Burlington Northern

Case 1

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# Introduction

During 1970, four independent railroads decided to merge which became known as “Burlington Northern” a railroad company which would have access to significant natural resources and extensive land grants that would contain minerals, timber, and oil and gas. Later in 1989, Burlington Northern were able to send up to 800 trains per day on their train routes carrying coal, agricultural commodities, industrial products, intermodal, forest products, food and consumer products, and automotive products. The company’s activity would help generate $6.147 billion dollars with a net income of $242 million. Burling Northern total assets in 1989 were worth up to $6.146 billion with a capital expenditure of $465 million, almost half generated by railroad activity.

Burlington Northern is headquartered in three different cities that held their own diverse operations and staffs. The company’s strategic planning operations were held in Fort Worth, Texas corporate functions like finance, labor relations, planning, and marketing. The operations department in Overland Park, Kansas, oversaw train dispatchers, operators, and their supervisors while managing support functions such as research and development, reengineering, and maintenance. Any additional corporate staff such as Information Systems Services, were located in St. Paul, Minnesota. The company is looking for opportunities to help meet certain strategic goals through IT solutions such as automated control system.

# Problems

As time passed since the creation of Burlington Northern, the company began to notice major threats that would concern the company’s growth. In 1989, Burlington Northern executives undertook a major strategic directions project to help review and understand its major concerns which would help shape the company’s future. The result of the project led to two major threats or challenges: service and capital insensitivity. According to the conclusions of the project, the teams behind this believed that the company must make major improvements towards its service which would help give opportunities to increase volume, at the expense of other rail carriers, and to raise its prices, which would require a radical service change. The company also believed that the railroad should improve utilization of their assets which would help reduce the capital investment required for its long-term future.

Burlington Northern has shown to be incapable to provide remarkable service across the board due to their poor methods when managing its railways in an efficient or safe manner.

Burlington Northern trains were controlled by dispatchers, each responsible for a distinct territory. These dispatchers utilized technology dating back to 1920, with little, yet, no significant changes since then. The company’s operational personal believed the recommend amount that a good dispatcher can feasibly focus on and expedite five to seven trains at a time. Despite the company’s recommendation, dispatchers were held responsible for 20 to 30 trains during their shift which was more than expected. As a result, dispatchers prioritized competitive segments like intermodal and merchandise traffic, while leaving unit trains carrying coal and grain unscheduled, and typically overlooked. Since dispatchers were only aware of trains in their territory, this meant that if a delayed train were to enter a dispatcher’s territory, they would be unaware whether it had to be expedited or if there was a sufficient amount of slack existed down the line to make up all the lost time which could jeopardize the schedules of other trains. This also affected maintenance-of-way (MOW) crews, who handled the repair and maintenance of trains, where they weren’t allowed to initiate work until dispatchers gave them clearance resulting for them to show up to a job site and cleared off the worksite much sooner than the expected 35-to-40-minute work window. Burlington Northern had a seventy-five to eighty percent rating for its on-time delivery service which wasn’t considered good according to the company. The company wanted to increase its on-time delivery rating between 90 to 95 percent in which trucks were within the rating boundary holding the competitive advantage in the service and delivery industry. “If you don’t provide a quality product all you’ve got at the end is a bunch of expensive mistakes” (Goldratt).

Burlington Northern’s headquarters are split up into three different locations where each is responsible for different operations potentially creating dissonance among the company causing slow responses that would be unsuitable to adapt towards fast-changing markets and emergencies. Dispatchers struggle with communicating and tracking trains efficiently since its headquarters are separated with delayed communications with one another and its dispatchers. “The principle of separating the planning and design of work from its execution is often seen as the most pernicious and far-reaching element of Taylor's approach to management, for it effectively "splits" the worker, advocating the separation of hand and brain.” (Morgan)

Gerald Grinstein, Chief Executive Officer, wrote a letter to share holders about handling the substantial debt load which will help maximize cash flow available for capital improvements while reducing the outstanding debt. This was caused by the spin-off of Burlington Resources Inc which made the company to focus on its freight transportation while retaining previous acquired debt from its railroad and resource operations. Consequently, this led to a debt-to-total capital ratio of 76%, a level considered to be high. “The goal is to make money, now and in the future” (Goldratt). By increasing asset utilization, it would help lower capital intensity and increase asset turnover ratios, giving the opportunity to create profit and paydown its debts. According to Goldratt’s Five Focusing steps, to utilize the company’s assets efficiently, one must find where its bottlenecks lie, exploit the bottlenecks, and keep re-evaluating to find new inefficiencies to tackle.

