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

FORM 10-K

(Mark One)
[X] 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

For the transition period from ______ to _______

Commission file number 1-5684

W.W. Grainger, Inc.

(Exact name of registrant as specified in its charter)

Illinois	**36-1150280**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
100 Grainger Parkway, Lake Forest, Illinois	**60045-5201**
(Address of principal executive offices)	(Zip Code)

(847) 535-1000
(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 $0.50 par value	New York Stock Exchange

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes [X] 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 [X]

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 [X] No [ ]

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate website, 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 [X] No [ ]

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

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

Large accelerated filer [X]   Accelerated filer [ ]   Non-accelerated filer [ ]   Smaller reporting company [ ]

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

The aggregate market value of the voting common equity held by nonaffiliates of the registrant was $9,747,864,843 as of the close of trading as reported on the New York Stock Exchange on June 30, 2017. The Company does not have nonvoting common equity.

The registrant had 56,105,411 shares of the Company's Common Stock outstanding as of January 31, 2018.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement to be filed in connection with the annual meeting of shareholders to be held on April 25, 2018, are incorporated by reference into Part III hereof of this Form 10-K where indicated the definitive 2018 proxy statement will be filed on or about March 15, 2018.

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PART I

Item 1: Business

The Company

W.W. Grainger, Inc., incorporated in the State of Illinois in 1928, is a broad line, business-to-business distributor of maintenance, repair and operating (MRO) supplies and other related products and services. W.W. Grainger, Inc.'s operations are primarily in the United States (U.S.) and Canada, with a presence in Europe, Asia and Latin America. In this report, the words “Grainger” or “Company” mean W.W. Grainger, Inc. and its subsidiaries.

Grainger uses a combination of multichannel and single channel online business models to provide customers, primarily businesses, with a range of options for finding and purchasing MRO products, utilizing sales representatives, contact centers, catalogs, inventory management solutions and eCommerce technology. Grainger serves more than 3 million customers worldwide through a network of highly integrated distribution centers, websites, branches and inventory management solutions.

Products are regularly added to and removed from Grainger's product lines on the basis of customer demand, market research, suppliers' recommendations, sales volumes and other factors.

Grainger's centralized business support functions provide coordination and guidance in the areas of supply chain, product management, accounting and finance, strategy, communications and investor relations, human resources, compensation and benefits, information systems, health and safety, procurement, risk management, internal audit, legal, real estate, security, tax and treasury. These services are provided in varying degrees to all business units.

Grainger’s two reportable segments are the U.S. and Canada, and they are described further below. Other businesses include the single channel online businesses Zoro Tools, Inc. (Zoro) in the U.S. and MonotaRO Co., Ltd. (MonotaRO) in Japan and operations in Europe, Asia and Latin America. These businesses generate revenue through the distribution of MRO supplies and products and related services. For segment and geographical information and consolidated net sales and operating earnings, see “Item 7: Management’s Discussion and Analysis of Financial Condition and Results of Operations” and Note 16 to the Consolidated Financial Statements.

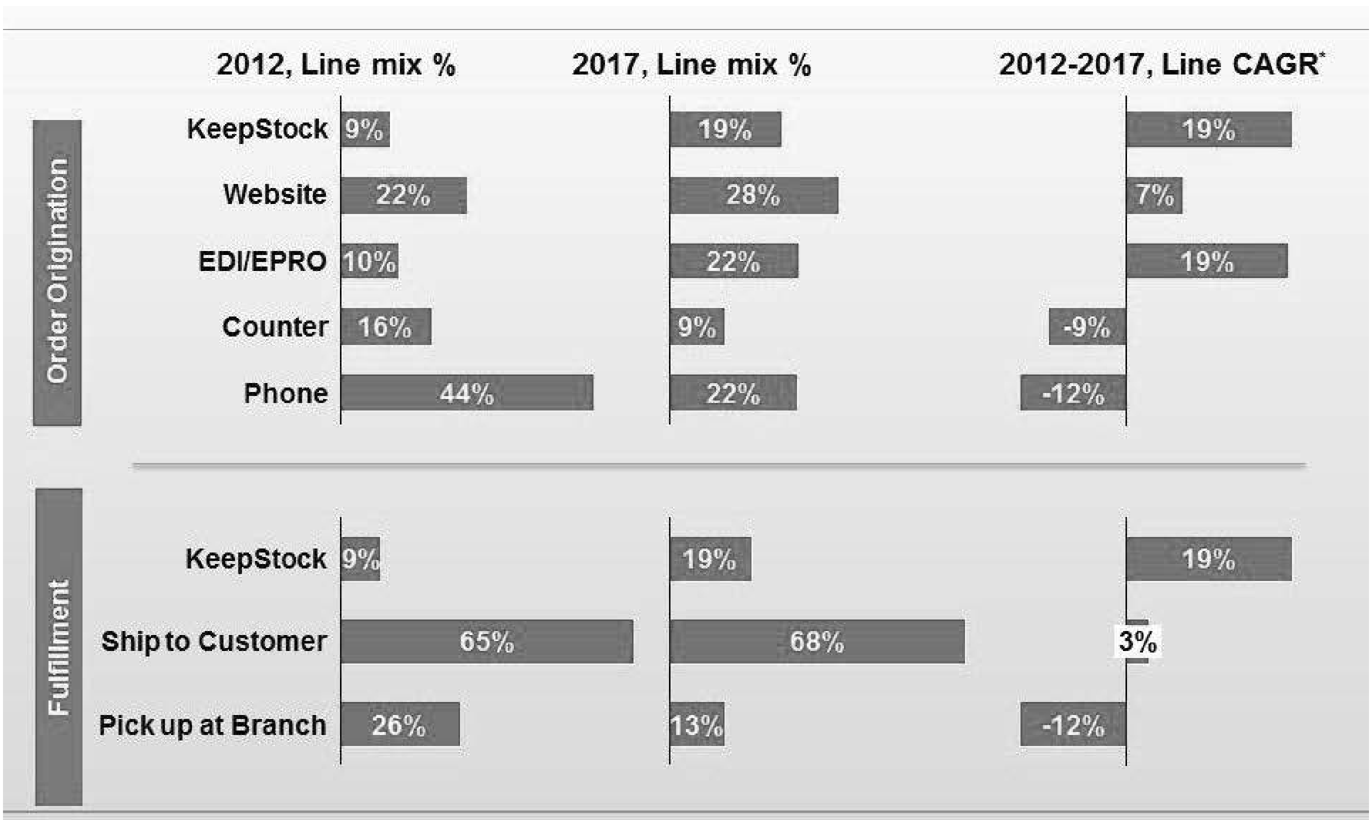
United States

The U.S. business offers a broad selection of MRO supplies and other related products and services through sales representatives, catalogs, eCommerce and local branches. A combination of product breadth, local availability, speed of delivery, detailed product information and competitively priced products and services is provided by this business. Products offered include material handling equipment, safety and security supplies, lighting and electrical products, power and hand tools, pumps and plumbing supplies, cleaning and maintenance supplies and metalworking tools. Services offered primarily relate to inventory management solutions.

The majority of products sold by the U.S. business are nationally branded products. In addition, 22% of 2017 sales were private label MRO items bearing Grainger’s registered trademarks, including DAYTON®, SPEEDAIRE®, AIR HANDLER®, TOUGH GUY®, WESTWARD®, CONDOR® and LUMAPRO®. Grainger has taken steps to protect these trademarks against infringement and believes that they will remain available for future use in its business. The U.S. business purchases products for sale from more than 2,600 suppliers, most of which are manufacturers. Through a global sourcing operation, the business procures competitively priced, high-quality products produced outside the U.S. from approximately 400 suppliers. No single supplier comprised more than 5% of total purchases and no significant barriers thus far exist with respect to sources of supply.

The U.S. business operates and fulfills orders in all 50 states and exports to a select number of countries through a network of distribution centers (DCs), branches and contact centers. Customers range from small and mid-sized businesses to large corporations, government entities and other institutions. They are primarily represented by purchasing managers or employees in facilities maintenance departments and service shops across a wide range of industries such as manufacturing, hospitality, transportation, government, retail, healthcare and natural resources. Sales in 2017 were made to approximately 1 million customers averaging 113,000 daily transactions. No single customer accounted for more than 4% of total sales.

Macro trends are changing the way Grainger's customers behave. Customers want highly tailored solutions with real-time access to information and just-in-time delivery of products and services. Demands for transparency are also increasing as access to information expands. These changes in behaviors are reflected in how customers do business with the U.S. business as demonstrated in the following chart:



*CAGR is defined as compound annual growth rate.

Customers continue to migrate to web platforms and electronic purchasing platforms such as EDI, eProcurement and KeepStock®, the electronic inventory management offering. Through Grainger.com and other branded websites, which serve as prominent channels in the U.S. business, customers have access to approximately 2.4 million products. Grainger.com provides real-time price and product availability and detailed product information and offers features such as product search and compare capabilities. For customers with sophisticated electronic purchasing platforms, the U.S. business utilizes technology that allows these systems to communicate directly with Grainger.com.

Inventory management services is another area where the U.S. business helps customers be more productive. KeepStock® inventory solutions is a comprehensive program that includes vendor-managed inventory, customer-managed inventory and onsite vending machines. The U.S. business KeepStock® program currently provides services to nearly 20,000 customers and, in 2017, facilitated approximately 9,000 installations. As of December 31, 2017, there were approximately 65,000 total installations.

As of December 31, 2017, the U.S. business had 284 branches (251 stand alone, 31 onsite and 2 will-call express locations), 16 DCs, 3 national contact centers and 37 regional contact centers, which are located within branches. DCs in the U.S. business range in size from approximately 45,000 square feet to 1.3 million square feet, the largest of which can accommodate more than 500,000 in-stock products. Automated equipment and processes allow DCs to handle the majority of the customer shipping for next-day product availability and replenish branches that provide same-day availability. The DC network fulfills a large portion of customer orders, especially as customers migrate to website and electronic purchasing.

Branches in the U.S. business serve the immediate needs of customers in their local markets by allowing them to directly pick up items. In addition, branches support local KeepStock® operations. The branch network has approximately 1,700 employees who primarily fulfill counter and will-call product purchases and provide customer service. Branch network sales volume has continued to grow throughout 2017.

Grainger's contact center network in the U.S. business consists of approximately 1,900 employees who handle about 70,000 customer interactions per day including approximately 20,000 orders via phone, e-mail and fax. To enable improved customer service, team member engagement and efficiencies, the 37 regional contact centers are currently being consolidated to 3 national contact centers with expanded work-from-home arrangements.

The U.S. business has a sales force of approximately 3,500 professionals who help customers select the right products to find immediate solutions to their needs and reduce costs by utilizing Grainger as a consistent source of supply. In 2017, the U.S. business continued to focus its outside sales force on facilitating growth with large customers who typically have more complex purchasing requirements than small and mid-sized customers. The U.S. business primarily utilizes a network of inside sellers and digital channels to meet the needs of small and mid-sized customers.

The Grainger catalog, most recently issued in February 2018, offers approximately 365,000 MRO products and is used by customers to assist in product selection. The 2018 catalog includes almost 24,000 new items and approximately 1 million copies of the catalog were produced.

Grainger estimates the U.S. market for MRO products to be approximately $127 billion in 2017, of which the U.S. business share is approximately 6%.

Canada

Acklands – Grainger Inc. and its subsidiaries (the Canada business) is Canada’s leading broad line MRO distributor. This business provides a combination of product breadth, local availability, speed of delivery, detailed product information and competitively priced products and services.

The Canada business serves customers through branches, sales and service representatives and DCs across Canada. As of December 31, 2017, the Canada business had 91 branches and 6 DCs. Approximately 13,000 sales transactions are completed daily. Customers have access to more than 131,000 stocked products through a comprehensive catalog. In addition, customers can purchase products through various fully bilingual websites. Grainger estimates the 2017 Canada market for MRO products was approximately $11 billion, of which the Canada business share is approximately 7%.

Other businesses

Other businesses include Zoro in the U.S., MonotaRO in Japan and operations in Europe, Asia and Latin America. The businesses in this group with revenues of more than $100 million in 2017 are described below.

Zoro

Zoro is an online MRO distributor primarily serving U.S. customers through its website, Zoro.com. Zoro offers a broad selection of more than 1 million products. Zoro has no branches or sales force, and customer orders are primarily fulfilled through the U.S. business supply chain.

