# STRUGGLING TO MAKE STRATEGIC CHANGES TO INDUSTRIAL PRODUCT MANUFACTURER'S TRANSPORTATION SYSTEMS

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## Introduction

Industrial Product Manufacturers have a difficult time getting their product to market in an efficient cost effective manner. They continually make tactical adjustments to keep product flowing. However when they attempt to make major strategic changes, they face significant obstacles. These obstacles can be put into three categories; cost analysis, internal constraints and external forces.

These three obstacles are a major impediment to having a transportation system that can quickly adapt to change. The obstacles effectively form roadblocks that prevent manufacturers from optimizing their transportation system.

This paper examines these obstacles through the use of specific examples that illustrate the dynamic manufacturers need to over come. Specifically for each obstacle the paper lays out scenarios that illustrate the challenge. Each illustration is intended to serve as a framework for finding solutions.

For cost analysis the paper examines a situation which could result in cost savings if the company was able to build a detailed cost model. The model could then be used to prove to the organization that taking the risk of spending extra time and effort can result in a new money savings transportation system. For internal constraints the paper examines transportation problems that can easily be solved, however; the complexity of the organization prevents the cost saving change from happening. Finally for external constraints the paper looks at a

situation where a manufacturer has over come the first two obstacles however implementing the change gets stalled due to external forces.

**Cost Analysis**

Industrial Products manufacturers often sell their products delivered destination. This gives them the opportunity to not only sell but to market their product in different geographies. And in theory it protects the manufacturer from selling against there own product since they control the timing of the supply chain. This strategy should be good for making flexible transportation decisions, however; companies do not actually manage their sales transactions this way.

The way manufacturers manage their sales transactions is on an individual order basis with transportation used as a cost adder. Even though the purchaser is buying the product delivered they are actually purchasing the product free on board origin plus the transportation cost. There is no marketing in different geographies just selling their product at the best price they can achieve plus freight.

Since the manufacturers don't adjust freight charges based on market delivered price they don't keep the transportation savings for their own bottom line. This hinders the flexibility of their transportation system.

The simple cost pass on method appears to prevent manufacturers from building strategic transportation systems. The transportation providers know that if a customer is given a lower freight rate they will not keep the savings for themselves but instead they will pass it along to the buyer thereby lowering the overall price in the market. The lowering of price in the market may cause the transportation provider to face additional requests for lower freight rates from other manufacturers servicing the same market. This transportation reduction spiral carries more risk then most transportation providers are willing to take so they are reluctant to address the original concern.

An unintended consequence of this inability to build strategic transportation systems is the transformation of the transportation provider role into a simple rate maker. The transportation provider knows there is no ability of the manufacturer to bundle their service offering so they are relegated to competing for business on an individual lane bases. Then they are forced to look at the manufacturers as interchangeable. This results in suppliers quoting generic rates to all shippers and only providing competitive options in lanes which they have a competitive advantage. This selective approach reduces the competitive options and thus often increases the transportation cost to the manufacturer.

The first scenario that illustrates this problem involves an off rail lumber mill. That has access to four railroads via four different transloads. The location of the mill is approximately the same trucking distance from all four rail origins. This allows us to assume the truck cost from the mill to each location is approximately the same. The other cost factor is lumber transloading. This is a simple business that involves unloading trucks and then transferring the product to rail cars. So the lumber transloads operating costs only vary slightly due to rent, demurrage, manpower and equipment leasing costs. Therefore the correct assumption is that there isn't any significant cost difference between transloads. So the only cost variable that needs to be analyzed is rail cost.

Since the lumber manufacturer is unable to forecast or budget their rail transportation spend each rail provider retains their strategic markets and doesn't attempt to bundle their transportation services. In most cases they provide the manufacturer with their generic public rates. They decline to enter into any private agreements which may leverage their assets.

If the manufacturer had the ability to look at their overall transportation spend and produce meaningful historic data to the rail transportation providers they might then receive a more tailored transportation solution. The carriers would be able to analyze the data and come up with a complete package. This complete package would most likely result in a lower overall transportation spend.

