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9/4/18

CIS 410

Burlington Northern: The ARES Decision

In the decades following World War II, both the American and the global economy began to evolve, and with it, consumers' expectations for products and services began to evolve as well. Consumers also began to expect faster service in the form of just-in-time deliveries and door-to-door service. Over time, they became so sensitive to quality of these services that it started to impact their buying decisions, and in turn, boosted their buying power in previously unforeseen ways.

Truck shipping began to boom and overtake the rail shipping industry. Generally speaking, trucks became faster and more versatile for shipping all manner of goods, including food products, electronics, and textiles, which could not be easily or reliably transported on rail. The rail industry still maintained a majority of the commodity, intermodal(Rodrigue) natural resources shipping industry, but in most other goods, trucking became preferred.

Burlington Northern (BN) is a major rail shipping company that also owns extensive amounts of land grants containing a variety of natural resources. Because of the boom in trucking, by the 1980's, Burlington Northern was suffering. For years, they had considered adopting a new information technology system as well as new practices and policies that could allow their rail system to become more efficient and better compete with the growing trucking industry. The proposed system, called ARES, would help mitigate many of the common issues that BN dealt with on a daily basis, and ideally, get products from point A to point B faster. But what exactly were the issues that ARES aimed to tackle?

In a nutshell, ARES was to be an interconnected system between all stations, trains and personnel that are part of the BN railroad system. The system could help track and manage active trains as well as facilitate communication between railroad dispatchers, MOW crews, and engineers. With trains being continuously tracked and managed by ARES, travel times can be estimated, delays, which are BN's biggest bottleneck(Goldratt), could be reduced, and travel schedules could be generated by using data gathers during arrivals and departures, something that BN is currently unable to do. ARES offered train diagnostics, using systems that could relay meaningful data to the engineers that could predict potential problems and monitor the health and status of the train at any time.

Currently, dispatchers manage an estimated 30 trains simultaneously while on duty, although they can only offer their full attention to an estimated 5 – 7 at a time. As a result, trains are frequently neglected, which can create dangerous situations when multiple trains are on the same section of track. If a MOW crew needs to repair a section of track or clear debris (McMahon, Mary, Wallace), they essentially have to guess, based on the estimated arrival of the train, when they can work on the section that needs attention. This creates dangerous situations for even routine maintenance. With ARES, the personnel involved could easily find the exact locations of incoming trains and schedule maintenance sessions.

Even with the numerous potential benefits that ARES could provide, BN executives were still quite divided on whether the projected cost of $350 Million was justified, or even accurate, given the scope of the project and the time investment of restructuring critical business processes that would be affected by ARES. Some argued that it would advance BN "from the Iron Age to the Electronic Age"(Cash et. al) and that it was simply years ahead of the systems that

competitors were developing or using. Others shake the feeling that the cost would be far higher than what the ARES team had originally pitched.

Before we can address if ARES is the solution that Burlington Northern needs, we need to do an Industry Competitive Analysis (ICA). In a sentence, Burlington Northern offers rail-based shipping, primary for the natural resources and commodities industries using a cost-leadership model. BN can ship bulk amounts of natural resources more effectively than rival shipping models.

Next, we apply Porter's Five Forces Model(Jurevicius) to Burlington Northern to see how where it lies in its market. For competition, Burlington Northern is just one of many other rail companies, such as rival Union Pacific, which operates in 23 states(up.com). However, BN does benefit from the fact that it is the result of a merger between several smaller companies, and now owns the resources and market share of each of those companies. In the case of rail shipping, the major substitute is trucking, which is having a major impact on the shipping industry as a whole. New entrants are possible in the rail industry, but are unlikely, given the vast amount of capital and infrastructure it would take to operate at a level that is competitive with established shipping industries, some of which have been operating in excess of a century or more. In the case of BN, many of the resources that are shipped come from operations and land that the company already owns, so many of the suppliers of these resources have no influence to exert on the company. There are always external suppliers who provide parts for trains and track maintenance, and they will continue to have influence so long as BN exists. This influence can only be minimized by maintaining relationships with multiple suppliers that can satisfy the same needs for the company. Lastly, and one the biggest issues for BN, is the bargaining power of customers. As customers become more accustomed to just-in-time shipping and door-to-door services, they will

begin to turn to companies that can consistently offer them. Until BN can compete by offering those services, they may continue to lose market share to those who can.