With the various problems Burlington Northern has endured, significant changes are required to improve the wellbeing for the company and its growth. These changes include improved business operations, on-time delivery service, and railroad management. There are many approaches to solving these problems, but it’ll require more than one solution to fix Burlington Northern’s business model. We will analyze the various elements about the company, and focus on improving the railroad’s delivery services through proposed solutions.

# Industry Competitive Analysis

Burlington Northern is a railroad company competing within the transportation industry which has little threat from inter-industry competition, new entrants, or the bargaining power of its customers or suppliers. Since it can’t compete with other substitutes of transportations, the main competition is against other railroads.

## Mission Statement

Burlington Northern is a rail transportation company that can ship cargo holding goods and resources at a high volume in a timely and cost-effective manner.

## Generic Strategy

The optimal strategy that Burlington Northern should take is a broad differentiation strategy. The company should develop unique differences in its products or services to help influence demand in their favor and drive repeat customer user behavior.

## Organizational Structure

The case doesn’t explicitly state much information about Burlington Northern’s organizational structure, but it would appear that the company has a hierarchal functional structure that is shown in a diagram. The diagram illustrates a division of labor based on various main company functions, which are headed by vice presidents of the company who work under its CEO and COO. “A successful company organization strategy includes organizational, control, and cultural variables, which are managerial levers used by decision makers to effect changes in their organizations” (Cash).

# Porter’s five forces

Utilizing Porter’s Five Forces is an essential tool that helps analyze competitive forces within an environment to help assess potential for profitability in an industry.

## Threat of New Entrants

The chance for new entrants to enter the railroad transportation industry is low when there are significant entry barriers that are too costly to enter the market. The competition will typically remain static with the exception of future mergers and consolidation.

## Bargaining Power of Suppliers

There are no implications or information provided about suppliers in the case. Assuming that railroads depend on resources such as diesel fuel, the suppliers that help keep operations running will make railroad companies susceptible to follow and purchase quantities regardless of the cost. “The suppliers can raise prices without affecting demand, and reduce quantity supplied” (FME, Porter’s Five Forces, 23).

## Bargaining Power of Customers

The power customers have to bargain is fairly limited but is dependent upon the segment. Burlington Northern was under several long-term contracts such as the Certificate of Transportation (COT) program which made the company follow a commitment to move carloads of grain within a three-day interval which helped eliminate randomness in grain shipments and pricing by customers, but if failed would incur a large penalty in which customers could exploit to lower pricing for their services. The company also imposes switching costs that customers may not want to convert to other rail companies since some are only available in specific regions or don’t provide certain services.

## Intra-industry Competition

Railroad companies weren’t able to compete in certain transportation industries such as aircraft, ships, and trucks, so Burlington Northern is competing against other railroad companies. Burlington Northern’s main competitor was Union Pacific who were moving on the company’s highest earning segment in coal. Union Pacific had a significant advantage for fuel efficient locomotives enabling them to transport coal at a lower cost. In addition to Union Pacific benefits, they had created investments in double track unlike Burlington Northern. This made Union Pacific a chief competitor in the intra-industry competition.

Threat of Substitutes
Railroads in the transportation market are facing competition against other transportation services that are able to travel through air, sea, and local land areas. Trucking is able to provide door-to-door services at cheaper prices in local land areas that Burlington Northern is incapable of doing. The same thing happens with planes and maritime transportation, where planes can ship goods overnight across the country and maritime transportation capable of holding large cargos oversea across other countries. Burlington Northern incapability to compete in certain parts of the transportation industry is cornered to compete amongst their own railroad competitors for rail transportation market share.

