INTRICON CORP
Form 10-K
March 14, 2019

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

or

TRANSITION REPORT PURSUANT TO SECTION 13 or 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from _____ to _____.

Commission File Number 1-5005

INTRICON CORPORATION

(Exact name of registrant as specified in its charter)

Pennsylvania (State or other jurisdiction of incorporation or organization)	23-1069060 (I.R.S. Employer Identification No.)
1260 Red Fox Road Arden Hills, Minnesota (Address of principal executive offices)	55112 (Zip Code)

Registrant's telephone number, including area code (651) 636-9770

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

Title of each class	Name of each exchange on which registered
Common Shares, $1 par value per share	The NASDAQ Global Market

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

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

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

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

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

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (Section 229.405 of this chapter) 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, 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. (Check one):

Large accelerated filer Accelerated filer

Non-accelerated filer Smaller reporting company
Emerging growth company

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

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

The aggregate market value of the voting common shares held by non-affiliates of the registrant on June 30, 2018 was $247,437,648. Common shares held by each officer and director and by each person who owns 10% or more of the outstanding common shares have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

The number of outstanding shares of the registrant's common shares on February 26, 2019 was 8,707,947.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Company's definitive proxy statement for the 2019 annual meeting of shareholders are incorporated by reference into Part III of this report; provided, however, that the Audit Committee Report and any other information in such Proxy Statement that is not required to be included in this Annual Report on Form 10-K, shall not be deemed to be incorporated herein or filed for the purposes of the Securities Act of 1933, as amended or the Securities Exchange Act of 1934, as amended.

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PART I

ITEM 1. Business

Company Overview

IntriCon Corporation (together with its subsidiaries referred herein as the “Company”, or “IntriCon”, “we”, “us” or “our”) is an international company engaged in designing, developing, engineering, manufacturing and distributing body-worn devices. The Company serves the body-worn device market by designing, developing, engineering, manufacturing and distributing micro-miniature products, microelectronics, micro-mechanical assemblies, complete assemblies and software solutions, primarily for the emerging value based hearing healthcare market, the medical biotelemetry market and the professional audio communication market. The Company, headquartered in Arden Hills, Minnesota, has facilities in Minnesota, Illinois, Singapore, Indonesia, the United Kingdom and Germany, and operates through subsidiaries. The Company is a Pennsylvania corporation formed in 1930, and has gone through several transformations since its formation. The Company’s core business of body-worn devices was established in 1993 through the acquisition of Resistance Technologies Inc., now known as IntriCon, Inc. The majority of IntriCon’s current management came to the Company with the Resistance Technologies Inc. acquisition, including IntriCon’s President and CEO, who was a co-founder of Resistance Technologies Inc.

In December 2016, the Company’s board of directors approved plans to discontinue its cardiac diagnostic monitoring business. The Company sold the cardiac diagnostic monitoring business on February 17, 2017 to Datrix, LLC. For all periods presented, the Company classified this business as discontinued operations, and, accordingly, has reclassified historical financial data presented herein.

Information contained in this Annual Report on Form 10-K and expressed in U.S. dollars or number of shares are presented in thousands (000s), except for per share data and as otherwise noted.

Business Highlights

Major Events in 2018

In February 2018, the Company closed on an additional 33% ownership interest in Soundperience, bringing its total ownership to 49% and its total investment to 1,500 Euros, as of December 31, 2018, consisting of an equity investment and license agreement. Subsequently, in January 2019, the Company purchased the source code for the Sentibo Smart Brain self-fitting software from Soundperience for 1,829 Euros, positioning the Company to capitalize on the pending over-the-counter (OTC) hearing aid regulation. Sentibo Smart Brain self-fitting software is designed to improve both channel productivity and the quality of first-time fittings, resulting in lower prices, greater access and increased customer satisfaction. This software is being used in the German market today, most notably through Signison, the Company's joint venture with the majority owner of Soundperience. In addition, the Company transferred its 49% ownership interest in Soundperience to the majority owner of Soundperience. As of December 31, 2018, Soundperience and Signison are accounted for in the Company's financial statements using the equity method.

In March 2018, the Company entered into a new 5-year lease for an additional 37,000 square foot manufacturing and clean room facility near our Corporate Headquarters in Arden Hills, Minnesota. In addition, during 2018 the Company added 13 new molding presses, as well as a high-speed printed circuit board assembly line. In June 2018, the Company entered into an additional 10,000 square foot medical assembly space in Singapore. The added capacity and equipment will aid us in meeting the anticipated rising demand in our medical biotelemetry business.

On August 20, 2018, the Company completed a public offering and sale of 1,725 shares of common stock at a price to the public of $55.00 per share less an underwriting discount of $3.30 per share. The net proceeds from this offering, after deducting underwriting discounts and offering expenses, totaled approximately $88,967 and were used to repay debt, fund capital expenditures, to repurchase 500 shares of common stock owned by directors and officers and for working capital and other general corporate purposes. The amount of domestic and foreign bank debt repaid from the offering was $16,381.

Major Events in 2017

In December 2017, the Company acquired the remaining 80-percent stake in Hearing Help Express, Inc. (referred to as "Hearing Help Express" or "HHE"), a direct-to-end-consumer mail order hearing aid provider, for $650 in cash, repayment of $1,833 in debt to HHE's 80% holder and an earn-out. The results of HHE were consolidated into the Company's financial statements beginning October 31, 2016. Prior to the acquisition of 100% ownership in December 2017, the Company allocated income and losses to the noncontrolling interest based on ownership percentage.

The Company entered into an agreement to acquire a 49% stake in Soundperience for 1,500 Euros. As of December 31, 2017, the Company had an investment in Soundperience of $1,415, consisting of a 16% ownership interest, cash advances and a license agreement.

Major Events in 2016

In December 2016, the Company's board of directors approved plans to discontinue its cardiac diagnostic monitoring business. The Company sold the cardiac diagnostic monitoring business on February 17, 2017 to Datrix, LLC. For all periods presented, the Company classified this business as discontinued operations, and, accordingly, has reclassified historical financial data presented herein.

In October of 2016, the Company purchased 20 percent of Hearing Help Express and began implementing cost cutting measures and business improvements.

On May 18, 2016, the Company completed a public offering and sale of 805 shares of common stock. The net proceeds from this offering, after deducting underwriting discounts and offering expenses, totaled approximately $3,678 and were used for working capital and general corporate purposes.

Market Overview:

IntriCon serves the body-worn device market by designing, developing, engineering, manufacturing and distributing micro-miniature products, microelectronics, micro-mechanical assemblies, complete assemblies and software solutions, primarily for the medical biotelemetry market, the emerging value based hearing healthcare market, the hearing health direct-to-end-consumer market and the professional audio communication market. Revenue from these markets is reported on the respective medical biotelemetry, hearing health, hearing health direct-to-end-consumer and professional audio lines in the discussion of our results of operations in "Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations" and Note 23 "Revenue by Market" to the Company's consolidated condensed financial statements included herein.

Hearing Healthcare Market

In the United States alone, there are approximately 40 million adults that report some degree of hearing loss. In adults, the most common cause of hearing loss is aging and noise. In fact, by the age of 65, one out of three people have hearing loss. The hearing-impaired population is expected to grow significantly over the next decade due to an aging population and more frequent exposure to loud sounds that can cause noise-induced hearing loss. It is estimated that hearing aids can help more than 90 percent of people with hearing loss, however the current market penetration into the U.S. hearing impaired population is approximately 20 percent, a percentage that has remained essentially

unchanged for the last four decades. The primary deterrents to greater penetration are cost and access. Along with this, the legacy hearing aid distribution channel is an oligopoly of six large hearing aid manufacturers who utilize bricks and mortar and licensed audiologists to sell devices while controlling the channel dynamics. As a result, the average cost of a hearing aid sold in the US market today is over $2,400 per device, more than double the cost from fifteen years ago. Approximately 70 percent of the hearing impaired have hearing loss in both ears (referred to as a binaural loss), driving the total cost to almost $5,000 on average for a set of hearing aids.

Today in the US market, the legacy channel pushes all hearing impaired through the same inefficient, costly channel. However, a very large portion of the hearing-impaired market – mostly notably those with mild to moderate losses – could be properly served with the proper combination of high quality, outcome-based devices, advanced fitting software and consumer services/care best practices – all at much lower cost. We believe fundamental change is needed and are excited about the opportunity that we created through thoughtful hard work and planning: a chance to deliver superior outcomes-based affordable hearing healthcare, by combining state-of-the-art devices and software technology, along with best practices customer service and at a much lower cost directly to consumers across the country, many of whom have not been able to afford care previously.

We believe a perfect vortex of factors has come together over the last few years to enable the emergence of a market disruptive, high-quality, low cost distribution model. These factors include the continued consolidation of retail (causing escalating hearing aid prices), consumer outcry, consumer education, advancements in technology (such as behind-the-ear devices, advanced digital signal processing, low-power wireless, and self-fitting software) as well as regulatory actions and pronouncements by the U.S. Food and Drug Administration (FDA), the President’s Council of Advisors on Science and Technology and the National Academies of Science, Engineering and Medicine.

In early January 2016, the FDA weighed in on low hearing aid penetration rates with an announcement that highlighted statistics from the National Institute on Deafness and Other Communication Disorders. They found that 37.5 million U.S. adults aged 18 and older report some form of hearing loss. However, only 30 percent of adults over 70, and 16 percent of those aged 20 to 69, who could benefit from wearing hearing aids, have ever used them. Based on these statistics, the FDA reopened the public comment period on draft guidance related to the agency’s premarket requirements for hearing aids and personal sound amplifiers (PSAPs). In April 2016, the FDA hosted a public workshop to, among other things, gather stakeholder and public input on draft guidance related to the agency’s premarket requirements for hearing aids and PSAPs. The FDA’s intent was to consider ways in which it can most effectively regulate hearing aids to promote accessibility and affordability while encouraging innovation. In December 2016, the FDA announced important steps to better support consumer access to hearing aids. The agency issued a guidance document explaining that it does not intend to enforce the requirement that individuals age 18 and older receive a medical evaluation or sign a waiver prior to purchasing most hearing aids, effective immediately. It also announced its commitment to consider creating a category of over-the-counter (OTC) hearing aids.