MonotaRO

Grainger operates in Japan and other Asian countries primarily through its majority interest in MonotaRO. MonotaRO provides customers with MRO products primarily through its catalogs and websites. A majority of orders are conducted through Monotaro.com, through which customers have access to approximately 13 million products. MonotaRO fulfills the majority of orders from three DCs. Grainger estimates the Japanese market for MRO products was approximately $42 billion in 2017, of which MonotaRO’s share is approximately 2%.

Cromwell

Cromwell is a broad line MRO distributor in the United Kingdom (U.K.) serving approximately 130,000 customers. Headquartered in Leicester, England, as of December 31, 2017, Cromwell had 45 U.K. branches, 10 international branches in 10 countries and one DC. Customers have access to approximately 170,000 MRO products through a catalog and through Cromwell.co.uk. Grainger estimates the U.K. market for MRO products was approximately $15 billion in 2017, of which Cromwell's share is approximately 2%. In November 2017, Cromwell launched a new brand and website Zoro.co.uk and its customer orders are primarily fulfilled through the Cromwell business supply chain.

Fabory
Fabory is a European specialty distributor of fasteners and MRO products. Fabory is headquartered in Tilburg, the Netherlands. As of December 31, 2017, Fabory had 44 branches in 13 countries and two DCs. Customers have access to more than 250,000 products through a catalog and Fabory.com. Grainger estimates the European market (in which Fabory has its primary operations) for MRO products, including fasteners, was approximately $37 billion in 2017, of which Fabory's share is approximately 1%.

Grainger Mexico
Grainger's operations in Mexico provide local businesses with MRO supplies and other related products primarily from Mexico and the U.S. As of December 31, 2017, the business in Mexico distributes products through a network of 19 branches and two DCs. Customers have access to approximately 330,000 products through a Spanish-language catalog and through Grainger.com.mx. Grainger estimates the Mexican market for MRO products was approximately $10 billion in 2017, of which Grainger Mexico's share is approximately 1%.

Seasonality
Grainger's business in general is not seasonal, however, there are some products that typically sell more often during the winter or summer seasons. In any given month, unusual weather patterns, that is, unusually hot or cold weather, could positively or negatively impact the sales volumes of these products.

Competition
Grainger faces competition in each market from manufacturers (including some of its own suppliers) that sell directly to certain segments of the market, to wholesale distributors, catalog houses, retail enterprises and Internet-based businesses. Grainger differentiates itself by providing local product availability, a broad product line, sales representatives, competitive pricing, catalogs (which include product descriptions and, in certain cases, extensive technical and application data) and electronic and eCommerce technology. Grainger also offers other services, such as inventory management. Grainger has several large competitors and continues to be highly competitive against the predominant number of small local and regional competitors.

Employees
As of December 31, 2017, Grainger had approximately 25,700 employees, of whom approximately 24,400 were full-time and 1,300 were part-time or temporary. Grainger has never had a major work stoppage and considers employee relations to be good.

Website Access to Company Reports
Grainger makes available free of charge, through its website, www.Grainger.com/investor, its Annual Report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, proxy statements and amendments to those reports if any, as soon as reasonably practicable after these materials are electronically filed with or furnished to the U.S. Securities and Exchange Commission (SEC).

In addition, the public may read and copy any materials the Company files with the SEC at the SEC's Public Reference Room at 100 F Street, NE, Washington D.C. 20549. The public may obtain information on the operation of the Public Reference Room by calling the SEC at (800) SEC-0330. The SEC maintains a website that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC and the address of that site is http://www.sec.gov.

Item 1A: Risk Factors

The following is a discussion of significant risk factors relevant to Grainger’s business that could adversely affect its financial condition, results of operations and cash flows. The risk factors discussed in this section should be considered together with information included elsewhere in this Annual Report on Form 10-K and should not be considered the only risks to which the Company is exposed.

Weakness in the economy, market trends and other conditions affecting the profitability and financial stability of Grainger’s customers could negatively impact Grainger’s sales growth and results of operations.

Economic and industry trends affect Grainger’s business environments. Grainger serves several industries in which the demand for its products and services is sensitive to the production activity, capital spending and demand for products and services of Grainger’s customers. Many of these customers operate in markets that are subject to cyclical fluctuations resulting from market uncertainty, costs of goods sold, currency exchange rates, foreign competition, offshoring of production, oil and natural gas prices, geopolitical developments and a variety of other factors beyond Grainger’s control. Any of these factors could cause customers to idle or close facilities, delay purchases, reduce production levels or experience reductions in the demand for their own products or services.

Any of these events could impair the ability of Grainger’s customers to make full and timely payments or reduce the volume of products and services these customers purchase from Grainger and could cause increased pressure on Grainger’s selling prices and terms of sale. Accordingly, a significant or prolonged slowdown in activity in the U.S., Canada or any other major world economy, or a segment of any such economy, could negatively impact Grainger’s sales growth and results of operations.

The facilities maintenance industry is highly competitive, and changes in competition could result in decreased demand for Grainger’s products and services.

There are several large competitors in the industry, although most of the market is served by small local and regional competitors. Grainger faces competition in all markets it serves, from manufacturers (including some of its own suppliers) that sell directly to certain segments of the market, wholesale distributors, catalog houses, retail enterprises and online businesses that compete with price transparency.

To remain competitive, the Company must be willing and able to respond to market pressures, including pricing, whether widely available or negotiated under a contract, delivery and services. These pressures, and the implementation, timing and results of our strategic pricing and other responses, could have a material effect on Grainger's sales and profitability. If the Company is unable to grow sales or reduce costs, among other actions, to wholly or partially offset the effect on profitability of our pricing actions, the Company's results of operations and financial condition may be adversely affected.

The industry is also consolidating as customers are increasingly aware of the total costs of fulfillment and of the need to have consistent sources of supply at multiple locations. This consolidation could cause the industry to become more competitive as greater economies of scale are achieved by competitors, or as competitors with a new lower cost business models are able to operate with lower prices.

Changes in inflation may adversely affect gross margins.

Inflation impacts the costs at which Grainger can procure product and the ability to increase prices to customers over time. Prolonged periods of deflation could adversely affect the degree to which Grainger is able to increase sales through price increases.

Volatility in commodity prices may adversely affect gross margins.

Some of Grainger’s products contain significant amounts of commodity-priced materials, such as steel, copper, petroleum derivatives or rare earth minerals, and are subject to price changes based upon fluctuations in the commodities market. Fluctuations in the price of fuel could affect transportation costs. Grainger’s ability to pass on such increases in costs in a timely manner depends on market conditions. The inability to pass along cost increases could result in lower gross margins. In addition, higher prices could impact demand for these products, resulting in lower sales volumes.

Unexpected product shortages could negatively impact customer relationships, resulting in an adverse impact on results of operations.

Grainger's competitive strengths include product selection and availability. Products are purchased from approximately 5,200 suppliers located in various countries around the world, not one of which accounted for more than 5% of total purchases. Historically, no significant difficulty has been encountered with respect to sources of supply; however, disruptions could occur due to factors beyond Grainger's control, including economic downturns, geopolitical unrest, port slowdowns, trade issues and other factors, any of which could adversely affect a supplier's ability to manufacture or deliver products. As Grainger continues to source lower cost products from Asia and other areas of the world, the risk for disruptions has increased due to the additional lead time required and distances involved. If Grainger was to experience difficulty in obtaining products, there could be a short-term adverse effect on results of operations and a longer-term adverse effect on customer relationships and Grainger's reputation. In addition, Grainger has strategic relationships with a number of vendors. In the event Grainger was unable to maintain those relations, there might be a loss of competitive pricing advantages which could, in turn, adversely affect results of operations.

Changes in customer or product mix could cause the gross margin percentage to decline.

From time to time, Grainger experiences changes in customer and product mix that affect gross margin. Changes in customer and product mix result primarily from business acquisitions, changes in customer demand, customer acquisitions, selling and marketing activities and competition. If rapid growth with larger, lower margin customers continues, Grainger will face pressure to maintain current gross margins, as these customers receive more discounted pricing due to their higher sales volume. There can be no assurance that Grainger will be able to maintain historical gross margins in the future.

Disruptions in Grainger's supply chain could result in an adverse impact on results of operations.

A disruption within Grainger's logistics or supply chain network, including damage, destruction, extreme weather and other events, which could cause one or more of Grainger's distribution centers to become non-operational, could adversely affect Grainger's ability to obtain or deliver inventory in a timely manner, impair Grainger's ability to meet customer demand for products and result in lost sales or damage to Grainger's reputation. Grainger's ability to provide same-day shipping and next-day delivery is an integral component of Grainger's business strategy and any such disruption could adversely impact results of operations.

Interruptions in the proper functioning of information systems could disrupt operations and cause unanticipated increases in costs and/or decreases in revenues.

The proper functioning of Grainger's information systems is critical to the successful operation of its business. Grainger continues to invest in software, hardware and network infrastructures in order to effectively manage its information systems. Although Grainger's information systems are protected with robust backup and security systems, including physical and software safeguards and remote processing capabilities, information systems are still vulnerable to natural disasters, power losses, computer viruses, telecommunication failures and other problems. If critical information systems fail or otherwise become unavailable, among other things, Grainger's ability to process orders, maintain proper levels of inventories, collect accounts receivable and disburse funds could be adversely affected. Any such interruption of Grainger's information systems could also subject Grainger to additional costs.

Breaches of information systems security could damage Grainger's reputation, disrupt operations, increase costs and/or decrease revenues.

Through Grainger's sales and eCommerce channels, Grainger collects and stores personally identifiable, confidential, proprietary and other information from customers so that they may, among other things, purchase products or services, enroll in promotional programs, register on Grainger's websites or otherwise communicate or interact with the Company. Moreover, Grainger's operations routinely involve receiving, storing, processing and transmitting sensitive information pertaining to its business, customers, suppliers and employees, and other sensitive matters.

While Grainger has instituted safeguards for the protection of such information, during the normal course of business, Grainger has experienced and expects to continue to experience attempts to breach the Company's information systems, and Grainger may be unable to protect sensitive data and/or the integrity of the Company's information systems. A cybersecurity incident could be caused by malicious outsiders using sophisticated methods to circumvent firewalls, encryption and other security defenses. Because techniques used to obtain unauthorized access or to sabotage systems change frequently and generally are not recognized until they are launched against a target, Grainger may be unable to anticipate these techniques or implement adequate preventative measures.

Moreover, from time to time, Grainger may share information with vendors and other third parties that assist with certain aspects of the business. While Grainger requires assurances that these vendors and other parties will protect confidential information, there is a risk that the confidentiality of data held or accessed by them may be compromised. If successful, those attempting to penetrate Grainger's or its vendors' information systems may misappropriate personally identifiable, credit card, confidential, proprietary or other sensitive customer, supplier, employee or business information.

In addition, a Grainger employee, contractor or other third party with whom Grainger does business may attempt to circumvent security measures in order to obtain such information or inadvertently cause a breach involving such information. Further, Grainger's systems are integrated with customer systems in certain cases, and a breach of the Company's information systems could be used to gain illicit access to customer systems and information.

Loss of customer, supplier, employee or other business information could disrupt operations, damage Grainger's reputation and expose Grainger to claims from customers, suppliers, financial institutions, regulators, payment card associations, employees and others, any of which could have a material adverse effect on Grainger, its financial condition and results of operations.

***Fluctuations in foreign currency have an effect on reported results of operations*.**

Grainger's exposure to fluctuations in foreign currency rates results primarily from the translation exposure associated with the preparation of the Consolidated Financial Statements, as well as from transaction exposure associated with transactions in currencies other than an entity's functional currency. While the Consolidated Financial Statements are reported in U.S. dollars, the financial statements of Grainger's subsidiaries outside the U.S. are prepared using the local currency as the functional currency and translated into U.S. dollars. In addition, Grainger is exposed to foreign currency exchange rate risk with respect to the U.S. dollar relative to the local currencies of Grainger's international subsidiaries, primarily the Canadian dollar, euro, pound sterling, Mexican peso, renminbi and yen, arising from transactions in the normal course of business, such as sales and loans to wholly owned subsidiaries, sales to third-party customers, purchases from suppliers and bank loans and lines of credit denominated in foreign currencies. Grainger also has foreign currency exposure to the extent receipts and expenditures are not denominated in the subsidiary's functional currency and that could have an impact on sales, costs and cash flows. These fluctuations in foreign currency exchange rates could affect Grainger's results of operations and impact reported net sales and net earnings.

