

A CASE STUDY OF THE MANUFACTURING GIANT TEREX: A QUALITATIVE AND QUANTITATIVE FINANCIAL MARKET ANALYSIS OF THE MANUFACTURING INDUSTRY

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Abstract

Terex Corporation is a diversified global manufacturer of lifting and material handling, equipment, operating in two business segments, Ariel work platforms and material processing. The major Terex brands include Terex, Genie and Power-screen. Terex has changed significantly since its founding in 1986, achieving USD \$7.1 Billion of net sales in 2013. The expansion of its business globally with an increased emphasis on developing markets such as China, India, Brazil, Russia, and Middle East with expansion of its operations the business has become increasingly global in scope. This case study is a complete financial market analysis of one such company in the manufacturing industry, TEREX. The case study gives a complete overview on the company's business strategy, the products, its customers, the company's SWOT analysis and the complete financial analysis. It has taken into consideration all the qualitative as well as quantitative data of the company not limiting to the industry data and news.

Keywords: manufacturing industry, Terex, financial market analysis

Introduction

Owing to the emerging technologies world-wide, the world manufacturing industry has geared up and has incorporated several new technologies within its purview. Economists consider the World manufacturing industry as a sector which generates a lot of wealth. Generating employment, introducing latest techniques, real earnings from shipments etc., have put the world manufacturing industry in a favourable position.

With the implementation of the concept of eco-friendly environment, world manufacturing industry has taken several measures to ensure that the manufacturing industries worldwide abide by the eco- friendly norms. World manufacturing industry also plays an important role in the defence of a country. By manufacturing aircrafts which play a vital role in the country's defence, the aerospace manufacturing industry acts as a shield. Other industries in the manufacturing sector manufacture products which are indispensable in our daily lives. Regarding the GDP or gross domestic product, world manufacturing industry contributes to the global economy as well as the global GDP.

Terex is one such company in the manufacturing industry contributing to the country's economy. The company contributes as a capitalist type of economy. Terex Corporation, incorporated on October 30, 1986, is an American worldwide manufacturer of lifting and material handling solutions for a variety of industries, including construction, infrastructure, quarrying, recycling, energy, mining, shipping, transportation, refining and utilities. It has its headquarters in Westport, Connecticut, USA. The company has operations in North and South America, Australia, Europe, Asia, and the Middle East regions.

The company is focused on manufacturer of lifting and material processing products and services delivering lifecycle solutions that maximize customer return on investment. The Corporation is a \$4.5 billion, publicly traded global manufacturer. The company is passionate about producing equipment that improves the lives of people around the world. Terex operations are global, yet each office or factory is a close-knit community.

Terex has continued its evolution in recent years, primarily through a series of acquisitions and divestitures, designed to enhance the product offering, improve geographic coverage, and deliver value to Terex customers, shareholders, and team members.

