Burlington Northern:

The ARES Decision

CIS 410-02

Case 1

Louis S. Ries

01/23/2018

Table of Contents

[Mission Statement 1](#_Toc504613429)

[Generic Strategy 1](#_Toc504613430)

[Organizational Structure 1](#_Toc504613431)

[The Problem 2](#_Toc504613432)

[Industry Competitive Analysis 3](#_Toc504613433)

[Competitive Rivalry 3](#_Toc504613434)

[Threat of New Entrants 3](#_Toc504613435)

[Threat of Substitutes 3](#_Toc504613436)

[Bargaining Power of Suppliers 4](#_Toc504613437)

[Bargaining Power of Customers 4](#_Toc504613438)

[Key Stakeholders 4](#_Toc504613439)

[Burlington Northern Management 4](#_Toc504613440)

[Burlington Northern Employees 4](#_Toc504613441)

[Customers 4](#_Toc504613442)

[Alternatives 5](#_Toc504613443)

[Implement ARES in all regions simultaneously 5](#_Toc504613444)

[Implement ARES in one region at a time 5](#_Toc504613445)

[Wait and adopt ATCS 5](#_Toc504613446)

[Do Nothing 5](#_Toc504613447)

[Impact of Each Alternative 5](#_Toc504613448)

[Implement ARES in all regions simultaneously 5](#_Toc504613449)

[Implement ARES in one region at a time 6](#_Toc504613450)

[Wait and adopt ATCS 6](#_Toc504613451)

[Do Nothing 6](#_Toc504613452)

[Recommendation 7](#_Toc504613453)

[References 8](#_Toc504613722)

# Mission Statement

The Burlington Northern Railway’s vision is to realize the tremendous potential of the Burlington Northern Railway by providing transportation services that consistently meet their customers’ expectations.

# Generic Strategy

Burlington Northern follows the differentiation strategy. A firm is said to have adopted differentiation strategy when the firm is seeking to be unique in its industry along some dimensions of its product or service that are widely valued by customers. Burlington Northern has set themselves apart from other railways through strategically locating its stops to provide regular supply of products such as grain and coal to its customers, and by implementing its Certificates of Transportation program in which Burlington Northern sells contracts for commitments of regular delivery of its products, particularly resources such as grain which have inconsistent demand from year to year with varying availability of the product. The Certificates of Transportation helps to eliminate some of the randomness in shipments and prices.

# Organizational Structure

Burlington Northern has a functional organizational structure which promotes economies of scale. The firm’s CEO, COO, and corporate functions such as finance, strategic planning, marketing, and labor relations were located in Fort Worth, Texas. The Operations Department, head-quartered in Overland Park, Kansas. And additional corporate staff functions such as Information System Services were located in St. Paul, Minnesota.

# The Problem

The problem for the case of Burlington Northern is the decision to go ahead with ARES (Advanced Railroad Electronics System), an automated railroad control system. The project was initiated in 1983, and two locomotives had been installed with demonstration systems in 1984. The demonstration occurs in 1985 and receives the support of the Burlington Northern Board of Directors and soon after receives funding from the CEO for a prototype. By 1989, Burlington Northern had spent $15 million, cumulatively, on the ARES project. Testing of a prototype was completed in late 1989. The year is now 1990, and with a working prototype, the ARES team has now requested authorization for the expenditures needed to complete the development of the full operational system and to roll out implementation through the railroad. At this point, corporate management has significantly changed from the management team that had authorized earlier phases, and the firm is left with individuals who are unfamiliar with the choices that guided the development of ARES. With the expected cost of the project being $350 million, and uncertainty based on earlier dealings with application development of the software being developed both on time and without going overbudget, Burlington Northern’s executives must weigh the costs, benefits, and risks of any decisions they make about ARES. “For the ability to answer three simple questions: ‘what to change?’, ‘what to change to?’, and ‘how to cause the change?’ Basically what we are asking for is the most fundamental abilities one would expect from a manager” (Goal 343).

# Industry Competitive Analysis

## Competitive Rivalry

Union Pacific Railroad and other railroads are the main competition when it comes to providing the service of delivering resources to customers, non-perishables in particular. Burlington Northern was behind Union Pacific in track availability and engine fuel efficiency.   
 Trucks serve as the primary competition for perishable goods such as grain products. Despite truck deliveries not being able to support the same capacity of goods per haul, their deliveries are more frequently on time than deliveries by train, which is very important to consumers of perishable goods.