One way the program could work is the manufacturer would trade paying a higher cost in certain lanes for a lower cost in other lanes resulting in an overall lower total cost option.

The chart below shows an example of how the transportation spend might look like today and tomorrow.

| | **Today** | | | **Tomorrow with an over all agreement with Rail 3** | | |
|---|---|---|---|---|---|---|
| | Units | Cost Per Unit | | | Units | Cost Per Unit |
| Rail 1 | 150 | $ 5,000 | | Rail 1 | 50 | $ 5,000 |
| Rail 2 | 400 | $ 5,000 | | Rail 2 | 50 | $ 5,000 |
| Rail 3 | 350 | $ 5,000 | | Rail 3 | 450 | $ 5,100 |
| Rail 4 | 100 | $ 5,000 | | Rail 3 | 350 | $ 4,000 |
| | | | | Rail 4 | 100 | $ 5,000 |
| | | Total Cost | | | | Total Cost |
| Total Units | 1000 | $ 5,000,000 | | | 1000 | $ 4,695,000 |

The manufacturer is able to reduce their over all transportation expense by six percent but that involved paying more on certain lanes. This seemingly simple trade off approach becomes a very difficult internal sell at most manufacturing companies because of the measurement process they use. For example if more then one manufacturing facility needs to participate in this trade off approach one facility may have to absorb the extra transportation cost so that another facility can see the benefit. The manufacturing facility is measured on its individual performance so paying extra freight would be unacceptable.

This type of trade off is also hard to sell to sales departments that may see one sector or salesman paying extra in order for another sector or salesman to see the advantage. The inability to change internal sales reporting often prevents strategic transportation changes.

Beyond this simple analysis manufacturers generally don't have the tools necessary to build models that take into account the dollar savings of value added services or the extra cost of accessorial charges. For example one transportation provider may have a superior car supply system which allows for equipment to be ordered in half the time with guaranteed supply. A system that saves time and

money for the manufacturer, however; most companies aren't building this cost comparison into their decision models. The opposite is also true some carriers provide a base price that doesn't include many penalty charges. Charges that should be included in a cost comparison model, however; again organizations seldom include this cost in their analysis.

A second scenario in this section involves a manufacturer who has traditionally moved their product via ocean vessel from the West coast of North America to the East coast of North America. This transportation system originally served the company well because their cargo was considered filler by the ocean carriers.

Filler can be described as you are sailing from point a to point b to pick up some cargo at point b that will fill the ship for a transatlantic shipment. If you can secure any cargo from point a to point b you should fill your ship with filler cargo. And since filler could be described as bonus cargo it is usually priced extremely attractive.

In the last few years trade patterns have changed resulting in the disappearance of the attractive filler pricing. This has left other transportation providers including railways very interested in capturing this business. There interest has not been well received by the manufacturer in part because of unskillful cost analysis.

A new program would involve several transportation providers working together to come up with a new system. These transportation providers are eager to work with the manufacturer to come up with a complete solution however the manufacturer does not provide them with enough data to build a cost model.

The manufacturer seems paralyzed to change even though change could result in an improved transportation system. This new program also appears to provide benefits to the manufacturer beyond transportation in sales, finance and operations.

Since the new system would involve significantly smaller lot sizes and better transit time improvements in inventory carrying costs

would be substantial. The receiver would also see smaller lots delivered more often resulting in less inventory.

The manufacturer would be able to smooth out their product flow as they would no longer spend over two weeks building inventory for a single shipment. They could improve their supply chain by shipping smaller volumes every day.

The chart below outlines the two systems.

| | Today Via Vessel | | Tomorrow via Rail | | |
|---|---|---|---|---|---|
| | Sailings | Cost per Sailing | | Units | Cost per Unit |
| Vessel | 6 | $ 3,000,000 | Rail | 1200 | $ 9,250 |
| | | | Barge | 60 | $ 25,000 |
| | | | Rail Loading | 1200 | $ 500 |
| Inventory Cost | ? | ? | | | |
| Inland Transportation | ? | ? | | | |
| | | Total Cost | | | Total Cost |
| | | $ 18,000,000 | | | $ 13,200,000 |

In order to begin to tackle this type of obstacle manufacturers need to step back from their current sales process and make a strategic decision on the role of transportation. If it's just a cost plus function then manufacturers should look at not taking on the risk and work load associated with paying freight. If there is no benefit to be gleamed why make the investment. If it's going to be seen as an area that can create value then the transportation department needs to be freed from the lowest cost per sales transaction measurement. They need to move to a transportation budget. If the transportation department had a budget to work from they could work with their providers to come up with an overall solution.

