein by reference.
10.4.3	*	Fourth Amendment, dated January 1, 2015 to the Communications Systems, Inc. Employee Stock Ownership Plan and Trust	Filed as Exhibit 10.3.3 to the Form 10-K for the year ended December 31, 2014 and incorporated herein by reference.
10.5	*	1990 Employee Stock Purchase Plan, as amended May 21, 2015	Filed as Appendix B to the Proxy Statement dated April 10, 2015 for the 2015 Annual Meeting of Shareholders and incorporated herein by reference.

10.6	*	1990 Stock Option Plan for Nonemployee Directors, as amended May 19, 2011	Filed as Exhibit 10.4 to the Form 10-Q for the quarter ended September 30, 2011 and incorporated herein by reference.
10.7	*	1992 Stock Plan, as amended August 11, 2011	Filed as Exhibit 10.3 to the Form 10-Q for the quarter ended September 30, 2011 and incorporated herein by reference.
10.8	*	Supplemental Executive Retirement Plan	Filed as Exhibit 10.8 to the 1993 Form 10-K and incorporated herein by reference.
10.9	*	Communications Systems Inc. Long Term Incentive Plan, as amended through March 1, 2012	Filed as Exhibit 99.2 to the Company's Form 8-K dated March 9, 2012 and incorporated herein by reference.
10.10	*	Communications Systems Inc. 2011 Executive Incentive Compensation Plan, as amended May 23, 2018	Filed as Appendix A to the Proxy Statement dated April 11, 2018 for the 2018 Annual Meeting of Shareholders and incorporated herein by reference.
10.11	*	Communications Systems Inc. Annual Bonus Plan	Filed as Exhibit 99.1 to the Company's Form 8-K dated March 9, 2012 and incorporated herein by reference.
10.12		Form of Rights Agreement, dated as of December 23, 2009 between Communications Systems, Inc. and Wells Fargo Bank National Association	Filed as Exhibit 4(b) to Form 8-A on December 28, 2009 and incorporated herein by reference.
10.13		Form of Communications Systems, Inc. Change of Control Agreement for Executives	Filed herewith.
21		Subsidiaries of the Registrant	Filed herewith.
23.1		Consent of Independent Registered Public Accounting Firm	Filed herewith.
24		Power of Attorney	Included in signatures at page 59.
31.1		Certification of Chief Executive Officer	Filed herewith.
31.2		Certification of Chief Financial Officer	Filed herewith.
32		Certification under USC § 1350	Filed herewith.
99.1		Press Release dated March 6, 2019 Announcing 2018 Fourth Quarter and Year-End Results	Filed herewith.

The exhibits referred to in this Exhibit Index will be supplied to a shareholder at a charge of $0.25 per page upon written request directed to CSI's Assistant Secretary at the executive offices of the Company.

ITEM 16. FORM 10-K SUMMARY

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

COMMUNICATIONS SYSTEMS, INC.

Dated: March 8, 2019

/s/ Roger H.D. Lacey
Roger H.D. Lacey, Chief Executive Officer and Chairman of the Board of Directors

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 in the capacities and on the dates indicated:

Each person whose signature appears below constitutes and appoints ROGER H.D. LACEY and MARK D. FANDRICH as his true and lawful attorneys-in-fact and agents, each acting alone, with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to sign any or all amendments to this Annual Report on Form 10-K and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, each acting alone, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all said attorneys-in-fact and agents, each acting alone, or his substitute or substitutes, may lawfully do or cause to be done by virtue thereof.

Signature	Title	Date
/s/Roger H.D. Lacey Roger H.D. Lacey	Chief Executive Officer and Chairman of the Board of Directors	March 8, 2019
/s/Mark D. Fandrich Mark D. Fandrich	Group Business President and Chief Financial Officer (Principal Financial Officer)	March 8, 2019
/s/Kristin A. Hlavka Kristin A. Hlavka	Corporate Controller (Principal Accounting Officer)	March 8, 2019
/s/Curtis A. Sampson Curtis A. Sampson	Chairman Emeritus of the Board of Directors and Director	March 8, 2019
/s/Randall D. Sampson Randall D. Sampson	Director	March 8, 2019
/s/Richard A. Primuth Richard A. Primuth	Director	March 8, 2019
/s/Steven C. Webster Steven C. Webster	Director	March 8, 2019

Exhibit 10.13

COMMUNICATIONS SYSTEMS, INC.
CHANGE IN CONTROL AGREEMENT

THIS CHANGE IN CONTROL AGREEMENT is adopted this 1st day of January, 2015 (the "Effective Date") by and between COMMUNICATIONS SYSTEMS, INC., a Minnesota corporation located in Minnetonka, Minnesota (the "Company"), and ____________, an executive of the Company or one of its subsidiaries (the "Executive").

The Board of Directors of the Company (the "Board") has determined that it is in the best interests of the Company to retain the Executive's services and to reinforce and encourage the continued attention and dedication of the Executive to his or her assigned duties, without distraction in potentially disturbing circumstances arising from the possibility of a change in control of the Company.

The Company and the Executive agree as provided herein.

Article 1

Definitions

Whenever used in this Agreement, the following words and phrases shall have the meanings specified:

1.1 "A**greement**" means this Communications Systems, Inc. Change in Control Agreement, as it may be amended from time to time.

1.2 "**Annual Compensatio**n" means the Executive's average compensation paid by the Company which was includible in the Executive's gross income during the most recent two taxable years ending before the date of the Change in Control. The definition includes amounts includible in compensation, prior to any reduction for a salary contribution to a plan described in Section 125 of the Code or qualified under Section 401(k) of the Code, as well as any compensation included in the Executive's compensation within the meaning of Section 280G of the Code.