Furthermore, there have been significant public policy developments during 2017. On August 18, 2017, President Donald Trump signed into law H.R. 2430, the FDA Reauthorization Act of 2017, which includes a section concerning the regulation of OTC hearing aids. The law is designed to enable adults with mild to moderate hearing loss to access OTC hearing aids without being seen by a hearing care professional. The law requires the FDA to create and regulate a category of OTC hearing aids to ensure they meet the same high standards for safety, consumer labeling, and manufacturing protection that all other medical devices must meet. Additionally, the law mandates that the FDA establish an OTC hearing aid category for adults with "perceived" mild to moderate hearing loss within three years of passage of the legislation. The FDA also must finalize a rule within 180 days after the close of the comment period, detailing what level of safety, labeling and consumer protections will be included. We believe this law has the potential to remove the significant barriers existing today that prevent innovative hearing health solutions. We believe that this law will invigorate competition, spur innovation and facilitate the development of an ecosystem of hearing health care that provides affordable and accessible solutions to millions of unserved or underserved Americans. Today, IntriCon serves both the value-based hearing healthcare channel and the legacy hearing health channel.

Value-Based Hearing Healthcare

The Company believes the value-based hearing healthcare (VBHH) market offers significant growth opportunities. In contrast to the legacy channel dynamics, the VBHH market channel is flexible and able to serve the end consumer through a variety of modalities which may include self-fitting, remote programing and adjustments, customer support call centers and bricks and mortar stores. The average price of a hearing aid sold through this channel is less than twenty-five percent of the average $2,400 device price typically sold through the legacy channel. The Company recently commissioned an ethnographic research study, which identified a $3+ billion annual VBHH market opportunity. In addition, this study assisted us in identifying our customer, various customer segmentations and personas. To best approach this market opportunity, we have focused our efforts to serve both the value-based Direct-to-End-Consumer (DTEC) and value-based Indirect-to-End-Consumer (ITEC) channels. Over the past decade we have invested in the manufacturing footprint, product technology and fitting software to provide individuals access to affordable, quality outcomes-based hearing healthcare.

Our DTEC represents a channel that sells products and services directly to the end consumer, which today consists of our HHE business. In December of 2017, we purchased the remaining 80% of HHE, a direct-to-end-consumer mail order hearing aid provider. However, the Company had been preparing to address this market long before the acquisition of HHE and has spent the last decade investing in the technology and low-cost manufacturing to design and build superior devices and fitting solutions. With this acquisition, we believe we now have the channel infrastructure to directly reach consumers and—importantly for millions—the ability to offer high-quality hearing healthcare at a fraction of the cost. The Company's devices and technologies coupled with HHE's high-touch care, outcomes based, and hassle free telemedicine model has created a complete eco-system of hearing healthcare in which the Company intends to serve the $3+ billion market. Through our other VBHH initiatives and tests, we have formed alliances with other key partners, which have given us experience and vital insight as we move aggressively into a more consumer-facing role. HHE provides an efficient, direct-to-end-consumer channel to reach consumers who likely do not have insurance covering hearing devices. This is a channel that we can build on and expand via technology—and one that is complementary with many of our existing relationships.

The Company is also focused on serving its value-based ITEC customers, who also sell products and services directly to the end consumer. We have established ourselves as a leader in supplying this portion of the market with advanced, outcome-based products and accessories. The Company has formed strong relationships with various customers in the channel, including insurance providers, and geriatric product retailers and other indirect-to-end-consumer hearing aid providers.

In January 2019, the Company purchased the source code for the Sentibo Smart Brain self-fitting software from Soundperience, positioning the Company to capitalize on the pending over-the-counter (OTC) hearing aid regulation. Sentibo Smart Brain self-fitting software is designed to improve both channel productivity and the quality of first-time fittings, resulting in lower prices, greater access and increased customer satisfaction. This software is being used in the German market today, most notably through Signison, the Company’s joint venture with the majority owner of Soundperience.

We strongly believe that incorporating self-fitting technology is a critical step in creating our high-quality, low-cost hearing healthcare ecosystem. The Sentibo Smart Brain self-fitting software technology has the potential to drastically reduce the price of hearing aids, drive greater access and increase customer satisfaction.

Legacy Hearing Health Channel

We also believe there are niches in the legacy hearing health channel that will embrace our outcomes-based products and technologies in the United States and Europe. High costs of legacy devices and retail consolidation have constrained the growth potential of the independent audiologist and dispenser. We believe our software and product offering can provide independent audiologists and dispensers the ability to compete with larger retailers, such as Costco, and manufacturer owned retail distributors.

Medical Biotelemetry

In the medical biotelemetry market, the Company is focused on sales of biotelemetry devices for life-critical diagnostic monitoring. The Company manufactures microelectronics, micro-mechanical assemblies, high-precision injection-molded plastic components and complete biotelemetry devices for leading and emerging medical device manufacturers. The medical industry is faced with pressures to reduce the cost of healthcare. Driven by its core technologies, IntriCon helps shift the point of care from expensive traditional settings, such as hospitals, to less expensive non-traditional settings like the home. IntriCon currently serves this market by offering medical manufacturers the capabilities to design, develop, manufacture and distribute medical devices that are easier to use, are more miniature, use less power, and are lighter. Increasingly, the medical industry is looking for wireless, low-power capabilities in their devices.

IntriCon currently has a presence in the diabetes, cardiac and catheter positioning markets. For diabetes, IntriCon works with Medtronic to manufacture their wireless continuous glucose monitors (CGM), sensor assemblies, and accessories associated with Medtronic’s insulin pump and CGM system. In August 2016, the FDA approved the MiniMed 630G system which is intended to replace Medtronic’s MiniMed 530G system. In September 2016, the FDA approved the next generation MiniMed 670G insulin pump system, into which IntriCon components are also designed. The MiniMed 670G is the world’s first hybrid closed loop insulin delivery system and we are excited that our components are designed into and support such a revolutionary diabetes management system. In June 2017, the 670G was launched in the U.S. and Medtronic began fulfilling orders from patients enrolled in their Priority Access Program. In parallel, Medtronic began taking new orders from interested customers who want to be next in line to receive the system after the Priority Access orders are filled. In March 2018, the FDA approved the Guardian Connect, Medtronic’s standalone CGM system that allows patients to stay ahead of high and low glucose events. Looking ahead, we believe there are opportunities to expand our diabetes product offering with Medtronic, as well as move into new markets outside of the diabetes market.

IntriCon has a suite of medical coils and micro coils that it offers to various original equipment manufacturing (OEM) customers. These products are currently used in pacemaker programming and interventional catheter positioning applications.

IntriCon manufactures bubble sensors and flow restrictors that monitor and control the flow of fluid in an intravenous infusion system as well as a family of safety needle products for an OEM customer that utilizes IntriCon's insert and straight molding capabilities. These products are assembled using full automation, including built-in quality checks within the production lines.

During the first half of 2018, we expanded our infrastructure to support anticipated growth from current medical biotelemetry customers and future growth from increased business development. Expansion efforts in 2018 included a newly leased 37,000-square-foot medical biotelemetry manufacturing and clean room facility in Minnesota, an additional 10,000-square-foot medical assembly space in Singapore, 13 new molding presses and a high-speed printed circuit board assembly line. In addition to these investments, our current customers invested several million dollars in tooling and automation within our facilities. While we have begun limited production on certain products in our new facilities, we are still working with current medical biotelemetry customers to complete required validation and qualification of several key production lines.

The company is committed to increasing investments to support its medical biotelemetry business development efforts. In early 2019, the company hired a vice president of medical business development, to leverage our core competencies and diversify our medical revenue base. The company believes it has a significant opportunities to serve the emerging biotelemetry and home care markets through its already developed core competencies and capabilities to develop devices that are more technologically advanced, smaller and lightweight.

To provide greater financial and operational focus, IntriCon made the strategic decision to divest its non-core cardiac diagnostic monitoring business in 2016. The Company sold this business on February 17, 2017 to Datrix, LLC.

Professional Audio Communications

IntriCon entered the high-quality audio communication device market in 2001, and now has a line of miniature, professional audio headset products used by customers focusing on emergency response needs. The line includes several communication devices that are extremely portable and perform well in noisy or hazardous environments. These products are well suited for applications in the fire, law enforcement, safety, aviation and military markets. In addition, the Company has a line of miniature ear- and head-worn devices used by performers and support staff in the music and stage performance markets. We believe performance in difficult listening environments and wireless operations will continue to improve as these products increasingly include our proprietary nanoDSP, wireless nanoLink and PhysioLink technologies.

Core Technologies Overview:

Our core technologies expertise is focused on four main markets: medical biotelemetry, hearing health, hearing health direct-to-end-consumer and professional audio communications. Over the past several years, the Company has increased investments in the continued development of five critical core technologies: Ultra-Low-Power (ULP) Digital Signal Processing (DSP), ULP Wireless, Fitting Software, Microminiaturization, and Miniature Transducers. These five core technologies serve as the foundation of current and future product platform development, designed to meet the rising demand for smaller, portable, more advanced devices and the need for greater efficiencies in the delivery models. The continued advancements in this area have allowed the Company to further enhance the mobility and effectiveness of miniature body-worn devices.

ULP DSP

DSP converts real-world analog signals into a digital format. Through our nanoDSP™ technology, IntriCon offers an extensive range of ULP DSP amplifiers for hearing, medical and professional audio applications. Our proprietary nanoDSP incorporates advanced ultra-miniature hardware with sophisticated signal processing algorithms to produce devices that are smaller and more effective. The Company further expanded its DSP portfolio including improvements to its Reliant CLEAR™ feedback canceller, offering increased added stable gain and faster reaction time. Additionally, the DSP technologies are utilized in the Audion8™, our eight-channel hearing aid amplifier, and the Audion16™, our wide dynamic range compression sixteen-channel hearing aid amplifier. The amplifiers are feature-rich and are designed to fit a wide array of applications. In addition to multiple compression channels, the amplifiers have a complete set of proven adaptive features which greatly improve the user experience.