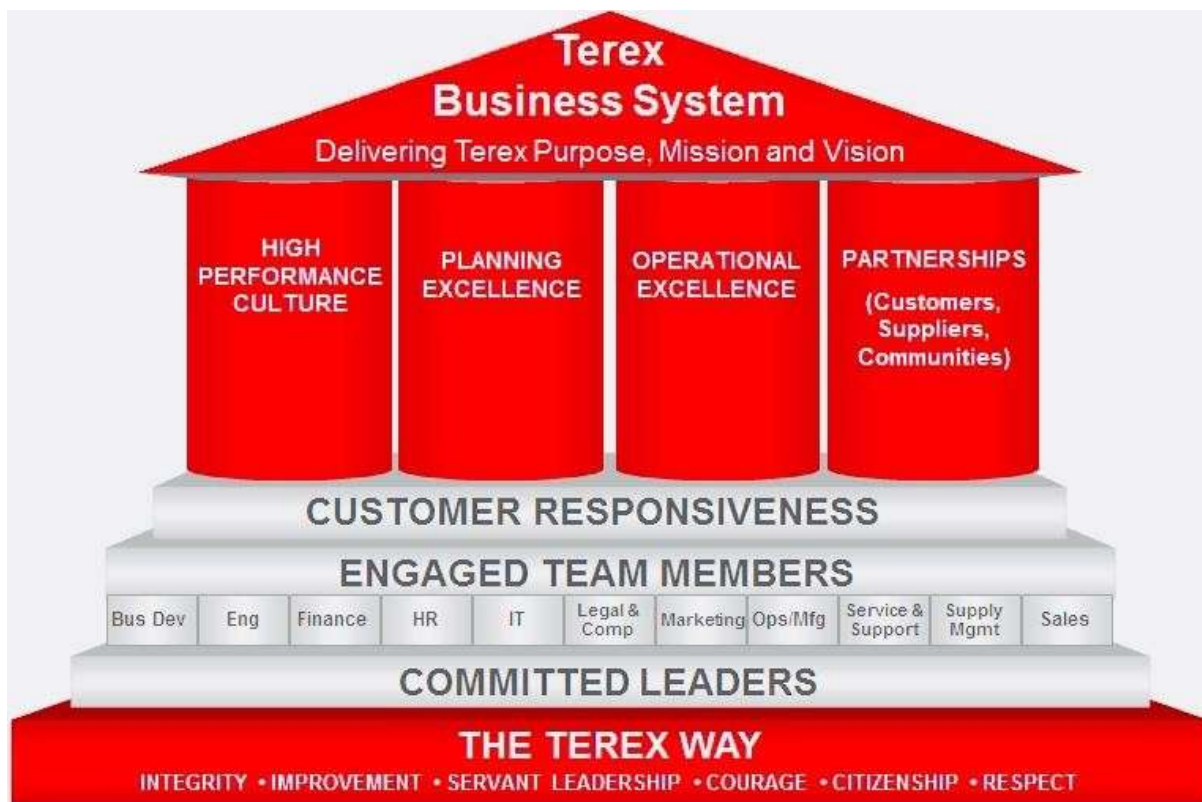
The Company has three business segments: Aerial Work Platforms (AWP), Cranes and Materials Processing (MP). It delivers lifecycle solutions to a range of industries, including the construction, infrastructure, manufacturing, shipping, transportation, refining, and energy, utility, quarrying and mining industries. It has more than 22,000 employees and operates manufacturing

facilities throughout the world. They also offer financial products and services to assist in the acquisition of Terex equipment through Terex Financial Services.

Business strategy

Terex is a specialized manufacturer of capital equipment and related services. The goal is to design, manufacture and market equipment and services that provide superior life cycle return on invested capital to its customers. Customer ROIC is a key focus of the organization and is central to their ability to generate returns for the investors.

Their business system is a framework developed through adopting world-class business practices. Much greater than a manufacturing improvement effort, TBS (Terex Business System) touches every part of the organization.



The "Terex Way" of business is based on six key values:

- **Integrity:**
Integrity reflects honesty, ethics, transparency, and accountability. The company is committed to maintaining high ethical standards in all their business dealings and never sacrifice integrity for profit
- **Respect:**
Respect incorporates concern for safety, health, teamwork, diversity, inclusion, and performance. Terex treats all team members, customers and suppliers with respect and dignity.
- **Improvement:**
Improvement encompasses quality, problem-solving systems, a continuous improvement culture and collaboration. The company continuously searches for new and better ways of doing things, focusing on continuous improvement and the elimination of waste.
- **Servant Leadership:**
Servant leadership requires service to others, humility, authenticity and leading by example. The company focuses on serving the needs of customers, investors, and team members.
- **Courage:**
Courage entails willingness to take risks, responsibility, action, and empowerment. A company of their stature have the courage to make a difference even when it is difficult.
- **Citizenship:**
Citizenship means social responsibility and environmental stewardship. They comply with all laws, respect all people's values and cultures, and are good global, national, and local citizens.

The company is dedicated on delivering on four fundamental pillars of excellence: High-performance culture, excelling at planning, operations, and creating valued partnerships with their customers, suppliers, and the communities in which they work.

Terex S.W.O.T Analysis

Strengths - Internal Strategic Factors

As one of the leading firms in its industry, Terex has numerous strengths that enable it to thrive in the marketplace. These strengths not only help it to protect the market share in existing markets but also help in penetrating new markets.

