

Allison Transmission Holdings Inc
Form 10-K
February 15, 2018
Table of Contents

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

FORM 10-K

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

For the Fiscal Year Ended December 31, 2017

OR

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

Commission File No. 001-35456

ALLISON TRANSMISSION HOLDINGS, INC.
(Exact Name of Registrant as Specified in Its Charter)

Delaware
(State of Incorporation)

26-0414014
(I.R.S. Employer
Identification Number)

One Allison Way

Indianapolis, IN 46222

(Address of Principal Executive Offices and Zip Code)

(317) 242-5000

(Registrant's Telephone Number, Including Area Code)

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

| Title of each class | Name of each exchange on which registered |
|---|--|
| Common Stock, \$0.01 par value | New York Stock Exchange |
| 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 and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted 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 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 definitions of large accelerated filer, accelerated

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filer, smaller reporting company and emerging growth company in Rule 12b-2 of the Exchange Act.

Large accelerated filer

Accelerated filer

Non-accelerated filer (Do not check if a smaller reporting company)

Smaller reporting company

Emerging growth company

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

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

The aggregate market value of the voting and non-voting stock held by non-affiliates was approximately \$5,575 million as of June 30, 2017.

As of February 2, 2018, there were 140,066,567 shares of Common Stock outstanding.

Documents Incorporated by Reference

Portions of the Registrant's definitive Proxy Statement for its 2018 annual meeting of stockholders will be incorporated by reference in Part III of this Annual Report on Form 10-K.

Table of Contents

INDEX

| | Page |
|---|-------|
| <u>PART I.</u> | |
| <u>Item 1. Business</u> | 3-13 |
| <u>Item 1A. Risk Factors</u> | 14-25 |
| <u>Item 1B. Unresolved Staff Comments</u> | 26 |
| <u>Item 2. Properties</u> | 26 |
| <u>Item 3. Legal Proceedings</u> | 26 |
| <u>Item 4. Mine Safety Disclosures</u> | 26 |
| <u>PART II.</u> | |
| <u>Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities</u> | 27-29 |
| <u>Item 6. Selected Financial Data</u> | 30 |
| <u>Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations</u> | 31-44 |
| <u>Item 7A. Quantitative and Qualitative Disclosures About Market Risk</u> | 45 |
| <u>Item 8. Financial Statements and Supplementary Data</u> | 46-84 |
| <u>Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosure</u> | 85 |
| <u>Item 9A. Controls and Procedures</u> | 85 |
| <u>Item 9B. Other Information</u> | 85 |
| <u>PART III.</u> | |
| <u>Item 10. Directors, Executive Officers and Corporate Governance</u> | 86 |
| <u>Item 11. Executive Compensation</u> | 86 |
| <u>Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters</u> | 86 |
| <u>Item 13. Certain Relationships and Related Transactions, and Director Independence</u> | 86 |
| <u>Item 14. Principal Accounting Fees and Services</u> | 86 |
| <u>PART IV.</u> | |
| <u>Item 15. Exhibits, Financial Statement Schedules</u> | 87 |
| <u>Item 16. Form 10-K Summary</u> | 90 |

Table of Contents

Cautionary Note Regarding Forward-Looking Statements

This Annual Report on Form 10-K contains forward-looking statements. The words believe, expect, anticipate, estimate and other expressions that are predictions of or indicate future events and trends and that do not relate to historical matters identify forward-looking statements. You should not place undue reliance on these forward-looking statements. Although forward-looking statements reflect management's good faith beliefs, reliance should not be placed on forward-looking statements because they involve known and unknown risks, uncertainties and other factors, which may cause the actual results, performance or achievements to differ materially from anticipated future results, performance or achievements expressed or implied by such forward-looking statements. Forward-looking statements speak only as of the date the statements are made. We undertake no obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events, changed circumstances or otherwise. These forward-looking statements are subject to numerous risks and uncertainties, including, but not limited to: uncertainty in the global regulatory and business environments in which we operate; our participation in markets that are competitive; the highly cyclical industries in which certain of our end users operate; the failure of markets outside North America to increase adoption of fully-automatic transmissions; the concentration of our net sales in our top five customers and the loss of any one of these; future reductions or changes in government subsidies for hybrid vehicles and other external factors impacting demand; U.S. and foreign defense spending; general economic and industry conditions; the discovery of defects in our products, resulting in delays in new model launches, recall campaigns and/or increased warranty costs and reduction in future sales or damage to our brand and reputation; our ability to prepare for, respond to and successfully achieve our objectives relating to technological and market developments, competitive threats and changing customer needs; risks associated with our international operations; labor strikes, work stoppages or similar labor disputes, which could significantly disrupt our operations or those of our principal customers; risks related to our substantial indebtedness; and our intention to pay dividends and repurchase shares of our common stock.

Important factors that could cause actual results to differ materially from our expectations are disclosed under Part I, Item 1A, Risk Factors in this Annual Report on Form 10-K. All written and oral forward-looking statements attributable to us, or persons acting on our behalf, are expressly qualified in their entirety by the cautionary statements as well as other cautionary statements that are made from time to time in our other Securities and Exchange Commission filings or public communications. You should evaluate all forward-looking statements made in this Annual Report on Form 10-K in the context of these risks and uncertainties.