1.3 "**Cause**" means

(a) Gross negligence or gross neglect of duties; or

(b) Commission of a felony or of a gross misdemeanor involving moral turpitude which in the reasonable determination of the Board is materially and demonstrably injurious to the Company or which impairs the Executive's ability to perform substantially the Executive's duties with the Company or a Subsidiary; or

(c) Fraud, disloyalty, dishonesty or willful violation of any law or a willful violation of a material Company or Subsidiary policy which, after warning, remains a continuing violation, committed in connection with the Executive's employment.

1.4 "**Change in Control**" shall occur on the earliest date that:

(a) A "person" or "group" acquires ownership of stock of the Company that, together with stock held by such person or group, constitutes more than fifty percent (50%) of the total fair market value or total voting power of the stock of the Company;

(b) Any person or group acquires (or has acquired during the twelve (12) month period ending on the date of the most recent acquisition by such person or group) ownership of stock of the Company possessing thirty percent (30%) or more of the total voting power of the stock of the Company;

(c) A majority of the members of the Board is replaced during any twelve (12) month period by directors whose appointment or election is not endorsed by a majority of the members of the Company's Board prior to the date that such appointments or elections are made;

(d) Any person or group acquires (or has acquired) during the twelve (12) month period ending on the date of the most recent acquisition by such person or group, assets from the Company that have a total gross fair market value equal to or more than forty percent (40%) of the total gross fair market value of all of the assets of the Company immediately prior to such acquisition or acquisitions; or

(e) For the purposes of this Section 1.4, "person" or "group" does not include The Communications Systems, Inc. Employee Stock Ownership Plan and Trust.

1.5 "**Code**" means the Internal Revenue Code of 1986, as amended.

1.6 "**Disability**" means the Executive's suffering a sickness, accident or injury which has been determined by the insurance carrier of any individual or group disability insurance policy covering the Executive, or by the Social Security Administration, to be a disability rendering the Executive totally and permanently disabled. The Executive must submit proof to the Plan Administrator of the insurance carrier's or Social Security Administration's determination upon the request of the Plan Administrator.

1.7 "**Good Reason**" means the existence of any of the following without the Executive's written consent:

(a) A material diminution by the Company in the Executive's annual base salary.

(b) A material diminution in the Executive's authority, duties or responsibilities as in effect in the three (3) month period immediately preceding a Change in Control.

(c) A material diminution in the authority, duties or responsibilities as in effect in the three (3) month period immediately preceding a Change in Control, of the person to whom the Executive is required to report, including a requirement that the Executive report to a corporate officer or employee instead of reporting directly to the Company's Board, if the Executive otherwise reported directly to the Company's Board;

(d) A material diminution in the budget over which the Executive retains authority as in effect in the three (3) month period immediately preceding a Change in Control;

(e) The Company requiring the Executive to be based more than thirty (30) miles from where the Executive's office is located immediately prior to a Change in Control, except for required travel on the Company's business, and then only to the extent substantially consistent with the business travel obligations which the Executive undertook on behalf of the Company during the 90-day period ending on the date of the Change in Control (without regard to travel related to or in anticipation of the Change in Control); or

(f) Any other action or inaction that constitutes a material breach by the Company of this Agreement.

The Executive will have Good Reason to terminate employment only if within ninety (90) days following the Executive's actual knowledge of the event which the Executive determines constitutes Good Reason, the Executive notifies the Company in writing that the Executive has determined a Good Reason exists and specifies the event creating Good Reason; following receipt of the notice, the Company fails to remedy the event within thirty (30) days; and the Executive's resignation for Good Reason is effective within ninety (90) days following the Company's period for remedy. If such conditions are not met, the Executive will not have a Good Reason to terminated employment.

1.8 "**Subsidiary**" means any entity that, along with the Company, would be treated as a single employer under Sections 414(b) and (c) of the Code.

1.9 "**Successor**" means any entity that assumes the rights and the obligations of the Company by merger, acquisition, or other valid legal succession.

1.10 "**Termination Date**" shall mean the date of the Executive's Termination of Employment.

1.11 "**Termination of Employment**" shall mean Executive's separation from service with the Company or one of its Subsidiaries.

Article 2

Change in Control Benefits

2.1 **Change in Control Benefit**. Subject to the terms and conditions of this Agreement, if within twenty-four (24) months following a Change in Control of the Company, the Executive shall be subject to an involuntary Termination of Employment by the Company other than for Cause, death, disability or retirement, or Executive shall initiate a voluntary Termination of Employment for Good Reason, the Company shall pay to the Executive the benefit specified below in this Section 2.1. If a Change in Control as defined in the Agreement occurs, this Agreement shall expire on the second anniversary of such Change in Control; provided, however, that any benefits provided under this Section 2.1 shall continue in effect until fully paid or satisfied.

2.1.1 **Amount of Benefit**. The benefit under this Section 2.1 is one (1) times the Executive's Annual Compensation at the date of the Change of Control.

2.1.2 **Payment of Benefit**. The Company shall pay the benefit to the Executive in a lump sum seventy-five (75) days following the Termination Date provided that, prior to such date the Executive has executed a release of all claims against the Company, its officers and Directors.

2.1.3 **Insurance Benefits**. If a benefit is payable under Section 2.1, then for a period of twelve (12) months following the Termination Date the Executive shall receive, in addition to the benefit provided in Section 2.1.1 of this Agreement the following benefits substantially in the form and expense to the Executive as received by the Executive on the Termination Date: (a) medical and dental insurance; and (b) life insurance. The provision of medical and dental insurance and the provision of life insurance benefits pursuant to this Section 2.1.3 shall, however, be subject to the following limitations: (i) the benefits provided during Executive's taxable year may not affect the benefits to be provided to Executive in any other taxable year, (ii) reimbursements or payments must be made on or before the last day of Executive's taxable year following the taxable year in which the expense being paid or reimbursed was incurred, and (iii) the right to continued coverage is not subject to liquidation or exchange for another benefit.

