

GROUP ASSESSMENT - CASE STUDY - ABB TRACTION, INC.

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2. Current Situation and Trends

2.1. Market

2.1.1 Definition

ABB Traction's core product is train sets, yet the case presented relates directly to winning a contract with Amtrak. There are two clear markets, defined as follows:

Broad: The broad market definition is that of railway transportation manufacturing, including both low and high-speed trains.

Narrow: The narrow market is the contract that ABB and its competitors are bidding for, that being a train set that satisfies the requirements of Amtrak on the Metroliner Northeast Corridor route.

2.1.2 Size and Growth

Broad: The sum of projected high speed rail projects including the Northeast Corridor, The High Roller, The Golden Palm, The Magnetic Mouse, The Longhorn Limited, and the Buckeye Bullet is \$12.8 billion, and technologies such as Maglev are being introduced as the technology becomes available. Clearly the high-speed train market is growing.

Such research and development, and such investment in existing high-speed rail products indicates that the high-speed rail market is in a stage of growth, held back only by the high costs (Beyond Brilliance: Maglev Trains, 2003), which inevitably fall as the technology matures.

The following page diagrams the position of the broad market on the Product Life Cycle.

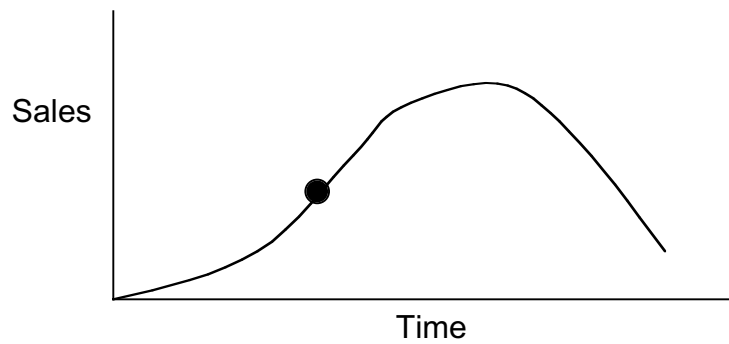


Figure 2.1.2-1 - Growth Stage of high speed rail in the Product Life Cycle

On the other hand, the existing passenger rail transportation market has been around since 1825 so is clearly quite matured. It is argued that it is through the decline in the existing rail market that the technology for high-speed trains is growing, giving rail transportation new market growth, as can be seen on the following product life cycle.

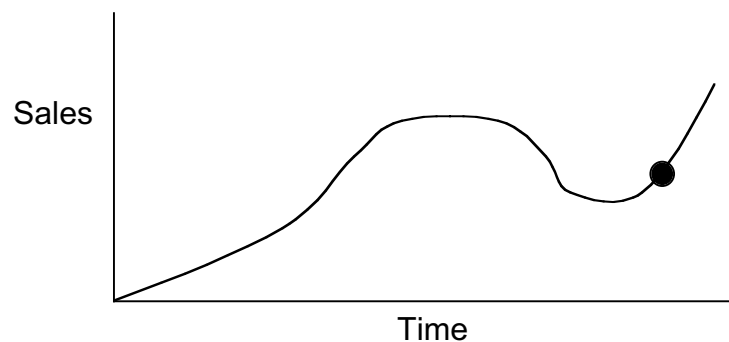


Figure 2.1.2-2 - Re-growth stage of rail transportation in the Product Life Cycle

Narrow: Amtrak is looking to purchase 26 high-speed trains, with the option of purchasing 25 more, for the purpose of Amtrak remaining competitive with alternative modes of transport, such as flight. While the contract alone represents at least \$400 million (for the initial order), securing a partnership such as this with Amtrak would put ABB in a powerful position to negotiate further work, indicating that the securing of this contract may provide ABB further opportunities with Amtrak.

While the Boston Consulting Group Matrix is often useful in analysing the current market situation, within the narrow market ABB currently has no market (the contract is not yet secured), and market growth is dependant solely on the winning of the contract. While the BCG Matrix could be used to analyse the broad market definition, information such as relative market share and market growth, within the broad definition has not been provided.

2.1.3 Structure

Rivalry

Broad - Medium: As the rail transportation market is very mature, rivalry between train manufacturers for contracts would be high. However with the introduction of high-speed rail, the sales and profits of rail transportation is again increasing as can be seen on the product life cycle above, resulting in a medium amount of rivalry in the broad market. The high fixed costs associated with trains and the high exit barriers result in increased rivalry, but the enormous switching costs counter this.