Certain Trademarks

This Annual Report on Form 10-K includes trademarks, such as Allison Transmission and ReTran, which are protected under applicable intellectual property laws and are our property and/or the property of our subsidiaries. This report also contains trademarks, service marks, copyrights and trade names of other companies, which are the property of their respective owners. We do not intend our use or display of other companies' trademarks, service marks, copyrights or trade names to imply a relationship with, or endorsement or sponsorship of us by, any other companies. Solely for convenience, our trademarks and trade names referred to in this report may appear without the ® or symbols, but such references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or the right of the applicable licensor to these trademarks and trade names.

Table of Contents

PART I.

ITEM 1. Business

Overview

Allison Transmission Holdings, Inc. and its subsidiaries (Allison, the Company or we) design and manufacture commercial and defense fully-automatic transmissions. The business was founded in 1915 and has been headquartered in Indianapolis, Indiana since inception. Allison was an operating unit of General Motors Corporation from 1929 until 2007, when Allison once again became a stand-alone company. In March 2012, Allison began trading on the New York Stock Exchange under the symbol, ALSN .

We have approximately 2,700 employees and 13 different transmission product lines. Although approximately 79% of revenues were generated in North America in 2017, we have a global presence by serving customers in Europe, Asia, South America and Africa. We serve customers through an independent network of approximately 1,400 independent distributor and dealer locations worldwide.

Our Business

We are the world's largest manufacturer of fully-automatic transmissions for medium- and heavy-duty commercial vehicles and medium- and heavy-tactical U.S. defense vehicles. Allison transmissions are used in a wide variety of applications, including on-highway trucks (distribution, refuse, construction, fire and emergency), buses (primarily school, transit and electric hybrid-transit), motorhomes, off-highway vehicles and equipment (primarily energy, mining and construction) and defense vehicles (wheeled and tracked). We estimate that globally, in 2017, we sold approximately 60% of all fully-automatic transmissions for medium- and heavy-duty on-highway commercial vehicle applications. We believe the Allison brand is one of the most recognized in our industry as a result of the performance, reliability and fuel efficiency of our transmissions and is associated with high quality, durability, vocational value, technological leadership and superior customer service.

We introduced the world's first fully-automatic transmission for commercial vehicles over 60 years ago. Since that time, we have driven the trend in North America and Western Europe towards increasing automaticity by targeting a diverse range of commercial vehicle vocations. Allison transmissions are optimized for the unique performance requirements of end users, which typically vary by vocation. Our products are highly engineered, requiring advanced manufacturing processes, and employ complex software algorithms for our transmission controls to maximize end user performance. We have developed over 100 different models that are used in more than 2,500 different vehicle configurations and are compatible with more than 500 combinations of engine brands, models and ratings (including diesel, gasoline, natural gas and other alternative fuels). Additionally, we have created thousands of unique Allison-developed calibrations available to be used with our transmission control modules.

Our Industry

Commercial vehicles typically employ one of three transmission types: manual, automated manual transmissions (AMT) or fully-automatic. Manual transmissions are the most prevalent transmission type used in Class 8 tractors in North America and in medium- and heavy-duty commercial vehicles, generally, outside North America. Manual transmissions utilize a disconnect clutch causing power to be interrupted during each gear shift resulting in energy loss-related inefficiencies and less work being accomplished for a given amount of fuel consumed. In long-distance trucking, this power interruption is not a significant factor, as the manual transmission provides its highest degree of fuel economy during steady-state cruising. However, steady-state cruising is only one part of the duty cycle. When the duty cycle requires a high degree of start and stop activity or speed transients, as is common in many vocations as well as in urban environments, we believe manual transmissions result in reduced performance, lower fuel efficiency, lower average speed for a given amount of fuel consumed and inferior ride quality. Moreover, the clutches must be replaced regularly, resulting in increased maintenance expense and vehicle downtime. Manual transmissions also require a skilled driver to operate the disconnect clutch when launching the vehicle and shifting gears. AMTs are manual transmissions that feature automated operation of the disconnect clutch. Fully-automatic transmissions utilize technology that smoothly shifts gears instead of a disconnect clutch, thereby delivering uninterrupted power to the wheels during gear shifts and requiring minimal driver input. These transmissions deliver superior acceleration, higher productivity, increased fuel efficiency, reduced operating costs, less driveline shock and smoother shifting relative to both manual transmissions and AMTs in vocations with a high degree of start and stop activity, as well as in urban environments.

Table of Contents

Emerging technologies in commercial-duty transmissions and powertrains include dual clutch transmissions (DCT) and electric drive powertrains. DCTs are variants of manual transmissions and AMTs that incorporate a dual clutch mechanism to facilitate shifting the manual transmission gearbox. Electric drive powertrains are also emerging in certain end markets, such as transit buses, and are in part driven by efforts to reduce fuel consumption and greenhouse gas emissions. Electric drive powertrains differ from electric hybrid powertrains because they only propel the vehicle with an electric motor; while electric hybrids generally utilize both a conventional internal combustion power source and powertrain as well as the means to propel the vehicle electrically. While both emerging technologies are gaining use in niche automotive markets, they are just beginning to evolve and become proven in commercial vehicle markets.