It is understood and agreed that any rights and privileges of the Executive provided by the Consolidated Omnibus Budget Reconciliation Act of 1986 "(COBRA"), amending the Employee Retirement Income Security Act, the Internal Revenue Code and the Public Health Services Act, as amended, shall begin immediately following the Termination Date.

2.2 **Excess Parachute Payment**. Notwithstanding anything to the contrary in this Agreement, the payments made to the Executive under this Section 2 shall be one dollar ($1.00) less than the amount which would cause the payments to the Executive (including payments to the Executive which are not included in this Agreement) to be subject to the excise tax imposed by Section 4999 of the Code. Any reductions in payments under this section will come first from payments under Section 2.1.1 and then from payments under Section 2.1.3

2.3 **Withholding & Payroll Taxes.** To the extent required by law, the Company shall withhold from other amounts owed to the Executive or require the Executive to remit to the Company an amount sufficient to satisfy federal, state and local withholding tax requirements on any payments made to the Executive under this Agreement. Determinations by the Company as to withholding shall be binding on the Executive.

Article 3

Miscellaneous

3.1 **Confidential Information**. The Executive recognizes and acknowledges that the Executive will have access to certain information of the Company and that such information is confidential and constitutes valuable, special and unique property of the Company. The Executive shall not at any time, either during or subsequent to the term of this Agreement, disclose to others, use, copy or permit to be copied, except as directed by law or in pursuance of the Executive's duties for or on behalf of the Company, its Successors, assigns or nominees, any Confidential Information of the Company (regardless of whether developed by the Executive), without the prior written consent of the Company. The term "Confidential Information" with respect to any person means any secret or confidential information or know-how and shall include, but shall not be limited to, the plans, customers, costs, prices, uses, and applications of products and services, results of investigations, studies owned or used by such person, and all products, processes, compositions, computer programs, and servicing, marketing or operational methods and techniques at any time used, developed, investigated, made or sold by such person, before or during the term of this Agreement, that are not readily available to the public or that are maintained as confidential by such person. The Executive shall maintain in confidence any Confidential Information of third parties received as a result of the Executive's employment with the Company in accordance with the Company's obligations to such third parties and the policies established by the Company.

3.2 **No Competition**. If within the twenty-four (24) months following a Change in Control of the Company, the Executive shall have an involuntary Termination of Employment by the Company other than for Cause, death, disability or retirement, or shall have a voluntary Termination of Employment for Good Reason, then and for a period of one (1) year immediately following the Termination Date, the Executive shall not directly or indirectly engage in any business in which the Company directly or indirectly engages during the term of the Agreement; provided, however, that this restriction shall apply only to the geographic market of the Company. The Executive shall be deemed to engage in a business if the Executive directly or indirectly, engages or invests in, owns, manages, operates, controls or participates in the ownership, management, operation or control of, is employed by, associated or in any manner connected with, or renders services or advice to, any business in which the Company directly or indirectly engages, provided, however, that the Executive may invest in the securities of any enterprise (but without otherwise participating in the activities of such enterprise) if two conditions are met: (a) such securities are listed on any national or regional securities exchange or have been registered under Section 12(g) of the Securities Exchange Act of 1934 and (b) the Executive does not beneficially own (as defined Rule 13d-3 promulgated under the Securities Exchange Act of 1934) in excess of one percent of the outstanding capital stock of such enterprise. In the event the Executive is eligible for and receives a payment under this Agreement, for the twelve (12) months after termination of employment, the Executive will not, directly or indirectly, solicit, induce or attempt to solicit or induce any of the Company's employees or independent contractors for the purpose of hiring them to work for the Executive or another individual, entity or employer, or for the purpose of inducing them to leave their employment with the Company, except with the Company's written consent. In the event the Executive violates this Section 3.2 or Section 3.1, any and all rights of the Executive under this Agreement shall terminate and no further payment shall be due the Executive, which shall be in addition to, and not in lieu of, any other rights or remedies of the Company under this Agreement.

3.3 **Termination of Agreement Prior to Change of Control**. At any time after the Effective Date and prior to a Change of Control, the Board of Directors of the Company may amend or terminate this Agreement: provided that no such amendment or termination shall be effective until at least sixty (60) days following written notification of Executive of such termination or amendment of this Agreement. Further, this Agreement shall automatically terminate if, prior to a Change of Control, Company terminates Executive, whether with or without Cause, or Executive voluntarily terminates his or her employment with the Company, whether with or without Good Reason.

3.4 **Delivery of Documents Upon Termination of Employment**. The Executive shall deliver to the Company or its designee at the Executive's Termination of Employment all correspondence, memoranda, notes, records, drawings, sketches, plans, customer lists, product compositions, and other documents and all copies thereof, made, composed or received by the Executive, solely or jointly with others, that are in the Executive's possession, custody, or control at such Termination of Employment and that are related in any manner to the past, present, or anticipated business of the Company.

3.5 **Remedies**. The Executive acknowledges that a remedy at law for any breach or attempted breach of the Executive's obligations under Sections 3.1, 3.2 and 3.3 may be inadequate, agrees that the Company may be entitled to specific performance and injunctive and other equitable remedies in case of any such breach or attempted breach and further agrees to waive any requirement for the securing or posting of any bond in connection with the obtaining of any such injunctive or other equitable relief. The Company shall have the right to offset against amounts to be paid to the Executive pursuant to the terms hereof any amounts owed by the Executive to the Company at the time of payment.