ULP Wireless

Wireless connectivity is fast becoming a required technology, and wireless capabilities are especially critical in new body-worn devices. IntriCon's BodyNet™ ULP technology, including the nanoLink™ and PhysioLink™ wireless systems, offers solutions for transmitting the body's activities to caregivers and wireless audio links for professional communications and surveillance products, including diabetes monitoring and audio streaming for hearing devices.

IntriCon is in the final stages of commercializing its Physiolink3 wireless technology, which will be incorporated into product platforms serving the medical biotelemetry, hearing health, hearing health direct-to-end-consumer and professional audio communication markets. This system is based on 2.4GHz proprietary digital radio protocol in the industrial-scientific-medical (ISM) frequency band and enables audio and data streaming and command and control to ear-worn and body-worn applications over distances of up to ten meters. The Physiolink3 technology can be used to increase productivity in the emerging VBHH channels through in office wireless programming, remote cloud based fitting and consumer directed self-fitting of hearing aids. This will provide both greater access and lower costs for patients. In addition, remote control functions will improve the patient experience while using the device especially for those with diminished dexterity. The Physiolink3 technology builds on the Physiolink2 capabilities by adding wireless streaming at, what we believe, are much lower power levels than any technology currently on the market. This will allow for accessories to enhance the user experience in noisy environments by allowing audio streaming directly to the hearing aid.

Fitting Software

The ability to efficiently and effectively fit hearing aids is critical to building a value based eco-system of hearing healthcare. By developing more advanced fitting software systems, individuals can benefit from fittings that conform to their specific loss, while eliminating the need for an in-person appointment. In addition to the traditional fitting software, IntriFit, used in the conventional channel, IntriCon has made significant investments in various advanced fitting software solutions, including its purchase of the source code for the Sentibo Smart Brain self-fitting software, that can enable remote and self-fitting solutions. IntriCon believes these advanced fitting solutions, along with the other components of the eco-system, will drive access, affordability and superior customer satisfaction to the millions of individuals that cannot receive care today, primarily due to high cost and low access.

In January 2019, the Company purchased the source code for the Sentibo Smart Brain self-fitting software from Soundperience. The Sentibo Smart Brain System is the first psycho-acoustic way of analyzing peripheral hearing and central hearing processing. It was developed by an international research team based on the latest scientific findings from the fields of audiology and brain research. The software is a sophisticated self-fitting hearing aid and brain training software technology that is being used in the German market today, most notably through our Signison joint venture. We view this software technology as a critical component to our domestic value-based hearing healthcare model. Sentibo, as well as our other proprietary fitting systems, are designed to improve both channel productivity and the quality of first-time fittings, resulting in lower prices, greater access and increased customer satisfaction. IntriCon expects to introduce our advanced fitting solutions through our various VBHH channels in 2019.

Microminiaturization

IntriCon excels at miniaturizing body-worn devices. We began honing our microminiaturization skills over 30 years ago, supplying components to the hearing health industry. Our core miniaturization technology allows us to make devices for our markets that are one cubic inch and smaller. We also are specialists in devices that run on very low power, as evidenced by our ULP wireless and DSP. Less power means a smaller battery, which enables us to reduce size even further, and develop devices that fit into the palm of one’s hand.

Miniature Transducers

IntriCon’s advanced transducer technology has been pushing the limits of size and performance for over a decade. Included in our transducer line are our miniature medical coils and micro coils used in pacemaker programming and interventional catheter positioning applications. We believe that with the increase of greater interventional care, our coil technology harbors significant value.

Marketing and Competition:

IntriCon intends to focus more capital and resources in marketing and sales to expand its reach into the emerging value based hearing healthcare market and large medical device and healthcare companies in the medical biotelemetry market outlined above. The Company believes this will allow us to advance our technology portfolio, advance new product platforms, strengthen customer relationships and expand our market knowledge.

Currently, IntriCon sells some of its hearing device products directly to domestic hearing instrument manufacturers, and distributors and partnerships through an internal sales force. As a result of the investments in Hearing Help Express in 2016 and 2017, the Company began marketing and selling hearing aid devices directly to consumers through direct mail advertising, internet and a call center. Sales of medical and professional audio communications products are also made primarily through an internal sales force.

Internationally, sales representatives employed by IntriCon GmbH ("GmbH"), a wholly owned German subsidiary, solicit sales from European hearing instrument, medical device and professional audio communications manufacturers and suppliers.

In recent years, a small number of customers have accounted for a substantial portion of the Company's sales. In 2018, one customer in our medical market accounted for approximately 56 percent of the Company's net revenue. During 2018, the top five customers accounted for approximately $81,886, or 70 percent, of the Company's net revenue. See Note 7 to the consolidated financial statements for a discussion of net revenue and long-lived assets by geographic area.

IntriCon markets its high performance microphone products to the radio communication and professional audio industries and has several larger competitors who have greater financial resources. IntriCon holds a small market share in the global market for microphone capsules and other related products.

Employees. As of December 31, 2018, the Company had a total of 810 full time equivalent employees, of whom 74 are executive and administrative personnel, 53 are sales personnel, 41 are engineering personnel and 642 are operations personnel. The Company considers its relations with its employees to be satisfactory. None of the Company's employees are represented by a union.

As a supplier of consumer and medical products and parts, IntriCon is subject to claims for personal injuries allegedly caused by its products. The Company maintains what it believes to be adequate insurance coverage.

Research and Development. IntriCon conducts research and development activities primarily to improve its existing products and proprietary technology. The Company is committed to investing in the research and development of proprietary technologies, such as the ULP DSP and ULP wireless technologies. The Company believes the continued development of key proprietary technologies will be the catalyst for long-term revenues and margin growth. Research and development expenditures were $4,671, $4,458, and $4,688 in 2018, 2017 and 2016, respectively. These amounts are net of any customer and grant reimbursed research and development.

IntriCon owns numerous United States patents which cover various product designs and processes. Although the Company believes that these patents collectively add value to the Company, the costs associated with the submission of patent applications are expensed as incurred given the uncertainty of the patents providing future economic benefit to the Company.

Regulation. A large portion of our business operates in a marketplace subject to extensive and rigorous regulation by the FDA and by comparable agencies in foreign countries. In the United States, the FDA regulates the design control, development, manufacturing, labeling, record keeping, and surveillance procedures for medical devices.

United States Food and Drug Administration

FDA regulations classify medical devices based on perceived risk to public health as either Class I, II or III devices. Class I devices are subject to general controls, Class II devices are subject to special controls and Class III devices are subject to pre-market approval ("PMA") requirements. While most Class I devices are exempt from pre-market submission, it is necessary for most Class II devices to be cleared by a 510(k) pre-market notification prior to marketing. A "cleared" 510(k) establishes that the device is "substantially equivalent" to a predicate device which was legally marketed prior to May 28, 1976 or which itself has been found to be substantially equivalent, through the 510(k) process, after May 28, 1976. It is "substantially equivalent" if it has the same intended use and the same technological characteristics as the predicate. The 510(k) pre-market notification must be supported by data establishing the claim of substantial equivalence to the satisfaction of the FDA. The process of obtaining a 510(k) clearance typically can take several months to a year or longer. If the product is notably new or different and substantial equivalence cannot be established, the FDA will require the manufacturer to submit a PMA application for a Class III device that must be reviewed and approved by the FDA prior to sale and marketing of the device in the United States. The process of obtaining PMA approval can be expensive, uncertain, lengthy and frequently requires anywhere from one to several years from the date of FDA submission, if approval is obtained at all. A "De Novo" application may be submitted for a new type of Class II device for which there is no predicate. The FDA controls the indicated uses for which a product may be marketed and strictly prohibits the marketing of medical devices for unapproved uses. The FDA can require the manufacturer to withdraw products from the market for failure to comply with laws or the occurrence of safety risks.

Our wireless and non-wireless hearing aids are air-conduction devices and, as such, are Class I and Class II medical devices. Air-conduction hearing aids are exempt from the 510(k) pre-market notification process. These hearing aids may be marketed either through distribution channels owned, in whole or in part, by IntriCon or through non-affiliated distribution channels. In the latter sense, IntriCon acts as the contract manufacturer to the distributing organization, assisting in design, development and manufacturing. Our manufacturing operations are subject to periodic inspections by the FDA, whose primary purpose is to audit the Company's compliance with the Quality System Regulations published by the FDA (21 CFR Part 820) and other applicable government standards. Strict regulatory action may be initiated in response to audit deficiencies or to product performance problems. We believe that our manufacturing and quality control procedures are in compliance with the requirements of the FDA regulations. Our most recent FDA audits were conducted in December of 2017. No issues (observations) arising from those audits were noted.

International Regulation

International regulatory bodies have established varying regulations governing product standards, packaging and labeling requirements, import restrictions, tariff regulations, duties and tax. Many of these regulations are similar to those of the FDA. We believe we are in compliance with the regulatory requirements in the foreign countries in which

our medical devices are marketed.

Medical device law in the EU requires that our quality system conforms to international quality standards and that our medical devices conform to “essential requirements” set forth by the Medical Device Directive (“MDD”). In order to keep pace with accelerating technical reality and manufacturing risks, medical device law in Europe is changing rapidly. Effective May 5, 2017, the MDD has been replaced with a broader, more reaching Medical Device Regulation (“MDR”) with a three-year transition period. IntriCon intends to comply with the MDR prior to the end of the transition period.

IntriCon manufacturing facilities are audited annually by an International Organization for Standardization (“ISO”) registrar to verify conformity of products and quality systems to the relevant standards and regulations. The ISO registrar for our US facilities is British Standards Institute (“BSI”) while the registrar for our Asian facilities is SGS United Kingdom Ltd.