Fuel efficiency, reduction in fuel consumption and reduced emissions are important considerations for commercial vehicles everywhere and they tend to go together. We believe fuel efficiency, the measure of work performed for a given amount of fuel consumed, is the best method to assess fuel consumption of commercial vehicles as compared to the more commonly-used fuel economy metric of miles-per-gallon (MPG). MPG is inadequate for commercial vehicles because it does not encompass two key elements of efficiency that we believe are important to vehicle owners and operators: payload and transport time. For example, if more work can be completed or more payload hauled using the same amount of fuel and/or over a shorter period of time, then we believe the vehicle is more fuel efficient. Since fuel economy only accounts for distance traveled and fuel consumed, ignoring time and work performed, we believe it is therefore an inferior metric to fuel efficiency when it comes to assessing commercial vehicles. Markets, regulations, policies and technology continue to evolve with respect to these topics.

Our Served Markets

We sell our transmissions globally for use in medium- and heavy-duty on-highway commercial vehicles, off-highway vehicles and equipment and defense vehicles. In addition to the sale of transmissions, we also sell branded replacement parts, support equipment and other products necessary to service the installed base of vehicles utilizing our transmissions. The following table provides a summary of our business by end market, for the fiscal year ended December 31, 2017.

| | OUTSIDE NORTH | | | | | | |
|-----------------------|---------------|----------|-------------|------------|-------------|---------|----------------|
| | NORTH AMERICA | | | AMERICA | | | SERVICE PARTS, |
| | ON-HIGHWAY | ELECTRIC | OFF-HIGHWAY | ON-HIGHWAY | OFF-HIGHWAY | DEFENSE | SUPPORT |
| | | HYBRID | | | | | EQUIPMENT |
| END MARKET | TRANSIT BUS | | | | | & OTHER | |
| 2017 NET SALES | | | | | | | |
| (IN MILLIONS) | \$1,106 | \$71 | \$51 | \$344 | \$41 | \$117 | \$532 |
| % OF TOTAL | 49% | 3% | 2% | 15% | 2% | 5% | 24% |

| MARKET POSITION | #1 supplier of fully-automatic transmissions | A leading supplier of electric hybrid-propulsion systems | A leading independent supplier | #1 supplier of fully-automatic transmissions in China | A leading independent supplier | #1 supplier of transmissions for the U.S. Department of Defense | Approximate 1,400 dealers and distributors worldwide |
|----------------------|--|--|--------------------------------|---|--------------------------------|---|--|
| VOCATIONS OR END USE | Distribution | Electric hybrid transit bus | Energy | Established presence in Western Europe | Distribution | Energy | Medium- and heavy-tactical wheeled platforms |
| | Emergency | Electric hybrid shuttle bus | Mining | Emergency | Mining | | Support equipment |
| | Refuse | | Construction | Refuse | Construction | Tracked combat platforms | Remanufactured transmissions |
| | Construction | | Specialty vehicle | Construction | Specialty vehicle | | Fluids |
| | Utility | | | Utility | | | |
| | School, transit, shuttle and coach buses | | | Transit, shuttle and coach buses | | | |
| | Motorhome | | | | | | |
| | Metro tractors | | | | | | |

Refer to NOTE 17, Concentration of Risk and NOTE 21, Geographic Information in Part II, Item 8, of this Annual Report on Form 10-K for additional information on our significant original equipment manufacturer (OEM) customers and net sales by geographical areas.

Table of Contents**North America**

On-Highway. We are the largest manufacturer of fully-automatic transmissions for the on-highway medium- and heavy-duty commercial vehicle market in North America. The following is a summary of our on-highway net sales by vehicle class in North America.

Our core North American on-highway market includes Class 4-5, Class 6-7 and Class 8 straight trucks, conventional transit, shuttle and coach buses, school buses and motorhomes. Class 8 trucks are subdivided into two markets: straight and tractor. Class 8 straight trucks are those with a unified body (e.g., refuse, construction, and dump trucks), while tractors have a vehicle chassis that is separable from the trailer they pull. We have been supplying transmissions for Class 8 straight trucks for decades, and it is a core end market for us. Today, we have very limited exposure to the Class 8 line-haul tractor market because lower priced manual transmissions and AMTs generally meet the needs of these vehicles which are primarily used in long distance hauling. However, we have identified a portion of the Class 8 tractor market that we call metro tractors that are used in urban environments the majority of the time and developed a fully-automatic transmission (the TC10) that meets the unique duty cycle requirements of the Class 8 metro tractor market. Combining the startability and continuous, uninterrupted power qualities of a fully-automatic transmission with the cruising aspects of a manual transmission, the TC10 offers an alternative to traditional manual and automated manual transmissions in tractor applications.

We sell substantially all of our transmissions in the North American on-highway market to OEMs. These OEMs, in turn, install our transmissions in vehicles in which our transmission is either the exclusive transmission available or is specifically requested by end users. In 2017, OEM customers representing over 95% of our North American on-highway unit volume participated in long-term supply agreements (LTSA) with us. Generally, these LTSAs offer the OEM customer defined levels of mutual commitment with respect to growing Allison's presence in the OEMs products and promotional efforts, pricing and sharing of commodity cost risk. The length of our LTSAs is typically between three and five years. We often compete in this market against independent manufacturers of manual transmissions, AMTs, DCTs, electric drive systems, fully-automatic transmissions manufactured by Ford Motor Company (Ford), ZF Friedrichshafen AG (ZF) and Voith GmbH, and against vertically integrated OEMs in certain weight classes that use their own internally manufactured transmissions in certain vehicles.