The termination of the Agreement shall not be deemed to be a waiver by the Company of any breach by the Executive of this Agreement or any other obligation owed the Company, and notwithstanding such a termination the Executive shall be liable for all damages attributable to such a breach.

3.6 **Dispute Resolution**. Subject to the Company's right to seek injunctive relief in court as provided in Section 3.4 of this Agreement, any dispute, controversy or claim arising out of or in relation to or connection to this Agreement, including without limitation any dispute as to the construction, validity, interpretation, enforceability or breach of this Agreement, shall be settled by arbitration administered by the American Arbitration Association under its National Rules for the Resolution of Employment Disputes and judgment upon the award rendered by the arbitrator(s) may be entered in any court having jurisdiction thereof.

Any such Arbitration will be conducted: (i) by a neutral arbitrator appointed by mutual agreement of the parties; or (ii) failing such agreement, by a neutral arbitrator appointed in accordance with said AAA rules; the Company shall pay the fees and reasonable expenses of the arbitrator; the parties will be permitted reasonable discovery in accordance with the provisions of the Minnesota Rules of Civil Procedure, including the production of relevant documents by the other party, the exchange of witness lists, and a limited number of depositions, including depositions of any expert who will testify at the arbitration; the arbitrator's award will include findings of fact and conclusions of law showing the legal and factual bases for the arbitrator's decision; the arbitrator will have the authority to award to the prevailing party any remedy or relief that a United States District Court or court of the State of Minnesota could order or grant if the Dispute had first been brought in that judicial forum, including costs and attorneys' fees; and unless otherwise agreed by the parties, the place of any arbitration proceeding will be Minneapolis, Minnesota.

3.7 **Acknowledgement of Parties**. The Company and the Executive understand and acknowledge that this Agreement means that neither can pursue an action against the other in a court of law regarding any employment dispute, except for claims involving workers' compensation benefits or unemployment benefits, and except as set forth elsewhere in this Agreement, in the event that either party notifies the other of its demand for arbitration under this Agreement. The Company and the Executive understand and agree that this Section 3.5, concerning arbitration, shall not include any controversies or claims related to any agreements or provisions (including provisions in this Agreement) respecting confidentiality, proprietary information, non-competition, non-solicitation, trade secrets, or breaches of fiduciary obligations by the Executive, which shall not be subject to arbitration.

3.8 **Right to Consult Counsel**. Executive has been advised of the Executive's right to consult with an attorney prior to entering into this Agreement.

3.9 **Successors of the Company**. The Company will require any Successor by agreement in form and substance satisfactory to the Executive, expressly to assume and agree to perform this Agreement in the same manner and to the same extent that the Company would be required to perform it if no such succession had taken place. The failure of the Company to obtain such agreement prior to the effectiveness of any such succession shall be a breach of this Agreement and shall entitle the Executive to terminate the Agreement and receive compensation from the Company in the same amount and on the same terms as the Executive would be entitled hereunder if the Executive terminated the Executive's employment for Good Reason. As used in this Agreement, "Company" as hereinbefore defined shall include any Successor to its business and/or assets as aforesaid which executes and delivers the agreement provided for in this Section 3.8 or which otherwise becomes bound by all the terms and provisions of this Agreement by operation of law.

3.10 **Executive's Heirs, etc**. The Executive may not assign the Executive's rights or delegate the Executive's duties or obligations hereunder without the written consent of the Company. This Agreement shall inure to the benefit of and be enforceable by the Executive's personal or legal representatives, executors, administrators, successors, heirs, distributees, devisees and legatees. If the Executive should die while any amounts would still be payable to the Executive hereunder if the Executive had continued to live, all such amounts, unless other provided herein, shall be paid in accordance with the terms of this Agreement to the Executive's designee or, if there be no such designee, to the Executive's estate.

3.11 **Notices**. Any notice or communication required or permitted under the terms of this Agreement shall be in writing and shall be delivered personally, or sent by registered or certified mail, return receipt requested, postage prepaid, or sent by nationally recognized overnight carrier, postage prepaid, or sent by facsimile transmission to the Company at the Company's principal office and facsimile number in Minnetonka, Minnesota, or to the Executive at the address and facsimile number, if any, appearing on the books and records of the Company. Such notice or communication shall be deemed given (a) when delivered if personally delivered; (b) five mailing days after having been placed in the mail, if delivered by registered or certified mail; (c) the business day after having been placed with a nationally recognized overnight carrier, if delivered by nationally recognized overnight carrier, and (d) the business day after transmittal when transmitted with electronic confirmation of receipt, if transmitted by facsimile. Any party may change the address or facsimile number to which notices or communications are to be sent to such party by giving notice of such change in the manner herein provided for giving notice. Until changed by notice, the following shall be the address and facsimile number to which notices shall be sent:

If to the Company:	If to the Executive:
Communications Systems, Inc.	
Attention: President and CFO	
10900 Red Circle Drive	
Minnetonka, MN 55343	
Fax: (952) 946-1835	

3.12 **Amendment or Waiver**. No provisions of this Agreement may be modified, waived or discharged unless such waiver, modification or discharge is agreed to in writing signed by the Executive and such officer as may be specifically designated by the Board (which shall not include the Executive). No waiver by either party hereto at any time of any breach by the other party hereto of or compliance with, any condition or provision of this Agreement to be performed by such other party shall be deemed a waiver of similar or dissimilar provisions or conditions at the same or at any prior or subsequent time. No agreements or representations, oral or otherwise, express or implied, with respect to the subject matter hereof have been made by either party, which are not set forth expressly in this Agreement. This Agreement constitutes the entire agreement between the Company and the Executive as to the subject matter hereof, and supersedes any prior agreement, whether written or oral. No rights are granted to the Executive by virtue of this Agreement other than those specifically set forth herein.