Technical documentation, including the essential requirements matrix, for each product placed on the market in the EU is audited by our European Notified Body (also BSI). Successful audits verify conformance to the essential requirements set forth by the MDD for the class of medical devices we produce and result in a CE Certificate. This entitles us to place the “CE” mark on our devices distributed in Europe. In 2014, IntriCon obtained “CE” certification for our own hearing aid devices and we are supplying these devices into the European market. Our hearing aids may also bear the CE mark of our customers who then assume regulatory responsibilities for those devices they place on the EU market under their own name.

Our European Authorized Representative, CE Partner 4U, reviews and retains our technical documentation and registers our products as required with applicable authorities in all EU member states.

Third Party Reimbursement

The availability and level of reimbursement from third-party payers for procedures utilizing our products is significant to our business. Our products are purchased primarily by OEM customers who sell into clinics, hospitals and other end-users, who in turn bill various third party payers for the services provided to the patients. These payers, which include Medicare, Medicaid, private health insurance plans and managed care organizations, reimburse all or part of the costs and fees associated with the procedures utilizing our products.

In response to the national focus on rising health care costs, numerous changes to reduce costs have been proposed or have begun to emerge. There have been, and may continue to be, proposals by legislators, regulators and third party payers to curb these costs. The development or increased use of more cost effective treatments for diseases could cause such payers to decrease or deny reimbursement for surgeries or devices to favor alternatives that do not utilize our products. A significant number of Americans enroll in some form of managed care plan. Higher managed care utilization typically drives down the payments for health care procedures, which in turn places pressure on medical supply prices. This causes hospitals to implement tighter vendor selection and certification processes, by reducing the number of vendors used, purchasing more products from fewer vendors and trading discounts on price for guaranteed higher volumes to vendors. Hospitals have also sought to control and reduce costs over the last decade by joining group purchasing organizations or purchasing alliances. OEM customers also seek to reduce their costs by attempting to reduce the prices they pay for our products. We cannot predict what continuing or future impact these practices, the existing or proposed legislation, or such third-party payer measures within a constantly changing healthcare landscape may have on our future business, financial condition or results of operations.

Forward-Looking Statements

Certain statements included or incorporated by reference in this Annual Report on Form 10-K or the Company's other public filings and releases, which are not historical facts, or that include forward-looking terminology such as "may", "will", "believe", "anticipate", "expect", "should", "optimistic", "continue", "estimate", "intend", "plan", "would", "could", "g "opportunity", "project", "forecast", "confident", "projections", "scheduled", "designed", "future", "discussion", "if" or the neg or other variations thereof, are forward-looking statements (as such term is defined in Section 21E of the Securities Exchange Act of 1934 and Section 27A of the Securities Act of 1933, and the regulations thereunder), which are intended to be covered by the safe harbors created thereby. These statements may include, but are not limited to statements in "Business," "Legal Proceedings", "Risk Factors," "Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Notes to the Consolidated Financial Statements", such as the Company's ability to compete, strategic alliances and their benefits, the adequacy of insurance coverage, government regulation, potential increases in demand for the Company's products, net operating loss carryforwards, the ability to meet cash requirements for operating needs, the ability to meet liquidity needs, assumptions used to calculate future levels of funding of employee benefit plans, the adequacy of insurance coverage, the impacts of new accounting pronouncements and litigation.

Forward-looking statements also include, without limitation, statements as to the Company's expected future results of operations and growth, the Company's ability to meet working capital requirements, the Company's business strategy, the expected increases in operating efficiencies, anticipated trends in the Company's body-worn device markets, the effect of compliance with environmental protection laws and other government regulations, estimates of goodwill impairments and amortization expense of other intangible assets, estimates of asset impairment, the effects of changes in accounting pronouncements, the effects of litigation and the amount of insurance coverage, and statements as to trends or the Company's or management's beliefs, expectations and opinions. Forward-looking statements are subject to risks and uncertainties and may be affected by various risks, uncertainties and other factors that can cause actual results and developments to be materially different from those expressed or implied by such forward-looking statements, including, without limitation, the risk factors discussed in Item 1A of this Annual Report on Form 10-K.

The Company does not undertake to update any forward-looking statement that may be made from time to time by or on behalf of the Company.

Available Information

The Company files or furnishes its annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, proxy statements and other information with the Securities and Exchange Commission ("SEC"). The Company's reports, proxy and information statements and other SEC filings are also available on the SEC's website as part of the EDGAR database (http://www.sec.gov).

The Company maintains an internet website at www.IntriCon.com. The information on the website is not and should not be considered part of this annual report on Form 10-K and is not incorporated by reference in this document. This website is, and is only intended to be, for reference purposes only.

The Company makes available free of charge on or through its website its annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports, filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, as soon as reasonably practicable after the Company electronically files such material with, or furnishes it to, the SEC.

In addition, we will provide, at no cost (other than for exhibits), paper or electronic copies of our reports and other filings made with the SEC. Requests should be directed to:

Corporate Secretary
IntriCon Corporation
1260 Red Fox Road
Arden Hills, Minnesota 55112

ITEM 1A. Risk Factors

You should carefully consider the risks described below. If any of the risks events actually occur, our business, financial condition or results of future operations could be materially adversely affected. This Annual Report on Form 10-K contains forward-looking statements that involve risk and uncertainties. Our actual results could differ materially from those anticipated in the forward-looking statements as a result of many factors, including the risks faced by us described below and elsewhere in this Annual Report on Form 10-K.

We have experienced and expect to continue to experience fluctuations in our results of operations, which could adversely affect us.

Factors that affect our results of operations include, but are not limited to, the volume and timing of orders received, changes in the global economy and financial markets, changes in the mix of products sold, market acceptance of our products and our customer's products, competitive pricing pressures, global currency valuations, the availability of electronic components that we purchase from suppliers, our ability to meet demand, our ability to introduce new products on a timely basis, the timing of new product announcements and introductions by us or our competitors, changing customer requirements, delays in new product qualifications, the timing and extent of research and development expenses and regulatory changes and/or delays. These factors have caused and may continue to cause us to experience fluctuations in operating results on a quarterly and/or annual basis. These fluctuations could materially adversely affect our business, financial condition and results of operations, which in turn, could adversely affect the price of our common stock.

The loss of one or more of our major customers could adversely affect our results of operations.

We are dependent on a small number of customers for a majority of our revenues. In fiscal year 2018, our largest customer accounted for approximately 56 percent of our net revenue and our five largest customers accounted for approximately 70 percent of our net revenue. A significant decrease or delay in the sales to or loss of any of our major customers could have a material adverse effect on our business and results of operations. Our revenues are largely dependent upon the ability of customers to develop and sell products that incorporate our products. No assurance can be given that our major customers will not experience financial, technical, regulatory or other difficulties or delays that could adversely affect their operations and, in turn, our results of operations.

We may not be able to collect outstanding accounts receivable from our customers.

Some of our customers purchase our products on credit, which may cause a concentration of accounts receivable. As of December 31, 2018, we had accounts receivable, less allowance for doubtful accounts, of $11,479, which represented approximately 12 percent of our shareholders' equity as of that date. As of that date, two customers accounted for a combined total of approximately 52 percent of our accounts receivable. Our financial condition and profitability may be harmed if one or more of our customers are unable or unwilling to pay these accounts receivable when due.

We recently acquired Hearing Help Express and we may explore other acquisitions that complement or expand our business. Acquisitions pose significant risks and may materially adversely affect our business, financial condition and operating results.

In 2016, we acquired 20% of the equity of Hearing Help Express and, in late 2017, we completed the acquisition of the remaining 80% equity interest. Hearing Help Express represents a new and exciting business opportunity; however, we do not have any prior experience in the direct-to-end-consumer mail order hearing aid business, and we may not be able to successfully integrate or profitably operate this business, which may result in our not realizing the value paid for the acquisition. We recorded goodwill and intangible assets of $4,177 in connection with the acquisition, and if we are not able to realize the value paid, it could lead to impairment of the assets acquired, for which we would need to recognize an expense charge. Our success will be largely influenced by management's ability to hire and retain skilled direct-to-end-consumer personnel and determine the proper customer base and marketing channels to achieve our planned profitability levels.

We may explore opportunities to buy other businesses or technologies that could complement, enhance or expand our current business or product lines or that might otherwise offer us growth opportunities. We may have difficulty finding these opportunities or, if we do identify these opportunities, we may not be able to complete the transactions for various reasons, including a failure to secure financing.

The Hearing Help Express acquisition, and any other transactions that we are able to identify and complete, involve a number of risks, including: the diversion of our management's attention from our existing business to integrate the operations and personnel of the acquired or combined business or joint venture; possible adverse effects on our operating results during the integration process; unanticipated liabilities and litigation; and our possible inability to achieve the intended objectives of the transaction. In addition, we may not be able to successfully or profitably integrate, operate, maintain and manage our newly acquired operations or employees. Future acquisitions also may result in dilutive issuances of equity securities or the incurrence of additional debt.

Despite improvement in economic conditions, downturns in the domestic economic environment could cause a severe disruption in our operations.

Our business has been negatively impacted by the domestic economic environment in past years. If the economy does not continue to improve, or worsens, there could be several severely negative implications to our business that may exacerbate many of the risk factors we identified including, but not limited to, the following:

Liquidity:

The domestic economic environment, including credit markets, could worsen and reduce liquidity and this could have a negative impact on financial institutions and the country's financial system, which could, in turn, have a negative impact on the business of our customers and on our business.

Investments held by the Company are subject to market conditions which could decline in value and reduce liquidity.

Interest rates have begun to rise and are expected to continue to rise, which could disrupt domestic and world markets and could adversely affect the economy as a whole and our liquidity, costs of borrowing and results of operations.

Demand:

Any downturn in the economy or a return to recession could result in lower sales to our customers. Additionally, our customers may not have access to sufficient cash or short-term credit to obtain our products or services.

Prices:

In the event of a downturn, certain markets could experience deflation, which would negatively impact our average prices and reduce our margins.

