Savannah James

Dr. Barker

CIS 410-01

Case 1: Burlington Northern

9/6/18

**Summary**

Burlington Northern Railroad (BN) is a company that was formed in 1970 when four railroads merged together. BN’s revenue comes from a wide range of segments, with coal being the largest, and agricultural commodities following in second. BN upgraded the railroad around 1980, however, there were still issues with controlling the trains and conducting timely deliveries. A couple years later, BN managers wondered if the technology with tracking airplanes could be used in the railroad system to improve operating effectiveness and capital utilization. This thought started the first stages of the ARES project. We will analyze the ARES project throughout this paper to make an informed decision on whether BN should continue with the ARES project and if so, how they should implement it.

**Problem**

Although Burlington Northern modernized their railroad in the 1980s, many complications were still happening with the system that they were using. For example, dispatchers could not see if a train was delayed in other territories, so sending the train further could cause even larger problems and cause more trains to be off schedule. Maintenance was sometimes unable to be performed because of the small window of time dispatchers were able to be certain that there were not any trains coming towards the site. Another issue is that it was not easy for conductors to monitor the status of the train, such as fuel levels, potential problems with the cars indicating maintenance was needed, and speed limits. Many managers at BN believe that the ARES project is the answer to the above problems and more. Burlington Northern is concerned if the ARES project will help them accomplish their goals and is worth the $350 million investment, putting BN deeper into debt than they already are.

**Industry Competitive Analysis**

**Mission Statement**

The mission of Burlington Northern is to the lead railway operator by using advanced technologies that revolve around improving customer service and safety, while delivering goods in a timely manner.

**Market**

After the merger, Burlington Northern focuses on seven markets: coal, agricultural commodities, industrial products, intermodal, forest products, food and consumer products, and automotive products. BN primarily services the Midwest and Western part of the United States.

**Porter’s 5 Forces**

**Inter-Industry Competition**

Burlington Northern Railroad’s main competition is Union Pacific (UP), which is another railroad company. UP specifically competes with BN in the coal industry. BN believes that UP could transport more coal because they had invested in new technology that allowed them to have fuel-efficient engines and double tracks.

Other transportation methods are also competition to BN. This includes trucks, airplanes, and boats. The primary competitor to railways are trucks. Trucks could carry the same goods as trains, but trucks had the benefit of being able to offer door-to-door delivery. Trucks also provided low cost options for transporting the same goods that railways transport. However, after deregulation, BN realized that competition was primarily between railways, not trucks. Deregulation allowed for the modernization of railways and allowed productivity to increase, which increase revenue.

**Substitutes**

The threat of substitutes for Burlington Northern is at a medium risk. Suppliers could choose to change their transportation methods due to lower costs from competitors, more timely delivery, or better service. Items that are time-sensitive may be better suited to be flown rather than transported by train.

**New Entrants**

Threat of new entrants can differ company to company and market to market. Barriers to entry include absolute cost advantages, access to inputs, economies of scale and well-recognized brands. (Martin) The threat of new entrants in the train industry is low. The railways that are already built have companies who own and operate trains on them. Burlington Northern Railway is the result of the merger of four different railways. By 1990, there were only nine railroad companies that controlled the United States. It would cost a new entrant too much money and other resources to acquire the materials, employee, and land needed to compete with BN, UP, or any other large railway company in the United States. In other words, there are extremely high entry and exit barriers. Regulations, capital investment and training employees are just a few reasons why the threat of new entrants is low. (Pratap)

Although the threat of new entrants in the train industry is low, there is still an opportunity that a new mode of transportation could develop and could overtake the train industry. This risk is also low and would be a very slow process of overtaking the railways.

**Supplier’s Bargaining Power**

Burlington Northern has suppliers that provide fuel for the trains, replacement parts and other items needed to keep the railways and train cars in great condition. There are many different suppliers that could provide the items that BN needs. Although Burlington Northern could switch suppliers easily, they will always need fuel and replacement parts to stay in business. Therefore, if the market sets the fuel price above what BN wants to pay, they have no choice but to purchase it for that price because they need fuel to stay in business. The suppliers can stay competitive by providing quality products at a low cost or having the best services.

**Customer’s Bargaining Power**

Customer’s bargaining power is very high in this case. There are so many transportation alternatives, customer’s will refuse to pay BN prices if they are not competitive in the market. Burlington Northern must have lower prices or better technology to keep their customers. Innovation is key in this industry, especially with the cheap price of transportation using trucks or planes.