3.13 **Invalid Provisions**. Should any portion of this Agreement be adjudged or held to be invalid, unenforceable or void, such holding shall not have the effect of invalidating or voiding the remainder of this Agreement and the parties hereby agree that the portion so held invalid, unenforceable or void shall if possible, be deemed amended or reduced in scope, or otherwise be stricken from this Agreement to the extent required for the purposes of validity and enforcement thereof. In this regard, the parties hereto hereby agree that any judicial authority construing this Agreement shall be empowered to sever any portion of the geographic area or any prohibited business activity from the coverage of this Agreement, and to reduce the duration of the non-compete period and to apply the provisions of this Agreement to the remaining portion of the geographic area or the remaining business activities not to be severed by such judicial authority and to the duration of the non-compete period as reduced by judicial determination.

3.14 **Survival of the Executive's Obligations**. The Executive's obligations under this Agreement shall survive regardless of whether the Executive incurs a Termination of Employment, voluntarily or involuntarily, by the Company or the Executive, with or without Cause.

3.15 **Counterparts**. This Agreement may be executed in one or more counterparts, each of which shall be deemed to be an original but all of which together will constitute one and the same instrument.

3.16 **Governing Law**. This Agreement and any action or proceeding related to it shall be governed by and construed under the laws of the State of Minnesota.

3.17 **Captions and Gender**. The use of Captions and Section headings herein is for purposes of convenience only and shall not affect the interpretation or substance of any provisions contained herein. Similarly, the use of the masculine gender with respect to pronouns in this Agreement is for purposes of convenience and includes either sex who may be a signatory.

3.18 **No Guarantee of Tax Treatment**. Nothing herein shall be construed as an entitlement to or guarantee of any particular tax treatment to the Executive. This Agreement is drafted and shall be interpreted to be exempt from Code Section 409A.

IN WITNESS WHEREOF, the Executive and a duly authorized representative of the Company have signed this Agreement.

EXECUTIVE:	**COMPANY**:
______________________________	**COMMUNICATIONS SYSTEMS, INC.**
______________________________	By ______________________________
______________________________	Its ______________________________

SUBSIDIARIES OF COMMUNICATIONS SYSTEMS, INC.

Subsidiaries	Jurisdiction of Incorporation
Suttle, Inc.	Minnesota
Austin Taylor Communications, Ltd.	United Kingdom
JDL Technologies, Inc.	Minnesota
Twisted Technologies, Inc.	Georgia
Transition Networks, Inc.	Minnesota
LANart Corporation	Massachusetts
MiLAN Technology Corporation	California
Image Systems Corporation	Minnesota
Transition Networks Europe	United Kingdom
Transition Networks EMEA, Ltd.	United Kingdom
Net2Edge, Ltd.	United Kingdom

All these subsidiaries are 100%-owned directly by Communications Systems, Inc. The financial statements of all these subsidiaries are included in the consolidated financial statements of Communications Systems, Inc.

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the Registration Statements on Form S-8 (File No. 333-98325, 333-120561, 333-161376, 333-177890, and 333-204379) of Communications Systems, Inc. and subsidiaries of our report dated March 8, 2019, relating to the consolidated financial statements, which appears on page 29 of this Annual Report on Form 10-K for the year ended December 31, 2018.

/s/ Baker Tilly Virchow Krause,LLP
Minneapolis, Minnesota
March 8, 2019

Exhibit 31.1

Certifications

I, Roger H.D. Lacey certify that:

1. I have reviewed this annual report on Form 10-K of Communications Systems, Inc.;

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

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

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

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

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

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

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

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

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

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

Date: March 8, 2019

/s/ Roger H.D. Lacey
Roger H.D. Lacey
Chief Executive Officer

Exhibit 31.2

Certifications

I, Mark D. Fandrich certify that:

1. I have reviewed this annual report on Form 10-K of Communications Systems, Inc;

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

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

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

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

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

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

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

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

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

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

Date: March 8, 2019

/s/ Mark D. Fandrich
Mark D. Fandrich
Chief Financial Officer

Exhibit 32

CERTIFICATION PURSUANT TO SECTION 906 OF THE
SARBANES-OXLEY ACT OF 2002

Pursuant to 18 U.S.C. § 1350, we the undersigned Chief Executive Officer and Chief Financial Officer, respectively of Communications Systems, Inc. (the “Company”) hereby certify:

(1) That the accompanying Annual Report of the Company on Form 10-K for the period ended December 31, 2018 (the “Report”) 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 Company.

	/s/ Roger H.D. Lacey
	Roger H.D. Lacey
Date: March 8, 2019	Chief Executive Officer
	/s/ Mark D. Fandrich
	Mark D. Fandrich
Date: March 8, 2019	Group Business President and Chief Financial Officer

FOR IMMEDIATE RELEASE

COMMUNICATIONS SYSTEMS, INC. REPORTS FOURTH QUARTER POSITIVE OPERATING INCOME BEFORE RESTRUCTURING EXPENSE

Minnetonka, MN – March 6, 2019 – Communications Systems, Inc. (NASDAQ: JCS) (“CSI” or the “Company”) , a global provider of enterprise network infrastructure, voice and data communication products and services for deployments and management of IT networks, today announced financial results for the fourth quarter (“Q4”) and full year ended December 31, 2018, including a discussion of results of operations by segment.