Based on Fern Fort University extensive research, some of the strengths of Terex are:

- Strong Brand Portfolio - Over the years Terex has invested in building a strong brand portfolio. The SWOT analysis of Terex just underlines this fact. This brand portfolio can be extremely useful if the organization wants to expand into new product categories.
- Successful track record of integrating complimentary firms through mergers & acquisition. It has successfully integrated number of technology companies in the past few years to streamline its operations and to build a reliable supply chain.
- Successful track record of developing new products; product innovation.
- High level of customer satisfaction, the company with its dedicated customer relationship management department has able to achieve a high level of customer satisfaction among present customers and good brand equity among the potential customers.
- Superb performance in new markets - Terex has built expertise at entering new markets and making success of them. The expansion has helped the organization to build new revenue stream and diversify the economic cycle risk in the markets it operates in.
- Strong Free Cash Flow - Terex has strong free cash flows that provide resources in the hand of the company to expand into new projects.
- Strong distribution network - Over the years Terex has built a reliable distribution network that can reach majority of its potential market.

The company has a highly skilled workforce through successful training and learning programs. Terex is investing huge resources in training and development of its employees resulting in a workforce that is not only highly skilled but also motivated to achieve more.

Weakness - Internal Strategic Factors

Strategy is about making choices and weaknesses are the areas where a firm can improve using SWOT analysis and build on its competitive advantage and strategic positioning. Weaknesses are the areas where Terex can improve upon.

- Investment in R&D is below the fastest growing players in the industry. Even though Terex is spending above the industry average on research and development, it has not been able to compete with the leading players in the industry in terms of innovation. It has come across as a mature firm looking forward to bringing out products based on tested features in the market.
- Days inventory is high compared to the competitors, making the company raise more capital to invest in the channel. This could impact the long-term growth of Terex.
- Not highly successful at integrating firms with different work culture. As mentioned earlier even though Terex is successful at integrating small companies it has its share of failure to merge firms that have different work culture.

- Limited success outside core business - Even though Terex is one of the leading organizations in its industry it has faced challenges in moving to other product segments with its present culture.
- The marketing of the products left a lot to be desired. Even though the product is a success in terms of sale, but its positioning and unique selling proposition is not clearly defined which can lead to the attacks in this segment from the competitors.
- There are gaps in the product range sold by the company. This lack of choice can give a new competitor a foothold in the market.
- High attrition rate in work force - compare to other organizations in the industry Terex has a higher attrition rate and must spend a lot more compare to its competitors on training and development of its employees.

Opportunities - External Strategic Factors

- New customers from online channel - Over the past few years the company has invested vast sum of money into the online platform. This investment has opened new sales channel for Terex. In the next few years, the company can leverage this opportunity by knowing its customer better and serving their needs using big data analytics.
- Stable free cash flow provides opportunities to invest in adjacent product segments. With more cash in bank the company can invest in new technologies as well as in new products segments. This should open a window of opportunity for Terex in other product categories.
- Decreasing cost of transportation because of lower shipping prices can also bring down the cost of Terex's products thus providing an opportunity to the company - either to boost its profitability or pass on the benefits to the customers to gain market share.
- Organization's core competencies can be a success in similar another products field. A comparative example could be - GE healthcare research helped it in developing better Oil drilling machines.
- Economic uptick and increase in customer spending, after years of recession and slow growth rate in the industry, is an opportunity for Terex to capture new customers and increase its market share.
- Opening of new markets because of government agreement – the adoption of new technology standard and government free trade agreement has provided Terex an opportunity to enter a new emerging market.
- New environmental policies - The new opportunities will create a level playing field for all the players in the industry. It represents a great opportunity for Terex to drive home its advantage in new technology and gain market share in the new product category.

- Lower inflation rate – The low inflation rate brings more stability in the market, enable credit at lower interest rate to the customers of Terex.