Health care policy changes, including U.S. health care reform legislation signed in 2010, may have a material adverse effect on us.

In March 2010, President Obama signed into law the Patient Protection and Affordable Care Act and the Health Care and Education Affordability Reconciliation Act of 2010, collectively referred to as the Affordable Care Act. The legislation imposed significant new taxes on medical device makers in the form of a 2.3% excise tax on all U.S. medical device sales beginning in January 2013. Under the legislation, the total cost to the medical device industry was estimated to be approximately $30 billion over ten years. Congress suspended the excise tax for 2016 and 2017. Further legislation was adopted in January 2018 to continue the suspension for two years. If the excise tax is not repealed or further suspended, the tax would go back into effect on December 31, 2019. If re-imposed, this tax could

have a material, negative impact on our results of operations and our cash flows either directly, through taxes on us, or indirectly through others in our value chain being subject to the tax. Although the direct impact of the excise tax is expected to be immaterial on us, if facts or circumstances change in our business relationships, we could be subject to customer pricing pressures or required to pay additional taxes under the rules.

Other elements of this legislation, such as comparative effectiveness research, an independent payment advisory board, payment system reforms, including shared savings pilots, and other provisions, could meaningfully change the way health care is developed and delivered, and may materially impact numerous aspects of our business.

The Trump Administration and members of Congress have expressed their intentions to repeal and replace the Affordable Care Act. We cannot predict if the Affordable Care Act will be modified, repealed or replaced or the effect that any such actions will have on our business.

If we are unable to continue to develop new products that are inexpensive to manufacture, our results of operations could be adversely affected.

We may not be able to continue to achieve our historical profit margins due to advancements in technology. The ability to continue our profit margins is dependent upon our ability to stay competitive by developing products that are technologically advanced and inexpensive to manufacture.

Our need for continued investment in research and development may increase expenses and reduce our profitability.

Our industry is characterized by the need for continued investment in research and development. If we fail to invest sufficiently in research and development, our products could become less attractive to existing and potential customers and our business and financial condition could be materially and adversely affected. As a result of the need to maintain or increase spending levels in this area and the difficulty in reducing costs associated with research and development, our operating results could be materially harmed if our research and development efforts fail to result in new products or if revenues fall below expectations. In addition, as a result of our commitment to invest in research and development, management believes that research and development expenses as a percentage of revenues could increase in the future.

We operate in a highly competitive business and if we are unable to be competitive, our financial condition could be adversely affected.

Several of our competitors have been able to offer more standardized and less technologically advanced hearing and professional audio communication products at lower prices. Price competition has had an adverse effect on our sales and margins. Many of our competitors are larger than us and have greater research and development resources, marketing and financial resources, manufacturing capability and customer support organizations than we have. There can be no assurance that we will be able to maintain or enhance our technical capabilities or compete successfully with our existing and future competitors.

Merger and acquisition activity in our hearing health market has resulted in a smaller customer base. Reliance on fewer customers may have an adverse effect on us.

Several of our customers in the hearing health market have undergone mergers or acquisitions, resulting in a smaller customer base with larger customers. If we are unable to maintain satisfactory relationships with the reduced customer base, it may adversely affect our operating profits and revenue.

Our failure, or the failure of our customers, to obtain required governmental approvals and maintain regulatory compliance for regulated products would adversely affect our ability to generate revenue from those products.

The markets in which we and our customers operate are subject to extensive and rigorous regulation by the FDA and by comparable agencies in foreign countries. In the United States, the FDA regulates the design control, development, manufacturing, labeling, record keeping, and surveillance procedures for our medical devices and those of our customers.

The process of obtaining marketing clearance or approvals from the FDA for new products and new applications for existing products can be time-consuming and expensive, and there is no assurance that such clearance/approvals will be granted, or that the FDA review will not involve delays that would adversely affect our ability to commercialize additional products or additional applications for existing products. Some of our products in the research and development stage may be subject to a lengthy and expensive pre-market approval process with the FDA. The FDA has the authority to control the indicated uses of a device. Products can also be withdrawn from the market due to failure to comply with regulatory standards or the occurrence of unforeseen problems. The FDA regulations depend heavily on administrative interpretation, and there can be no assurance that future interpretations made by the FDA or other regulatory bodies, with possible retroactive effect, will not adversely affect us.

The registration system for our medical devices in the EU requires that our quality system conform to international quality standards. Manufacturing facilities and processes under which our hearing aid devices are produced, are inspected and audited by various certifying bodies. These audits verify our compliance with applicable requirements and standards. Further, the FDA, various state agencies and foreign regulatory agencies inspect our facilities to determine whether we are in compliance with various regulations relating to quality systems, such as manufacturing practices, validation, testing, quality control, product labeling and product surveillance. A determination that we are in violation of such regulations could lead to imposition of civil penalties, including fines, product recalls or product seizures, suspensions or shutdown of production and, in extreme cases, criminal sanctions, depending on the nature of the violation.

Further, to the extent that any of our customers to whom we supply products become subject to regulatory actions or delays, our sales to those customers could be reduced, delayed or suspended, which could have a material adverse effect on our sales and earnings.

Implementation of our growth strategy may not be successful, which could affect our ability to increase revenues.

Our growth strategy includes developing new products and entering new markets, as well as identifying and integrating acquisitions. Our ability to compete in new markets will depend upon a number of factors including, among others:

our ability to create demand for products in new markets;

our ability to manage growth effectively;

our ability to strengthen our sales and marketing presence;

our ability to successfully identify, complete and integrate acquisitions;

our ability to respond to changes in our customers' businesses by updating existing products and introducing, in a timely fashion, new products which meet the needs of our customers;

our ability to fund growth;

the quality of our new products; and

our ability to respond rapidly to technological change.

The failure to do any of the foregoing could have a material adverse effect on our business, financial condition and results of operations. In addition, we may face competition in these new markets from various companies that may

have substantially greater research and development resources, marketing and financial resources, manufacturing capability and customer support organizations.

We have foreign operations in Singapore, Indonesia, the United Kingdom and Germany, and various factors relating to our international operations could affect our results of operations.

In 2018, we operated in Singapore, Indonesia, the United Kingdom and Germany. Approximately 17 percent of our revenues were derived from our facilities in these countries in 2018. As of December 31, 2018, approximately 14 percent of our long-lived assets are located in these countries. Political or economic instability in these countries could have an adverse impact on our results of operations due to disruption of production or diminished revenues in these countries. Our future revenues, costs of operations and profit results could be affected by a number of factors related to our international operations, including changes in foreign currency exchange rates, changes in economic conditions from country to country, changes in a country's political condition, trade protection measures, licensing and other legal requirements and local tax issues. Unanticipated currency fluctuations in the British pound, euro, Singapore dollar and other currencies could lead to lower reported consolidated revenues due to the translation of this currency into U.S. dollars when we consolidate our revenues and results from operations.

Events in Europe could negatively affect our ability to conduct business in those countries.

Following a referendum in June 2016 in which voters in the United Kingdom approved an exit from the European Union, the United Kingdom government has initiated a process to leave the European Union (often referred to as Brexit), which is currently scheduled to take place on March 29, 2019. In 2018, we derived 17 percent of our revenues from sales outside the U.S., including 7 percent from Europe. The consequences of Brexit, together with what may be protracted negotiations around the terms of Brexit or the exit of the United Kingdom without an agreement, could introduce significant uncertainties into global financial markets and adversely impact the markets in which we and our customers operate. While we are not experiencing any immediate adverse impact on our financial condition as a result of Brexit, adverse consequences such as deterioration in economic conditions, volatility in currency exchange rates, including the British pound and the euro, or adverse changes in regulation could have a negative impact on our future operations, operating results and financial condition. All of these potential consequences could be further magnified if additional countries were to exit the European Union.

The recent debt crisis in certain European countries could cause the value of the euro to deteriorate, reducing the purchasing power of our European customers. Financial difficulties experienced by our suppliers and customers, including distributors, could result in product delays and inventory issues; risks to accounts receivable could also include delays in collection and greater bad debt expense. Also, the effect of the debt crisis in certain European countries could have an adverse effect on the capital markets generally, specifically impacting our ability and the ability of our customers to finance our and their respective businesses on acceptable terms, if at all, the availability of materials and supplies and demand for our products.

We are subject to tax legislation in numerous countries; changes in tax laws or challenges to our tax positions could adversely affect our business, results of operations and financial condition.

We are a global corporation with a presence in the United States, Singapore, Indonesia, the United Kingdom and Germany. As such, we are subject to tax laws, regulations and policies of the U.S. federal, state and local governments and of comparable taxing authorities in other country jurisdictions. Changes in tax laws, including the recently enacted U.S. federal tax legislation commonly referred to as the Tax Cuts and Jobs Act of 2017 ("Tax Act"), as well as other factors, could cause us to experience fluctuations in our tax obligations and effective tax rates in 2019 and thereafter and otherwise adversely affect our tax positions and/or our tax liabilities. There can be no assurance that our effective tax rates, tax payments, tax credits or incentives will not be adversely affected by these or other initiatives.

If we fail to meet our financial and other covenants under our loan agreements with our lenders, absent a waiver, we will be in default of the loan agreements and our lenders can take actions that would adversely affect our business.

There can be no assurances that we will be able to maintain compliance with the financial and other covenants in our loan agreements. In the event we are unable to comply with these covenants during future periods, it is uncertain whether our lenders will grant waivers for our non-compliance. If there is an event of default by us under our loan agreements, our lenders have the option to, among other things, accelerate any and all of our obligations under the loan agreements which would have a material adverse effect on our business, financial condition and results of operations.

Our success depends on our senior management team and if we are not able to retain them, it could have a materially adverse effect on us.

We are highly dependent upon the continued services and experience of our senior management team, including Mark S. Gorder, our President, Chief Executive Officer and a member of the Board of Directors. We depend on the services of Mr. Gorder and the other members of our senior management team to, among other things, continue the development and implementation of our business strategies and maintain and develop our client relationships. Certain members of our management team are approaching retirement and the Company must locate and employ suitable replacements from within or without the Company. We do not maintain key-man life insurance for any members of our senior management team.