Narrow - High: There are four major firms competing for the contract, and there are a number of other firms considering making a proposal. These four main firms all feel that what they have to offer is superior, and a combination of the size of the contract, with the size and reputation of Amtrak makes the contract a very valuable one.

Threat of Substitutes

Broad- High: There are many substitutes available to rail transportation, such as air travel, buses, cars, sea travel etc. While rail has some definite advantages, both air and road travel methods also have advantages that make them acceptable substitutes.

Narrow - Low: While the broad market has a high threat of substitutes, the narrow market definition is a high speed train that satisfies Amtrak's requirements - as Amtrak is committed to purchasing a high-speed train set, there is really no threat of substitution.

Buyer Power

Broad - High: The number of firms who purchase trains is relatively concentrated, and each firm would purchase a large portion of manufacturers output resulting in a high buyer power.

Narrow - Very High: The narrow target market is so specific that the buyers are concentrated to a single organisation, and the buyer purchases a significant proportion of the output (the entire quantity), this makes buyers extremely powerful. However, Amtrak does not possess the ability to supply the trains themselves, and Amtrak requires the product. While this does not reduce buyer power by a significant amount, it is important to note.

Supplier Power

Broad - Medium: Like passenger rail service providers would find entering the manufacturing market difficult, manufactures would find entering the passenger transportation market equally difficult, furthermore suppliers are concentrated and there is significant cost of switching suppliers. However this high supplier power is severely diluted by the high buyer power.

Narrow - Very Low: Prior to choosing a winner for the Amtrak contract, the switching costs are zero, and the customer is extremely powerful (see above), resulting in a very low supplier power.

Threat of Entry

Broad - Low: Resulting from the high costs of manufacturing trains, the capital required, and the required size of the organisation to support the tasks, the threat of entry into the broad market is quite low. It should be considered however that with the increasing popularity of high-speed rail trains, companies might take advantage of this and choose to enter the now growing marketplace in the future.

Narrow - High: There are a number of firms that may be considering making a proposal for the contract, but have not yet made a bid, including GE Transportation Systems, Ansaldo Transporti, Union Switch and Signal, Mitsubishi Corp., and Renfe Talgo. If the current entrants are considered to be firms that have made a bid, then the threat of new entrants is high.

The following diagrams summarises the structure of the two market definitions.

