CSX Corporation

INTRODUCTION

CSX Corporation is an American holding company which deals with rail-based transportation. The company offers transportation services for intermodal containers as well as trailers. Mostly, the company transports and gravel, crushed stones, metal, food, agricultural products, automotive, paper, chemical products, taking coal to power plants. It also transports steel, industrial plant equipment, and deep water port facilities. So, it is a leading transportation supplier in the United States. Overall, CSX has a transportation network that encompasses 21,000 different route miles in 23 States; it also connects with the District of Colombia as well as the Canadian provinces of Quebec and Ontario. In fact, almost two-thirds of the American residents operate within the CSX's service territory.

CSX Corporation is in the transportation/logistics industry and the railroad sector as mentioned above. This industry is made up of companies that control the function of railroads across the country. There are three main methods of freight transportation in the country, barges, rails and trucks. Barges are best at achieving maximum productivity with minimum wasted effort or expense, but they are less convenient due to the fact that they are dependent on water routes. On the other hand, trucks can reach the largest base of users but are less cost-effective and fuel-efficient.

Intermodal rail/road transport is among the most remarkable things of the post-War European logistics. Statistics show that the intermodal industry in the United States is the fastest growing rail freight market segment for the last 20 years. In fact, by 2003, the United States intermodal services topped the best-selling fright selling segment in terms of revenue. Its revenue exceeded that of coal, which is the main commodity, making it to be the first industry to go beyond what coal used to give. This fact reflects the role the rail transport industry is playing in the US economy.

First, the rail has led to increased growth of cargo flows as well as expanded the volume of global container movement and thus has in turn increased foreign trade. The evolution of intermodal services in the United States is connected to the deregulation of the railway industry that occurred during the 1980s. The deregulation of rail industry saw the freeing of the rail sector from ties of state control and other regulatory measures, and thus the industry was given a breathing space. Afterward, several dynamics took place, and the rail freight services began to grow gradually. The overall performance and growth of the U.S intermodal industry can better be explained and understood if we set in the current context of the whole industry and the impacts of deregulation almost 40 years ago. By then, one can start to appreciate the unexploited potential and possible growth of the intermodal services in the United States v.

Challenges That Faced Railways

From 1950 to 1980, the importance of rail freight declined rapidly after the war. In fact, according to the Federal Railroad Administration, the rail's market share dropped from 56.1% to 37.5%. In fact, by 1970s the economic conditions of the rail freight industry deteriorated to a point whereby the industry almost collapsed completely. Lack of revenues meant that the railway networks could not be maintained appropriately. By the same year, about 47,000 miles of rail lines operated below the normal speed for purposes of ensuring the safety which was also at stake. Comparing the 1970s context with today, we find that the current U.S freight line network encompasses about 140,000 miles of lines, and 95,000 of these lines are operated by Seven Class 1 railways with operating revenue of more than $359.6 million (McNish, 2017). This deplorable economic condition of the rail freight industry was partly contributed by the increased, severe competition from the motor carriers or road transport operators for that matter (Perl, 2012).

However, despite the severe competition from the motor carriers, the government of the U.S and the players in the railway industry agreed that indeed, the main cause of the dramatic situation of a weakened freight railway was the regulatory framework and particularly the price regulation which was being overseen by Interstate Commerce Commission (ICC). ICC was the federal regulatory authority whose primary mandate was to protect the shippers from excessive or rather discriminatory freight charges. However, out of lack of vision, the authority constrained the railways, it also stifled innovation such that the railways could no longer afford to offer competitive service or produce efficiently and thus generate enough revenue that it could then invest in maintenance and infrastructure (Vitaliano, 2016).

It was resolved that the only way to improve freight railways was to ensure free market conditions are developed with the aim of improving competitiveness. This resolution meant that ICC had to be eliminated and 'The Railroad Revitalization and Regulatory Reform Act' was established. The Act created the guidelines for deregulation which helped the industry to go back on its feet again. However, the growth was not realized until in 1980 when the United States Congress passed the Staggers Rail Act. The Act brought so many changes which supported a free market that ensured minimal government intervention. Today, the U.S intermodal freight industry is the world's best and most effective rail freight service.