Cybersecurity incidents could disrupt business operations, result in the loss of critical and confidential information, and adversely impact our reputation and results of operations.

Global cybersecurity threats can range from uncoordinated individual attempts to gain unauthorized access to our information technology (IT) systems to sophisticated and targeted measures known as advanced persistent threats. While we employ comprehensive measures to prevent, detect, address and mitigate these threats (including access controls, insurance, vulnerability assessments, continuous monitoring of our IT networks and systems, maintenance of backup and protective systems and user training and education), cybersecurity incidents, depending on their nature and scope, could potentially result in the misappropriation, destruction, corruption or unavailability of critical data and confidential or proprietary information (our own or that of third parties) and the disruption of business operations. The potential consequences of a material cybersecurity incident include reputational damage, loss of customers, litigation with customers and other parties, loss of trade secrets and other proprietary business data, diminution in the value of our investment in research, development and engineering, and increased cybersecurity protection and remediation costs, which in turn could adversely affect our competitiveness and results of operations.

Our future success depends in part on the continued service of our engineering and technical personnel and our ability to identify, hire and retain additional personnel.

There is intense competition for qualified personnel in our markets. We may not be able to continue to attract and retain engineers or other qualified personnel necessary for the development and growth of our business or to replace engineers or other qualified personnel who may leave our employ in the future. The failure to retain and recruit key technical personnel could cause additional expense, potentially reduce the efficiency of our operations and could harm our business.

We and/or our customers may be unable to protect our and their proprietary technology and intellectual property rights or keep up with that of competitors.

Our ability to compete effectively against other companies in our markets depends, in part, on our ability and the ability of our customers to protect our and their current and future proprietary technology under patent, copyright, trademark, trade secret and unfair competition laws. We cannot assure that our means of protecting our proprietary rights in the United States or abroad will be adequate, or that others will not develop technologies similar or superior to our technology or design around the proprietary rights we own or license. In addition, we may incur substantial costs in attempting to protect our proprietary rights.

Also, despite the steps taken by us to protect our proprietary rights, it may be possible for unauthorized third parties to copy or reverse-engineer aspects of our and our customers' products, develop similar technology independently or otherwise obtain and use information that we or our customers regard as proprietary. We and our customers may be unable to successfully identify or prosecute unauthorized uses of our or our customers' technology.

If we become subject to material intellectual property infringement claims, we could incur significant expenses and could be prevented from selling specific products.

We may become subject to material claims that we infringe the intellectual property rights of others in the future. We cannot assure that, if made, these claims will not be successful. Any claim of infringement could cause us to incur substantial costs defending against the claim even if the claim is invalid, and could distract management from other business. Any judgment against us could require substantial payment in damages and could also include an injunction or other court order that could prevent us from offering certain products.

Environmental liability and compliance obligations may affect our operations and results.

Our manufacturing operations are subject to a variety of environmental laws and regulations as well as internal programs and policies governing:

air emissions;

wastewater discharges;

the storage, use, handling, disposal and remediation of hazardous substances, wastes and chemicals; and

employee health and safety.

If violations of environmental laws occur, we could be held liable for damages, penalties, fines and remedial actions. Our operations and results could be adversely affected by any material obligations arising from existing laws, as well as any required material modifications arising from new regulations that may be enacted in the future. We may also be held liable for past disposal of hazardous substances generated by our business or former businesses or businesses we acquire. In addition, it is possible that we may be held liable for contamination discovered at our present or former facilities.

We are subject to numerous asbestos-related lawsuits, which could adversely affect our financial position, results of operations or liquidity.

We are a defendant along with a number of other parties in lawsuits alleging that plaintiffs have or may have contracted asbestos-related diseases as a result of exposure to asbestos products or equipment containing asbestos sold by one or more named defendants. These lawsuits relate to the discontinued heat technologies segment which we sold in March 2005. Due to the non-informative nature of the complaints, we do not know whether any of the complaints state valid claims against us. Certain insurance carriers have informed us that the primary policies for the period August 1, 1970-1978 have been exhausted and that the carriers will no longer provide defense and insurance coverage under those policies. However, we have other primary and excess insurance policies that we believe afford coverage for later years. Some of these other primary insurers have accepted defense and insurance coverage for these suits, and some of them have either ignored our tender of defense of these cases, or have denied coverage, or have accepted the tenders but asserted a reservation of rights and/or advised us that they need to investigate further. Because settlement payments are applied to all years a litigant was deemed to have been exposed to asbestos, we believe we will have funds available for defense and insurance coverage under the non-exhausted primary and excess insurance policies. However, unlike the older policies, the more recent policies have deductible amounts for defense and settlements costs that we will be required to pay; accordingly, we expect that our litigation costs will increase in the future as the older policies are exhausted. Further, many of the policies covering later years (approximately 1984 and thereafter) have exclusions for any asbestos products or operations, and thus do not provide insurance coverage for asbestos-related lawsuits. If our insurance policies do not cover the costs and any awards for the asbestos-related lawsuits, we will have to use our cash or obtain additional financing to pay the asbestos-related obligations and settlement costs. There is no assurance that we will have the cash or be able to obtain additional financings on favorable terms to pay asbestos related obligations or settlements should they occur. The ultimate outcome of any legal matter cannot be predicted with certainty. In light of the significant uncertainty associated with asbestos lawsuits, there is no guarantee that these lawsuits will not materially adversely affect our financial position, results of operations or liquidity.

The market price of our common stock has been and is likely to continue to be volatile and there has been limited trading volume in our stock, which may make it difficult for shareholders to resell common stock when they want to and at prices they find attractive.

The market price of our common stock has been and is likely to be highly volatile, and there has been limited trading volume in our common stock. For example, our stock traded between a low sale price of $16.70 and a high sale price of $76.80 in 2018. The common stock market price could be subject to wide fluctuations in response to a variety of factors, including the following:

announcements of fluctuations in our or our competitors' operating results;

regulatory or other delays affecting our or our customers' products;

the timing and announcement of sales or acquisitions of assets by us or our competitors;

changes in estimates or recommendations by securities analysts;

adverse or unfavorable publicity about our products, technologies or us;

the commencement of material litigation, or an unfavorable verdict, against us;

terrorist attacks, war and threats of attacks and war;

additions or departures of key personnel; and

sales of common stock by us or our shareholders.

In addition, the stock market in recent years has experienced significant price and volume fluctuations. Such volatility has affected many companies irrespective of, or disproportionately to, the operating performance of these companies. These broad fluctuations and limited trading volume may materially adversely affect the market price of our common stock, and your ability to sell our common stock.

Most of our outstanding shares are available for resale in the public market without restriction. The sale of a large number of these shares could adversely affect the share price and could impair our ability to raise capital through the sale of equity securities or make acquisitions for common stock.

“Anti-takeover” provisions may make it more difficult for a third party to acquire control of us, even if the change in control would be beneficial to shareholders.

We are a Pennsylvania corporation. Anti-takeover provisions in Pennsylvania law and our charter and bylaws could make it more difficult for a third party to acquire control of us. These provisions could adversely affect the market price of the common stock and could reduce the amount that shareholders might receive if we are sold. For example, our charter provides that the board of directors may issue preferred stock without shareholder approval. In addition, our bylaws provide for a classified board, with each board member serving a staggered three-year term. Directors may be removed by shareholders only with the approval of the holders of at least two-thirds of all of the shares outstanding and entitled to vote.

If we fail to maintain an effective system of internal controls, we may not be able to accurately report our financial results or prevent fraud. As a result, current and potential shareholders and customers could lose confidence in our financial reporting, which could harm our business, the trading price of our stock and our ability to retain our current customers or obtain new customers.

Pursuant to Section 404 of the Sarbanes-Oxley Act of 2002, referred to as Section 404, we are required to include in our Annual Reports on Form 10-K, reports of our management and our independent registered public accounting firm on our internal control over financial reporting. While we have reported no “material weaknesses” in the Form 10-K for the fiscal year ended December 31, 2018, we cannot guarantee that we will not have material weaknesses in the future. Compliance with the requirements of Section 404 is expensive and time-consuming. If in the future we fail to complete this evaluation in a timely manner, or if we determine that we have a material weakness, we could be subject to regulatory scrutiny and a loss of public confidence in our internal control over financial reporting. In addition, any failure to establish an effective system of disclosure controls and procedures could cause our current and potential investors and customers to lose confidence in our financial reporting and disclosure required under the Securities Exchange Act of 1934, which could adversely affect our business and the market price of our common stock.

ITEM 1B. Unresolved Staff Comments

Not applicable.

ITEM 2. Properties

The Company leases eight facilities, four domestically and four internationally, as follows:

a 47,000 square foot manufacturing facility in Arden Hills, Minnesota, which also serves as the Company's headquarters. At this facility, the Company manufactures body-worn devices, other than plastic component parts. Annual base rent expense, including real estate taxes and other charges, is approximately $534. This lease expires in January 2022.

a 37,000 square foot manufacturing facility in Arden Hills, Minnesota at which the Company manufactures body-worn devices, and plastic component parts. Annual base rent expense is approximately $334. This lease expires in July 2023.

a 46,000 square foot building in Vadnais Heights, Minnesota at which IntriCon produces plastic component parts for body-worn devices. Annual base rent expense, including real estate taxes and other charges, is approximately $390. This lease expires in December 2022.

a 22,000 square foot facility in DeKalb, Illinois which houses Hearing Help Express's sales and administrative offices and warehouse. Annual base rent expense is approximately $203. We are also responsible for our pro rata share of common area costs, real estate taxes and insurance costs. This lease expires in December 2021.

a 35,000 square foot facility in Singapore which houses production facilities, warehouse and administrative offices. Annual base rent expense, including real estate taxes and other charges, is approximately $637. This lease expires in October 2020.

a 33,000 square foot facility in Indonesia which houses production facilities, warehouse and administrative offices. Annual base rent expense, including real estate taxes and other charges is approximately $85. This lease expires in September 2021.

a 2,000 square foot facility in Germany which houses sales and administrative offices. Annual base rent expense, including real estate taxes and other charges, is approximately $32. This lease expires in June 2022.

a 11,900 square foot facility in United Kingdom which houses sales and administrative offices. Annual base rent expense, including real estate taxes and other charges, is approximately $138. This lease expires in March 2021.