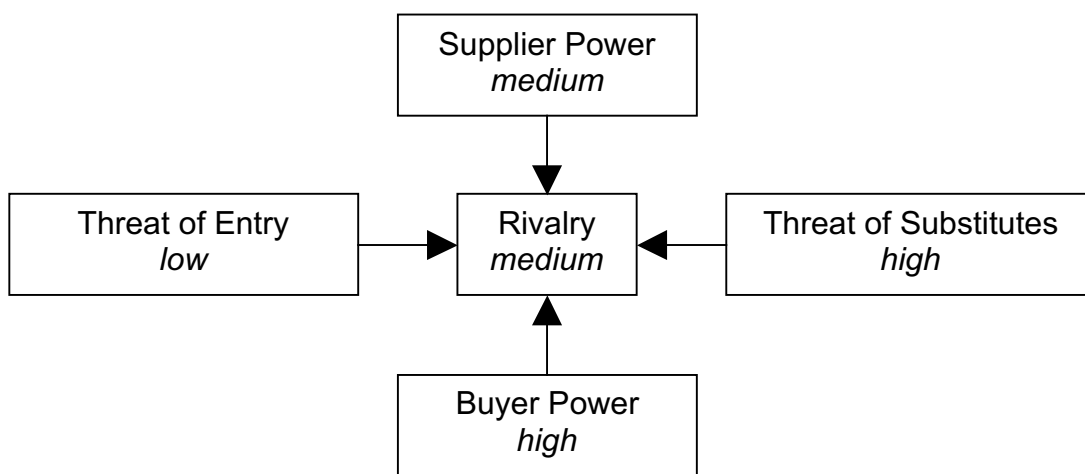


Figure 2.1.3-1 - Porters 5 Forces in the Broad Market

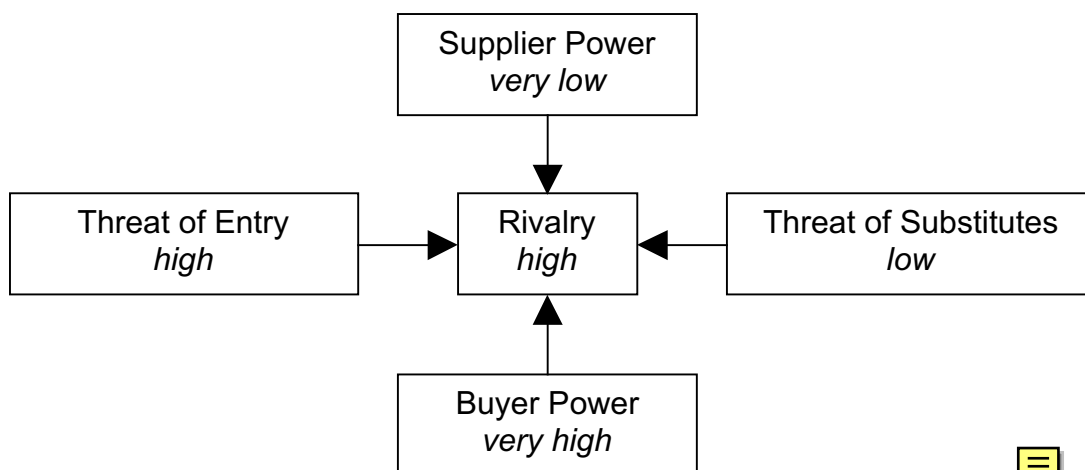



Figure 2.1.3-2 - Porters 5 Forces in the Narrow Market

The analysis of the broad market using Porters Five Forces would indicate that the overall industry attractiveness is medium to low, however Porters Five Forces does not consider market growth, business strength or market share. To accurately comment on the market attractiveness for ABB Traction, other analysis tools such as the Product Life Cycle (see above), the BCG Matrix and the GE Business Planning Grid (see below) must also be used.

The analysis of the narrow market would tend to indicate very low industry attractiveness. Low supplier power, high threat of entry, high rivalry, and high buyer power all point to an unattractive industry. However Porters Five Forces does not consider risk, cost, or benefit. In this case, there is very little risk, very little cost, and a very high payoff regarding attempting to win the contract. While this is not market structure (as per the chapter heading), it is important to acknowledge that the conclusions drawn from using Porters Five Forces as an analysis tool, will not necessarily match the overall conclusions regarding the industry attractiveness for the business in question. 

2.2. Environmental

Broad:

- Environmental concern regarding pollution caused by cars and buses
- Frustration with inefficiency of road transport stemming from increasing number of cars on the road
- Increasing costs of flying as a result of terrorism
- U.S. government promoting rail travel and encouraging the building of high-speed rail alternatives

Narrow: In the scope of the narrow market, the environmental analysis is an analysis on the needs of Amtrak in order to accept the proposal made by bidders.

- New York-Boston route has many curves, requiring a train that can travel at high speed through curves and remain comfortable for passengers

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- Train must be able to support a diesel engine, or a 650-volt DC rail
- Train must match or beat flying and driving times along proposed route (3 hours)
- Amtrak requires 26 trains with an optional 25 more
- Passenger capacity of 300 to 350 per train set
- Bidder must “understand the needs of the rail system in the next century”
- “Own or be able to lease fabrication, production, and final assembly facilities in the United States”
- Deliver two pre-production train sets by January 1996 and have capacity to produce two production units per month

2.3. Competition

Broad: There is competition from a number of large firms in the rail transportation industry, however it is not uncommon for these competing companies to work together on some projects. EMD and GE are the “big two” in locomotive building.

Narrow: The Amtrak contract has a number of specific competitors that have been outlined below. It should be noted that these competitors exist in both the narrow and broad markets, but neither of the “big two” are part of the main four competitors.

- Siemens Transportation Systems (STS) - German company, teamed with GM’s Electro-Motive division and AEG Westinghouse. Bidding with the InterCityExpress (ICE) train, tested at 250mph, features asynchronous energy, is air-pressurised, made of light-weight aluminium, only train other than X2000 to have demonstrated capabilities to Amtrak. Passenger capacity of 285, two power units, restaurant car, deluxe car, 4 coaches, many amenities. Train uses conventional steering so cannot tilt. STS headquarters is in New York, with a sales office in Oregon and manufacturing facilities in Georgia, North Carolina and Ohio.
- GEC Alstom - Principal French manufacturer of “Train a Grande Vitesse” (TGV), which is tested at speeds up to 186mph, and set the world record of 320mph. GEC also built the Eurostar train sets for use in England and France. GEC had no US

partner at the time of proposal. TGV's are reported to run very fast on tracks tailored to TGV, while operation on standard rail was possible at reduced speed. The TGV can climb steep slopes without a great reduction in speed, and has accident-free operation for over 10 years.