Major Competitors for CSX

The business environment within which CSX operates is very competitive. The top competitors for CSX are Union Pacific (UP), Norfolk Southern (NS) and

Burlington Northern Santa Fe (BNSF) who also provides a mega region and plays a significant role in the US economic market. The Mississippi River is the dividing line since CSX, and NS networks provide for the east region while UP and BNSF serves the western region of the U.S. Shippers select the service providers who offer the most compelling combination of cost and service. Service requirements in terms of time of delivery and reliability may differ by shipper and commodity. Therefore, the only way CSX's competition varies is by geographical location, commodity, available mode of transportation, the motor carriers that operate on a similar route, and with fewer significance ships, barges and pipelines. The major competitor for CSX is NS because it also operates much on CSX's territory. Also, deregulated motor carriers may put more pressure in terms of price and service. This can be seen in the figure below.

Class I Railway	Operating revenue ($ billions)	Expense-revenue ratio (%)	Traffic performance (bn ton-miles)	Network (road) owned (miles)	Staff (n°)
Union Pacific Railroad Co.	16.249	80.5%	562	26,687	53,130
BNSF Railway Co.	15.909	78.6%	655	23,228	41,181
Norfolk Southern Railway	9.432	74.8%	196	16,320	30,334
CSX Transportation	9.039	81.4%	247	17,351	31,157
Grand Trunk Corp. (Canadian National)	2.258	63.3%	55	6,282	5,878
Kansas City Southern Railway Co.	0.926	83.2%	30	2,664	2,955
Soo Line Railroad Co. (Canadian Pacific)	0.786	70.6%	25	1,580	2,581

According to IBISWorld, the market share in the rail transportation industry is highly concentrated, with the top four companies accounting for almost $66 billion which is eighty-eight percent of revenue in 2016 (Macedonian Business Monthly, 2016). A limited number of new entrants into the market is due to the high capital costs of initiating new railroads and the need for considerable operations. The industry has had some challenges due to the slow economic recovery, but that is expected to change over time as the U.S trade is expected to rise over the next five years. This will have a positive impact on revenue for this industry. An increase in consumer spending will also improve demand for the industry's services, since retailers, wholesalers, and manufacturers are significant industry customers.

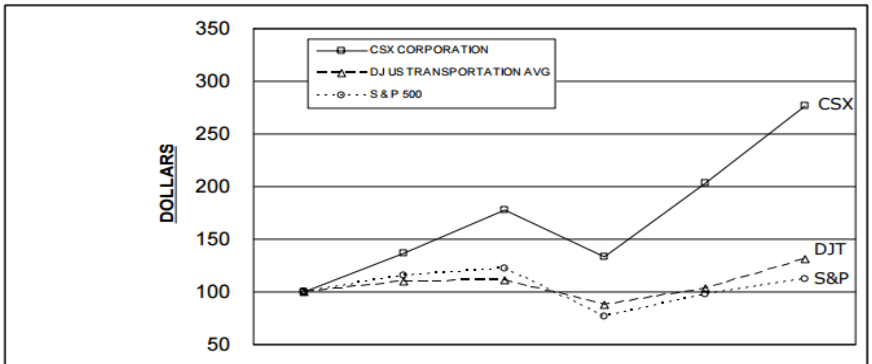
There is a positive long-term forecast for rail transportation as the market improves. The growing demand for rail transportation is a result of increased fuel efficiency, a lower carbon footprint and an increasing demand for bulk freight transportation. Changes in oil prices also made rail transportation more competitive than other methods of transit. This has had an effect on freight trucking because trains are calculated to be more fuel efficient than trucks on a per ton, per mile basis. More opportunities within this industry will be available in the future as companies look for greener and environmentally friendly options (Wireless News, 2016).

PROBLEMS FACING CSX

Economic challenges

CSX have been facing many challenges for the last few years which have affected its revenue as well as its capacity to accommodate growth in the last few years. The headwinds in the energy sector, and especially due to weakness in coal, have really plagued the transportation service giant for quite some time. Although the company stated in the third quarter that it is dealing with the issues, there is a lot to be done if the company has to meet its long-term goals. Despite these energy headwinds, the company has several projects including the Carolina Connector Intermodal Rail Terminal which is in its initial stages (Wireless News, 2015). The state-of-the-art terminal is expected to begin construction in 2018 so that by 2020, it will be fully operational. This project will cost the company more than $270 million, and it will serve as a transportation hub in the southeast of the U.S as well as a catalyst for economic growth in the State of North Carolina ("CSX.com - Crete Intermodal Terminal," 2017).