See Note 20 to the Company's consolidated financial statements in Item 8 of the Annual Report on Form 10-K.

ITEM 3. Legal Proceedings

The Company is a defendant along with a number of other parties in lawsuits alleging that plaintiffs have or may have contracted asbestos-related diseases as a result of exposure to asbestos products or equipment containing asbestos sold by one or more named defendants. These lawsuits relate to the discontinued heat technologies segment which was sold in March 2005. Due to the non-informative nature of the complaints, the Company does not know whether any of the complaints state valid claims against the Company. Certain insurance carriers have informed the Company that the primary policies for the period August 1, 1970-1978 have been exhausted and that the carriers will no longer provide defense and insurance coverage under those policies. However, the Company has other primary and excess insurance policies that the Company believes afford coverage for later years. Some of these other primary insurers have accepted defense and insurance coverage for these suits, and some of them have either ignored the Company's tender of defense of these cases, or have denied coverage, or have accepted the tenders but asserted a reservation of rights and/or advised the Company that they need to investigate further. Because settlement payments are applied to all years a litigant was deemed to have been exposed to asbestos, the Company believes that it will have funds available for defense and insurance coverage under the non-exhausted primary and excess insurance policies. However, unlike the older policies, the more recent policies have deductible amounts for defense and settlements costs that the Company will be required to pay; accordingly, the Company expects that its litigation costs will increase in the future. Further, many of the policies covering later years (approximately 1984 and thereafter) have exclusions for any asbestos products or operations, and thus do not provide insurance coverage for asbestos-related lawsuits. The Company does not believe that the asserted exhaustion of some of the primary insurance coverage for the 1970-1978 period will have a material adverse effect on its financial condition, liquidity, or results of operations. Management believes that the number of insurance carriers involved in the defense of the suits, and the significant number of policy years and policy limits under which these insurance carriers are insuring the Company, make the ultimate disposition of these lawsuits not material to the Company's consolidated financial position or results of operations.

The Company's former wholly owned French subsidiary, Selas SAS, filed for insolvency in France. The Company may be subject to additional litigation or liabilities as a result of the completion of the French insolvency proceeding, including liabilities under guarantees aggregating approximately $448.

The Company is also involved from time to time in other lawsuits arising in the normal course of business. While it is not possible to predict with certainty the outcome of these matters, management is of the opinion that the disposition of these lawsuits and claims will not materially affect the Company's consolidated financial position, liquidity, or results of operations.

ITEM 4. Mine Safety Disclosures

Not applicable.

ITEM 4A. Executive Officers of the Registrant

The names, ages and offices (as of February 26, 2019) of the Company's executive officers were as follows:

Name	Age	Position
Mark S. Gorder	72	President, Chief Executive Officer and Director of the Company
Scott Longval	42	Executive Vice President, Chief Financial Officer and Treasurer
Michael P. Geraci	60	Senior Vice President, Sales and Marketing
Dennis L. Gonsior	60	Senior Vice President, Global Operations
Greg Gruenhagen	65	Vice President, Corporate Quality and Regulatory Affairs

Mr. Gorder joined the Company in October 1993 when Resistance Technology, Inc. (RTI) (now known as IntriCon, Inc.) was acquired by the Company. Mr. Gorder received a Bachelor of Arts degree in Mathematics from the St. Olaf College, a Bachelor of Science degree in Electrical Engineering from the University of Minnesota and a Master of Business Administration from the University of Minnesota. Prior to the acquisition, Mr. Gorder was President and one of the founders of RTI, which began operations in 1977. Mr. Gorder was promoted to Vice President of the Company and elected to the Board of Directors in April 1996. In December 2000, he was elected President and Chief Operating Officer and in April 2001, Mr. Gorder assumed the role of Chief Executive Officer.

Mr. Longval has served as the Company's Chief Financial Officer since July 2006 and was promoted to Executive Vice President in January 2019. Mr. Longval received a Bachelor of Science degree in Accounting from the University of St. Thomas. Prior to being appointed as CFO, Mr. Longval served as the Company's Corporate Controller since September 2005. Prior to joining the Company, Mr. Longval was Principal Project Analyst at ADC Telecommunications, Inc., a provider of innovative network infrastructure products and services, from March 2005 until September 2005. From May 2002 until March 2005 he was employed by Accellent, Inc., formerly MedSource Technologies, a provider of outsourcing solutions to the medical device industry, most recently as Manager of Financial Planning and Analysis. From September 1998 until April 2002, he was employed by Arthur Andersen, most recently as experienced audit senior.

Mr. Geraci joined the Company in October 1983. Mr. Geraci received a Bachelor of Science degree in Electrical Engineering from Bradley University and a Master of Business Administration from the University of Minnesota – Carlson School of Business. He has served as the Company's Vice President of Sales and Marketing since January

1995.

Mr. Gonsior joined the Company in February 1982. Mr. Gonsior received a Bachelor of Science degree from Saint Cloud State University. He has served as the Company's Vice President of Operations since January 1996.

Mr. Gruenhagen joined the Company in November 1984. Mr. Gruenhagen received a Bachelor of Science degree from Iowa State University. He has served as the Company's Vice President of Corporate Quality and Regulatory Affairs since December 2007. Prior to that, Mr. Gruenhagen served as Director of Corporate Quality since 2004 and Director of Project Management since 2000.

PART II

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

The Company's common shares are listed on the NASDAQ Global Market under the ticker symbol "IIN".

Market and Dividend Information

The high and low sale prices of the Company's common stock during each quarterly period during the past two years were as follows:

	2018 Market Price Range		2017 Market Price Range	
Quarter	High	Low	High	Low
First	$ 24.00	16.70	$ 9.15	6.50
Second	46.20	18.85	9.65	6.05
Third	76.80	39.15	12.95	6.90
Fourth	56.47	21.96	21.75	10.40

The closing sale price of the Company's common stock on February 26, 2019, was $27.08 per share.

At February 26, 2019 the Company had 257 shareholders of record of common stock. Such number does not reflect shareholders who beneficially own common stock in nominee or street name.

The Company currently intends to retain any future earnings to support operations and to finance the growth and development of its business and does not intend to pay cash dividends on its common stock for the foreseeable future. Any payment of future dividends will be at the discretion of the Board of Directors and will depend upon, among other things, the Company's earnings, financial condition, capital requirements, level of indebtedness, contractual restrictions with respect to the payment of dividends, and other factors that the Board of Directors deems relevant. Terms of the Company's banking agreements prohibit the payment of cash dividends without prior bank approval.

See “Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters — Equity Compensation Plans” of this Annual Report on Form 10-K for disclosure regarding our equity compensation plans.

On August 20, 2018, the Company completed a public offering and sale of 1,725 shares of common stock at a price to the public of $55.00 per share less an underwriting discount of $3.30 per share. The net proceeds from this offering, after deducting underwriting discounts and offering expenses, totaled approximately $88,967 and were used to repay debt, fund capital expenditures, to repurchase 500 shares of common stock owned by directors and officers and for working capital and other general corporate purposes.

The Company did not repurchase any shares of common stock in the quarter ended December 31, 2018.

ITEM 6. Selected Financial Data

Year Ended December 31	2018	2017 (a)	2016 (a)(b)	2015 (b)	2014
Revenue, net	$ 116,462	$ 90,637	$ 68,980	$ 68,527	$ 67,094
Gross profit	37,163	26,747	16,716	18,756	18,115
Operating expenses	30,049	24,244	18,674	15,025	13,836
Interest expense, net	(314)	(716)	(553)	(369)	(461)
Other expense, net	(769)	(367)	(602)	(261)	(1)
Income (loss) from continuing operations before income taxes, non-controlling interest and discontinued operations	6,031	1,420	(3,113)	3,101	3,817
Income tax expense	(484)	(8)	(217)	(19)	(428)
Income (loss) from continuing operations before non-controlling interest and discontinued operations	5,547	1,412	(3,330)	3,082	3,389
Loss on sale of discontinued operations, net of income taxes	—	(164)	—	—	(120)
Loss from discontinued operations, net of income taxes	—	(128)	(1,770)	(965)	(1,021)
Net income (loss)	5,547	1,120	(5,100)	2,117	2,248
Less: Loss allocated to non-controlling interest	—	(938)	(157)	(111)	—
Net income (loss) attributable to shareholders	$ 5,547	$ 2,058	$ (4,943)	$ 2,228	$ 2,248
Basic income (loss) per share attributable to shareholders:					
Continuing operations	$ 0.73	$ 0.34	$ (0.49)	$ 0.54	$ 0.59
Discontinued operations	—	(0.04)	(0.27)	(0.16)	(0.20)
Net income (loss)	$ 0.73	$ 0.30	$ (0.76)	$ 0.38	$ 0.39
Diluted income (loss) per share attributable to shareholders:					
Continuing operations	$ 0.64	$ 0.32	$ (0.49)	$ 0.51	$ 0.56
Discontinued operations	—	(0.04)	(0.27)	(0.15)	(0.19)
Net income (loss)	$ 0.64	$ 0.28	$ (0.76)	$ 0.36	$ 0.37
Weighted average number of shares outstanding during year:					
Basic	7,599	6,852	6,497	5,907	5,791
Diluted	8,630	7,307	6,497	6,241	6,038

Other Financial Highlights

Year Ended December 31	2018	2017 (a)	2016 (a)(b)	2015 (b)	2014
Working capital (c)	$ 62,897	$ 8,985	$ 8,456	$ 11,302	$ 7,804
Total assets	115,248	54,474	43,758	41,886	33,961
Long-term debt	—	9,321	9,284	7,929	4,627
Equity	91,974	21,439	19,011	18,897	16,107
Depreciation and amortization	2,943	2,194	2,041	1,755	2,182

(a) Certain historical balances have been adjusted due to the adoption of ASC 606 “Revenue from Contracts with Customers”, with the exception of years 2015 and 2014. Please refer to Notes 5 and 6 for further information.