**Cost Leadership Strategy**

Burlington Northern uses a cost-leadership strategy in business. It is important to note that cost leadership does not mean the company with the lowest prices, but it means the company with the lowest costs, although the two seem to go hand in hand. (Jorgenson) In cost leadership, the market sets the price; the organization does not have control over their price, therefore they must lower costs. The customers who use Burlington Northern have a price that they will not go above to ship their goods to customers. If Burlington Northern and Union Pacific have the same price, it is important for BN to have lower costs to produce a larger revenue. Cost leadership can focus on economies of scale, technology, raw materials, or operating efficiency. Since BN merged, they have access to many different raw materials, with suppliers across half the country. This allows them to cut some costs in shipping to locations since the raw materials are readily available. If they implement ARES, they hope to increase operating efficiency and technological capabilities.

**Stakeholders**

The three main categories of stakeholders in BN are employees, shareholders, and suppliers. The employees include all dispatchers, conductors, maintenance crew, executives and others employed by BN. These people are the ones who will allow funding, make decisions, and will ultimately determine the success or failure of the ARES project. The shareholders also have a huge stake in the success or failure of ARES. They are the ones who are investing in BN and hoping ARES will provide financial gain and smoother business operations. Finally, the suppliers are important regarding the ARES decision because they want to ensure their products will be delivered safely and efficiently to their destinations.

**Alternatives and Impact on Stakeholders**

The first alternative is to do nothing and continue operations normally. Since BN is not in a great spot financially and $350 million is a lot to invest, they could do nothing and work as they have been over the years. After merging four companies, this works, but how long can they compete if they continue like this? Without focusing on new technologies and keeping up with the competition, there is a large chance that employees could lose jobs if BN were to go out of business. Suppliers would have to find a different way to transport their goods, which may lead to delays in shipments for their customers. Shareholders would be out of a lot of money and lose investment in the business.

The second alternative is to do the ARES project. ARES is an automated railroad control system, expected to cost $350 million. ARES is broken into three segments: Control, Data, and Vehicle. Overall, this covers all aspects of the railroad and will help make BN operate more efficiently. ARES is expected to reduce costs and improve asset utilization, while increasing supplier relations. As employees of BN, they will have trained on this system. The maintenance crew will be able to perform maintenance when necessary, and dispatchers will be able to notify them more accurately when they are able to work. Suppliers will have the benefits of knowing where their commodities are on the train accurately. Shareholders could receive benefits from implementing ARES, or downfalls. The entire project is dependent on that ARES will work as expected and is implemented correctly. The gross benefit could exceed $900 million, which would be great news for shareholders. However, if shareholders were to invest over $300 million and ARES fail, they would suffer a great lost, and the company may go under.

The final alternative is to wait and do the ATCS project. ATCS is the Advanced Train Control System, which was being created by the Association of American Railroads. “ATCS controlled trains; ARES controlled the entire railroad operation.” (Barker) At the time of making this decision, ATCS was still in the beginning stages of development, while ARES was five years ahead of ACTS. Implementing ATCS would cause employees to be trained on an entire new way of controlling train traffic. This may cause people to lose jobs due to the cost of retraining employees and learning and implementing new technology. Suppliers would not be affected directly. Suppliers would be able to benefit through better technology in tracking the trains, and possibly get their goods delivered more quickly. Stakeholders may have benefit or loss, depending on how ATCS did after implemented. Stakeholders first would need to approve of this new system being implemented. After implementation, if the system worked as intended, BN could gain more suppliers, and with this new technology could be able to lower costs and gain a competitive advantage. However, if it goes poorly, BN shareholders may take a hit and lose money if the business does not do as well as they did before implementing ATCS.

**Solution**

I believe the best alternative is to implement the ARES project. After investing so much money, BN should implement this choice in stages, to ensure that it is deployed and working correctly. If something happens so the technology is not working correctly, they can revert to the old way of doing things until it is fixed. This decision also proves the best for shareholders. In The Goal, Goldratt States “So this is the goal: To make money by increasing net profit, while simultaneously increasing return on investment, and simultaneously increasing cash flow.” (Goldratt) ARES is expected to increase net profit by allowing dispatchers to better control cars and allow the maintenance crew to get better use of equipment and labor time. Although the cost of ARES is high, I believe that Burlington Northern will see the benefits within the first year, which will make the investment worth it.

**Sources**

Barker, Robert. Computer Information Systems – CIS 410-01.

Martin, Marci. “Porter’s Five Forces: Analyzing the Competition.” Business News Daily. 26 June 2017.

Pratap, Abhijeet. “Five Forces Analysis of Aviation Industry.” Cheshnotes. 25 August 2017.

Joregenson, Eric. “Why Low-Cost Operations Build Powerful Businesses, and Why It Always Matters”. Evergreen. 4 May 2015.

“Railroads Today: The 1980s Onward”. American-Rails.

Goldratt, Eliyahu. “The Goal”.