Project Title: Supply Chain and Inventory Management through Intermodal Logistics Analysis

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Project Summary:

More collaboration is needed between transportation (trucking and rail) and industry. Often transportation requests are last minute decisions made by manufacturers many times with the expectation that trucks and/or trains are always available. The problem is made worse when manufacturers have known weeks in advance of the need. As a result, this leads to supplier and logistic demand spikes, avoidable delays, increased transportation costs, safety concerns, reduced driver satisfaction, and increased highway congestion. Supplier and logistic demand spikes are caused by customer inventory control policy and require additional resources to compensate. Inability to have sufficient resources to make deliveries will certainly cause avoidable delays. In addition, the last minute nature of these spikes does not allow sufficient time to make optimal transportation mode decisions. This leads to relying on long haul trucks and increases costs. Reliance on long haul trucks leads to more time on the road for drivers and trucks which increases the opportunity for accidents and increases highway congestion. Long hauls impact driver satisfaction by forcing drivers to be away from their home and families. In addition, it is becoming more difficult for logistic companies to hire and retain drivers willing to perform long hauls.

The objective of this project is to pilot a system to help stimulate collaboration between trucking, rail and industry for domestic transportation. Specifically, this project will focus on applying the concept of Vendor Managed Inventory (VMI) to the dry and liquid freight industry. In addition, a web-based software system will be developed and implemented to provide and manage up-to-date inventory information. This software system will help logistics companies and suppliers make better manufacturing and transportation mode decisions. This system will be tested at Mississippi Export Railroad's (MER) new rail/truck terminal located in Moss Point, MS.
The proposed system ultimately strives to alleviate the aforementioned issues of supplier and logistic demand spikes, avoidable delays, transportation costs, logistic manager productivity, safety, driver satisfaction, and highway congestion. The resulting system could also change how rail yards are designed and managed in the future.