As indicated earlier, the demand for coal has really gone down due to the sharp decline in oil and gas prices thereby creating headwinds for industry operators. The company, in its annual report, has responded by cutting costs in different departments. In 2016, the company had already extracted about $340 million in cost reduction, and that amount was added to the $200 million it had in savings. However, investors are worried because they want to know the next step that the company will take. Note that the company is still operating with expenses estimated to be 69% of the revenue. The long-term goal of CSX is to reduce that percentage to mid-60s. The graph below shows the continuous growth of CSX company.



	12/05	12/06	12/07	12/08	12/09	12/10
CSX CORPORATION	100.00	137.05	177.36	132.90	203.67	276.52
DJ US TRANSPORTATION AVG	100.00	109.81	111.38	87.53	103.79	131.55
S & P 500	100.00	115.80	122.16	76.96	97.33	111.99

Technical challenges

Another big challenge is MGA Line Investment Planning which is a jointly owned project by CSX and their competitors. The project is expected to invoke demand of transportation services from coal mines. The problem here is that there is high competition which means that if either of them fails to meet its part of the agreement, the other one would automatically do so. Therefore, CSX has to develop a winning strategy and identify ways of handling the massive business if it occurs. Thus, CSX must ask themselves whether they have the capacity to attend to new demand for coal units. As part of their solution, CSX created a supply-chain network model which was used to simulate the demand of five empty trains coming from the coal mines. The stimulation also showed how the demand would be fulfilled as well as how the staging of the empty trains will be done. In the simulation, the trains were modeled to appear as agents/packets moving across the network and by varying the values of different parameters, it was possible for the user to infer the impact of different factors throughout the train (Siddiqui et al., 2017).

The other problem is the Nashville Locomotive shop redesign which required expansion so as to accommodate the new level railroad which had been redesigned already. The expansion was to include a roundhouse and a quality maintenance shop. CSX decided to expand its mechanical workshop, and it had to choose from different layouts. The challenge here was to choose a layout that would maximize the throughput of the locomotive processing. The company used a special Rail Library tool to develop a model of the mechanical shop for locomotive processing. The model was used to test the different layout designs and as a result is has helped specialists to choose the design with the best configurations. Capacity constraints that may face CSX include the difficulties related to crew or locomotive shortages and extreme weather conditions.

CSX is also planning to invest in technology as a way of improving its operations. This will allow the company to have much presence on routes with longer trains. However, implementing such ideas will depend on the whims of the economy as well as the demand by customers to fill the extra cars. However, the company management is confident that they will achieve their long-term goal and that statement is supported by their financial results which indicate that the company is able to deliver value to both its customers and shareholders (Wireless News, 2017).

Regulatory Challenges

CSX operations are subjected to various federal, state and law regulations which are generally applicable to many businesses. However, there are new rules or regulatory changes that impacts on company's earning. Some have even restricted the company from negotiating prices independently. For instance, the 10K annual report highlights that there are some proposals which are under STB that might hinder the company from negotiating price. This would mean that the company would be forced to reduce its capital spending and consequently to harm its financial status. Again, government regulation has also affected the company's operation as well as its financial results (Wireless News, 2017).

CSX is subject to the jurisdiction of several regulatory agencies such as FRA, STB, TSA, EPA, PHMSA and other state agencies for purposes of health, safety, environment, economic, and labor matters. However, much as the company may operate within the set rules and regulations, sometimes the agencies may modify or create new rules that may reduce the operating efficiencies and affect service performance. For instance, RSIA mandates that the PTC hardware must be installed by 31st December 2018.

OPERATIONAL EFFORTS

Led by Chairman and CEO Michael J. Ward, the company has successfully navigated through the economic waves that have posed several challenging to its operations. Last year, the company faced unexpected demand growth which was coupled with winter weather and other resource constraints as well as several new regulations which affected its financial results. These problems have already been identified, and several solutions as mentioned above have been developed. Despite tough competition from NS, CSX has remained a dominant force in the rail freight industry. CSX has improved its operations by replacing its traditional analytical methods with technological techniques known as the emulator. The operational efforts have also enhanced proper decision making at the management level. CSX continues to be the most progressive railroad in the North America as it connects 240 short lines and more than 70 oceans. Indeed, CSX is the best transportation service solution for, among others, energy, industrial, agricultural and consumer products.