**Internal Constraints**

The internal constraints transportation departments face are often significant. These constraints can significantly hurt manufacturer's ability to make strategic transportation changes. The constraints fall into two categories: resources and business culture. The resource constraints can be further broken down into; capital, human resources and skills. The business culture can be broken down into; structure, perception and education.

Transportation departments want to develop the cost analysis tools and make the transportation changes that improve bottom line, however; they often have only enough resources to execute the day to day transportation function.

The first resource they are short on is capital. Any transportation project that requires capital to implement will often fail. The failure comes from no capital budget allocated to transportation departments because the departments are seen as cost centres. Transportation departments spend large amounts of capital paying transportation providers, however; this capital is all charged on a per transaction basis. So if the department saves on any shipment they are meeting objectives, however; if they want to spend capital to save on future transactions there is no budget available.

If transportation was seen as a strategic business unit then capital would be allocated to introduce new programs. The transportation department would have a budget for new programs.

The next constraint, lack of human resources, comes from transportation departments being staffed at levels that are suitable for sustaining the transportation system. They are not staffed at levels that could improve the transportation system. Job titles like; Transportation Planner and Strategic Transportation Analyst no-longer exist. This often results in manufacturers not being able to allocate resources to solving transportation system problems because the work load associated with keeping the system running consumes all the resources. Most transportation departments do an excellent job keeping the enterprise operating, however; resources for streamlining and making improvements can not be found.

The next issue, skills, is a problem in the connection between the perceived skills needed and the actual skills needed. Manufacturers believe a transportation departments needs good tacticians, who can negotiate good agreements. However the skill set is broader then this because transportation systems don't change without buy in from almost every department in the organization. Any project requires

buy in from many parts of the organization be it the business concept being sold to Sales and Accounting or the business process change being sold to Operations and IT. The transportation departments need to have knowledge of the whole enterprise in order to sell the benefit.

The missing skill set leads into the obstacle of business culture. As stated earlier companies treat transportation as a cost function so they fall outside the core function of the business. This results in significant roadblocks to change.

Depending on the organization when transportation departments come to them with a change there will be immediate push back from the core business unit that this change does not fit the business process. This will slow down or stop change. Over time the transportation departments will even give up attempting to make change.

The next problem is the internal perception of transportation being a cost unit reduces the ability to make changes. Since the transportation departments can only point to reduced costs and not to incremental revenue the organization doesn't embrace their suggestions. If transportation departments could turn this argument around and show that the savings go directly to the bottom line then there might become a sense of urgency for change. As discussed in the introduction manufacturers need to find transportation savings and then not give those savings back to their customers but keep them to increase their profits.

The education component is manufacturers seldom spend the time educating staff on the importance of transportation. There are countless examples of sales people not been educated on the mechanics of transportation and the use of transportation as an advantage in certain markets.

An illustration of this comes from a paper manufacturer who had a significant transportation problem that they wanted to solve. The manufacturer felt they were paying too much for rail services into

Northern California and they also faced a complex equipment order process that often resulted in an inconsistent transportation system.

They brought their problem to the competing transportation provider who was able to offer a solution that saved the manufacturer money and guaranteed equipment supply. The only difference was the new system would require them to switch warehouses at destination. The new warehouse was better equipped and arguably better run then the warehouse they were currently using but the change didn't happen.

Without internal obstacles this change happens and the manufacturer enjoys the benefit of a better transportation system at a lower cost. However with obstacles the problem continues to fester. The internal obstacles took the form of the sales department sells this particular product to the customer via an agent. The agent and the sales department could not agree on the new warehouse so the change did not happen. The transportation department wants to make the change, however; their message is not being heard.