Fourth Quarter 2018 Summary

- Q4 2018 consolidated sales were $18.7 million compared to $19.0 million in Q4 2017, with fourth quarter year-over-year sales declining in Suttle and Transition Networks segments and increasing in the JDL and Net2Edge segments.
- Q4 2018 consolidated operating income before restructuring expense was $104,000,[1] while consolidated operating loss (after restructuring expense of $364,000) was $260,000. Q4 2017 consolidated operating loss before restructuring was $1.62 million while consolidated operating loss (after restructuring income of $41,000) was $1.58 million.
  - Transition Networks’ operating income was $1.0 million versus $0.7 million in Q4 2017.
  - Suttle’s operating loss was $1.4 million versus an operating loss of $1.1 million in Q4 2017.
  - JDL Technologies’ operating income was $0.6 million versus an operating loss of $0.5 million in Q4 2017.
  - Net2Edge’s operating loss was $0.6 million versus an operating loss of $0.7 million in Q4 2017.
- Q4 2018 net loss was $0.7 million, or $(0.08) per diluted share, compared to a net loss of $1.7 million, or $(0.19) per diluted share, in Q4 2017.

Full Year 2018 Summary

- Consolidated 2018 sales were $65.8 million compared to $82.3 million in 2017, with Net2Edge showing growth, while each of the Company’s other business units had sales declines.
- The consolidated 2018 net loss was $6.8 million, or $(0.75) per diluted share, compared to a 2017 net loss of $11.8 million, or $(1.32) per diluted share. The improvement year-over-year included:
  - $471,000 favorable margin impact on lower sales due to mix in operating segments and supply chain operating efficiencies;
  - $1.2 million favorable SG&A expense variance, experienced across all segments; and
  - $1.9 million lower restructuring costs with 2018 at $364,000 related to the downsizing of Suttle’s U.S. operations compared to $2.3 million in 2017 related to closing Suttle’s Costa Rica facility.
- Changes in operating income, used to measure business segment performance, are noted below and further explained in the segment overviews that follow.
  - Transition Networks’ operating income was $1.9 million, compared to 2017 operating income of $1.4 million;

- JDL Technologies' operating loss was $575,000 compared to a 2017 operating loss of $791,000 that included a $1.5 million goodwill impairment charge;
- Suttle's operating loss was $5.1 million, including restructuring costs of $364,000, compared to a 2017 operating loss of $9.8 million, including restructuring costs of $2.3 million; and
- Net2Edge's operating loss was $2.8 million compared to a 2017 $2.6 million operating loss.

- Cash, cash equivalents, and investments totaled $11.1 million and working capital was $30.7 million as of December 31, 2018.

CSI's Chief Executive Officer Roger H.D. Lacey commented, "Our 2018 results ended with a strong fourth quarter. Without restructuring charges, CSI achieved positive operating income for the quarter. During the fourth quarter our restructuring actions contributed to gaining better control of our operations, our core business in Transition Networks showed continued strength and JDL Technologies returned to profitability. Company sales again increased over the previous quarter and overall Company gross margins were at 37% due to a favorable mix of products and services.

"Transition Networks had its tenth consecutive quarter of profitability and its new product sales [2] were $3.7 million for the quarter or 36% of total Transition Networks' sales. While sales were down slightly in 2018, we are well positioned for sales growth of security, intelligent transportation and smart building POE applications. Federal projects were strong in 2018 fourth quarter and our continued focus on core supply chain processes resulted in 48% gross margins for the fourth quarter and 46% for the year. Net2Edge, the other leg of our electronics and software offering, had a 58% increase in sales for the year but product development costs remained high as new products moved from customer testing to customer orders and product shipment at the end of the fourth quarter. JDL Technologies responded quickly to its education customer's funding approvals, resulting in a revenue rebound and positive operating income for the quarter.

Mr. Lacey concluded "We believe CSI remains a fundamentally strong company with a balance sheet that provides the resources for growth. Our strategic review process announced in May 2018 is nearing conclusion with portfolio decisions expected in the near future. We believe therefore that CSI is now solidly poised for recovery in 2019."

[1] Reconciliations of GAAP and non-GAAP financial measures, including operating income before restructuring charges, appears at the end of this release.
[2] "New product revenue" represents sales from new products introduced within the last three years.

Q4 and 2018 Segment Financial Overview

Transition Networks

(in 000s)	Three Months Ended December 31		Twelve Months Ended December 31	
	2018	2017	2018	2017
Sales	$ 10,252	$ 10,710	$ 36,470	$ 38,541
Gross profit	4,914	4,599	16,695	16,762
Operating income	1,049	709	1,883	1,391

Transition Networks' Q4 2018 sales decreased 4% to $10.3 million from $10.7 million in Q4 2017 driven by lower international sales, partially offset by higher North American sales. Operating income increased quarter over quarter due to improved margins and lower selling costs.

Transition Networks' total 2018 sales in North America decreased 1% or $202,000 compared to 2017 due to decreased activity with a major carrier customer, partially offset by strong demand in the federal government sector. International sales decreased $1,869,000, or 26%, due to weakness related to distribution management and some limited transfer of sales to Net2Edge, our UK business unit. Sales of media converters decreased 7% or $1,444,000 due to decreased activity at a major North America carrier customer while sales of Ethernet switches and adapters increased 11% or $995,000 due to strong activity in the federal government sector. All other product sales decreased 20%, or $1,622,000, due to slower spending from major carrier customers.

Gross margin remained flat at $16,695,000 in 2018 compared to $16,762,000 in 2017, but gross margin as a percentage of sales increased to 46% in 2018 from 43% in 2017 due to improved pricing from suppliers.