Changes in Grainger's credit ratings and outlook may reduce access to capital and increase borrowing costs.

Grainger's credit ratings are based on a number of factors, including Grainger's financial strength and factors outside of Grainger's control, such as conditions affecting Grainger's industry generally or the introduction of new rating practices and methodologies. Grainger cannot provide assurances that Grainger's current credit ratings will remain in effect or that the ratings will not be lowered, suspended or withdrawn entirely by the rating agencies. If rating agencies lower, suspend or withdraw the ratings, the market price or marketability of Grainger's securities may be adversely affected. In addition, any change in ratings could make it more difficult for Grainger to raise capital on acceptable terms, impact the ability to obtain adequate financing and result in higher interest costs for Grainger's existing credit facilities or on future financings.

Acquisitions, partnerships, joint ventures and other business combination transactions involve a number of inherent risks, any of which could result in the benefits anticipated not being realized and could have an adverse effect on results of operations.

Acquisitions, partnerships, joint ventures and other business combination transactions, both foreign and domestic, involve various inherent risks, such as uncertainties in assessing value, strengths, weaknesses, liabilities and potential profitability. There is also risk relating to Grainger's ability to achieve identified operating and financial synergies anticipated to result from the transactions. Additionally, problems could arise from the integration of acquired businesses, including unanticipated changes in the business or industry or general economic conditions that affect the assumptions underlying the acquisition. Any one or more of these factors could cause Grainger to not realize the benefits anticipated or have a negative impact on the fair value of the reporting units. Accordingly, goodwill and intangible assets recorded as a result of acquisitions could become impaired.

In order to compete, Grainger must attract, retain and motivate key employees, and the failure to do so could have an adverse effect on results of operations.

In order to compete and have continued growth, Grainger must attract, retain and motivate executives and other key employees, including those in managerial, technical, sales, marketing and support positions. Grainger competes to hire employees and then must train them and develop their skills and competencies. Grainger's results of operations could be adversely affected by increased costs due to increased competition for employees, higher employee turnover or increased employee benefit costs.

Grainger's continued success is substantially dependent on positive perceptions of Grainger's reputation.

One of the reasons why customers choose to do business with Grainger and why employees choose Grainger as a place of employment is the reputation that Grainger has built over many years. To be successful in the future, Grainger must continue to preserve, grow and leverage the value of Grainger's brand. Reputational value is based in large part on perceptions of subjective qualities. Even an isolated incident, or the aggregate effect of individually insignificant incidents, can erode trust and confidence, particularly if they result in adverse publicity, governmental investigations or litigation, and as a result, could tarnish Grainger's brand and lead to adverse effects on Grainger's business.

Grainger is subject to various domestic and foreign laws, regulations and standards. Failure to comply or unforeseen developments in related contingencies such as litigation could adversely affect Grainger's financial condition, results of operations and cash flows.

Grainger's business is subject to a wide array of laws, regulations and standards in every domestic and foreign jurisdiction where it operates, including advertising and marketing regulations, anti-bribery and corruption laws, anti-competition regulations, data protection (including payment card industry data security standards), data privacy (including in the U.S. and the European Union, which has traditionally imposed strict obligations under data privacy laws and regulations that vary from country to country) and cybersecurity requirements (including protection of information and incident responses), environmental protection laws, foreign exchange controls and cash repatriation restrictions, government business regulations applicable to Grainger as a government contractor selling to federal, state and local government entities, health and safety laws, import and export requirements, intellectual property laws, labor laws, product compliance laws, supplier regulations regarding the sources of supplies or products, tax laws (including as to U.S. taxes on foreign subsidiaries), unclaimed property laws and laws, regulations and standards applicable to other commercial matters. Moreover, Grainger is also subject to audits and inquiries in the normal course of business.

Failure to comply with any of these laws, regulations and standards could result in civil, criminal, monetary and non-monetary penalties as well as potential damage to the Company's reputation. Changes in these laws, regulations and standards, or in their interpretation, could increase the cost of doing business, including, among other factors, as a result of increased investments in technology and the development of new operational processes. Furthermore, while Grainger has implemented policies and procedures designed to facilitate compliance with these laws, regulations and standards, there can be no assurance that employees, contractors or agents will not violate such laws, regulations and standards or Grainger's policies. Any such failure to comply or violation could individually or in the aggregate materially adversely affect Grainger's financial condition, results of operations and cash flows.

Grainger also is, and from time to time may become, party to a number of legal proceedings incidental to Grainger's business involving alleged damages or injuries arising out of the use of Grainger's products and services or violations of these laws, regulations or standards. The defense of these proceedings may require significant expenses and divert management's time and attention, and Grainger may be required to pay damages that could individually or in the aggregate materially adversely affect its financial condition, results of operations and cash flows. In addition, any insurance or indemnification rights that Grainger may have with respect to such matters may be insufficient or unavailable to protect the Company against potential loss exposures.

Tax changes could affect Grainger's effective tax rate and future profitability.

Grainger's future results could be adversely affected by changes in the effective tax rate as a result of changes in Grainger's overall profitability and changes in the mix of earnings in countries with differing statutory tax rates, changes in tax legislation, the results of the examination of previously filed tax returns and continuing assessment of the Company's tax exposures.

Item 1B: Unresolved Staff Comments

None.

Item 2: Properties

As of December 31, 2017, Grainger's owned and leased facilities totaled approximately 28.2 million square feet. The U.S. and Canada businesses accounted for the majority of the total square footage. Grainger believes that its properties are generally in excellent condition, well maintained and suitable for the conduct of business.

A brief description of significant facilities follows:

Location	Facility and Use (6)	Size in Square Feet (in 000s)
U.S. (1)	284 U.S. branch locations	6,367
U.S. (2)	16 distribution centers	8,169
U.S. (3)	Other facilities	3,685
Canada (4)	139 facilities	3,147
Other businesses (5)	Other facilities	5,624
Chicago area (2)	Headquarters and general offices	1,188
	Total Square Feet	28,180

(1) Consists of 204 owned and 80 leased properties located throughout the U.S. ranging in size from approximately 500 to 109,000 square feet.

(2) These facilities are primarily owned and range in size from approximately 45,000 square feet to 1.3 million square feet.

(3) These facilities include both owned and leased locations, primarily consisting of storage facilities, office space, call centers and other properties.

(4) Consists of general offices, distribution centers and branches located throughout Canada, of which 58 are owned and 81 leased.

(5) These facilities include owned and leased locations in Europe, Asia, Latin America and other U.S. operations.

(6) Owned facilities are not subject to any mortgages.

Grainger continues to evaluate its physical footprint and announced throughout 2017 the intention to close 113 branches in the Canada business.

Item 3: Legal Proceedings

For a description of legal proceedings, see the disclosure contained in Note 17 to the Consolidated Financial Statements included in "Part II, Item 8: Financial Statements and Supplementary Data" of this report, which is incorporated herein by reference.

Item 4: Mine Safety Disclosures

Not applicable.

Item 4A: Executive Officers of the Registrant

Following is information about the Executive Officers of Grainger including age as of February 26, 2018. Executive Officers of Grainger generally serve until the next annual election of officers, or until earlier resignation or removal.

Name and Age	Positions and Offices Held and Principal Occupation and Employment During the Past Five Years
Laura D. Brown (54)	Senior Vice President, Communications and Investor Relations, a position assumed in 2010 after serving as Vice President, Global Business Communications, a position assumed in 2009 and Vice President, Investor Relations, a position assumed in 2008.
Joseph C. High (63)	Senior Vice President and Chief People Officer, a position assumed in June 2011. Prior to joining Grainger, Mr. High was the Senior Vice President of Human Resources at Owens Corning in Toledo, Ohio, a position assumed in 2004.
John L. Howard (60)	Senior Vice President and General Counsel, a position assumed in 2000.
Ronald L. Jadin (57)	Senior Vice President and Chief Financial Officer, a position assumed in 2008. Previously, Mr. Jadin served as Vice President and Controller, a position assumed in 2006 after serving as Vice President, Finance. On July 19, 2017, Mr. Jadin announced that he planned to retire from the Company at the end of 2017. Mr. Jadin has agreed to continue serving the Company in his current position as Senior Vice President and Chief Financial Officer until the transition to his successor is completed later in 2018.
D.G. Macpherson (50)	Chairman of the Board, a position assumed in October 2017, and Chief Executive Officer, a position assumed in October 2016 at which time he was also appointed to the Board of Directors. Previously, Mr. Macpherson served as Chief Operating Officer, a position assumed in 2015; Senior Vice President and Group President, Global Supply Chain and International, a position assumed in 2013; Senior Vice President and President, Global Supply Chain and Corporate Strategy, a position assumed in 2012, and Senior Vice President, Global Supply Chain, a position assumed in 2008.
Paige K. Robbins (49)	Senior Vice President, Grainger Chief Digital Officer, a position assumed in September 2017. Previously, Ms. Robbins served as Senior Vice President, Global Supply Chain, Branch Network, Contact Centers and Corporate Strategy, a position assumed in 2016. Since joining Grainger in September 2010, Ms. Robbins has held various positions as a Vice President, including in the areas of Global Supply Chain and Logistics.
Eric R. Tapia (41)	Vice President and Controller, a position assumed in 2016. Previously, Mr. Tapia served as Vice President, Internal Audit from 2010 to 2016. Mr. Tapia is a Certified Public Accountant (CPA) and before joining Grainger in 2010 was an audit partner with KPMG.

PART II

Item 5: Market for Registrant’s Common Equity, Related Shareholder Matters and Issuer Purchases of Equity Securities

Market Information and Dividends

Grainger's common stock is listed and traded on the New York Stock Exchange, under the symbol GWW. The high and low sales prices for the common stock and the dividends declared and paid per share for each calendar quarter during 2017 and 2016 are shown below.

		Market Price Per Share		
	Quarters	High	Low	Dividends
2017	First	$ 262.72	$ 229.05	$ 1.22
	Second	234.66	168.58	1.28
	Third	185.82	155.00	1.28
	Fourth	240.49	166.46	1.28
	Year	$ 262.72	$ 155.00	$ 5.06
2016	First	$ 234.77	$ 176.85	$ 1.17
	Second	239.95	212.64	1.22
	Third	235.53	212.54	1.22
	Fourth	240.74	201.94	1.22
	Year	$ 240.74	$ 176.85	$ 4.83

Grainger expects that its practice of paying quarterly dividends on its common stock will continue, although the payment of future dividends is at the discretion of Grainger’s Board of Directors and will depend upon Grainger’s earnings, capital requirements, financial condition and other factors.

Holders

The approximate number of shareholders of record of Grainger’s common stock as of February 7, 2018, was 688 with approximately 150,934 additional shareholders holding stock through nominees.