# Stakeholders

A review of people that are influenced by Burlington Northern’s business decisions leading to the creation of following stakeholders.

## Burlington Northern’s employees

Employees have a stake in decisions made by a company that affect the welfare of their jobs and improve the effectiveness of its services. Burlington Northern has the potential to create new jobs, dismantle other jobs, increase the standard of living and improve work environments for workers.

## Burlington Northern’s Customers

Burlington Northern customers will be affected by decisions the company takes in improving its services. Actions that help decrease costs, increase ratings in on-time delivery services, and more efficient operations will all impact any customer’s supply chain for the better.

## Burlington Northern’s Shareholders

Those who own stocks in Burlington Northern hold a huge stake in the company. The company’s current program of paying down debts has increased the value of share prices of their stocks, but if it were to acquire a significant amount of debt when investing in IT related projects and infrastructure, it would consequentially lower stock prices. Underestimating costs of projects and issues when implementing systems are concerning matter that could also lower stock prices for shareholders.

# Possible Solutions

Before finding solutions, there are questions that helps determine a solution which are, “What to change? What to change to? and How to cause the change?” (Goldratt). There are three possible options that we could use as solutions such as doing nothing, implementing the Advanced Railroad Electronics System (ARES), and changing the culture and underlying business processes. We will also see how each solution effects its stakeholder.

Do Nothing

Burlington Northern has to do something to remain competitive against both the inter and intra-industry competition. Management believes embracing technology is the solution, but they are in no position to know what the correct solution is without direction.

## Effect on Stakeholders

With no significant action taking place, employees of the company would still continue to operate normally without any changes. This meant that no improvements or relief for dispatchers, no degradation of conductors, no new jobs that would revolve around an implementation of a new automated system. Customers would likely see little to no improvements in external improvements and on-time delivery rates. With $350 million dollars to invest, Burlington Northern could decide to invest in other things such as a more aggressive paydown program to reduce debt.

## Implement ARES

ARES an improved communication and automation railroad control system that would radically change how railroad operations were planned and controlled, possibly revolutionizing the railroad industry. Prior to the ARES proposal, the Association of American Railroads developed a system called the Advanced Train Control System (ATCS) which only controlled trains. When comparing ARES and ATCS, ARES was 5 years ahead in development compared to ATCS. ARES had an estimated growth benefit ranging between $400 to 900 million at an initial investment of $350 million cost while having a present value around $600 million at a weighed cost of $220 million dollars.

Some of the various main benefits the ARES system would include: reduced expenditures on fuel, improved operating efficiency, higher productivity from maintenance crews, increased rail operations safety, and improved overall business management. If the ARES system is implemented and utilized as expected then it would greatly improve the service it supplies to its customers, yet it may come with unforeseeable unknowns and unmeasured risks.

## Effect on Stake Holders

Burlington Northern’s employers will be significantly affected by the implementation of ARES. There’s a chance for newly created jobs revolving around the use of ARES, improved operation and efficiency of dispatchers, conductors could have lessened job tasks, and a reduction of dispatchers. Customers would probably see generous improvements to the company’s on-time delivery service and see growth in its customer services. If ARES is considered a profitable project, stocks would increase exceptionally high for stockholders in Burlington North. If ARES fails to prove its worth and doesn’t meet expectation then stocks are likely to plummet, hurting its stock holders.

## Change the Culture and the Underlying Business Processes

“Mechanistic approaches to organization work well only under conditions where machines work well: (a) when there is a straightforward task to perform; (b) when the environment is stable enough to ensure that the products produced will be appropriate ones; (c) when one wishes to produce exactly the same product time and again; (d) when precision is at a premium; and (e) when the human "machine" parts are compliant and behave as they have been designed to do” (Morgan). This approach working with machines may be viable for companies, but there are many more factors to incorporate and improve on. A deep hierarchal organization structure like Burlington Northern is based on century old business practices that needs to be revamped to meet present needs.