The following table presents a summary of our competitive position by vehicle class in the North America on-highway end market.

| | CLASS 4-5 | CLASS 6-7 | CLASS 8 STRAIGHT | SCHOOL | |
|--------------------|------------------|------------------|-------------------------|---------------|-------------------|
| | TRUCKS | TRUCKS | TRUCKS | BUSES | MOTORHOMES |
| 2017 SHARE | 4% | 71% | 68% | 88% | 38% |
| PRIMARY | Ford | Manual | Manual Transmissions | Ford | Ford |
| COMPETITION | | Transmissions | AMTs | | |
| | | AMTs | | | |
| | | Ford | | | |

Table of Contents

Electric Hybrid Transit Buses. The interest in conserving fuel and reducing greenhouse gas emissions is driving demand for more fuel efficient commercial vehicles. Our customers in this North American end market are typically city, state and federal governmental entities. In this market, we compete primarily with BAE Systems plc and manufacturers of electric drive systems.

Off-Highway. We have provided products used in vehicles and equipment that serve energy, mining and construction applications in North America for over 60 years. Off-highway energy applications include hydraulic fracturing equipment, well-stimulation equipment, pumping equipment, and well-servicing rigs, which often use a fully-automatic transmission to propel the vehicle and drive auxiliary equipment. We maintain a leadership position in this end market, with nearly all producers of well-stimulation and well-servicing equipment utilizing our heavy duty off-highway transmissions. Competition includes Caterpillar Inc. (Caterpillar) and Twin Disc, Inc. (Twin Disc).

We also provide heavy-duty transmissions used in mining trucks, specialty vehicles and construction vehicles. Mining applications include trucks used to haul various commodities and other products, including rigid dump trucks, underground trucks and long-haul tractor trailer trucks with load capacities between 40 to 110 tons. Our major competitors in this end market are Caterpillar and Komatsu Ltd. (Komatsu), both of which are vertically integrated and manufacture fully-automatic transmissions for their own vehicles. Specialty vehicles using our heavy-duty transmissions include airport rescue and firefighting vehicles and heavy-equipment transporters. Our major competitor in this end market is Twin Disc. Construction applications include articulated dump trucks, with Caterpillar, Volvo Group (Volvo) and ZF as competitors.

Outside North America

Outside North America we serve several different markets, including: Europe, Middle East, Africa (EMEA), Asia-Pacific, South America and India.

On-Highway. We are the largest manufacturer of fully-automatic transmissions for the commercial vehicle market outside of North America. While the use of fully-automatic transmissions in the medium- and heavy-duty commercial vehicle market has been widely accepted in North America, the markets outside North America continue to be dominated by manual transmissions. In 2017, fully-automatic transmission-equipped medium- and heavy-duty commercial vehicles represented less than 5% of the vehicles in markets outside North America and are concentrated in certain vocational end markets. The following is a summary of our on-highway net sales by region outside of North America.

Europe, Middle East, Africa. EMEA is composed of several different markets, each of which differs from our core North American market by the degree of market maturity, sophistication and acceptance of fully-automatic transmission technology. Within Europe, we serve Western European developed markets, as well as Russian and Eastern European emerging markets, principally in the refuse, emergency, bus, coach, distribution and utility markets. Competition in Western Europe is most notably characterized by a high level of vertical powertrain integration with OEMs often utilizing their own manual transmissions and AMTs in their vehicles. The Middle East and Africa regions are generally characterized by very limited local vehicle production, with imports from the U.S., South America, Turkey, China, India and Europe accounting for the majority of vehicles.

Table of Contents

Asia-Pacific. Our key Asia-Pacific markets include China, Japan, India, and South Korea; however, we actively participate in several other important Asia-Pacific countries including Australia, Taiwan, Indonesia, Malaysia and Thailand, which are primarily importers of commercial vehicles. Within Asia-Pacific, our sales efforts are principally focused on the transit bus and vocational truck markets. Currently, manual transmissions are the predominant transmissions used in commercial vehicles in the Asia-Pacific region.

South America. The South American region is characterized by a high level of OEM integration, with captive manual transmission and AMT manufacturing. Currently, manual transmissions are the predominant transmissions used in commercial vehicles in South America.

Off-Highway. The following is a summary of our off-highway net sales by region outside of North America.

Europe, Middle East, Africa. Our off-highway markets in EMEA are mining and construction. Our major off-highway competitors are Caterpillar and Komatsu, both of which are vertically integrated manufacturers of off-highway mining vehicles, including the specific fully-automatic transmission used in their mining trucks. A typical construction application is the articulated dump truck, with competition from Caterpillar, Volvo and ZF transmissions.

Asia-Pacific. Off-highway markets in Asia are shared by energy, mining and construction applications. Our primary competitors are Caterpillar, Danyang Winstar Auto Parts Co., Ltd. and Twin Disc in energy applications, Caterpillar, Komatsu and Danyang Winstar Auto Parts Co., Ltd. in mining applications and Caterpillar, Volvo and ZF in construction applications.

Defense

We have a long-standing relationship with the U.S. Department of Defense (DOD) dating back to 1946, when we began developing our first-generation tank transmission. Today, we sell substantially all of the transmissions for medium- and heavy-tactical wheeled vehicle platforms including the Family of Medium Tactical Vehicles, Armored Security Vehicles, Heavy Expanded Mobility Tactical Trucks, Heavy Equipment Transporters, Palletized Loading Systems, M915 Series Trucks, Medium Tactical Vehicle Replacements and the Logistic Vehicle System Replacement. Additionally, we supplied transmissions for the majority of Mine-Resistant Ambush Protected (MRAP) Vehicles, the MRAP All-Terrain Vehicle and the Joint Light Tactical Vehicle, which is the replacement vehicle for Humvee personnel transport. Transmissions for our wheeled vehicle platforms are typically sold to OEMs.