Issuer Purchases of Equity Securities - Fourth Quarter

Period	Total Number of Shares Purchased (A)	Average Price Paid Per Share (B)	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs (C)	Maximum Number of Shares That May Yet be Purchased Under the Plans or Programs
Oct. 1 – Oct. 31	206,586	$185.37	206,586	3,506,481 shares
Nov. 1 – Nov. 30	237,397	$199.91	237,397	3,269,084 shares
Dec. 1 – Dec. 31	410,679	$227.94	410,679	2,858,405 shares
Total	854,662	$209.86	854,662	

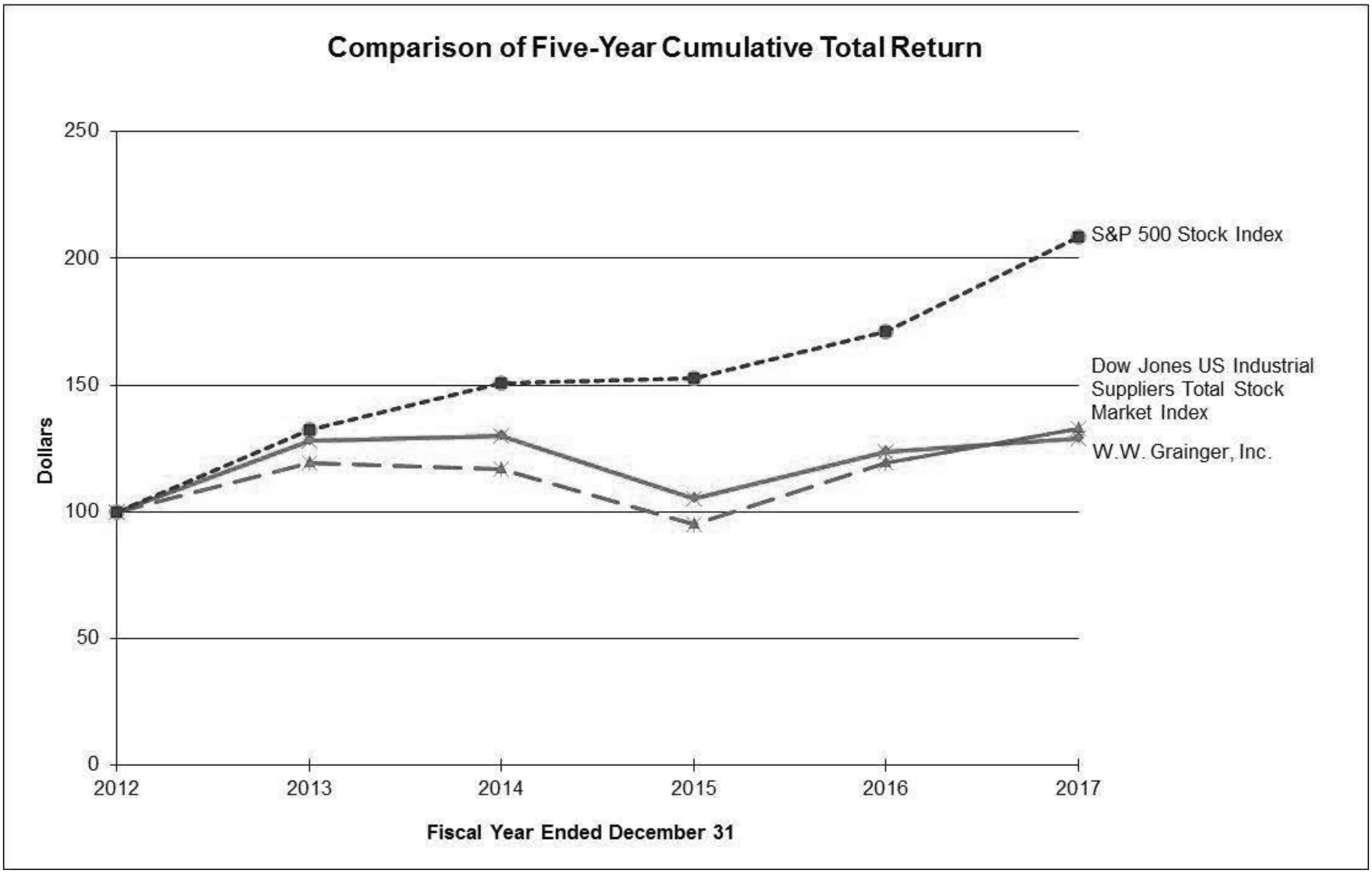
(A) 85 shares were withheld to satisfy tax withholding obligations in connection with the vesting of employee restricted stock awards.

(B) Average price paid per share includes any commissions paid and includes only those amounts related to purchases as part of publicly announced plans or programs.

(C) Purchases were made pursuant to a share repurchase program approved by Grainger's Board of Directors. This plan was announced on April 16, 2015, for 15 million shares with no expiration date. Activity is reported on a trade date basis.

Company Performance

The following stock price performance graph compares the cumulative total return on an investment in Grainger common stock with the cumulative total return of an investment in each of the Dow Jones US Industrial Suppliers Total Stock Market Index and the S&P 500 Stock Index. It covers the period commencing December 31, 2012, and ending December 31, 2017. The graph assumes that the value for the investment in Grainger common stock and in each index was $100 on December 31, 2012, and that all dividends were reinvested.



	December 31,					
	2012	2013	2014	2015	2016	2017
W.W. Grainger, Inc.	$ 100	$ 128	$ 130	$ 105	$ 124	$ 129
Dow Jones US Industrial Suppliers Total Stock Market Index	100	119	117	95	119	133
S&P 500 Stock Index	100	132	151	153	171	208

Item 6: Selected Financial Data

	2017	2016	2015	2014	2013
	(In thousands of dollars, except for per share amounts)				
Net sales	$ 10,424,858	$ 10,137,204	$ 9,973,384	$ 9,964,953	$ 9,437,758
Net earnings attributable to W.W. Grainger, Inc. (herein referred to as Net earnings)	585,730	605,928	768,996	801,729	797,036
Net earnings per basic share	10.07	9.94	11.69	11.59	11.31
Net earnings per diluted share	10.02	9.87	11.58	11.45	11.13
Total assets	5,804,254	5,694,307	5,857,755	5,283,049	5,266,328
Long-term debt (less current maturities) and other long-term liabilities	2,469,860	2,159,602	1,716,507	737,232	743,702
Total shareholders' equity	$ 1,827,733	$ 1,905,768	$ 2,352,714	$ 3,284,101	$ 3,326,836
Cash dividends paid per share	$ 5.06	$ 4.83	$ 4.59	$ 4.17	$ 3.59

The items discussed below are considered to materially affect the comparability of the information reflected in the selected financial data. For further information see “Part II, Item 7: Management's Discussion and Analysis of Financial Condition and Results of Operations” of this report, which is incorporated herein by reference.

Net earnings for 2017 included a net expense of $84 million primarily consisting of a net charge of $102 million related to restructuring and other charges primarily consisting of branch closures in the U.S. and Canada businesses, net of gains on sale of branch real estate in the U.S., the consolidation of the contact center network in the U.S. and the wind-down of operations in Colombia, which is part of other businesses. This was partially offset by the net benefit of $15 million related to U.S. tax legislation and other discrete tax items and a net benefit of $3 million related to General Services Administrative (GSA) and unclaimed property reserves.

Net earnings for 2016 included a net expense of $105 million primarily consisting of the following:

- Restructuring: A net charge of $26 million related to restructuring actions. These actions primarily included branch closures, net of gains on sale of branch real estate in the U.S. and Canada businesses.
- Goodwill and intangible impairments: An impairment charge of $52 million related to goodwill and intangible impairments in other businesses.
- Unclaimed property contingency: A charge of $23 million related to an adjustment for unclaimed property in the U.S. business primarily related to activity from 2008 through 2012.
- GSA contingency: A charge of $6 million to increase the U.S. business reserve for certain tax, freight and miscellaneous billing issues in connection with the audit of government contracts with the GSA first entered in 1999.
- Inventory adjustment: A charge of $7 million related to an inventory adjustment in the Canada business to reflect an updated reserve methodology and better visibility to inventory performance provided by the conversion to the U.S. ERP system.
- Discrete tax items: A net benefit of $9 million related to the conclusion of the federal income tax audit for the years 2009 through 2012 in the U.S. business and other discrete tax items.

Net earnings for 2015 included a net charge of $30 million primarily composed of a $25 million net charge related to the reorganization in the U.S. and Canada businesses and a $5 million charge for restructuring in other businesses.

Net earnings for 2014 included a net charge of $56 million primarily composed of a $28 million charge related to closing of the business in Brazil, a $10 million charge due to the retirement plan transition in Europe, a $10 million charge related to restructuring of the business in Europe and a $8 million charge related to a goodwill impairment charge in other businesses.

Net earnings for 2013 included a net charge of $28 million primarily composed of $21 million in impairment charges in other businesses primarily for goodwill and a $7 million charge related to restructuring the businesses in Europe and China.

Grainger completed several acquisitions in the years 2013 through 2015, all of which were immaterial individually and in the aggregate. Operating results have included the results of each business acquired since the respective acquisition dates.

Item 7: Management’s Discussion and Analysis of Financial Condition and Results of Operations

General

W.W. Grainger, Inc. (Grainger) is a broad line, business-to-business distributor of maintenance, repair and operating (MRO) supplies and other related products and services with operations primarily in the U.S. and Canada, with a presence in Europe, Asia and Latin America. More than 3 million customers worldwide rely on Grainger for products such as safety, gloves, ladders, motors and janitorial supplies, along with services like inventory management and technical support. These customers represent a broad collection of industries including commercial, government, healthcare and manufacturing. They place orders online, on mobile devices, through sales representatives, over the phone and at local branches. Approximately 5,200 suppliers provide Grainger with approximately 1.7 million products stocked in Grainger's distribution centers (DCs) and branches worldwide.

Grainger’s two reportable segments are the U.S. and Canada. The U.S. operating segment reflects the results of Grainger’s U.S. businesses. The Canada operating segment reflects the results for Acklands – Grainger Inc. and its subsidiaries. Other businesses include the single channel online businesses (Zoro in the U.S. and MonotaRO in Japan) and operations in Europe, Asia and Latin America.

Business Environment

Given Grainger's large number of customers and the diverse industries it serves, several economic factors and industry trends tend to shape Grainger’s business environment. The overall economy and leading economic indicators provide general insight into projecting Grainger's growth. Grainger’s sales in the U.S. and Canada tend to positively correlate with Business Investment, Business Inventory, Exports and Industrial Production. In the U.S., sales tend to positively correlate with Gross Domestic Product (GDP). In Canada, sales tend to positively correlate with oil prices. The table below provides these estimated indicators for 2017 and 2018:

	U.S.		Canada	
	Estimated 2017	Forecasted 2018	Estimated 2017	Forecasted 2018
Business Investment	5.1%	7.9%	2.3%	3.5%
Business Inventory	0.8%	2.1%	—	—
Exports	3.4%	5.3%	1.1%	1.8%
Industrial Production	1.9%	3.3%	5.2%	0.1%
GDP	2.2%	2.7%	3.0%	2.4%
Oil Prices	—	—	$51/barrel	$54/barrel
Source: Global Insight (January 2018)				

In the U.S., Business Investment and Exports are two major indicators of MRO spending. Per the Global Insight January 2018 forecast, Business Investment is likely to remain on a strong growth path during 2018, supported by expanding global markets, lower capital costs and an improving regulatory climate. Additionally on December 22, 2017, the Tax Cuts and Jobs Act was signed into law, which significantly lowered U.S. corporate income tax rates and introduced accelerated expensing of qualified capital investments, among other changes. These changes to U.S. tax laws may increase capital spending in the U.S. and attract incremental foreign capital to the U.S., which is expected to support export growth.

Per the Global Insight January 2018 forecast, Canada's GDP and industrial production are forecast slow in 2018, while exports and business nonresidental investment (a component of Business Investment) are expected to improve.

Outlook

Grainger’s portfolio consists of its U.S. business, its Canada business and other businesses. Grainger’s imperative to create unique value is focused on: (i) continuing to grow its share of business with large and mid-size customers in the U.S. by executing its high-value sales and service model, building an advantaged digital capability and completing its pricing strategy; (ii) executing a complete business model reset in Canada; (iii) driving profitable growth in its international portfolio and (iv) continuing the strong growth of its single channel businesses by expanding its assortment and innovation around customer acquisition. Grainger is also focused on improving the end-to-end customer experience by making investments in its eCommerce and digital capabilities and executing continuous improvement initiatives within its supply chain, such that customers have a positive experience with Grainger from order to delivery. Grainger intends to continue to reduce its cost base while ensuring that it delivers an effortless customer experience.

On January 24, 2018, Grainger updated its 2018 earnings per share guidance to reflect the 2017 actual results, lower corporate tax rate, lower tax benefit from clean energy, incremental investment in digital and higher share repurchases. The prior earnings per share guidance issued on November 10, 2017 for 2018 was $10.60 to $11.80. The Company still expects 3 to 7 percent sales growth and now expects earnings per share of $12.95 to $14.15 for 2018.

Matters Affecting Comparability

There were 254 sales days in the full year 2017 and 255 sales days in the full years 2016 and 2015. Grainger completed one divestiture in 2017 and one acquisition in 2015, which were immaterial individually and in the aggregate. Grainger's operating results have included the results of each business acquired since the respective acquisition dates.