Selling, general and administrative expenses decreased 4% to $14,812,000, or 41% of sales, in 2018 from $15,371,000, or 40% of sales in 2017 due to a continued focus on expense management. Operating income was $1,883,000 in 2018 compared to operating income of $1,391,000 in 2017.

Mr. Lacey noted, "2018 was the third consecutive profitable year for Transition Networks and it quite quickly resolved the supply chain problems it experienced in 2017. Going into 2019, we are positioning Transition Networks and Net2Edge as a full feature electronics and software operating unit for enterprise networking and communications markets. Further, international operations of these two businesses have been consolidated. This is expected to allow improved distribution of our new product offerings."

Suttle

(in 000s)	Three Months Ended December 31		Twelve Months Ended December 31	
	2018	2017	2018	2017
Sales	$5,555	$ 7,496	$ 23,410	$ 32,384
Gross profit	935	979	3,685	1,420
Operating (loss)	(1,359)	(1,105)	(5,072)	(9,765)

Suttle's Q4 2018 sales decreased 26% to $5.6 million from $7.5 million in Q4 2017, primarily due to lower sales to the major telecommunications customers, partially offset by favorable impact of pricing changes and higher international sales. Sales to the major communication service providers declined 29% to $4.7 million in Q4 2018 from $6.6 million in Q4 2017. The Q4 2018 operating loss of $1.4 million included $364,000 of restructuring costs.

Suttle's total 2018 sales to the major communication service providers decreased 33% to $19,370,000 compared to $29,071,000 in 2017 due to decreased demand for legacy products during the switch to fiber-based network architectures. Sales to these customers accounted for 83% of Suttle's sales in 2018 and 90% in 2017. Sales to distributors decreased 18% due to decreased demand from service providers that are being serviced by the channel, and accounted for 9% of sales in 2018 compared to 8% in 2017. International sales accounted for 8% of Suttle's 2018 sales and increased 157% compared to 2017 due to the execution of key projects by major service providers in Central America.

Sales of structured cabling and connectivity system products decreased 27% primarily due to the changing product mix and the shift in purchasing decisions from Tier 1 telecommunications suppliers to installers. Sales of DSL and other products decreased 32% due to major technology changes implemented by service providers reflected by a switch to fiber-based network architectures.

Suttle's gross margin increased 160% to $3,685,000 in 2018 compared to $1,420,000 in 2017. Gross margin as a percentage of sales increased to 16% in 2018 as compared to 4% in 2017 primarily due to large adjustments in the prior year, including a $417,000 write off of prepaid royalties under a product development agreement and increases to the inventory reserves, driven by Suttle's decision to discontinue certain legacy products. The margin impact of excess and obsolete inventory adjustments was $1,100,000 in 2018 (5% of sales) compared to $4,214,000 (13% of sales) in 2017.

Selling, general and administrative expenses decreased $507,000, or 6%, to $8,393,000, or 36% of sales, in 2018 compared to $8,900,000 in 2017, or 27% of sales, due to lower research and development expenditures and ongoing expense control measures. Suttle incurred $244,000 and $528,000 in research and development expenses in 2018 and 2017, respectively. Suttle incurred $364,000 in restructuring expense related to organizational changes in 2018 as compared to $2,285,000 in 2017 related to the planned closure of its Costa Rica facility.

Suttle had an operating loss of $5,072,000 in 2018 compared to an operating loss of $9,765,000 in 2017.

JDL Technologies

(in 000s)	Three Months Ended December 31		Twelve Months Ended December 31	
	2018	2017	2018	2017
Sales	$ 2,653	$ 707	$ 5,134	$ 11,210
Gross profit	1,103	(32)	1,304	2,773
Operating income (loss)	634	(529)	(575)	(791)

JDL Technologies' Q4 2018 sales increased 275% to $2.7 million from $0.7 million in Q4 2017, due to the timing of projects in the educational sector as the funding approval issues were resolved during Q3 2018. JDL realized operating income of $634,000 in the 2018 fourth quarter compared to an operating loss of $529,000 in the 2017 fourth quarter, due to the impact of higher education sector sales and lower SG&A expense.

JDL Technologies' total 2018 revenues from the education sector decreased $5,509,000 or 68% due to a decrease in the number of network related projects completed during the year and a delay in the approval of the federal funding for the 2017-2018 funding cycle, which was ultimately resolved by fourth quarter of 2018. Federal and local funding for public school district investments in IT infrastructure and services varies substantially from year to year, and JDL Technologies expects to continue to experience notable swings in future quarterly and annual revenues as a result.

Revenue from JDL Technologies' sales to small and medium-sized commercial businesses, which are primarily healthcare and commercial clients, decreased by 19% or $567,000 due to the expiration of two large customer contracts late in 2017.

JDL gross margin decreased 53% to $1,304,000 in 2018 compared to $2,773,000 in 2017. Gross margin as a percentage of sales remained flat at 25% in 2018 and 2017.

Selling, general and administrative expenses decreased 11% in 2018 to $1,879,000, or 37% of sales, compared to $2,101,000 in 2017, or 19% of sales due to cost saving measures implemented over the past year. JDL reported an operating loss of $575,000 in 2018 compared to an operating loss of $791,000 in 2017, which included a $1,463,000 goodwill impairment loss recognized in the second quarter of 2017.

Mr. Lacey commented, "While we expected a JDL Technologies revenue decline in 2018 due to timing of projects in our education customer's five-year cycle of installation and upgrade contract, the funding approval delays earlier in the year were not anticipated. With approvals received at the end of Q3, our Q4 performance therefore was expected. Our health care and financial managed services opportunities saw some improvements as well with focus on equipment sales and aligning the cost structure. JDL Technologies continues to aggressively leverage opportunities to provide managed services, cloud migration and virtualization services, HIPAA-compliant technology services, and other network and infrastructure services to the commercial and healthcare markets. This strategic, multiyear plan to reduce the impact of volatile government funding is beginning to produce results."