Another example is a wrapping paper producer faces a high freight rate to Mexico via one transportation option. They approach another transportation provider who provides a much lower price with better transit time and more consistent car supply, however; the border crossing with Mexico needed to change. The transportation department takes the new program to sales. The sales department takes the new program to the customer, however; the customer pushes back they don't have a custom broker at the new border crossing. Again the transportation department found a better transportation system, however; sales could not or would not implement it.

In both cases the transportation department reports into the sales department and once the obstacle has been created there appears to be no ability to raise this issue to a higher level. There doesn't appear to be the possibly of making a corporate decision.

**External Forces**

Unfortunately the struggle to make a transportation change is not over once the manufacturer has pushed through the cost analysis and over come internal constraints now comes the difficultly of executing the change. This final stage is becoming increasing difficult to over come due to government actions. Governments increasingly put restrictions on the movement of goods. The restrictions are usually structured as necessary for safety or security but they hinder change.

The chemical manufacturers face the most new regulation and the most negative reaction from transportation providers. In this industry all parties are attempting to mitigate risk from a chemical spill. These chemical spills now have the potential to cost hundreds of millions of dollars so everybody in the supply chain attempts to transfer risk.

The security issue is increasingly difficult on exporters as the border controls are becoming increasingly difficult. Manufacturers are forced to use transportation systems that do not minimize their costs or maximize their value.

For example there are border requirements that force shippers to pre-clear shipments before they cross the border, however; if they are loading in a city that is at the border like Vancouver they could be at the border before the time frame of pre-clearance resulting in them paying for truck wait time.

A frustrating situation happened to a pulp manufacturer who was able to work with a transportation provider to set up a new transportation system. The new system was going to result in; a lower cost, better equipment supply and easier to execute transportation system. But the new system ground to a halt when the manufacturer submitted a request to customs to use a non-commercial border crossing. There request outlined the saving they would incur and explained the need for the crossing. It even gave an example of another producer who had been granted access to cross the same border. After a substantial delay customs reject the application without any explanation or chance for appeal.

The same types of restrictions are prevalent on both sides of the border and hinder the flexibility of the manufacturer to make a change.

The solutions to this type of constraint are harder to over come since the control rests with organizations that have very different goals then the smooth flow of cargo. Ultimately success in overcoming this obstacle requires similar solutions as the other obstacles. The transportation departments need to spend a lot of resources pushing through the change. They also need assistance from higher parts of the organization to make sure the government is aware of its actions. And they need to have the skills necessary to build a case for why change needs to happen.

**Recommendations**

The paper has illustrated the difficulties manufacturers face when trying to make strategic changes to their transportation system. A simple change can take on a complex set of problems that need to be solved in order for the change to happen. These complex set of problems can be over come if manufacturers embrace the following five recommendations.

1. **Be Flexible.** The transportation department along with the transportation provider need to understand the constraints everyone is working under. The solutions can be found it is just a matter of working together to find a solution.

2. **Add Resources To Transportation Departments.** Transportation departments can produce bottom line saving if they have the resources needed to do in depth analysis. This is a department that needs to focus on change. Change requires; business cases, selling exercises, planning sessions and education seminars. All things that take an extraordinary amount of time.

3. **Elevate The Role Of Transportation.** Transportation departments need to be on equal status with sales, accounting and operations. If a transportation department has done the analysis

that shows they can contribute additional dollars to the bottom line they don't need to be held up because another higher profile department decides its going to be too difficult or it going to create too much work.

4. **Educate The Organization.** Transportation departments add value. Transportation dollars are either added or subtracted from the bottom line. This type of impact needs to be highlighted not ignored. For example sales people need to see transportation as a strategic advantage not as a paper work burden of closing a sale.

5. **Broaden The Cost Analysis.** Finally looking deeper into the transportation system to put a cost estimate on hidden problems or opportunities. If manufacturers dig deeper into the overall cost of transportation they will find areas that can be adjusted in a positive manner in order to reduce costs. Too often manufacturers paint two options as black and white without digging deeper to evaluate the whole transportation system.