- Morrison Knudsen (MK) - MK was previously (1980's) a floundering business building rails, but moved into trains. MK has contracted with U.S. projects for Chicago Transit, New York's Metro-North Commuter, Metra, Caltrans and BART. MK was lead company in consortium to provide high-speed rail to Texas, however when MK withdrew the project was killed. MK has joined with Fiat (builder of active-tilt technology in use in Italy, Germany and Finland) and Siemens for the Amtrak bid.
- Bombardier - Montreal based powerhouse with diverse mix of aerospace, rail equipment, motorized consumer products, and financial services. Located in Pennsylvania. Leading manufacturer of rail transit equipment. Bombardier manages China's largest passenger rail factory, has also won US\$400m contract for a 20-mile light rail system in Kuala Lumpur, and built the high tech railcars operating in Europe's Chunnel.
- GE Transportation Systems - One of the "big two".
- Ansaldo Transporti - Italy based with North American operation.
- Union Switch & Signal - headquarters in South Carolina, with systems and research operations in Pennsylvania and distribution operations in South Carolina.
- Mitsubishi Corp - Provides the Shinkansen (Bullet Train), known for accident-free operation and max speed of 270mph.
- Renfe Talgo of America - Spanish Talgo was tested between Seattle and Portland. Train is an articulated, tilt-body with diesel-electric motive power. Amtrak was operating it as an extra train on one of its runs.

2.4. Customers

Broad: The rail transportation manufacturing market's customers are typically passenger or freight rail service providers, such as Amtrak, British Columbia Passenger Rail Services,

VIA Rail Canada, Direct Rail Services etc, on a worldwide scale. These customers would typically request tenders for a product and companies such as ABB would bid for the contract.

Narrow: ABB Traction Inc.'s customer is Amtrak.

2.5. Internal

ABB is in a position where it "needs" the Amtrak contract. This could indicate anything from losing the contract to a competitor would put it at a disadvantage, to needing the contract to ensure ABB Traction's survival. While it has not been indicated that ABB is in any sort of trouble at the present time, it is important to consider all possibilities.

ABB Traction has headquarters in New York, regional offices in New Jersey and California, and is a part of the Transport Segment of ABB Inc. who employs 27,000 workers in the United States. ABB Inc. is the U.S. operations of the ABB Group, a global electrical equipment giant, and is the product of a merger between Swiss companies, one from Switzerland and one from Sweden, now based in Zurich. The sheer size of the parents companies to ABB Traction indicates that the financial resources and human resources are easily able to handle the Amtrak contract.

The CEO of the ABB Group is Percy Barnevik, and is considered to be aggressive and tough, but his successes is demonstrated by winning honours such as "emerging markets CEO of the year" and twice being the CEO of "Europe's most respected company" (Hildyard, 1998, p. 1). It is through his aggressiveness that ABB Traction appears to have adopted a cost leadership strategy, "ABB's operations had to be lean and mean in order to operate efficiently and profitably".

ABB employs a complex matrix structure that manages to balance decentralised operations and centralised reporting and control. This would likely give ABB an edge over large competitors.

3. Key Issues

Strengths

- Backing of massive parent companies
- Experience in high-speed trains
- Existing product (X2000) and reputation
- Previous experience dealing with Amtrak

Weaknesses

- Parent company not U.S. based
- X2000 currently only supports AC power, currently undergoing propulsion modification
- No partner in bid, represents greater risk for ABB

Opportunities

- Research previous Amtrak contracts to discover the importance of the “Buy American” requirement
- Focus on X2000 being manufactured in the United States to sell the “Buy American” requirement
- Focus on competitors failings to achieve strategic marketing advantage
- Partner with other bidders to combine strengths and eliminate weaknesses

Threats

- The ICE train already exists, and has many features, presenting a very real threat as a competitor to the contract
- Bombardier is a Canadian based company that has leading US operations in rail transport equipment. While they have no existing high-speed rail product, they have the resources to make one
- Smaller competitors working together for the Amtrak contract


4. Objectives

As previously mentioned, ABB is thought to have a cost leadership strategy. However, in the scope of the case, ABB's objective is to secure the Amtrak contract in the most beneficial way possible.