Results of Operations

The following table is included as an aid to understanding changes in Grainger's Consolidated Statements of Earnings (in millions of dollars):

	For the Years Ended December 31,				
			Percent Increase/ (Decrease) from Prior Year	As a Percent of Net Sales	
	2017 (A)	2016 (A)	2017	2017	2016
Net sales	$ 10,425	$ 10,137	3 %	100.0%	100.0%
Cost of merchandise sold	6,327	6,023	5 %	60.7	59.4
Gross profit	4,098	4,115	— %	39.3	40.6
Warehousing, marketing and administrative expenses	3,049	2,995	2 %	29.3	29.6
Operating earnings	1,049	1,119	(6)%	10.1	11.0
Other expense, net	113	100	13 %	1.1	1.0
Income taxes	313	386	(19)%	3.0	3.8
Net earnings	622	633	(2)%	6.0	6.2
Noncontrolling interest	37	27	36 %	0.4	0.3
Net earnings attributable to W.W. Grainger, Inc.	$ 586	$ 606	(3)%	5.6%	6.0%

(A) May not sum due to rounding

<u>*2017 Compared to 2016*</u>

Grainger's net sales were $10,425 million for 2017, an increase of 3%, when compared with net sales of $10,137 million for the comparable 2016 period. On a daily basis, the 3% increase for the year consisted of the following:

	Percent Increase/ (Decrease)
Volume	8
Divestiture	(1)
Price	(4)
Total	3%

The increase in net sales was primarily driven by the single channel online businesses in the U.S. and Japan, as well as volume increases in the U.S. business as a result of the pricing actions. The U.S. business pricing actions were primarily implemented in the first and third quarters of 2017 and included adjusting list price and introducing new lower web prices on the entire business assortment, which drove faster growth in 2017 through share gains with existing customers and acquisition of new customers. Refer to the *Segment Analysis* below for further details.

In 2017, eCommerce sales for Grainger were $5,283 million, an increase of 11% over the prior year. Total eCommerce sales represented 51% and 47% of total sales for 2017 and 2016, respectively. The increase was primarily driven by Grainger.com and other electronic purchasing platforms in the U.S. and across all single channel online businesses.

If the Company included KeepStock®, total eCommerce and KeepStock® sales would represent 56% and 53% of total sales for 2017 and 2016, respectively. Refer to the *Segment Analysis* below for further details.

Gross profit of $4,098 million for 2017 was down $17 million compared with $4,115 million for 2016. The gross profit margin for 2017 was 39.3%, down 1.3 percentage points versus 2016, driven primarily by the pricing actions in the U.S. business.

Operating expenses of $3,049 million for 2017 increased 2% from $2,995 million for 2016. Excluding restructuring costs, gains on the sale of assets and other charges in both periods as noted below, operating expenses increased 3%, driven primarily by higher employee related costs.

Operating earnings of $1,049 million for 2017 decreased 6% from $1,119 million for 2016. Excluding restructuring costs, gains on the sale of assets and other charges in both periods as noted below, operating earnings decreased 8% or $107 million, driven primarily by lower gross profit and higher operating expenses.

Other expense, net was $113 million in 2017 compared to $100 million of expense in 2016. The increase in expense was primarily due to incremental interest expense on $400 million in long-term debt issued in May 2016 and $400 million in long-term debt issued in May 2017, as well as higher operating losses from the Company's clean energy investments.

Income taxes of $313 million in 2017 decreased 19% compared with $386 million in 2016. Grainger's effective tax rates were 33.5% and 37.9% in 2017 and 2016, respectively. The lower rate versus the prior year is due to discrete tax items and U.S. tax legislation.

On December 22, 2017, the Tax Cuts and Jobs Act (the Tax Act) was signed into law, which significantly revised the U.S. corporate income tax system by lowering corporate income tax rates from 35% to 21% effective January 1, 2018, allowing accelerated expensing of qualified capital investments for a specific period, limiting net interest expense deductions and transitioning U.S. international taxation from a worldwide to a territorial tax system, among other changes. Grainger recognized a net provisional tax benefit of $3.2 million for the year ended December 31, 2017, related to the estimated impact of the Tax Act. See Note 14 to the Consolidated Financial Statements for additional information.

Grainger projects a tax rate of 23% to 26% for 2018, which includes the impact of the Tax Act.

The table below reconciles reported net earnings determined in accordance with U.S. generally accepted accounting principles (GAAP) to adjusted net earnings, a non-GAAP measure. Management believes adjusted net earnings is an important indicator of operations because it excludes items that may not be indicative of core operating results. Because non-GAAP financial measures are not standardized, it may not be possible to compare this financial measure with other companies' non-GAAP financial measures having the same or similar names. (In thousands of dollars):

	Twelve Months Ended December 31, 2017	2016	%
Net earnings reported	$ 585,730	$ 605,928	(3)%
Restructuring (U.S.)	30,352	21,234	
Branch gains (U.S.)	(20,620)	(11,421)	
Other (gains) charges (U.S.)	(2,830)	28,531	
Restructuring (Canada)	30,390	11,085	
Inventory reserve adjustment (Canada)	—	7,278	
Restructuring (Other businesses)	55,324	—	
Other charges (Other businesses)	—	52,318	
Restructuring (Unallocated expense)	6,647	5,603	
U.S. tax legislation	(3,250)	—	
Discrete tax items	(12,123)	(9,378)	
Subtotal	83,890	105,250	
Net earnings adjusted	$ 669,620	$ 711,178	(6)%

Net earnings attributable to W.W. Grainger, Inc. for 2017 decreased by 3% to $586 million from $606 million in 2016. The decrease in net earnings primarily resulted from lower operating earnings, partially offset by lower income taxes. Excluding the net charges from both years mentioned above and discrete tax items, net earnings decreased 6%.

Diluted earnings per share of $10.02 in 2017 were 2% higher than $9.87 for 2016, due to lower average shares outstanding partially offset by lower earnings. Excluding the charges mentioned above, diluted earnings per share would have been $11.46 compared to $11.58 in 2016, a decrease of 1%.

2016 Compared to 2015

The following table is included as an aid to understanding changes in Grainger's Consolidated Statements of Earnings (in millions of dollars):

	For the Years Ended December 31,				
			Percent Increase/ (Decrease) from Prior Year	As a Percent of Net Sales	
	2016 (A)	2015 (A)	2016	2016	2015
Net sales	$ 10,137	$ 9,973	2 %	100.0%	100.0%
Cost of merchandise sold	6,023	5,742	5 %	59.4	57.6
Gross profit	4,115	4,231	(3)%	40.6	42.4
Warehousing, marketing and administrative expenses	2,995	2,931	2 %	29.6	29.4
Operating earnings	1,119	1,300	(14)%	11.0	13.0
Other expense, net	100	50	102 %	1.0	0.5
Income taxes	386	466	(17)%	3.8	4.7
Net earnings	633	785	(19)%	6.2	7.9
Noncontrolling interest	27	16	66 %	0.3	0.2
Net earnings attributable to W.W. Grainger, Inc.	$ 606	$ 769	(21)%	6.0%	7.7%

(A) May not sum due to rounding

Grainger's net sales were $10,137 million for 2016, an increase of 2% when compared with net sales of $9,973 million for the comparable 2015 period. The 2% increase for the year consisted of the following:

	Percent Increase/ (Decrease)
Cromwell acquisition	3
Volume	1
Price	(2)
Total	2%

In the U.S. business, sales growth to government, retail and light manufacturing customers were offset by a decline in sales to natural resource customers, resellers, contractors and heavy manufacturing customers. The increase in sales in 2016 was also due to the acquisition of Cromwell on September 1, 2015.

In 2016, eCommerce sales for Grainger were $4,757 million, an increase of 15% over the prior year and represented 47% of total sales. The increase was primarily driven by an increase in sales via EDI and electronic purchasing platforms in the U.S. and Japan businesses. If the Company included KeepStock®, total eCommerce and KeepStock® sales would represent 53% of total sales. Refer to the *Segment Analysis* below for further details.

Gross profit of $4,115 million for 2016 decreased 3%. The gross profit margin for 2016 was 40.6%, down 1.8 percentage points versus 2015, primarily due to price deflation exceeding cost deflation and unfavorable customer mix.

Operating expenses of $2,995 million for 2016 increased 2% from $2,931 million for 2015. Excluding the charges from both years mentioned above, operating expenses decreased 1% primarily due to lower employee benefit costs.

Operating earnings of $1,119 million for 2016 decreased 14% from $1,300 million for 2015. The decrease in operating earnings was driven by lower gross profit margin and higher restructuring costs and other charges. Operating earnings included the charges noted above. Excluding these charges from both years, operating earnings decreased 6%.

Other expense, net was $100 million in 2016 compared to $50 million of expense in 2015. The following table summarizes the components of other income and expense (in thousands of dollars):

	For the Years Ended December 31, 2016	2015
Interest income (expense) - net	$ (65,615)	$ (32,405)
Loss from equity method investment	(31,193)	(11,740)
Other non-operating income	1,300	1,102
Other non-operating expense	(4,931)	(6,572)
Total	$ (100,439)	$ (49,615)

The increase in expense was driven by higher interest expense from the $1 billion in long-term debt issued in June 2015 and $400 million in long-term debt issued in May 2016, as well as higher operating losses from the Company's clean energy investments.

Income taxes of $386 million in 2016 decreased 17% compared with $466 million in 2015. Grainger's effective tax rates were 37.9% and 37.2% in 2016 and 2015, respectively. The year-over-year increase in the tax rate was primarily due to a larger proportion of earnings from higher tax rate jurisdictions, partially offset by a higher benefit from the Company’s clean energy investments. The twelve months ended December 31, 2016, included a benefit from the conclusion of the federal income tax audit for the years 2009 through 2012 and other discrete items. Excluding the discrete tax benefits and nondeductible intangible write-downs, the Company’s effective tax rate was 37.1%. The Company's clean energy investment generated $0.15 per share of earnings for the year ended December 31, 2016.

The table below reconciles reported net earnings determined in accordance with U.S. generally accepted accounting principles (GAAP) to adjusted net earnings, a non-GAAP measure. Management believes adjusted net earnings is an important indicator of operations because it excludes items that may not be indicative of core operating results. Because non-GAAP financial measures are not standardized, it may not be possible to compare this financial measure with other companies' non-GAAP financial measures having the same or similar names. (In thousands of dollars):

	Twelve Months Ended December 31, 2016	Twelve Months Ended December 31, 2015	%
Net earnings reported	$ 605,928	$ 768,996	(21)%
Restructuring (U.S.)	21,234	22,231	
Branch gains (U.S.)	(11,421)	—	
Other charges (U.S.)	28,531	—	
Restructuring (Canada)	11,085	3,090	
Inventory reserve adjustment (Canada)	7,278	—	
Restructuring (Other businesses)	—	4,814	
Other charges (Other businesses)	52,318	—	
Restructuring (Unallocated expense)	5,603	(24)	
Discrete tax items	(9,378)	(5,984)	
Subtotal	105,250	24,127	
Net earnings adjusted	$ 711,178	$ 793,123	(10)%

Net earnings attributable to W.W. Grainger, Inc. for 2016 decreased by 21% to $606 million from $769 million in 2015. The decrease in net earnings primarily resulted from lower operating earnings, partially offset by lower income taxes. Excluding the charges from both years mentioned above and discrete tax items, net earnings decreased 10%.

Diluted earnings per share of $9.87 in 2016 were 15% lower than $11.58 for 2015, due to lower earnings, partially offset by lower average shares outstanding as a result of share repurchases. Excluding the charges mentioned above, diluted earnings per share would have been $11.58, compared to $11.94 in 2015, a decrease of 3%.

Segment Analysis - 2017 Compared to 2016

The following comments at the reportable segment and other business unit level include external and intersegment net sales and operating earnings. See Note 16 to the Consolidated Financial Statements.

United States

Net sales were $7,960 million for 2017, an increase of $90 million, or 1% when compared with net sales of $7,870 million for 2016. On a daily basis, the 2% increase consisted of the following:

	Percent Increase/ (Decrease)
Volume	7
Intercompany sales to Zoro	1
Divestiture	(1)
Price	(5)
Total	2%

Sales to customers in natural resources, resellers and retail end markets increased mid-single digits, while heavy manufacturing and government increased low single digits. The sales growth was partially offset by declines in contractors and commercial services. Volume increased year over year, primarily driven by the pricing actions.