We are also the supplier on two of the three key tracked vehicle platforms, the Abrams tank and the M113 family of vehicles, which are sold directly to the DOD. Additionally, we sell parts kits to licensees for the production of transmissions for tracked vehicles manufactured outside North America. See Part I, Item 1A, Risk Factors of this Annual Report on Form 10-K for a discussion of risks associated with our contracts with the U.S. DOD.

Globally, we face competition for the supply of our transmissions in tracked defense vehicles primarily from L3 Technologies, Inc., Renk AG and ZF. Additionally, we face limited competition from Caterpillar and ZF in certain defense wheeled vehicle platforms.

Table of Contents

Service Parts, Support Equipment and Other

The aftermarket provides us with a relatively stable source of revenues as the installed base of vehicles and equipment utilizing our transmissions continues to grow. The need for replacement parts is driven by normal vehicle and equipment maintenance requirements. Uninterrupted operation is generally critical for end users' profitability. End users focus on getting the vehicle or equipment back in service, which in some cases results in the aftermarket purchase decision being less price-sensitive.

The sale of Allison-branded parts and fluids, remanufactured transmissions and support equipment is fundamental to our brand promise. We have assembled a worldwide network of approximately 1,400 independent distributor and dealer locations to sell, service and support our transmissions. As part of our brand strategy, our distributors and dealers are required to sell genuine Allison-branded parts. Within the aftermarket, we offer remanufactured transmissions under our ReTran brand, which provides a cost-effective alternative for transmission repairs and replacements. We also provide support equipment to our OEMs to assist in installing new Allison transmissions into vehicles, and, therefore, sales of support equipment are dependent upon sales of new transmissions. The competition for service parts and ReTran transmissions comes from a variety of smaller-scale companies sourcing non-genuine will-fit parts from unauthorized manufacturers. These will-fit parts often do not meet our product specifications, and therefore may be of lesser quality than genuine Allison parts.

Table of Contents

Our Product Offerings

Allison transmissions are sold under the Allison Transmission brand name and remanufactured transmissions are sold under the ReTran brand name. The following is a summary of our 13 transmission product lines.

Table of Contents

10

Table of Contents

Product Development and Engineering

We maintain product development and engineering capability dedicated to the design, development, refinement and support of our fully-automatic transmissions and electric hybrid-propulsion systems. We believe our customers expect our products to provide unparalleled performance and value defined in various ways, including delivering maximum cargo in minimum time, using the least amount of fuel possible while employing the fewest vehicles possible and experiencing maximum vehicle uptime. In response to those needs and the evolving customer focus on fuel efficiency, we provide vehicle specification guidelines, transmission control software and mechanical components to optimize fuel economy while delivering desired vehicle performance. Further, we are developing new technology to improve fuel efficiency and fuel economy by allowing engines to operate more efficiently and at lower speeds to avoid consuming fuel without compromising performance. Building on our engineering capabilities, we pioneered electric hybrid-propulsion in commercial vehicles and are developing new alternative technologies for use in our global commercial vehicle markets. For the years ended December 31, 2017, 2016 and 2015, we have invested \$105 million, \$88 million and \$93 million in engineering research and development, respectively. From time to time, we also acquire certain licenses to provide us with technology to complement our portfolio of products and product initiatives.

Sales and Marketing Organization

Our sales and marketing effort is organized along geographic and customer lines and is comprised of marketing, sales and service professionals, supported by application engineers worldwide. In North America, selling efforts in the on-highway end market are organized by distributor area responsibility, OEM sales and, for our large end users, national accounts. Outside North America, we manage our sales, marketing, service and application engineering professionals through regional areas of responsibility. These regional management teams distribute OEM service and application engineering resources globally. We manage our defense products sales, marketing, service and application engineering through professionals based in Indianapolis, Indiana and Detroit, Michigan.

We have developed a marketing strategy to reach OEM customers as well as end users. We target our end users primarily through marketing activities by our sales staff, who directly call on end users and attend local trade shows, targeting specific vocations globally and through our plant tour programs, where end users may test our products on the Indianapolis test track and our enhanced customer experience demonstration track at our Hungary facility.

While our marketing management uses the term customer interchangeably for OEMs and end users, the primary objective of our marketing strategy is to create demand for fully-automatic transmissions through:

OEM promotion of our products and incorporation of fully-automatic transmissions in their commercial vehicle product offerings;

Allison representative and/or Allison distributor contact with identified, major end users; and

Our network of independent dealers who contact other end users.

The process is interactive, as Allison representatives, Allison distributors, OEMs and dealers educate customers and respond to the specific applications, requirements and needs of numerous specialty markets.

Similarly, we work with customers, dealers and OEMs to educate, improve and simplify how they specify vehicles and vehicle systems in order to optimize vehicle performance and fuel consumption. Our field organization also works closely with distributors who, in turn, work with dealers to provide end users with education, parts, service and warranty support. The defense marketing group follows a defined plan that identifies country, vehicle and specific OEMs and then approaches the ultimate end user through a variety of channels.