There are several major stakeholders that would ultimately be affected by the decision on whether to continue developing and integrate ARES into BN's business processes. Key stakeholders include BN's executives and BN's shareholders. Other primary stakeholders include primary BN personnel (engineers, dispatchers, MOW crews, station workers, etc.), the ARES development team, as well as customers who use BN to send and receive goods and materials. Depending on the decisions made by BN, these stakeholders, as well as many unmentioned lesser stakeholders, will be affected in a variety of ways.

At this point, Burlington Northern could proceed in one of several ways. BN could follow through with the ARES project and see it to completion, ultimately integrating it with their core business model. BN could cancel the ARES project, cut any losses associate with capital and resources that are already tied up in its development, and adopt a third-party rail system such as ATCS. Lastly, BN could cancel the ARES project, cut losses, and continue operations in the same manner that they always have: in effect, BN would do nothing. Let's discuss what could happen based on these alternatives:

If BN follows through with ARES, they risk sinking far more capital than was initially proposed in order to have the system fully integrated and to have personnel trained. The transition could take years before it is fully complete. During the transition period, processes could continually change, and personnel would be faced with constant uncertainty as they totally re-learn how to do their jobs. There are risks associated with field testing, such as unforeseen bugs or user difficulties, that could create stressful or potentially dangerous situations for BN

personnel. The ARES team may fail to integrate the system, it could just turn out to be a bad product that gets rejected by BN.

However, if the integration and project is successful, BN would ultimately be able to more schedule trains much more efficiently, as well as analyze schedules to reduce crowding traffic in sections of track. Common delays could be reduced or removed completely, potentially saving thousands of dollars per day (Lovett, Alexander, et al.). Personnel would have more tools to do their jobs effectively and safely. BN could attract new customers and retain more customers with faster service. Ultimately, BN would be more competitive with more modern forms of shipping.

If ARES was cancelled and BN chose to adopt a third-party technology, there are whole set of new risks involved. Firstly, the ARES team would be out of the job, and BN would have to continue operating in the same manner until a product such as ATCS entered the market, which could be several years, if not longer. If BN chose to be an early adopter of one of these systems, they expose themselves to many of the same risks that integrating ARES involves, such as the risk of it just not working, uncertainty, bugs, training personnel, etc. This could create danger and stress for personnel, as well as uncertainty for BN executives and shareholders. Customers are bound to experience delays and issues during the transition process.

A third-party software has the potential to be very successful, which would bring increased customer satisfaction as well as some of the other benefits that could be provided by ARES. However, it is important to note that ARES is larger in scope than say, ATCS, which is only meant to manage the trains, while ARES was meant to manage the entire operation. If BN adopts ATCS, they are likely to invest less capital than it could've cost to develop ARES, but

still retain most of the costs of transitioning the business to a new system, while getting fewer features than they would've gotten with ARES.

Lastly, BN could choose to abandon ARES and continue operating as normal. Initially, one might think this is a quick death sentence, but I disagree. That isn't to say that it isn't a bad idea. The simple fact is that America is covered in rail infrastructure that isn't going away any time soon. As of right now, the easiest way to ship large amounts of commodities and natural resources is still by rail. Burlington Northern could still compete in the shipping market for quite a while, but they do risk falling behind as competing rail companies begin to adopt systems like ATCS. BN will ultimately lose much of the business that can be done by truck, because without a better system, they couldn't simply can't compete with them. Market share will undoubtedly decline, and BN personnel will continue to expose themselves to dangerous and stressful conditions to do their work. If BN chooses to operate in this manner, they can't possibly compete with trucks, and must focus solely on competition with other rail companies.

With these possibilities in mind, one must carefully think about how they would proceed. In my case, I think Burlington Northern should continue with the ARES project, despite financial considerations and technological concerns. ARES is the type of system that could revitalize a dying industry and owning it would make BN a powerhouse in the market. The simple fact is that BN will continue having a harder and harder time competing as rival companies continue to innovate and that is a recipe for failure. The potential gains from ARES could help mitigate the high costs associated with continued development and transition, as well as allow BN to remain competitive and relevant even as the shipping industry continues to evolve. There are also major gains associated with the possibility of licensing ARES to other rail companies. Abandoning ARES is a waste of capital and time which would only be compounded

by adopting another system down the road. As previously stated, if BN does nothing, they will totally unable to compete with trucking, which at the least would hurt market share, and at the worst, could put BN out of business if trucking continues to expand and dominate.

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