In 2017, eCommerce sales for the U.S. business were $3,909 million, an increase of 7% over the prior year. Total eCommerce sales represented 49% and 46% of total sales for 2017 and 2016, respectively. The increase was primarily driven by Grainger.com and other electronic purchasing platforms. If the U.S. business included KeepStock®, total eCommerce and KeepStock® sales would represent 55% and 53% of total sales for 2017 and 2016, respectively.

Gross profit margin decreased 1.7 percentage points in 2017 compared to 2016, primarily driven by price deflation exceeding higher volume in response to pricing actions.

Operating expenses of $1,994 were down 2% for 2017 versus 2016. Excluding restructuring costs, net gains on the sale of assets and other charges in both periods mentioned above, operating expenses increased 1% or $19 million, driven by higher employee related costs. See Note 6 to the Consolidated Financial Statements.

Operating earnings of $1,213 million for 2017 decreased 5% versus $1,275 million in 2016. Excluding restructuring costs, gains on the sale of assets and other charges in both periods mentioned above, operating earnings decreased 9% or $116 million, driven primarily by price deflation. See Note 6 to the Consolidated Financial Statements.

Canada
Net sales were $753 million for 2017, an increase of $19 million, or 3%, when compared with $734 million for 2016. On a daily basis, the 3% increase consisted of volume across all end segments.

In 2017, eCommerce sales for the Canada business were $135 million, an increase of 38% over the prior year. Total eCommerce sales represented 18% and 13% of total sales for 2017 and 2016, respectively. If the Canada business included KeepStock®, total eCommerce and KeepStock® sales would represent 32% and 26% of total sales for 2017 and 2016, respectively.

Gross profit margin increased 1.0 percentage point in 2017 versus 2016, primarily due to a favorable comparison to an inventory adjustment in the second quarter of 2016 that did not repeat in 2017, partially offset by price deflation, cost inflation and higher freight costs from an increase in shipping directly to customers in 2017.

Operating expenses decreased 9% in 2017 versus 2016. Excluding restructuring costs in both periods, operating expenses would have increased 3%, primarily related to higher professional service fees related to the business transformation.

Operating losses of $77 million for 2017 increased versus operating losses of $65 million in 2016. Excluding the restructuring costs and the inventory adjustment, operating losses would have been $37 million compared to $41 million in the prior year.

Other businesses
Net sales for other businesses were $2,120 million for 2017, an increase of $235 million, or 12%, when compared to $1,885 million for 2016. The net sales increase was primarily due to incremental sales at Zoro and MonotaRO. On a daily basis, the 13% increase consisted of the following:

	Percent Increase/ (Decrease)
Volume	15
Foreign exchange	(2)
Total	13%

Operating earnings for other businesses were $56 million for 2017 compared to $41 million for 2016. Excluding restructuring charges in 2017 and the goodwill and intangible impairment charges of $52 million in the Fabory and Colombia businesses in the prior year, operating earnings increased $18 million or 19%, due to strong performance from the single channel online businesses.

Segment Analysis - 2016 Compared to 2015

United States
Net sales were $7,870 million for 2016, a decrease of $93 million, or 1% when compared with net sales of $7,963 million for 2015. The 1% decrease consisted of the following:

	Percent Increase/ (Decrease)
Intercompany sales to Zoro	1
Volume	(1)
Price	(1)
Total	(1)%

Mid-single-digit sales growth to government and retail customers and low single-digit growth to light manufacturing were offset by mid-teen declines in sales to natural resource and reseller customers and mid-single-digit declines to heavy manufacturing customers and contractors.

In 2016, eCommerce sales for the U.S. business were $3,660 million, an increase of 12% over the prior year and represented 46% of total sales. The increase was primarily driven by an increase in sales via EDI and electronic purchasing platforms. If the U.S. business included KeepStock®, the electronic inventory management offering, total eCommerce and KeepStock® sales would represent 53% of total sales.

Gross profit margin decreased 1.3 percentage points in 2016 compared to 2015, driven by price deflation exceeding cost deflation and stronger sales growth to lower margin customers.

Operating expenses were down 2% for 2016 versus 2015. The decrease in operating expenses was driven by lower employees benefit costs, partially offset by higher restructuring costs and other charges discussed above. Excluding the restructuring and other charges in both periods, operating expenses would have been down 4%.

Operating earnings of $1,275 million for 2016 decreased 7% versus $1,372 million in 2015. The decline in operating earnings for 2016 was primarily driven by lower sales and gross profit margin, partially offset by lower operating expenses. Excluding the restructuring costs and other charges in both periods, operating earnings decreased 5%.

Canada

Net sales were $734 million for 2016, a decrease of $157 million, or 18%, when compared with $891 million for 2015. In local currency, sales decreased 15% for 2015. The 18% decrease consisted of the following:

	Percent Decrease
Volume	(10)
Foreign exchange	(3)
Price	(2)
ERP implementation	(2)
Wildfire impact	(1)
Total	(18)%

Sales performance in the Canada business was primarily driven by declines within the oil and gas sector in Alberta, combined with declines in all other end markets across the country. The Alberta region, which represents about one-third of the sales in the Canada business, decreased 23% versus prior year, as it was negatively impacted by oil prices. Sales growth for the remaining regions in aggregate was down 10% in local currency. In addition, the Canada business implemented the U.S. ERP system in February 2016, which negatively impacted sales as employees transitioned to operating with the new system.

In 2016, eCommerce sales for the Canada business were $98 million, a decrease of 8% over the prior year and represented 13% of total sales. The decrease was primarily driven by lower sales volume. If the Canada business included KeepStock®, total eCommerce and KeepStock® sales would represent 26% of total sales.

Gross profit margin decreased 7.8 percentage points in 2016 versus 2015, due to an inventory adjustment of $10 million in the second quarter of 2016, along with price deflation versus cost inflation and higher freight costs from an increase in shipping directly to customers. As a result of service issues due to the ERP system implementation, the business did not increase prices to customers during 2016.

Operating expenses decreased 8% in 2016 versus 2015. The decrease was due to the benefit of a $7 million gain from the sale of the former Toronto DC in the first quarter of 2016 and lower ERP system project costs, partially offset by higher restructuring costs. Excluding the restructuring costs from both periods, operating expenses decreased 11%.

Operating losses were $65 million for 2016 versus operating earnings of $27 million in 2015, a decrease of $92 million. Excluding the restructuring costs mentioned above, the operating losses would have been $41 million due to lower sales and gross profit margin and operating expenses declining at a slower rate than sales when compared to the prior period.

Other businesses
Net sales for other businesses were $1,885 million for 2016, an increase of $479 million, or 34%, when compared to $1,406 million for 2015. The net sales increase was primarily due to the September 1, 2015 Cromwell acquisition and incremental sales at Zoro and MonotaRO. The 34% increase consisted of the following:

	Percent Increase
Cromwell acquisition	18
Volume	15
Foreign exchange	1
Total	34%

Operating earnings for other businesses were $41 million for 2016 compared to $48 million for 2015. Excluding goodwill and intangible impairment charges of $52 million in the Fabory and Colombia businesses and other restructuring charges in the prior year, operating earnings for other business increased by $39 million driven by strong performance from MonotaRO, Zoro and the earnings contribution from Cromwell.

Financial Condition
Grainger expects its strong working capital position, cash flows from operations and borrowing capacity to continue, allowing it to fund its operations, growth initiatives and capital expenditures as well as pay cash dividends, repurchase shares and repay its long-term debt obligations while maintaining an adequate credit rating.

Cash and Cash Equivalents
At December 31, 2017, 2016 and 2015, Grainger had cash and cash equivalents of $327 million, $274 million and $290 million, respectively. Approximately 64%, 72% and 76% were outside the U.S. business as of December 31, 2017, 2016 and 2015, respectively. Grainger has no material limits or restrictions on its ability to use or access these foreign liquid assets.

Cash Flow

2017 Compared to 2016
Net cash provided by operating activities was $1,057 million and $1,024 million for the twelve months ended December 31, 2017 and 2016, respectively. The increase in cash provided by operating activities is primarily the result of lower payments related to employee benefits, partially offset by lower earnings and higher working capital.

Net cash used in investing activities was $146 million and $262 million for the twelve months ended December 31, 2017 and 2016, respectively. The decrease in net cash used in investing activities was driven by lower additions to property, buildings and equipment compared to the prior year and higher proceeds primarily from the sales of branch real estate assets in the U.S. and a U.S. business divestiture when compared to the prior year.

Net cash used in financing activities was $867 million and $776 million in the twelve months ended December 31, 2017 and 2016, respectively. The increase in net cash used in financing activities was primarily driven by lower proceeds of long-term debt and higher net payments of commercial paper, offset by lower stock repurchases in 2017 compared to 2016 and lower payments of long-term debt.

2016 Compared to 2015
Net cash provided by operating activities was $1,024 million and $1,036 million for the twelve months ended December 31, 2016 and 2015, respectively. Net cash provided had been reported as $1,003 million and $990 million in 2016 and 2015, respectively. The $1,024 million and $1,036 million reflects the adoption of ASU 2016-09, *Stock Based Compensation: Improvement to Employee Shared-Based Payment Accounting*, which required retrospective

reclassification of $21 million and $46 million from operating activities to financing activities for 2016 and 2015, respectively. The reclassification relates to employee taxes paid as part of the exercise of stock options.

Net cash used in investing activities was $262 million and $843 million for the twelve months ended December 31, 2016 and 2015, respectively. The higher use of cash in 2015 was driven by the Cromwell acquisition in September 2015. In 2016, lower additions to property, buildings and equipment compared to the prior year and higher proceeds from the sale of branch real estate assets contributed to the reduction in cash used in investing activities.

Net cash used in financing activities was $776 million and $109 million in the twelve months ended December 31, 2016 and 2015, respectively. The change in financing activities was primarily driven by the issuance of $400 million in Senior Notes in 2016 compared to the issuance of $1 billion in Senior Notes in 2015 and significantly lower stock repurchases in 2016 compared to 2015.

Working Capital

Internally generated funds are the primary source of working capital and funds used for growth initiatives and capital expenditures. Grainger's working capital is not impacted by significant seasonality trends throughout the year.

Working capital consists of current assets (less non-operating cash) and current liabilities (less short-term debt and current maturities of long-term debt). Working capital was $1,669 million at December 31, 2017, compared with $1,722 million at December 31, 2016, primarily due to an increase in accounts receivable offset by increases in current liabilities. At these dates, the ratio of current assets to current liabilities was 2.2 and 2.4, respectively.

Capital Expenditures

In each of the past three years, a portion of the Company's net cash flows has been used for additions to property, buildings, equipment and capitalized software (presented in Intangibles - net on the Consolidated Balance Sheet) as summarized in the following table (in thousands of dollars):

	For the Years Ended December 31,		
	2017	2016	2015
Land, buildings, structures and improvements	$ 108,753	$ 70,942	$ 86,082
Furniture, fixtures, machinery and equipment	65,996	139,474	202,137
Subtotal	174,749	210,416	288,219
Capitalized software	62,534	73,833	85,649
Total	$ 237,283	$ 284,249	$ 373,868

In 2017, the Company continued to invest in its worldwide distribution network (e.g. new or expanding existing facilities and technology), digital platforms (e.g. eCommerce websites and inventory management solutions), capital maintenance of its existing branch networks across the enterprise and other supporting information technology assets.

In 2016, the Company continued to invest in the North America distribution network, as well as the distribution network in other businesses and sales productivity initiatives. Other significant investments in 2016 included the eCommerce platform, sustaining capital investments in branches and distribution centers and other technology infrastructure.

In 2015, the Company invested in the North America distribution center network and the completion of the common ERP platform for North America and made investments in support of sales initiatives. Other significant investments included the eCommerce platform, sustaining capital investments for Grainger's branches and distribution centers and other technology infrastructure.

In 2018, capital expenditures are expected to range from $290 million to $330 million. Projected spending includes continued investments in the supply chain, eCommerce/digital and inventory management solutions. Grainger expects to fund 2018 capital spending primarily from operating cash flows.

Debt

Grainger maintains a debt ratio and liquidity position that provides flexibility in funding working capital needs and long-term cash requirements. In addition to internally generated funds, Grainger has various sources of financing available, including bank borrowings under lines of credit. Total debt, which is defined as total interest-bearing debt (short-term current and long-term) as a percent of total capitalization was 56.2% and 54.1%, as of December 31, 2017 and 2016, respectively.