Manufacturing

Our manufacturing strategy provides for distributed capability in manufacturing and assembly of our products for the global commercial vehicle market. Our primary manufacturing facilities, located in Indianapolis, Indiana, consist of approximately 2.3 million square feet of usable manufacturing space in six plants. We also have established customization and parts distribution in the United States, The Netherlands, Brazil, China, Hungary, India and Japan, and plants in Chennai, India and Szentgotthard, Hungary. Our high volume on-highway products are produced in multiple global locations while off-highway, electric hybrid-propulsion and defense tracked and wheeled products are produced in Indianapolis.

Table of Contents

Suppliers and Raw Materials

A significant amount of the part numbers that make up our transmissions are purchased from outside suppliers, and during 2017, we purchased approximately \$735 million of direct materials and components from outside suppliers. The largest elements of our direct spending are aluminum and steel castings and forgings that are formed by our suppliers into our larger components and assemblies for use in our transmissions. However, our spending on aluminum and steel raw materials directly and indirectly through our purchase of these components constituted approximately 11% of our direct material and component costs in 2017. The balance of our direct and indirect materials and components costs are primarily composed of value-added services and conversion costs. Our supply contracts, along with an intensive supplier selection and performance monitoring process, have enabled us to establish and maintain close relationships with suppliers and have contributed to our overall operating efficiency and quality.

Intellectual Property

Patents and other proprietary rights are important to the continued success of our business. We also rely upon trade secrets, know-how, continuing technological innovation and licensing opportunities to develop and maintain our competitive position. We protect our proprietary rights through a variety of methods, including confidentiality agreements and proprietary information agreements with suppliers, employees, consultants and others who may have access to proprietary information. We own over 400 issued patents worldwide, and we have licensing arrangements with respect to more than 600 additional patents and patent applications. We have more than 400 pending patent applications throughout the world that relate to aspects of the technology incorporated in many of our products.

We have an irrevocable, royalty-free, worldwide license of more than 250 U.S. and foreign patents and patent applications, as well as certain unpatented technology and know-how, owned by General Motors Company (GM) to manufacture, use and sell fully-automatic transmissions and certain electric hybrid-propulsion systems for use in vocational and defense vehicles and off-highway products. Such licenses are subject to certain limitations. See Part I, Item 1A, Risk Factors of this Annual Report on Form 10-K for a discussion of these risks and limitations. We also acquired from GM an irrevocable, royalty-free, worldwide license under computer software programs that we use to run our business, including product design. In addition, GM has a license to use certain Allison trademarks.

Seasonality

Overall, the demand for our products is relatively consistent over the year. However, in typical market conditions, the North American truck market experiences a higher level of production in the first half of the year due to fewer holidays and the practice of plant shutdowns in July and December. Working capital levels do not fluctuate significantly in the normal course for our business.

Employees

As of December 31, 2017, we had approximately 2,700 employees, with approximately 89% of those employees in the U.S. Approximately 59% of our U.S. employees are represented by the International Union, United Automobile, Aerospace and Agricultural Implement Workers of America (UAW) and are subject to a collective bargaining agreement. In December 2017, we entered into a six year collective bargaining agreement with UAW Local 933 that expires in November 2023. As approximately 39% of our represented employees are currently retirement eligible, we anticipate a shift toward increasing the number of multi-tier employees over the coming years. There have been no strikes or work stoppages due to Allison-specific issues in over 30 years.

Table of Contents

Environmental Compliance

We are subject to a variety of federal, state, local and foreign environmental laws and regulations, including those governing the discharge of pollutants into the air or water, the management and disposal of hazardous substances or wastes, and the cleanup of contaminated sites. Some of our operations require environmental permits and controls to prevent and reduce air and water pollution. These permits are subject to modification, renewal and revocation by issuing authorities. In addition, certain of our products and our customer's products are subject to certification requirements by a variety of regulatory bodies. We believe we are in substantial compliance with all material environmental laws and regulations applicable to our plants and operations. Historically, our annual costs of achieving and maintaining compliance with environmental, health and safety requirements have not been material to our results.

Increasing global efforts to control emissions of carbon dioxide, methane, ozone, nitrogen oxide and other greenhouse gases and pollutants, as well as the shifting focus of regulatory efforts towards total emissions output, have the potential to impact our facilities, costs, products and customers. The U.S. Environmental Protection Agency (EPA) has taken action to control greenhouse gases from certain stationary and mobile sources. In addition, several states have taken steps, such as adoption of cap and trade programs or other regulatory systems, to address greenhouse gases. There have also been international efforts seeking legally binding reductions in emissions of greenhouse gases. These developments and further actions that may be taken in the U.S. and in other countries, states or provinces could affect our operations both positively and negatively (e.g., by affecting the demand for or suitability of some of our products).

We also may be subject to liability as a potentially responsible party under the Comprehensive Environmental Response, Compensation and Liability Act and similar state or foreign laws for contaminated properties that we currently own, lease or operate or that we or our predecessors have previously owned, leased or operated, and sites to which we or our predecessors sent hazardous substances. Such liability may be joint and several so that we may be liable for more than our share of any contamination, and any such liability may be determined without regard to causation or knowledge of contamination. We or our predecessors have been named potentially responsible parties at contaminated sites from time to time. We do not anticipate our liabilities relating to contaminated sites will be material to our results.

