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Burlington Northern Case Report

CIS 410-01

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**Burlington Northern**

According to Dick Lewis, vice president of strategic planning, Burlington Northern faced two major challenges: service and capital intensity. He believed it was vital to reform and reconstitute their service offerings to target service-sensitive segments. In regards to capital intensity, Dick believed it was vital to improve utilization of existing assets in order to reduce capital investment requirements. Burlington Northern’s generic strategy is cost-focus.

Burlington Northern consisted of three primary headquarters. The executive department included the CEO, COO, finance, strategic planning, marketing, and labor relations. The operations department was the largest and it included train dispatchers, operators and their supervisors, research and development, engineering, and maintenance. All other staff, including information system services, are located in the third headquarters office. In addition to the three headquarters, there’s staff that operates the trains in addition to maintenance-of-way (MOW) crews who travel to various locations across the railways to perform maintenance and repairs.

This case revolves around the decision of whether or not to implement the Automated Railroad Electronics System (ARES).

**Porters Five Forces Analysis**

The threat of new entrants in the railroad industry is minimal. Competition with preexisting railroads and the trucking industry would deter new entrants due to low industry profitability and the relative size and distribution of existing railways.

There is a high threat of substitution by the trucking industry that provides the convenience of specific location delivery. The switching cost from railroads to trucking is relevant yet almost minimal in conjunction with onsite delivery for service-sensitive segments of the market.

The bargaining power of customers in this industry is relatively high; this stems not only from competition with other railroads, but competition with the trucking industry that can provide better service for a slightly higher cost. Buyer’s price sensitivity is high due to the availability of substitutes.

The bargaining power of suppliers is practically negligible in this case with one exception. The supplies necessary for a railroad operation include: labor, fuel, trains, train cars (which in some cases, are provided by the customer), and rail materials. The bargaining power of suppliers in most of these areas is low due to the availability of competitors (in areas such as fuel and materials) or high-lifespans (such as with trains and train cars). The exception in this case would be labor, which is Burlington Northern’s largest supplier.

The intensity of competitive rivalry in this area is high; Burlington Northern not only competes with other railroads such as Union Pacific, they must also compete with the trucking industry (in service-sensitive segments) and the relative level of service they offer.

**Key stakeholders**

* **Senior executives**

The senior executive group is primarily concerned with the return on investment from implementing ARES. More precisely, they want to know if the benefits ARES provides are necessary to the strategic goal of Burlington Northern and if the same benefits can be obtained from a cheaper alternative. They must also weigh the priorities of other areas that compete for capital investments.

* **Operations department**

The operations department consists of the staff that controls the railways, operate the trains, and perform maintenance. Their primary concern is with their jobs. Implementing ARES will cause an estimated 50% reduction in staff necessary to perform the rail operations. Additionally, ARES will require specialized training to maximize utilization and achieve its full benefit.

* **Information systems services**

Information system services are responsible for maintaining and distributing the information utilized by Burlington Northern. With the implementation of ARES, this department, like the operations department, will require a complete overhaul of specialized training in order to support this enterprise system and maintain its full effectiveness.

**Problem Areas**

The first problem area for Burlington Northern is service. The primary source of business for Burlington Northern consists of bulk commodity items; namely, coal and wheat. Since the end of WWII, Burlington has not focused on service-sensitive segments of the market since these segments are primarily controlled by the trucking industry. The difference in the levels of service provided by railroads vs trucking is that railroads must have precision drop-off times in order to fulfil the requirements of just-in-time service. Trucks aren’t as affected by this problem since their final destination is the business receiving the shipment, rather than a terminal; allowing them to focus primarily on load size and speed. Thus, for railways to become more competitive in service-sensitive segments of the market they must not only increase speed on transport, they must increase reliability and predictability of service.

The second problem area deals with capital intensity; in other words, making the most of current assets to maximize potential and reduce future capital investment. In order to accomplish this goal, overall throughput must be improved. Increases in rail operation safety, improved traffic planning, maximizing information system potential (in terms of continuously updated ETAs for all trains, real-time positions, and communicating this knowledge to MOW crews), improved MOW and dispatcher productivity, and improved business management are all areas that will effectively increase throughput, reliability, and decrease future capital expenses. The issue stems from determining the most cost-effective way to achieve these results.