Over the last three years, Grainger issued $1.8 billion in long-term debt to partially fund the repurchase of $2.8 billion in shares of the total $3 billion previously announced. The remaining amount was funded from internally generated cash. Debt was issued as follows:

- In June 2015, $1.0 billion payable in 30 years and carries a 4.60% interest rate, payable semiannually.
- In May 2016, $400 million payable in 30 years and carries a 3.75% interest rate, payable semiannually.
- In May 2017, $400 million payable in 30 years and carries a 4.20% interest rate, payable semiannually.

Refer to Note 7 and Note 8 to the Consolidated Financial Statements included in Item 8.

The Company ended 2017 with a Debt/EBITDA ratio of 1.8x EBITDA, which is defined as Earnings before Interest, Taxes, Depreciation and Amortization, is a non-GAAP measure and may not be defined and calculated by other companies in the same manner.

Commitments and Other Contractual Obligations

At December 31, 2017, Grainger's contractual obligations, including estimated payments due by period, are as follows (in thousands of dollars):

	Payments Due by Period				
	Total Amounts Committed	Less than 1 Year	1 - 3 Years	4 - 5 Years	More than 5 Years
Debt obligations	$ 2,365,795	$ 94,312	$ 334,930	$ 136,553	$ 1,800,000
Interest on debt	2,197,909	83,002	161,853	156,604	1,796,450
Operating lease obligations	196,544	63,625	82,594	34,446	15,879
Purchase obligations:					
Uncompleted additions to property, buildings and equipment	68,806	68,287	346	173	—
Commitments to purchase inventory	541,834	541,834	—	—	—
Other goods and services	141,883	98,843	36,481	6,474	85
Other liabilities	130,256	91,879	9,703	6,569	22,105
Total	$ 5,643,027	$ 1,041,782	$ 625,907	$ 340,819	$ 3,634,519

See Notes 7, 8 and 10 to the Consolidated Financial Statements for further detail related to debt, interest on debt and operating lease obligations.

Purchase obligations are made in the normal course of business to meet operating needs. While purchase orders for both inventory purchases and non-inventory purchases are generally cancelable without penalty, certain vendor agreements provide for cancellation fees or penalties depending on the terms of the contract.

Other liabilities represent future payments for profit sharing and other employee benefit plans.

The Company's obligation for the postretirement healthcare benefits plan, as determined by actuarial projections, is $208 million at December 31, 2017. The Company has established a Group Benefit Trust (Trust) to fund the plan obligations. The Trust assets available for benefits payments are $189 million at December 31, 2017. The Company has no minimum funding requirements and the timing and amounts of the Company's additional contributions into the Trust have not been determined. Other employment-related benefits obligations of $65 million have also not been included in this table as the timing of benefit payments is not predictable. See Note 9 to the Consolidated Financial Statements for further detail.

Grainger has recorded a noncurrent liability of approximately $45 million for tax uncertainties and interest at December 31, 2017. This amount is excluded from the table above, as Grainger cannot predict the timing of these cash payments by period. See Note 14 to the Consolidated Financial Statements.

Off-Balance Sheet Arrangements
Grainger does not have any material exposures to off-balance sheet arrangements. All significant contractual obligations are recorded on the Company's Consolidated Balance Sheet or disclosed in the notes to Grainger's Consolidated Financial Statements.

Critical Accounting Estimates
Note 1 to the Consolidated Financial Statements describes the significant accounting policies used in the preparation of the Consolidated Financial Statements. As discussed in Note 1, the preparation of financial statements, in conformity with Generally Accepted Accounting Principles (GAAP) in the United States of America, requires management to make judgments, estimates and assumptions about future events that affect the amounts reported in the financial statements and accompanying notes.

Accounting policies and estimates are considered critical when they require management to make subjective and complex judgments, estimates and assumptions about matters that have a material impact on Grainger's financial statements and accompanying notes.

The Company believes that the following discussion addresses Grainger's most critical accounting policies and estimates.

Allowance for Doubtful Accounts
Grainger considers several factors to estimate the allowance for uncollectible accounts receivable including the age of the receivables, the percent past due and the historical ratio of actual write-offs to the age of the receivables. The analyses performed also take into consideration economic conditions that may have an impact on a specific industry, group of customers or a specific customer.

Based on analysis of actual historical write-offs of uncollectible accounts receivable, Grainger's estimates and assumptions have been materially accurate in regards to the valuation of its allowance for doubtful accounts. However, write-offs could be materially different than the reserves established if business or economic conditions change or actual results deviate from historical trends, and Grainger's estimates and assumptions may be revised as appropriate to reflect these changes. For fiscal years 2017, 2016 and 2015, actual results did not vary materially from estimated amounts.

Inventory Reserves
Grainger establishes inventory reserves for excess and obsolete inventory. Grainger regularly reviews inventory to evaluate continued demand and identify any obsolete or excess quantities. Grainger records provisions for the difference between excess and obsolete inventory cost and its estimated realizable value. Estimated realizable value is based on anticipated future product demand, market conditions and liquidation values. As Grainger's inventory consists of approximately 1.7 million stocked products, it is not practical to quantify the actual disposition of excess and obsolete inventory against estimated amounts at a stock keeping unit (SKU) level and no individual SKU is material. There were no material differences noted between reserve levels compared to the level of write-offs historically.

Grainger's methodology for estimating reserves is continually evaluated based on current experience and the methodology provides for a materially accurate level of reserves at any reporting date. Actual results could differ materially from projections and require changes to reserves that could have a material effect on Grainger's results of operations, based on significant changes in product demand, market conditions or liquidation value. If business or economic conditions change, Grainger's estimates and assumptions may be revised as appropriate. For fiscal years 2017, 2016 and 2015, actual results did not vary materially from estimated amounts.

Goodwill and Indefinite Lived Intangible Assets

Business acquisitions result in the recording of goodwill and identified intangible assets that affect the amount of amortization expense and possible impairment write-downs that may occur in future periods. Grainger tests reporting units' goodwill and intangible assets for impairment annually during the fourth quarter and more frequently if impairment indicators exist. Grainger periodically performs qualitative assessments of significant events and circumstances such as reporting units' historical and current results, assumptions regarding future performance, strategic initiatives and overall economic factors to determine the existence of impairment indicators and assess if it is more likely than not that the fair value of the reporting unit or indefinite-lived intangible assets is less than its carrying value and if a quantitative impairment test is necessary. In the quantitative test, Grainger compares the carrying value of the reporting unit or an indefinite-lived intangible asset with its fair value. Any excess of the carrying value over fair value is recorded as an impairment charge.

The fair value of reporting units is calculated primarily using the discounted cash flow (DCF) method and utilizing value indicators from a market approach to evaluate the reasonableness of the resulting fair values. The DCF method incorporates various assumptions including the amount and timing of future expected cash flows, including revenues, gross margins, operating expenses, capital expenditures and working capital based on operational budgets, long-range strategic plans and other estimates. The terminal value growth rate is used to calculate the value of cash flows beyond the last projected period and reflects management's best estimates for perpetual growth for the reporting units. Estimates of market-participant risk-adjusted weighted average cost of capital are used as a basis for determining the discount rates to apply to the reporting units' future expected cash flows and terminal value.

Grainger's indefinite-lived intangibles are primarily trade names. The fair value of trade names is calculated primarily using the relief from royalty method, which estimates the expected royalty savings attributable to the ownership of the trade name asset. The key assumptions when valuing a trade name are the revenue base, the royalty rate and the discount rate.

The Company performed its annual tests of goodwill and indefinite-lived intangible assets for impairment, including qualitative assessments of all of its reporting units' goodwill and intangible assets with indefinite lives. Quantitative tests of the Company's reporting unit in Canada and the Cromwell reporting unit in other businesses were also performed due to lower-than-expected operating performance and lowered short-term forecasts. Based on the results of the quantitative tests performed, the fair values of these reporting units exceeded their carrying values by approximately 31 percent for the Canada reporting unit and 15 percent for the Cromwell reporting unit.

The Company performed sensitivity analyses on the reporting units' fair values utilizing alternate assumptions that reflect reasonably possible changes to future assumptions. Holding all other assumptions constant, the impact of a 100 basis point increase in discount rates or a 100 basis point decrease in terminal growth rates would have not resulted in the reporting units failing the quantitative tests.

While the Company's impairment test and respective sensitivity analyses supported no impairment of goodwill and intangibles, the risk of potential failure of quantitative tests in future reporting periods is highly dependent upon key assumptions included in the determination of reporting unit or intangible fair values. Changes in assumptions regarding future performance and the ability to execute on growth initiatives and productivity improvements may have a significant impact on future cash flows. Likewise, changes in terminal value and discount rate assumptions, unfavorable economic environment or market conditions and other factors may result in future impairments of goodwill and intangible assets. The Company will continue to monitor results and projected cash flows to assess whether goodwill or intangible impairments may be necessary.

Postretirement Healthcare Benefits

The postretirement healthcare obligation and net periodic cost are dependent on assumptions and estimates used in calculating such amounts. The assumptions used include, among others, discount rates, assumed rates of return on plan assets and healthcare cost trend rates and certain employee-related factors, such as turnover, retirement age and mortality rates. Changes in these and other assumptions (caused by conditions in equity markets or plan experience, for example) could have a material effect on Grainger's postretirement benefit obligation and expense and could affect its results of operations and financial condition. These changes in assumptions may also affect voluntary decisions to make additional contributions to the trust established for funding the postretirement benefit obligation.

During the third quarter of 2017, the Company implemented plan design changes effective January 1, 2018, for the post-65 age group. This plan change will move all post-65 Medicare eligible retirees to healthcare exchanges and provide them a subsidy to purchase insurance. The amount of the subsidy will be based on years of service. The plan obligation was remeasured as a result of this plan design change. The Company has elected to amortize the amount of net unrecognized gains over a period equal to the average remaining service period for active plan participants expected to retire and receive benefits. Grainger estimates that this plan change could increase 2018 pretax earnings by approximately $5.3 million. However, other changes in assumptions may increase, decrease or eliminate this effect.

The discount rate assumptions used by management reflect the rates available on high-quality fixed income debt instruments as of December 31, the measurement date, of each year. A higher discount rate reduces the present value of benefit obligations and net periodic benefit costs. As of December 31, 2017, Grainger decreased the discount rate used in the calculation of the postretirement plan obligation from 4.00% to 3.44% to reflect the decrease in market interest rates. Grainger estimates that this decrease could decrease 2018 pretax earnings by approximately $2.0 million. However, other changes in assumptions may increase, decrease or eliminate this effect.

A 1 percentage point change in assumed healthcare cost trend rates would have had the following effects on December 31, 2017 results (in thousands of dollars):

	1 Percentage Point	
	Increase	(Decrease)
Effect on total of service and interest cost	$ 1,269	$ (1,053)
Effect on postretirement benefit obligation	5,516	(5,095)

Grainger used Mortality Table RPH-2014 and changed the mortality improvement scale used to project mortality rates into the future from Mortality Improvement Scale MP-2016 to Mortality Improvement Scale MP-2017 at December 31, 2017. Mortality Table RPH-2014 is a headcount-weighted table that is more appropriate for the measurement of other postretirement employee benefit plans. Scale MP-2017, published by the Society of Actuaries, reflects the most recent data for mortality improvement. Grainger estimates this change could increase 2018 pretax earnings by approximately $0.2 million.

Grainger updated the 2017 census for involuntary terminations that occurred in 2017. Grainger estimates this change could increase 2018 pretax earnings by approximately $0.9 million.

When assumptions are selected, expected results can vary from actual results. Grainger's expected results varied from actual results for both expected return on plan assets and benefit payments. Grainger estimates this impact could increase 2018 pretax earnings by approximately $2.9 million.

Grainger may terminate or modify the postretirement plan at any time, subject to the provisions of the Employee Retirement Income Security Act of 1974 (ERISA) and the Internal Revenue Code, as amended. In the event the postretirement plan is terminated, all assets of the Group Benefit Trust inure to the benefit of the participants. The foregoing assumptions are based on the presumption that the postretirement plan will continue. Were the postretirement plan to terminate, different actuarial assumptions and other factors might be applicable.