In January 2016, we assumed all responsibility for operating, monitoring and maintaining the ongoing activities at our Indianapolis, Indiana manufacturing facilities relating to historical soil and ground water contamination. We entered into an administrative order of consent with the EPA that requires us to provide financial assurance to complete the operation, monitoring and maintenance in the event we fail to do so. In December 2016, we issued a letter of credit to the EPA in the amount of \$15 million.

Competition

We compete on the basis of product performance, quality, price, distribution capability and service in addition to other factors. We face competition from numerous manufacturers of various types of transmissions for commercial vehicles. We also face competition from manufacturers in our international operations and from international manufacturers entering our domestic market. Furthermore, we face an increasing amount of competition from vertical integration, as some of our customers are OEMs that manufacture transmissions for their own products, and from powertrains that do not require a transmission. Despite their transmission manufacturing capabilities, our existing OEM customers have chosen to purchase certain transmissions from us due to the quality, reliability and strong brand of our transmissions and in order to limit fixed costs, minimize production risks and maintain company focus on commercial vehicle design, production and marketing.

Corporate Information

Allison Transmission Holdings, Inc. was incorporated in Delaware on June 22, 2007. Our principal executive offices are located at One Allison Way, Indianapolis, IN 46222 and our telephone number is (317) 242-5000. Our internet address is www.allisontransmission.com. We file annual, quarterly and current reports, proxy statements and other documents with the United States Securities and Exchange Commission (SEC), under the Securities Exchange Act of 1934, as amended (Exchange Act). These periodic and current reports and all amendments to those reports are available free of charge on the investor relations page of our website at <http://ir.allisontransmission.com>. We have included our website address throughout this filing as textual references only. The information contained on, or accessible through, our website is not incorporated into this Annual Report on Form 10-K. The public may read and copy any materials we file with the SEC at the SEC's Public Reference Room at 100 F Street, NE, Washington, DC 20549. The public may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC also maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC at <http://www.sec.gov>.

Table of Contents

ITEM 1A. Risk Factors

The following is a cautionary discussion of risks, uncertainties and assumptions that we believe are significant to our business. In addition to the factors discussed elsewhere in this Annual Report on Form 10-K, the following are the important factors that, individually or in the aggregate, we believe could make our actual results differ materially from those described in any forward-looking statements.

Risks Related to Our Business

We participate in markets that are competitive, and our competitors' actions could have a material adverse effect on our business, results of operations and financial condition.

Our business operates in competitive markets. We compete against other existing or new global manufacturers of transmissions for commercial vehicles on the basis of product performance, quality, price, distribution capability and service in addition to other factors. In addition, we compete with manufacturers developing alternative technologies, including electric drivetrains, that may or may not require a transmission. Actions by our competitors could lead to downward pressure on prices and/or a decline in our market share, either or both of which could adversely affect our results.

In addition, some of our customers or future customers are OEMs that manufacture or could in the future manufacture transmissions for their own products. Despite their transmission manufacturing capabilities, our existing OEM customers have chosen to purchase certain transmissions from us due to customer demand, resulting from the quality of our transmission products and in order to reduce fixed costs, eliminate production risks and maintain company focus. However, we cannot be certain these customers will continue to purchase our products in the future. Increased levels of production insourcing by these customers could result from a number of factors, such as shifts in our customers' business strategies, acquisition by a customer of another transmission manufacturer, the inability of third-party suppliers to meet specifications and the emergence of low-cost production opportunities in foreign countries. As a result, these OEMs may use transmissions produced internally or by another manufacturer and no longer choose to purchase transmissions from us. A significant reduction in the level of external sourcing of transmission production by our OEM customers could significantly impact our net sales and cash flows and, accordingly, have a material adverse effect on our business, results of operations and financial condition.

Certain of our end users operate in highly cyclical industries, which can result in uncertainty and significantly impact the demand for our products, which could have a material adverse effect on our business, results of operations and financial condition.

Some of the markets in which we operate, including energy, mining, construction, distribution and motorhomes, exhibit a high degree of cyclicity. Decisions to purchase our transmissions are largely a result of the performance of these and other industries we serve. If demand for output in these industries decreases, the demand for our products will likely decrease. Demand in these industries is impacted by numerous factors including prices of commodities, rates of infrastructure spending, housing starts, real estate equity values, interest rates, consumer spending, fuel costs, energy demands, municipal spending and commercial construction, among others. Increases or decreases in these variables globally may significantly impact the demand for our products, which could have a material adverse effect on our business, results of operations and financial condition. If we are unable to accurately predict demand, we may be unable to meet our customers' needs, resulting in the loss of potential sales, or we may manufacture excess products, resulting in increased inventories and overcapacity in our production facilities, increasing our unit production cost and decreasing our operating margins.

Volatility in and disruption to the global economic environment and changes in the regulatory and business environments in which we operate may have a material adverse effect on our business, results of operations and financial condition.