**Alternative Courses of Action**

Among the multitude of plausible courses of action in this case, the following stands out as the most logical or effective:

* Not implementing ARES and exploring other alternatives
* Partial implementation of ARES (unbundling)
* Full implementation of ARES

Not implementing ARES would entail focusing capital expenditures on preexisting demands that compete for such resources. None of the benefits of ARES would be recognized unless the research and development department took it upon themselves to build upon the prototypes that were exhibited in the Iron Range. On the reverse side, none of the cost of ARES implementation would be recognized, leaving Burlington Northern more resources to tackle its debt issue and explore more cost effective options to achieving the same benefits; such as the Advance Train Control System being developed by the Association of American railroads. Another option for this path would include waiting for other railroad companies to implement ARES and respond according to their benefit from the system. Senior executives would not have to gamble on what they already believed to be an inaccurate benefits analysis. Instead, ARES could be reevaluated alongside other resources that compete for capital investment. The operations department wouldn’t technically be affected by this decision (they would continue operations as before); although they are sure to be relieved that crew sizes won’t be reduced. Like the operations department, information system services would continue as before the ARES proposal.

Unbundling ARES and performing partial implementation is the second alternative. This scenario would consist of examining the pieces of ARES that are independent of full implementation and analyzing their costs and benefits on an individual level. This would allow senior executives to invest purely in aspects of the system that have promising return on investments and less risk. However, taking this route means giving up aspects of the system that have higher return on investment ratings but are also more risky. The operations department would be affected under this course of action. Depending on which implementation aspects were chosen, the operations department would have to adjust their processes accordingly to achieve full benefit. Information systems services would be likewise affected; all aspects of implementation would now have to be supported and maintained to maximize the potential benefit.

Full implementation of ARES is the third logical alternative. This option would entail integrating all aspects of ARES into Burlington Northern’s business processes and rail operations. Successful integration of the system and the ability to achieve maximum benefit would ride on the conjoined efforts of all three key stakeholders. Senior executives would view this approach as risky due to the uncertain nature of the benefits analysis. However, if the benefits analysis and the results of the Strategic Decisions Group are reliable, senior executives would view this as the best option due to the projected benefits. This option would entail a complete overhaul of the operations department's current processes. The operations department would also experience layoffs due to the reduced staff required after implementation. Likewise, information systems services would experience a complete overhaul of their current processes and would likely require an increase in employees trained to support and maintain the ARES system.

**Recommendation**

The recommended course of action in this case would be a full implementation of ARES. Although senior executives did not fully trust in the benefits analysis, it was mentioned that ARES would likely bring additional benefits other than those that have been recognized in the benefits analysis. The main problem area for senior executives was the idea that ARES implementation would not necessarily cause customers to be less price sensitive. However, Exhibit 12 Primary ARES Benefits projects $419 million in present value benefits without the enhanced revenues. The key stipulation to taking this course of action would be a contract with ARES developers that explicitly states the total cost to be paid by Burlington Northern to be $350 million for the ARES system. That way, senior executives, namely Bill Greenwood, would not have to worry about future price increases due to an underestimated scope or ARES developers would be forced to reevaluate the total system cost. The operations department would not be happy with this alternative since it will lead to layoffs and a complete redesign of their job descriptions and processes. Information systems services would likely experience an expansion due to the requirements for supporting and maintaining ARES. Most positions in this department would also require a redesign of job descriptions and processes.

Taking into consideration the results of the Strategic Decisions Group, the expansion strategy of ARES implementation would lead to the highest net benefit. Since implementation will occur over a seven-year period, positive cash flow will begin on the seventh year and increase relatively exponentially. The seven-year period will also allow time for the gradual redesign of the operations and information systems services department and their processes. As stated in the text, “System design must be sound, a strong implementation plan must be developed, and functional groups across the BN system must be committed to using it to full advantage”.

The option of waiting for other railroad companies to implement ARES would be undesirable since pioneering the system will allow for expansion of the customer base into service sensitive segments and market share to be increased; something that may not be as easily attainable for those following in the footsteps of the pioneer to achieve. Unbundling ARES is not ideal due to the fact that various aspects of full implementation will not be achievable; especially in areas with the highest potential for net benefit. Thus it is recommended for Burlington Northern to pioneer ARES to achieve the greatest benefit.