Grainger has used its best judgment in making assumptions and estimates and believes such assumptions and estimates used are appropriate. Changes to the assumptions may be required in future years as a result of actual experience or new trends or plan changes and, therefore, may affect Grainger's retirement plan obligations and future expense. For additional information concerning postretirement healthcare benefits, see Note 9 to the Consolidated Financial Statements.

Income Taxes

The tax balances and income tax expense recognized by Grainger are based on management's interpretations of the tax laws of multiple jurisdictions. Income tax expense reflects Grainger's best estimates and assumptions regarding, among other items, the level of future taxable income, interpretation of tax laws and tax planning opportunities, plans for reinvestment of cash overseas and uncertain tax positions. On December 22, 2017, the Tax Cuts and Jobs Act was signed into law, which significantly revised the U.S. corporate income tax system including lowering the corporate income tax rates from 35% to 21% effective January 1, 2018. See Note 14 to the Consolidated Financial Statements for additional information.

Future rulings by tax authorities and future changes in tax laws and their interpretation, changes in projected levels of taxable income, changes in planned need for cash overseas and future tax planning strategies could impact the actual effective tax rate and tax balances recorded by Grainger.

Contingent Liabilities

At any time, Grainger may be subject to investigations, legal proceedings or claims related to the ongoing operation of its business, including claims both by and against Grainger. Such proceedings typically involve claims related to product liability, general negligence, contract disputes, environmental issues, unclaimed property, wage and hour laws, intellectual property, employment practices, regulatory compliance or other matters and actions brought by employees, customers, competitors, suppliers or governmental entities. As a government contractor selling to federal, state and local governmental entities, the Company is also subject to governmental or regulatory inquiries or audits or other proceedings, including those related to contract administration or to pricing compliance. Grainger retains a significant portion of the risk of certain losses related to workers' compensation, auto liability, general liability and property losses through the utilization of high deductibles and self-insured retentions. Grainger routinely assesses the likelihood of any adverse outcomes related to these matters on a case by case basis, as well as the potential ranges of losses and fees. Grainger establishes accruals for its potential exposures, as appropriate, for claims against Grainger when losses become probable and the financial impact of an adverse outcome is reasonably estimable. Legal fees are recognized as incurred and are not included in accruals for contingencies. Where Grainger is able to reasonably estimate a range of potential losses, Grainger records the amount within that range that constitutes Grainger's best estimate. Grainger also discloses the nature of and range of loss for claims against Grainger when losses are reasonably possible and the exposure is considered material to Grainger's Consolidated Financial Statements. These accruals and disclosures are determined based on the facts and circumstances related to the individual cases and require estimates and judgments regarding the interpretation of facts and laws, as well as the effectiveness of strategies or other factors beyond Grainger's control. If the assessment of any of these factors changes, the estimates may change. Predicting the outcome of claims and litigation, and estimating related costs and exposure, involves substantial uncertainties that could cause actual costs to vary materially from estimates and accruals.

Other
Other significant accounting policies, not involving the same level of measurement uncertainties as those discussed above, are nevertheless important to an understanding of the financial statements. Policies such as revenue recognition, depreciation, intangibles, long-lived assets, fair value measurements and valuations and warranties require judgments on complex matters that are often subject to multiple external sources of authoritative guidance such as the Financial Accounting Standards Board and the Securities and Exchange Commission. Possible changes in estimates or assumptions associated with these policies are not expected to have a material effect on the financial condition or results of operations of Grainger. More information on these additional accounting policies can be found in Note 1 to the Consolidated Financial Statements.

Effects of Inflation and Changing Prices
Grainger is affected by inflation through increased product and operating costs, and the ability to pass on cost increases to customers over time is dependent upon market conditions. The ability to achieve sales growth through increased prices is also subject to inflation and normal competitive conditions. The predominant use of the last-in, first-out (LIFO) method of accounting for inventories and accelerated depreciation methods for financial reporting and income tax purposes result in a substantial recognition of the effects of inflation in the financial statements.

Some of Grainger's products contain significant amounts of commodity-priced materials, such as steel, copper, petroleum derivatives or rare earth minerals, and are subject to price changes based upon fluctuations in the commodities market.

Grainger believes the most positive means to combat inflation and advance the interests of investors lie in the continued application of basic business principles, which include improving productivity, maintaining working capital turnover and offering products and services that can command appropriate prices in the marketplace.

Forward-Looking Statements
From time to time, in this Annual Report on Form 10-K, as well as in other written reports, communications and verbal statements, Grainger makes forward-looking statements that are not historical in nature but concern forecasts of future results, business plans, analyses, prospects, strategies, objectives and other matters that may be deemed to be “forward-looking statements” under the federal securities laws. Such forward-looking statements are identified by words such as “anticipate,” “estimate,” “believe,” “expect,” “could,” “forecast,” “may,” “intend,” “plan,” “predict,” “project” and similar terms and expressions.

Grainger cannot guarantee that any forward-looking statement will be realized, although Grainger does believe that its assumptions underlying its forward-looking statements are reasonable. Achievement of future results is subject to risks and uncertainties, many of which are beyond the Company's control, which could cause Grainger's results to differ materially from those that are presented.

Important factors that could cause actual results to differ materially from those presented or implied in a forward-looking statement include, without limitation: higher product costs or other expenses; a major loss of customers; loss or disruption of source of supply; increased competitive pricing pressures; failure to develop or implement new technologies or business strategies; the implementation, timing and results of the Company's strategic pricing initiatives and other responses to market pressures; the outcome of pending and future litigation or governmental or regulatory proceedings, including with respect to wage and hour, anti-bribery and corruption, environmental, advertising, privacy and cybersecurity matters; investigations, inquiries, audits and changes in laws and regulations; disruption of information technology or data security systems; general industry or market conditions; general global economic conditions; currency exchange rate fluctuations; market volatility; commodity price volatility; labor shortages; facilities disruptions or shutdowns; higher fuel costs or disruptions in transportation services; natural and other catastrophes; unanticipated weather conditions; loss of key members of management; the Company's ability to operate, integrate and leverage acquired businesses; changes in credit ratings; changes in effective tax rates and other factors identified under Item 1A: Risk Factors and elsewhere in this Form 10-K.

Caution should be taken not to place undue reliance on Grainger's forward-looking statements and Grainger undertakes no obligation to publicly update any of its forward-looking statements, whether as a result of new information, future events or otherwise.

Item 7A: Quantitative and Qualitative Disclosures About Market Risk

Grainger may use financial instruments to reduce its exposure to adverse fluctuations in foreign currency exchange rates and interest rates as part of its overall risk management strategy. The derivative positions reduce risk by hedging certain underlying economic exposures. Because of the high correlation between the hedging instrument and the underlying exposure, fluctuations in the value of the instruments are generally offset by reciprocal changes in the value of the underlying exposure. Grainger does not enter into derivative financial instruments for trading or speculative purposes.

Foreign Currency Exchange Rates

Grainger’s financial results, including the value of assets and liabilities, are exposed to foreign currency exchange rate risk when the financial statements of the business units, as stated in their local currencies, are translated into U.S. dollars. While it is difficult to quantify any particular impact of changes in exchange rates, a uniform 10% strengthening in the U.S. dollar (whereby all other variables are held constant and unusual expense items described in "Item 7: Management's Discussion and Analysis of Financial Condition and Results of Operations" are excluded) would have resulted in an increase in net earnings of $1 million for the year ended December 31, 2017, and an increase in net earnings of $2 million for the year ended December 31, 2016. Comparatively, a 10% weakening of the U.S. dollar would have resulted in a decrease in net earnings of $2 million for the year ended December 31, 2017, and a decrease in net earnings of $2 million for the year ended December 31, 2016. This sensitivity analysis of the effects of changes in foreign currency exchange rates does not factor in future potential changes in sales levels or local currency prices or costs.

Commodity Price Risk

Grainger has limited primary exposure to commodity price risk on certain products for resale, but does not purchase commodities directly.

Item 8: Financial Statements and Supplementary Data

The financial statements and supplementary data are included on pages 37 to 77. See the Index to Financial Statements and Supplementary Data on page 36.

Item 9: Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A: Controls and Procedures

Disclosure Controls and Procedures

Grainger carried out an evaluation, under the supervision and with the participation of its management, including the Chief Executive Officer and the Chief Financial Officer, of the effectiveness of the design and operation of Grainger's disclosure controls and procedures pursuant to Exchange Act Rule 13a-15. Based upon that evaluation, the Chief Executive Officer and the Chief Financial Officer concluded that Grainger's disclosure controls and procedures were effective as of the end of the period covered by this report.

Internal Control Over Financial Reporting

(A) Management's Annual Report on Internal Control Over Financial Reporting

Management's report on Grainger's internal control over financial reporting is included on page 37 of this Report under the heading Management's Annual Report on Internal Control Over Financial Reporting.

(B) Attestation Report of the Registered Public Accounting Firm

The report from Ernst & Young LLP on its audit of the effectiveness of Grainger's internal control over financial reporting as of December 31, 2017, is included on page 38 of this Report under the heading Report of Independent Registered Public Accounting Firm.

(C) Changes in Internal Control Over Financial Reporting

There have been no changes in Grainger's internal control over financial reporting during the last fiscal quarter that have materially affected, or are reasonably likely to materially affect, Grainger's internal control over financial reporting.

Item 9B: Information Required to Be Disclosed in a Form 8-K

None.

PART III

Item 10: Directors, Executive Officers and Corporate Governance

The information required by this item is incorporated by reference to Grainger's proxy statement relating to the annual meeting of shareholders to be held April 25, 2018, under the captions “Directors,” “Board of Directors and Board Committees” and “Section 16(a) Beneficial Ownership Reporting Compliance.” Information required by this item regarding executive officers of Grainger is set forth below under the caption “Executive Officers.”

Grainger has adopted a code of ethics that applies to its principal executive officer, principal financial officer and principal accounting officer and controller. This code of ethics is part of Grainger’s Business Conduct Guidelines for directors, officers and employees, which is available free of charge through Grainger’s website at www.grainger.com/investor. A copy of the Business Conduct Guidelines is also available in print without charge to any person upon request to Grainger's Corporate Secretary. Grainger intends to disclose on its website any amendment to any provision of the Business Conduct Guidelines that relates to any element of the definition of “code of ethics” enumerated in Item 406 (b) of Regulation S-K under the Exchange Act and any waiver from any such provision granted to Grainger’s principal executive officer, principal financial officer, principal accounting officer and controller or persons performing similar functions. Grainger has also adopted Operating Principles for the Board of Directors, which are available on its website and are available in print to any person who requests them.

Item 11: Executive Compensation

The information required by this item is incorporated by reference to Grainger's proxy statement relating to the annual meeting of shareholders to be held April 25, 2018, under the captions “Board of Directors and Board Committees,” “Director Compensation,” “Report of the Compensation Committee of the Board” and “Compensation Discussion and Analysis.”

Item 12: Directors and Executive Officers

The information required by this item is incorporated by reference to Grainger's proxy statement relating to the annual meeting of shareholders to be held April 25, 2018, under the captions “Ownership of Grainger Stock” and “Equity Compensation Plans.”

Item 13: Certain Relationships and Related Transactions

The information required by this item is incorporated by reference to Grainger's proxy statement relating to the annual meeting of shareholders to be held April 25, 2018, under the captions "Election of Directors" and "Transactions with Related Persons."

Item 14: Principal Accountant Fees and Services

The information required by this item is incorporated by reference to Grainger's proxy statement relating to the annual meeting of shareholders to be held April 25, 2018, under the caption “Audit Fees and Audit Committee Pre-Approval Policies and Procedures.”

PART IV

Item 15: Exhibits and Financial Statements Schedules

(a) Documents filed as part of the Form 10-K

(1) Financial Statements: see "Item 8: Financial Statements and Supplementary Data," on page 36 hereof, for a list of financial statements. Management's Annual Report on Internal Control Over Financial Reporting.

(2) Financial Statement Schedules: the schedules listed in Rule 5-04 of Regulation S-X have been omitted because they are either not applicable or the required information is shown in the consolidated financial statements or notes thereto.

(3) Exhibits Required by Item 601 of Regulation S-K: the information required by this Item 15(a)(3) of Form 10-K is set forth on the Exhibit Index that follows the Signatures page 77 of the Form 10-K.