GENERAL MOTORS COMPANY–SUPPLY CHAIN
COST ANALYSIS OF STEEL LOGISTIC NETWORK

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General Motors (GM) is a global automotive company, delivering 10 million vehicles in 2016 alone! With such a large vehicle output, GM was eager to investigate the steel raw material supply chain and analyze the costs involved in steel logistics. Through extensive analysis, the Tauber team was able to determine that current steel logistic initiatives at GM result in a cost avoidance of $1.9 million annually; if these initiatives were expanded, additional annual savings of over $7.6 million could be expected.

GM partners with eight major steel mills for steel coils and three main processors for steel blanks. The steel material is freighted between the mills, processors, and ultimately 15 GM stamping plants with locations in the U.S., Canada, and Mexico. This freight is controlled by the suppliers and indirectly paid for by GM as a rate per metric ton of steel. Recognizing potential cost savings, GM took control of 80% of the inbound freight coil volumes, directing them to one processor. GM then partnered with the Tauber team to verify that this transition of control resulted in significant cost savings and to analyze the cost saving potential from the remaining supplier-controlled freight. The main goal of this 14-week project was to provide a steel logistics cost analysis model to examine freight rates for negotiating future supplier freight rates.

The Tauber team performed a cost analysis on current GM-controlled business and then leveraged that information to expand the analysis to the remaining supplier-controlled freight. The team characterized the logistics structure of the steel network and then replicated costs for freight, warehousing, material handling, and management to develop a comprehensive cost model to compare to the supplier freight rates. These model costs were compiled for annual steel volumes and compared with annual logistics charges from the suppliers.

Analysis of current GM-controlled freight revealed that GM achieves a cost avoidance of $1.9 million annually by contracting with freight companies directly. Potential for an additional annual $7.6 million in savings exists, cutting expenses in direct steel logistics by 15%. As rates obtained for the model were based on initial responses from outside companies, final annual savings will be even higher than projected, as model rates can be negotiated lower. The model simulates the logistics setup of the supplier and provides a rate per metric ton to compare to the supplier's rate per metric ton. The team also delivered a user interface of the model for future use to update data and view the new saving analysis. The model can also be replicated to analyze the steel logistics costs for material through Mexico, material through GM's resale division (which is responsible for 30% of the steel volumes GM purchases), as well as for aluminum raw material.