Threats - External Strategic Factors

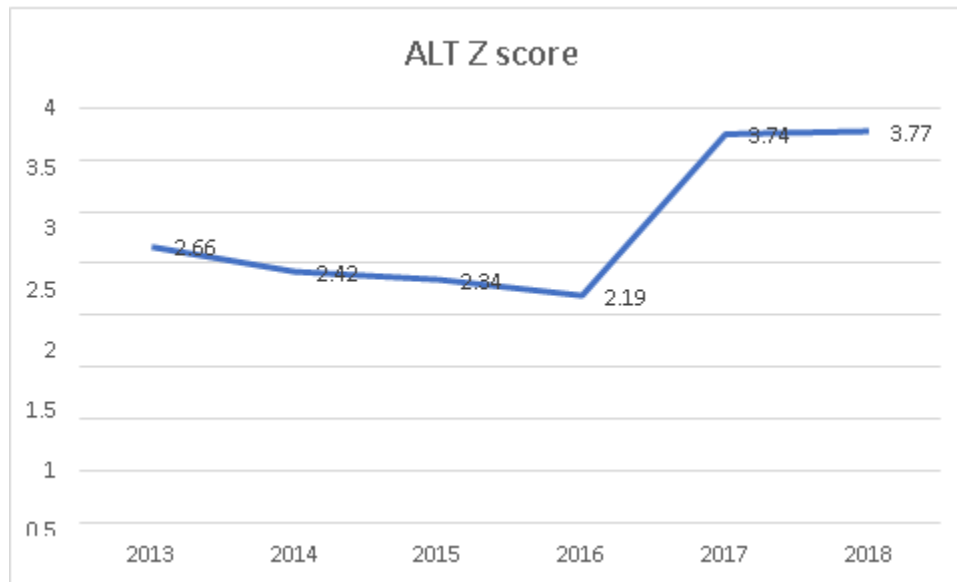
- Rising pay level especially movements such as \$15 an hour and increasing prices in the China can lead to serious pressure on profitability of Terex.
- Changing consumer buying behavior from online channel could be a threat to the existing physical infrastructure driven supply chain model.
- No regular supply of innovative products - Over the years the company has developed numerous products but those are often response to the development by other players. Secondly the supply of new products is not regular thus leading to high and low swings in the sales number over period.
- New technologies developed by the competitor or market disruptor could be a serious threat to the industry in medium to long term future.
- New environment regulations under Paris agreement (2016) could be a threat to certain existing product categories.
- Intense competition - Stable profitability has increased the number of players in the industry over last two years which has put downward pressure on not only profitability but also on overall sales.
- Liability laws in different countries are different and Terex may be exposed to various liability claims given change in policies in those markets.
- Increasing trend toward isolationism in the American economy can lead to similar reaction from other government thus negatively impacting the international sales.

Financial Analysis

Market Value Ratios

Alt Z Score:

It is combination of a set of 5 financial statements especially total assets/Edit, net sales/total assets, market value of equity /total liabilities, working capital/total assets, retained earnings /total assets. Each statement has its own weightage respectively x3.3, x0.999, x0.6, x1.2, x1.4.



According to the above graph the Altman score of the company Terex has been constantly above 1.8 which indicates they have not touched the phase of financial instability or embarrassment, whereas company was in alert position to run the execution with caution for about 5 years from 2013. The year 2017 onwards the Terex Corporation shifted the gear muddle through and kept their Alt z score above 3 which indicates their financial stability.

Recent News

The Trump Administration, on March 1st announced its intention to impose tariffs on imported steel and aluminium by adding a 25 percent tax on imports of steel and 10 percent on aluminium. Economists, Republican lawmakers and industries that use these metals have all warned of potentially harmful effects.

Steel prices have been rising steadily for several months, and this action drove prices even higher, reaching heights not seen in many years. Given the uncertain nature of these market dynamics, the company had to cover these cost increases to sustain its marketplace. This impact of the rising cost of steel is too large and too sudden for the company to absorb.

The company announced that they will be adding surcharge to cover the portion of these cost increases and these surcharges will remain separate from the base prices. Terex aims to minimize the impact on the customers' business by this bold move. As the price of steel normalizes, the company promises to revert to its original price.

Congressional Republicans are worried about sparking trade wars with key U.S. allies and Canada and Europe have already threatened to strike back with taxes on U.S. exports if the Trump government goes through with these tariffs.

Although it is a bold move by the company, it still regrets to have taken such an action on the prices. The company views the imposition of these tariffs as a significant source of friction in the global economy, creating unnecessary headwinds at a time when markets are trending favourably.