The commercial vehicle industry as a whole has been more adversely affected by volatile economic conditions than many other industries, as the purchase or replacement of commercial vehicles, which are durable items, can be deferred for many reasons, including reduced spending by end users. Future changes in the regulatory and business environments in which we operate may adversely affect our ability to sell our products or source materials needed to manufacture our products. Furthermore, financial instability or bankruptcy at any of our suppliers or customers could disrupt our ability to manufacture our products and impair our ability to collect receivables, any or all of which may have a material adverse effect on our business, results of operations and financial condition. In addition, some of our customers and suppliers may experience serious cash flow problems and, thus, may find it difficult to obtain financing, if financing is available at all. As a result, our customers' need for and ability to purchase our products or services may decrease, and our suppliers may increase their prices, reduce their output or change their terms of sale. Any inability of customers to pay us for our products and services, or any demands by suppliers for different payment terms, may materially and adversely affect our results of operations and financial condition. Furthermore, our suppliers may not be successful in generating sufficient

Table of Contents

sales or securing alternate financing arrangements, and therefore may no longer be able to supply goods and services to us. In that event, we would need to find alternate sources for these goods and services, and there is no assurance we would be able to find such alternate sources on favorable terms, if at all. Any such disruption in our supply chain could adversely affect our ability to manufacture and deliver our products on a timely basis, and thereby affect our results of operations.

Our long-term growth prospects and results of operations may be impaired if the rate of adoption of fully-automatic transmissions in commercial vehicles outside North America does not increase.

Our long-term growth strategy depends in part on an increased rate of automaticity outside North America. As part of that strategy, we have established manufacturing facilities in India and Hungary. We have also dedicated significant human resources to serve markets where we anticipate increased adoption of automaticity, including China, India, Brazil and Russia. However, manual transmissions remain the market leader outside North America and there can be no assurance that adoption of automatic transmissions will increase. Factors potentially impacting adoption of automatic transmissions outside of North America include the large existing installed base of manual transmissions, customer preferences for manual transmissions, commercial vehicle OEM vertical integration into manual transmission and AMT manufacturing, increased competition from AMTs, DCTs, electric driving systems, and other alternative transmission technologies and failure to further develop the Allison brand. If the rate of adoption of fully-automatic transmissions does not increase as we have anticipated, our long-term growth prospects and results of operations may be impaired.

Our sales are concentrated among our top five OEM customers and the loss or consolidation of any one of these customers or the discontinuation of particular vehicle models for which we are a significant supplier could reduce our net sales and have a material adverse effect on our results of operations and financial condition.

We have in the past and may in the future derive a significant portion of our net sales from a relatively limited number of OEM customers. For the years ended December 31, 2017, 2016 and 2015, our top five customers accounted for approximately 49%, 52% and 52% of our net sales, respectively. Our top three customers, Daimler AG, PACCAR Inc. and Volvo Group, accounted for approximately 20%, 9% and 8%, respectively, of our net sales during 2017. The loss of, or consolidation of, any one of these customers, or a significant decrease in business from, one or more of these customers could harm our business. In addition, the discontinuation of particular vehicle models for which we are a significant supplier could reduce our net sales and have a material adverse effect on our results of operations.

We may not be successful in introducing our new products and technologies and responding to customer needs.

We currently have new products and technologies under development. The development of new products and technologies is difficult and the timetable for commercial release is uncertain, and we may not be successful in introducing our new products and responding to customer needs. In addition, it often takes significant time, in some cases multiple fleet buy cycles, before customers gain experience with new products and technologies and those new products and technologies become widely-accepted by the market, if at all. If we do not adequately anticipate the changing needs of our customers by developing and introducing new and effective products and technologies on a timely basis, our competitive position and prospects could be harmed. If our competitors are able to respond to changing market demands and adopt new technologies more quickly than we do, demand for our products could decline, our competitive position could be harmed, and we will not be able to recoup a return on our development investments. Moreover, changing customer demands as well as evolving safety and environmental standards could require us to adapt our products and technologies to address such changes. As a result, in the future we may experience delays in the introduction of some or all of our new products or modifications or enhancements of existing products. Furthermore, there may be production delays due to unanticipated technological setbacks, which may, in

turn, delay the release of new products to our end users. If we experience significant delays in production, our net sales and results of operations may be materially adversely affected.

Our success depends on continued research and development efforts, the outcome of which is uncertain.

Our success depends on our ability to improve the efficiency and performance of our transmissions, and we invest significant resources in research and development in order to do so. Nevertheless, the research and development process is time-consuming and costly, and offers uncertain results. We may not be able through our research and development efforts to keep pace with improvements in transmission-related technology of our competitors, and licenses for technologies that would enable us to keep pace with our competitors may not be available on commercially reasonable terms if at all. Finally, our research and development efforts, and generally our ability to introduce improved products in the marketplace, may be constrained by the patents and other intellectual property rights of competitors and others.

Table of Contents

Our sales to the Defense end market are to government entities and contractors for the U.S. and foreign governments, and the loss of a significant number of our contracts, or budgetary declines or future reductions or changes in spending by the U.S. or foreign governments could have a material adverse effect on our results of operations and financial condition.

Our net sales to the Defense end market are derived from contracts (revenue arrangements) with agencies of, and prime system contractors for, the U.S. government and foreign governments. If a significant number of our DOD contracts and subcontracts are simultaneously delayed or cancelled for budgetary, performance or other reasons, it would have a material adverse effect on our results of operations and financial condition. Approximately 5%, or \$117 million, of our net sales for the year ended December 31, 2017 were from our Defense end market.

Our future financial results may be adversely affected by:

declines in, or uncertainty regarding, U.S. or foreign government defense budgets;

curtailment of the U.S. government's use of technology or other services and product providers, including curtailment due to government budget reductions, future government shutdowns and related fiscal matters;

geopolitical developments that affect demand for our products and services; and