## Threat of New Entrants

The threat of new entrants in the railroad industry is fairly low. The industry requires a large initial investment with high long-term maintenance costs. Competition is limited by the number of well-trained engineers, the cost of railcars, and right-to-operate tracks.

## Threat of Substitutes

The threat of substitution for the railway is limited to trucking. The threat to railways is low on the substitution for delivery of non-perishable goods as timeliness is less important to customers, pricing is more affordable, and railways are able to handle significantly larger quantities of goods.

## Bargaining Power of Suppliers

Suppliers have little to no control over the prices of goods sold to Burlington Northern due to the limitations of capacity of alternate delivery services. Only suppliers of light products or needing little space for their goods per delivery such as grain have the reasonable choice of using trucks to deliver their product, having greater convenience and timeliness of deliveries.

## Bargaining Power of Customers

Customers have high bargaining power over the price they pay for products delivered by Burlington Northern. From the perspective of the customer, delivery by railway can easily be substituted with delivery by trucks which at the time were able to offer better pricing and both quicker and more reliable service.

Key Stakeholders

## Burlington Northern Management

Management wants to improve the service the firm offers.

## Burlington Northern Employees

Employee jobs are affected by changes to the operation of the railway.

## Customers

Customers are paying for the service of product delivery by Burlington Northern Railway. Customers are concerned with the price they pay for the service and the time it takes to deliver.

# Alternatives

## Implement ARES in all regions simultaneously

Begin implementation across all regions, requiring a significant rate of funding.

## Implement ARES in one region at a time

By implementing locomotives with ARES in only one region at a time, smaller payments can be issued over a longer time than simultaneous implementation.

## Wait and adopt ATCS

Burlington Northern will wait an estimated five years for the Association of American Railroads to develop and release the Advanced Train Control System, a system that controls only trains.

## Do Nothing

Change nothing and continue business as normal.

# Impact of Each Alternative

## Implement ARES in all regions simultaneously

Management: Costs to implement will occur in large installments over a relatively short period of time. Benefits if successful will become apparently relatively fast.

Employees: "Technology is a necessary condition, but it's not sufficient. To get the benefits at the time that we install the new technology, we must also" (Necessary 125) educate the railway employees on operating and maintaining ARES in all regions.

Customers: Customers will quickly begin to see decreases in the cost of service and more timely deliveries.

## Implement ARES in one region at a time

Management: Costs will occur in small installments over a long period of time. More opportunity to abandon the project if regions implemented with ARES are negatively impacted by it.

Employees: Significant change in how operations are completed. Will have some time to adapt. Training in new system will be needed by railway employees during/before implementation.

Customers: Customers will begin to see decreases in the cost of service and more timely delivery as ARES is deployed to their regions.

## Wait and adopt ATCS

Management: Investment in ARES lost.

Employees: Upon implementation, will require some adjustment.

Customers: Upon implementation, should expect more consistent service.

## Do Nothing

Management: Investment in ARES lost.

Employees: Unimpacted.

Customers: Unimpacted.

# Recommendation

It is my recommendation that Burlington Northern implement ARES in one region at a time. “Whenever we think we have final answers progress, science, and better understanding ceases” (Goal 3). In recognition of the need for innovation, I recommend adopting ARES as the prototype has shown as a proof of concept that the system will improve control over assets, add visibility to what is happening at any given time, and will give the firm a competitive edge over other railways. This will give the lowest risk while giving the firm a chance to adapt to the new system. Moving ahead with caution is recommended given the firm’s high debt-to-total-capital ratio of 76%. I would inform you that “since the strength of the chain is determined by the weakest link, then the first step to improve an organization must be to identify the weakest link” (Goal 338), meaning that until all trains from point of supply to point of delivery are utilizing ARES, the benefits of the system may not yet be realized.

# References

Goldratt, Eliyahu M., and Jeff Cox. The Goal: A Process of Ongoing Improvement. 3rd ed., North River Press, 2004.

Goldratt, Eliyahu M., et al. Necessary But Not Sufficient: A Theory of Constraints Business Novel. North River Press, 2000.

Morgan, G. (1997). Images of Organization (2nd ed.). Thousand Oaks, Calif.: Sage Publications.

Kalakota, R., & Robinson, M. (2001). E-Business 2.0: Roadmap for Success. Boston, MA: Addison-Wesley.

Porter, Michael. “Porter’s Generic Competitive Strategies”. IOSR Journal of Business and Management (IOSR-JBM) e-ISSN: 2278-487X, p-ISSN: 2319-7668. Volume 15, Issue 1 (Nov. - Dec. 2013), PP 11-17.

Porter, Michael. “Porter’s Five Forces”. 2013.