This shows that the company cares for its customers and is upholding to its way of business with Integrity. The company aims to be honest, ethical, transparent, and accountable. The company is committed to maintaining high ethical standards in all their business dealings and never sacrifice integrity for profit.

Valuation Ratios

Ratio	Company	Industry	Sector
P/E RATIO (TTM)	17.04	15.49	22.94
P/E HIGH – LAST 5 YRS.	41.45	41.31	39.71
P/E LOW – LAST 5 YRS.	12.29	9.33	15.33
BETA	1.68	1.32	0.99
PRICE TO SALES (TTM)	0.68	1.24	2.35
PRICE TO BOOK (MRQ)	2.91	1.85	4.89
PRICE TO TANGIBLE BOOK (MRQ)	4.00	2.45	3.80
PRICE TO CASH FLOW (TTM)	11.04	11.18	14.55
% OWNED INSTITUTIONS	-	2.10	1.85

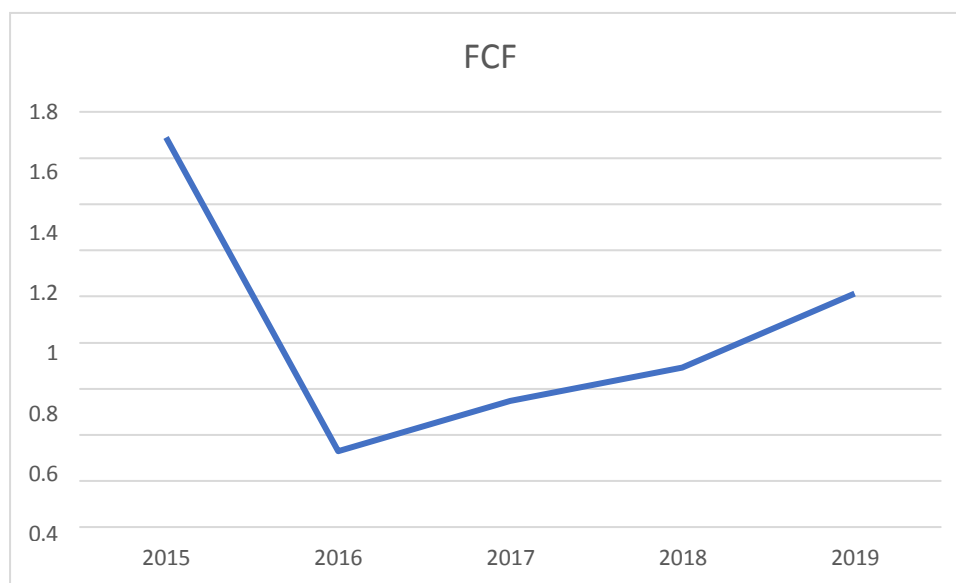
Free Cash Flow:

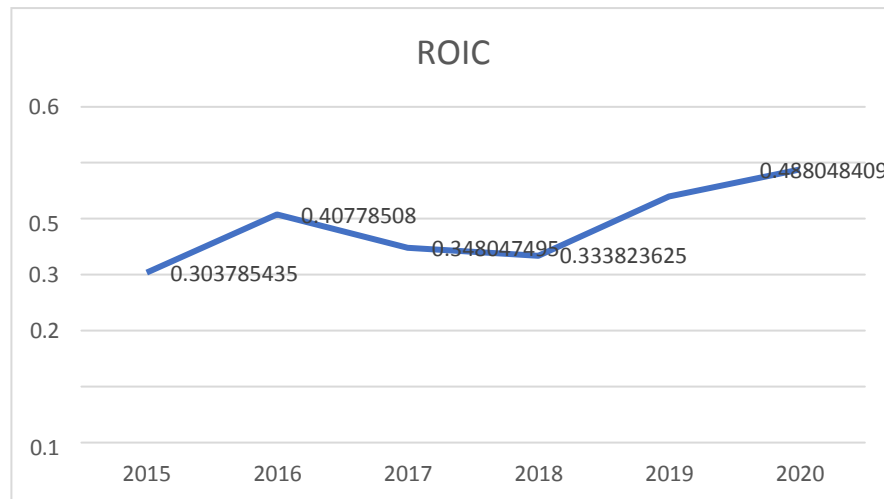
Panel A	Percent age	2015	2016	2017	2018	2019	2020
Sales Growth Rate	2	2	2	2	2	2	2
cost/ sales	3.08	3.08	3.08	3.08	3.08	3.08	3.08
depreciation/ net plant	1.5	1.5	1.5	1.5	1.5	1.5	1.5
cash/ sales	9	9	9	9	9	9	9
accounts receivables/sales	10	10	10	10	10	10	10
inventories/ sales	13.5	13.5	13.5	13.5	13.5	13.5	13.5
net plant/ sales	14	14	14	14	14	14	14