Net2Edge

(in 000s)	Three Months Ended December 31		Twelve Months Ended December 31	
	2018	**2017**	**2018**	**2017**
Sales	$ 449	$ 360	$ 1,700	$ 1,079
Gross profit	162	223	485	681
Operating (loss)	(584)	(660)	(2,794)	(2,600)

Net2Edge's sales increased 58% to $1,700,000 in 2018 compared to $1,079,000 in 2017 due to revenue from new higher-featured Net2Edge products sold to established CSI accounts. Gross margin decreased 29% to $485,000 in 2018 compared to $681,000 in 2017. Gross margin as a percentage of sales decreased to 29% in 2018 from 63% in 2017 due to product mix and additional costs incurred to expedite product shipments. Selling, general and administrative expenses increased 5% to $3,279,000 in 2018 compared to $3,127,000 in 2017 due to increased spending on engineering and research and development on new products. Net2Edge reported an operating loss of $2,794,000 in 2018 compared to a loss of $2,600,000 in 2017, which included a $154,000 impairment loss related to intangible assets during the second quarter of 2017. Mr. Lacey commented that "Gaining telco product approvals had been much longer than expected due to some extensive field trials required; however, these are now nearing completion or are complete in some cases and this is leading to a strong growth outlook for 2019."

Financial Condition
CSI's balance sheet at December 31, 2018 included cash, cash equivalents, and investments of $11.1 million, working capital of $30.7 million, and stockholders' equity of $41.7 million.

Form 10-K
For further information, please see the Company's Form 10-K, which will be filed on or about March 8, 2019.

About Communications Systems
Communications Systems, Inc. provides connectivity infrastructure and services for global deployments of broadband networks. Focusing on innovative, cost-effective solutions, CSI provides customers the ability to deliver, manage, and optimize their broadband network services and architecture. From the integration of fiber optics in any application and environment to efficient home voice and data deployments to optimization of data and application access, CSI provides tools for maximum utilization of the network from the edge to the user. With partners and customers in over 50 countries, CSI has built a reputation as a reliable global innovator focusing on quality and customer service.

Forward-Looking Statements
This press release includes certain forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, including statements regarding future financial performance, future growth and future acquisitions. These statements are based on Communications Systems' current expectations or beliefs and are subject to uncertainty and changes in circumstances. Actual results may vary materially from those expressed or implied by the statements here due to changes in economic, business, competitive or regulatory factors, and other risks and uncertainties affecting the operation of Communications Systems' business. These risks, uncertainties and contingencies are presented in the Company's Annual Report on Form 10-K and, from time to time, in the Company's other filings with the Securities and Exchange Commission. The information set forth herein should be read in light of such risks. Further, investors should keep in mind that the Company's financial results in any particular period may not be indicative of future results. Communications Systems is under no obligation to, and expressly disclaims any obligation to, update or alter its forward-looking statements, whether as a result of new information, future events, changes in assumptions or otherwise.

Contacts:
Communications Systems, Inc.
Mark D. Fandrich
Chief Financial Officer
952-582-6416
mark.fandrich@commsysinc.com

Roger H. D. Lacey
Chief Executive Officer
952-996-1674

CSI CONSOLIDATED SUMMARY OF EARNINGS
Selected Income Statement Data

	Unaudited			
	Three Months Ended		Twelve Months Ended	
	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Sales	$ 18,659,109	$ 19,041,638	$ 65,762,946	$ 82,322,618
Gross profit	6,902,971	5,556,627	21,307,249	20,836,239
Operating loss	(259,920)	(1,584,566)	(6,558,118)	(11,764,829)
Loss before income taxes	(334,290)	(1,664,897)	(6,386,468)	(11,860,135)
Income tax expense (benefit)	411,359	32,511	405,267	(34,503)
Net loss	$ (745,649)	$ (1,697,408)	$ (6,791,735)	$ (11,825,632)
Basic net loss per share	$ (0.08)	$ (0.19)	$ (0.75)	$ (1.32)
Diluted net loss per share	$ (0.08)	$ (0.19)	$ (0.75)	$ (1.32)
Cash dividends per share	$ 0.02	$ 0.04	$ 0.14	$ 0.16
Average basic shares outstanding	9,153,785	8,971,579	9,108,777	8,942,523
Average dilutive shares outstanding	9,153,785	8,971,579	9,108,777	8,942,523

Selected Balance Sheet Data

	Unaudited	
	Dec. 31, 2018	Dec. 31, 2017
Total assets	$ 53,321,164	$ 58,146,261
Cash, cash equivalents & investments	11,056,426	17,994,407
Working capital	30,695,322	36,506,028
Property, plant and equipment, net	10,962,239	12,624,730
Long-term liabilities	28,267	15,144
Stockholders' equity	41,653,127	49,170,727

Non-GAAP Financial Measures
Reconciliation of Operating Income (Loss) to Operating Income (Loss) before Restructuring Expense

	Three Months Ended December 31		Twelve Months Ended December 31	
	2018	2017	2018	2017
Sales	$ 18,659,109	$ 19,041,638	$ 65,762,946	$ 82,322,618
Gross profit	6,902,971	5,556,627	21,307,249	20,836,239
Operating loss	(259,920)	(1,584,566)	(6,558,118)	(11,764,829)
Restructuring expense(1)	363,676	(41,320)	363,676	2,284,541
Operating income (loss) before restructuring	103,756	(1,625,886)	(6,194,442)	(9,480,288)

[1] Restructuring, separation and transition expenses are not directly related to the ongoing operations.