(b) In 2016, the Company classified its cardiac diagnostic monitoring operations as discontinued operations. The Company revised its financial statements for 2016 and 2015 to reflect the discontinued operations.

(c) Working capital is equal to current assets less current liabilities.

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

Company Overview

IntriCon Corporation (together with its subsidiaries, the "Company" or "IntriCon", "we", "us" or "our") is an international company engaged in designing, developing, engineering, manufacturing and distributing body-worn devices. The Company serves the body-worn device market by designing, developing, engineering, manufacturing and distributing micro-miniature products, microelectronics, micro-mechanical assemblies and complete assemblies, primarily for biotelemetry devices, hearing instruments and professional audio communication devices.

As discussed below, the Company has two operating segments - its body-worn device segment and its hearing health direct-to-end-consumer segment. Our expertise in these segments is focused on four main markets: medical biotelemetry, hearing health, hearing health direct-to-end-consumer and professional audio communications. Within these chosen markets, we combine ultra-miniature mechanical and electronics capabilities with proprietary technology – including ultra low power (ULP) wireless and digital signal processing (DSP) capabilities – that enhances the performance of body-worn devices.

Business Highlights

In January 2019, the Company purchased the source code for the Sentibo Smart Brain self-fitting software from Soundperience for 1,829 Euros, positioning the Company to capitalize on the pending over-the-counter (OTC) hearing aid regulation. Sentibo Smart Brain self-fitting software is designed to improve both channel productivity and the quality of first-time fittings, resulting in lower prices, greater access and increased customer satisfaction. This software is being used in the German market today, most notably through Signison, the Company's joint venture with the majority owner of Soundperience. In addition, the Company transferred its 49% ownership interest in Soundperience to the majority owner of Soundperience.

On August 20, 2018, the Company completed a public offering and sale of 1,725 shares of common stock at a price to the public of $55.00 per share less an underwriting discount of $3.30 per share. The net proceeds from this offering, after deducting underwriting discounts and offering expenses, totaled approximately $88,967 and were used to repay debt, fund capital expenditures, to repurchase 500 shares of common stock owned by directors and officers and for working capital and other general corporate purposes. The amount of domestic and foreign bank debt repaid from the offering was $16,381.

In March 2018, the Company entered into a new 5-year lease for an additional 37,000 square foot manufacturing and clean room facility near our Corporate Headquarters in Arden Hills, Minnesota. In addition, during 2018 the Company added 13 new molding presses, as well as a high-speed printed circuit board assembly line in Minnesota. In June 2018, the Company entered into an additional 10,000 square foot medical assembly space in Singapore. The added capacity and equipment will aid us in meeting the anticipated rising demand in our medical biotelemetry business.

Forward–Looking Statements

The following discussion and analysis of our financial condition and results of operations should be read together with our financial statements and the related notes appearing in Item 8 of this report. This discussion and analysis contains forward-looking statements that involve risks, uncertainties and assumptions. Our actual results may differ materially from those anticipated in these forward- looking statements as a result of many factors, including but not limited to those under the heading “Risk Factors” in Item 1A of this Annual Report on Form 10-K. See also Item 1. “Business—Forward-Looking Statements” for more information.

Results of Operations: 2018 Compared with 2017

Consolidated Net Revenue

Our net revenue is comprised of two segments: our body-worn device segment (consisting of three markets: medical biotelemetry, hearing health, and professional audio) and our hearing health direct-to-end-consumer segment. Below is a recap of our revenue by main markets for the years ended December 31, 2018 and 2017:

			Change		
	2018	**2017 (a)**	**Dollars**	**Percent**	
Medical Biotelemetry	$ 75,645	$ 53,452	$ 22,193	41.5	%
Hearing Health	26,720	24,527	2,193	8.9	%
Hearing Health Direct-to-End-Consumer	6,858	6,492	366	5.6	%
Professional Audio Communications	7,239	6,166	1,073	17.4	%
Consolidated Net Revenue	$ 116,462	$ 90,637	$ 25,825	28.5	%

(a) Certain historical balances have been adjusted due to the adoption of ASC 606 “Revenue from Contracts with Customers”. Please refer to Notes 5 and 6 for further information.

In 2018, we experienced a 41.5 percent increase in medical biotelemetry revenue primarily driven by higher sales to Medtronic while the rest of the medical biotelemetry market remained relatively stable. IntriCon currently serves this market by offering medical manufacturers the capabilities to design, develop and manufacture medical devices that are easier to use, are more miniature, use less power, and are lighter. IntriCon has a strong presence in the diabetes market with its Medtronic partnership. The Company believes there are growth opportunities in this market as well other emerging biotelemetry and home care markets that could benefit from its capabilities to develop devices that are more technologically advanced, smaller and lightweight.

Net revenue in our hearing health business for the year ended December 31, 2018 increased 8.9 percent over the same period in 2017. The increase was primarily due to gains in our value-based hearing healthcare markets, partially offset by the anticipated continued decline in conventional channel sales. The Company is optimistic about the progress that has been made and the long-term prospects of the value-based hearing healthcare market. Market dynamics, such as low penetration rates, an aging population, regulatory scrutiny, and the need for reduced cost and convenience, have resulted in the emergence of alternative care models, including the direct-to-the-consumer channel and pending over-the-counter channel. IntriCon believes it is very well positioned to serve these value-based hearing healthcare market channels. The Company is aggressively pursuing larger customers who can benefit from our value proposition. Over the past several years, the Company has invested heavily in core technologies, product platforms and its global manufacturing capabilities geared to provide high-tech, lower-cost hearing devices.

Net revenue in our hearing health direct-to-end-consumer business for the year ended December 31, 2018 increased 5.6 percent over the same period in 2017, primarily due to an increase in advertising, which drove sales.

Net revenue to the professional audio device sector increased 17.4 percent in 2018 compared to the same period in 2017. IntriCon will continue to leverage its core technology in professional audio to support existing customers.

Gross Profit

Gross profit, both in dollars and as a percent of revenue, for the years ended December 31, 2018 and 2017, were as follows:

	2018			2017			Change		
	Dollars	Percent of Revenue		Dollars	Percent of Revenue		Dollars	Percent	
Gross Profit	$ 37,163	31.9	%	$ 26,747	29.5	%	$ 10,416	38.9	%

The 2018 gross profit increase as a percentage of revenue over the prior year was primarily due to higher overall sales volumes slightly offset by ramp-up costs associated with the new manufacturing facility.

Sales and Marketing, General and Administrative and Research and Development Expenses

Sales and marketing, general and administrative and research and development expenses for the years ended December 31, 2018 and 2017 were:

	2018		2017		Change	
	Dollars	Percent of Revenue	Dollars	Percent of Revenue	Dollars	Percent
Sales and Marketing	$ 12,369	10.6 %	$ 9,447	10.4 %	$ 2,922	30.9 %
General and Administrative	13,009	11.2 %	10,339	11.4 %	2,670	25.8 %
Research and Development	4,671	4.0 %	4,458	4.9 %	213	4.8 %

Sales and marketing expenses increased over the prior year due to increased hearing health direct-to-end-consumer advertising spending, bad debt expense, other outsider services and support costs. General and administrative and research and development expenses were greater than the prior year period primarily due to increased other external services and support costs to drive business growth.

Interest Expense

Interest expense for 2018 was $314, a decrease of $402 from $716 in 2017. The decrease in interest expense was primarily due to lower average outstanding debt balances during the year due to the full debt repayment during the second half of 2018 with the proceeds from our August 2018 public offering.

Other Expense, net

In 2018, other expense, net was $769 compared to $367 in 2017. The change in other expense primarily related to additional losses incurred in our partnerships accounted for under the equity method during the current period.

***Income Tax* Expense**

Income taxes were as follows:

	2018	2017
Income tax expense	$ 484	$ 8
Percentage of income tax expense of income (loss) from continuing operations before income taxes, non-controlling interest and discontinued operations	8.03%	0.56%

The expense in 2018 and 2017 was primarily due to foreign taxes on international operations. The Company is in a net operating loss (“NOL”) position for US federal and state income tax purposes, but our deferred tax asset related to the NOL carry forwards have been largely offset by a full valuation allowance. We incur minimal income tax expense for the current period domestic operations. We have approximately $38,432 of NOL carry forwards available to offset future U.S. federal income taxes that begin to expire in 2023.

Loss from Discontinued Operations

Loss from discontinued operations, net of income taxes, was $0 and $128 for the years ended December 31, 2018 and December 31, 2017.

Loss on Sale of Discontinued Operations

Loss on sale of discontinued operations, net of income taxes, was $0 and $164 for the years ended December 31, 2018 and December 31, 2017 due to our sale of Datrix, LLC. Please refer to Note 2 for additional information.

Loss Allocated to Non-Controlling Interest

Loss allocated to non-controlling interest of $0 and $938 for the years ended December 31, 2018 and December 31, 2017 was primarily due to losses within HHE. In December 2017, we obtained 100% ownership of HHE, therefore a non-controlling interest no longer existed in 2018.

Results of Operations: 2017 Compared with 2016

Consolidated Net Revenue

Our net revenue is comprised of two segments: our body-worn device segment (consisting of three markets: medical biotelemetry, hearing health, and professional audio) and our hearing health direct-to-end-consumer segment. Below is a recap of our revenue by main markets for the years ended December 31, 2017 and 2016:

			Change	
Year Ended December 31	**2017 (a)**	**2016 (a)**	**Dollars**	**Percent**
Medical Biotelemetry	$ 53,452	$ 36,618	$ 16,834	46.0 %
Hearing Health	24,527	23,837	690	2.9 %
Hearing Health Direct-to-End-Consumer	6,492			