accounts payables/sales	11.7	11.7	11.7	11.7	11.7	11.7	11.7
accruals/sales	9.6	9.6	9.6	9.6	9.6	9.6	9.6
tax rate	25.7	25.7	25.7	25.7	25.7	25.7	25.7
panel b							
net sales		5.02	4.44	4.36	4.4472	4.536144	4.62686688
cost (except depreciation)		3.92	3.59	3.51	3.618108	3.729545726	3.844415735
depreciation		0.063	0.065	0.059	0.059885	0.060783275	0.061695024
total operating costs		3.983	3.655	3.569	3.677993	3.790329001	3.906110759
EBIT		1	0.79	0.791	0.769207	0.745814999	0.720756121
panel c							
cash		0.466	0.428	0.626	0.68234	0.7437506	0.810688154
accounts receivables		0.939	0.512	0.579	0.6369	0.70059	0.770649
inventories		1.45	0.853	0.969	1.099815	1.248290025	1.416809178
operating current assets		2.855	1.793	2.174	2.419055	2.692630625	2.998146332
net plant and equipment		0.675	0.346	0.311	0.35454	0.4041756	0.460760184
operating liabilities							
accounts payables		0.737	0.5227	0.5924	0.6617108	0.739130964	0.825609286
accruals		0.2567	0.186	0.204	0.39984	0.7836864	1.536025344
operating current liabilities		0.9937	0.7087	0.7964	1.0615508	1.522817364	2.36163463

net working capital		1.8613	1.0843	1.3776	1.3575042	1.169813261	0.636511702
net PPE		0.675	0.346	0.311	0.35454	0.4041756	0.460760184
net operating capital		2.5363	1.4303	1.6886	1.7120442	1.573988861	1.097271886
investment operating capital			-1.106	0.2583	0.0234442	0.138055339	0.476716975
NOPAT		0.770491	0.583255	0.587713	0.571520801	0.554140544	0.535521798
Free cash flow			1.689255	0.329413	0.548076601	0.692195883	1.012238773

ROIC	0.303785435	0.40778508	0.348047495	0.333823625	0.43977178	0.488048409
EVA	0.5802685	0.4759825	0.461068	0.443117486	0.574146718	0.453226407





Conclusion

Terex Corporation is a global manufacturer of lifting and material processing products and services delivering lifecycle solutions that maximize customer return on investment. Major Terex brands include Terex, Genie, Power screen and Demag on calculating the ratio of return on investment Terex has been giving a proper return to the shareholder who has invested on the chain of Terex Corporation. Terex wanted to improve its supply chain management by establishing a more efficient price tracking mechanism and increasing communications and negotiations with its suppliers. Essentially, the company required a web-based system that automated project information and tracking within its supply chain. This would allow Terex to better focus its overall business objectives and increase productivity for assembly and manufacturing. Akvelon performed the initial scoping and created the requirements and design of the system. As a result of this work, and Akvelon's reputation for completing entire projects efficiently, Terex asked Akvelon to handle the project end-to-end. Akvelon successfully built the Global Sourcing Project Tracking System for Terex. The system efficiently tracks costs and company savings and integrates them into powerful, interactive reports. Those customizable auto-reports can be exported directly to Excel. Overall, by pulling data from an Oracle ERP, our solution effectively handles complex financial modeling and analysis for Terex. To ensure that

delays in Terex's production line are avoided and service levels are maintained to prevent sale losses, and make sure that all parts are available to create a full plant/ machine, requires meticulous planning.

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