5. Problem Analysis

ABB Traction feels it would make the best possible partner with Amtrak. However ABB faces the problem of being able to effectively communicate this to Amtrak to win the bid.

ABB Traction has weaknesses that the competition will attempt to capitalise on, such as having a non-U.S. based parent, however these weaknesses can be addressed equally well regardless of the alternative chosen, and will be discussed further in 7.1 Contingencies and Supporting Functions.

The other previously mentioned weakness regarding the X2000 only supporting AC power is currently being addressed, and so instead the problem has been defined on how best to communicate with Amtrak to maximise the likelihood of not only winning the contract, but maximising the benefit of the contract if it is won. 

6. Alternatives

The following two alternatives do not discuss the time horizon for their execution, on the basis that the time taken to communicate the message to Amtrak is dependant on the process required, which will be decided upon by the project leader.

Also, costing has been providing regarding the marketing of ABB Traction to Amtrak. A budget regarding the actual implementation of the X2000 is beyond the scope of this report.

6.1. Focus on the X2000

6.1.1 Costs and Benefits

Focusing on the X2000 allows the Amtrak decision makers to feel secure in the knowledge of what they will get. The X2000 has been proven to work, and is especially suited to the application that Amtrak requires the proposed train set for. The X2000 also has sunk costs associated with it, allowing ABB to potentially underbid competitors that will be forced to design the product from scratch.

However, focusing on the X2000 as the marketing advantage means that Amtrak will be comparing contracts based on the product when analysing the bid from ABB. This means that companies that do not necessarily have ABB's financial and human resources will be on a more level playing field, even if they are not as capable in fulfilling Amtrak's needs.

The X2000 also appears to be a well-balanced train in terms of features, however it is not the leader in anything. The TGV is faster; the ICE made of lightweight aluminium, is also already known to Amtrak, and appears to be more luxurious. Both the TGV and the ICE already exist, also cutting down the costs involved for STS and GEC respectively, thus eliminating much competitive advantage.

It is expected that the costs involved to communicate the benefits of the X2000 would be the wages of the people involved in making the bid, and a budget to support the project. It is estimated that this would be in the order of \$20,000.

6.1.2 Competitor Reactions

It is likely that competitors will also take the opportunity to focus on the superiority of their own trains in their respective fields, detracting from the benefits of the X2000 that performs well in all fields but specialises in none.

It is also possible that competitors will not focus on the product at all, and instead focus on the merits of their respective companies, as well as the relative drawbacks of their competition. If they were to do this, ABB's product advantage may be drowned out by arguments regarding the companies themselves, as opposed to the product they offer.

6.1.3 Congruency with managerial predispositions

According to Lutz Elsner, the president of ABB Traction, "It is very clear that we have an advantage. The X2000, we believe, is the right technology for the North East Corridor" (Railway Age, 1993). Clearly this alternative is congruent with managerial predispositions.

6.2. Compare Company and Competitors



6.2.1 Costs and benefits

While still arguing the benefits of the modified X2000, this alternative tends to focus more on ABB's strength as a company, and on competitors failings to allow ABB Traction to be seen as the superior alternative.

It would not be difficult to drive home that STS uses a train based on a conventional steering mechanism, an antiquated technology that is far from "understanding the needs of the rail system in the next century", and that it does not meet the seating requirements; that the TGV may have the record for the being the fastest train, but that without the special TGV rails it falls far below requirements; that GEC hasn't even secured a U.S. partner yet; that Morrison Knudsen destroyed the train project in Texas by pulling out; that Bombardier doesn't specialise in trains at all, and has no experience in fast rail; and that the rest of the competitors really don't stand up as competition at all. This perception of the competition may be enough to tip the scales in the direction of ABB.

It would also not be difficult to contrast this with ABB's tilt technology, their experience with high-speed trains, financial backing, human resources, U.S. presence, and their previous dealings with Amtrak.

However, ABB has worked with these companies in the past, and likely will in the future, the loss of good will may damage ABB more than securing the Amtrak contract. Furthermore, Amtrak may see this as a devious tactic and specifically reject ABB as a contender. Finally, Amtrak may simply think it is an attempt to draw attention away from an inferior product.

The costs involved would be similar to that of the first option, so the same budget has been suggested of \$20,000.

6.2.2 Competitor Reactions

The fact that competitors are being directly attacked is guaranteed to upset their management, and the competition is likely to react. It is possible that they will submit their own proposals in response that focus on ABB's failings.

The competition may even band together to ensure that ABB fails in its bid, purely in spite of poor business practices.