The COO is convinced that if the company’s underlying business processes are rewritten that improves upon efficiency and effectiveness then it will help accommodate the implementation of automated railroad management systems successfully. This decision could be highly disruptive to the entire organization and lead to turnovers in staff that are unwilling or unable to adapt to the remodeled company culture. Employees are destined to have completely redesigned roles and responsibilities when remodeling their business operations. Regardless of the changes towards its culture and underlying business processes, it would position Burlington Northern and its employees to thrive in the near future.

## Effect on Stakeholders

Burlington Northern’s employee are most affected by this solution. All employees at every level will be influenced by the decision which could cause increase in benefits or an extermination of jobs. If the solution is to benefit the company dramatically, customers will typically see an increase in quality of on-time delivery services and stockholders will have an increase in value in stocks based on the performance of the revamped company. With radical changes made throughout the company, there’s a chance that initial minor setbacks could occur causing the company’s stock to take a hit and mediocre services at the start before bolstering its remodeled operations.

# Recommendation

Burlington Northern had some questions about ARES asking, “Do we need those benefits?”, “Will there be a return on the $350 million?” and “Is there a cheaper way to get them?” Senior executives at Burlington Northern had doubts about ARES believing the company would obtain 80 percent of the benefits for only 20 percent of the costs. The company wanted to find other opportunities to achieve the same benefits without reaping the $350 million expenditure. Grinsteid, CEO of Burlington Northern, understood that the industry would inevitably embrace new technology, but did the company have to be the first? One of the questions Grinsteid asked was, “What kind of railroad should we be?” The company didn’t have a direction and had shallow objectives. How could the company possibly know whether a $350 million investment in ARES, which is still in development, would steer the company in the right direction? Bill Greenwood, the Chief Operating Officer, stated the benefits from ARES would not just come from the technology itself. His belief was that changing our underlying business processes, all intensely interrelated, would benefit the company dramatically without undertaking a costly new project. If a complete redesign to operation functions is changed, then the ARES system has a higher chance of being implemented successfully.

My recommended solution for Burlington Northern is to address complications that’s harming the company growth, therefore, changing the culture and its underlying business operations. Management needs to recognize what kind of transportation company it wants to be which sets up strategic goals. Once strategic goals are determined, the creation of a strategic plan is demanded to help achieve their goals that helps reflect on what the company intends to be. With a strategic goal and plan, a direction is set and the company can begin re-directing operation methods, and remodeling the rail systems by modernizing and implementing automated rail technology. Executive leaders are aware that technology is inevitable, but when implementing any technology, will require a major shift to its organizational structure and culture. This change in business operations will dictate from how company’s interrelated functions operate to changed employee roles and responsibilities. By changing and improving upon the Burlington Northen’s culture and business processes will help prevent any disastrous mistakes when implementing any rail control systems. It is possible by the time Burlington Northern accomplishes their goals, ATCS may be more developed than ARES, and company would be able to take advantage of mistakes made by first movers in automated control systems. Until the company establishes who they want to be, why, and how they want to get there, the implementation of ARES is not recommended.

# Justifications for Rejecting Alternatives

The following briefly explains why each of the rejected alternatives were excluded from consideration.

## Do Nothing

Burlington Northern has to do something to remain competitive against both the inter and intra-industry competition. Management believes embracing technology is the solution, but they are in no position to know what the correct solution is without direction.

## Implement Ares

According to Dick Lewis, Vice President of Strategic Planning at Burlington Northern, stated that ARES is technology solution in search of a problem. The benefits of ARES were derived through a bottom-up approach that didn’t take into account of a strategic plan, and wasn’t subjected to long-term resource allocation financing process according to Jack Bell, Chief Financial Officer. The company was concerned whether ARES would bring significant enough gains in the rail transportation market share to offset the risk of being a first mover. While concerning over the estimation of profitability, ARES has shown little input of its functional areas which may prove that the team behind ARES is losing its objectiveness.

With ARES costing at 350 million dollars riddled with doubts and concerns, makes the risky to initiate. While ARES has possibilities that could increase service performance, the company doesn’t have a clear strategic plan nor the efficient operations to implement this ambitious and untested technology.

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