6.2.3 Congruency with managerial predispositions

This alternative is likely to get strong support from the more aggressive members of management, and violent disapproval from the more conservative members. This in itself may create internal issues for ABB that would need to be dealt with for the alternative to have a chance of success - and managerial support from the members who disagree may not be possible at all.

6.3. Provide Supporting Functions

6.3.1 Costs and benefits

The final alternative is to concede the project, and offer a competitor a supportive roll in their bid. While doing so reduces the costs involved with the Amtrak proposal, the costs involved with marketing to other companies attempting to secure the contract would be higher. Also ABB is more than capable of fulfilling the contract, and there is little risk involved in doing so when the size of the parent company is considered, so not attempting to win the contract would be unwise.

As there is more work involved, and sunk costs would not be utilised, it is estimated that the costs involved would be approximately twice as much, or \$40,000.

6.3.2 Competitor Reactions

It is likely that the failed bidders may use the same opportunity, resulting in the same bidding war for the winning company that already exists with Amtrak. Worse still, it is quite possible that the competitor to whom the contract is offered may have no need for the services being offered.

6.3.3 Time Horizon

This alternative would take significantly longer to execute, as it would involve starting new communication with the winning company, learning the requirements, and creating a proposal.

6.3.4 Congruency with managerial predispositions

Clearly management is convinced that securing the contract is important, and therefore it is an industry with high attractiveness. Likewise the business is very strong, placing it in

the “strong SBU” dark grey cells (Kotler, 1998, p. 45). Given this, support from management for pulling out would be very difficult to find.

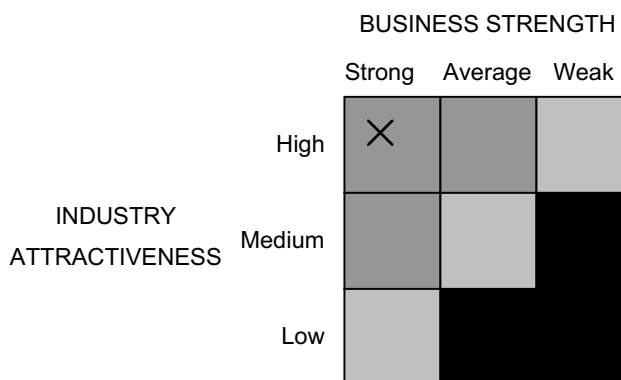


Figure 6.3.4-1 - GE Business Planning Grid - Strong SBU

6.4. Alternative Evaluation

While focusing on the company and competition is an option that will certainly get the attention of Amtrak, the costs involved (such as a bad reputation) regardless of the success of the bid are excessively high, even though the payoff may be winning of the contract. This alternative is more suited to a company in desperation.

Pulling out of the bidding has no relative benefits, and has increased monetary costs, so this alternative has been eliminated.

This leaves only the somewhat forgotten marketing technique of trying to convince the customer of the merits of the product itself.

7. Recommended Strategy

It is recommended that ABB focus on selling the merits of the X2000, but that is not to say that the weaknesses of the competition need be excluded. To the contrary, the weaknesses of the competitors can be used in a less underhanded technique to

accentuate the benefits of the X2000 and ABB Traction, and send a clear message of determination, stability and success.

Specifically, ABB Traction can focus on the previous track history of the X2000, the tilting car technology, the reduced costs while still providing Amtrak with competitive advantage over the competition, and the versatility of the X2000 in many scenarios including un-powered train lines. At the same time, ABB can point out that while the X2000 does not have the most of anything, it is the only option if a well-balance, cost effective, long-term solution is to be considered.

7.1. Contingencies and Supporting Functions

This alternative depends on the competitors not choosing to focus on the disadvantages of ABB Traction and the X2000. In the event that this occurs, ABB Traction may be able to converse with Amtrak to point out the lack of business ethics being displayed, and use this very technique against the competition, without resorting to similar tactics.

If ABB Traction is to lose the bid, ABB may still be in a position where it can offer a supporting role to the company that wins, as discussed in 6.3 Provide Supporting Functions.

The recommended alternative requires research into Amtrak to uncover a more accurate picture of their tacit requirements, including the “buy American” requirement. This research would involve but is not limited to, examining previous Amtrak contracts and contacting Amtrak directly. It is quite possible that ABB Traction’s production facilities, which are located in Elmira Heights, New York, satisfy Amtrak’s requirements - but further research is necessary.



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