

# Summary – automotive supply synchronization



## Operations Management “ Automotive Supply Chain Synchronization”

Summary The article, “ Automotive Supply Chain Synchronization” by Matthias Berlit, Ulrich Dorndorf, and Hans Jurgen Zimmerman, discussed the importance of logistics planning in the management of automotive supply chains, and namely the role the transport management system SynroTESS played in the optimization of supply chains for Audi and Volkswagen (VW) Mexico.

The article began by explaining that the unregulated inbound, internal and outbound movements within a given automotive supply chain were not only inefficient, but also led to significant wasted time evidenced by the queuing of vehicles and the congestion that results from waiting. The authors argued that this waste of resources could be overcome by the proper synchronization of movements with the use of a computer program called SyncroTESS. SyncroTESS was developed by a German IT company called INFORM and was described as a system that “ intelligently synchronizes time-critical transport operations. The system is immensely capable of optimizing operations like the allocation of material handling resources within a plant to scheduling the trucks used for internal and inter-factory movements. The authors then went on to provide two case studies in which SyncroTESS was able to successfully optimize the synchronization of auto supply chains for Audi and VW Mexico. The first case study involved the Audi Ingolstadt production facility in Germany. The Ingolstadt factory is Audi’s largest production facility and produces roughly 850 built to order cars from its assembly lines daily.

As we learned from the Marshall Fisher Harvard Business Review article "What is the right supply chain for your product," these built to order vehicles are considered an innovative product must employ a market responsive supply chain to meet its demand properly. In order to optimize this sort of supply chain, the SyncroTESS system manages "the internal material flow" of at least 3 days worth of stock, "optimizes the execution of 60,000 internal transport orders per day," including "up to 3,000 stock-in and 4,000 stock-out movement per day" and "the flow and transport of materials from the parts warehouse to the assembly line. As of 2006, the SyncroTESS system has been fully integrated into Audi's IT system and is still currently in use. In fact, SyncroTESS's responsibilities have been expanded to include the scheduling of about 500 inbound truck movements a day. The second case study showcased the impact of the SyncroTESS system in the optimization of controlling finished auto inventory in the yards of VW Mexico. The vehicle yards in Mexico distribute about 350,000 vehicles to dealers worldwide yearly.

The inventory is specifically tailored to store 2 types of production vehicles; built to order, hence innovative products, for the European market and built to stock, otherwise known as functional products, for the Mexican and North American markets. Although VW Mexico was dealing with essentially two types of products, the fact that these products were already completed and ready for shipment, this case study focused on SyncroTESS's ability to handle an efficient supply chain for otherwise functional products.

VW Mexico successfully implemented the optimization of its supply chain by marrying the SyncroTESS transport management system with VW's

proprietary TOMCADS system. This action allowed VW to rely on a single all encompassing logistical operation system and eliminated the confusion created from the use of the 3rd party logistic providers (3PLs) of the past. SyncroTESS and TOMCADS worked in concert through a process called " intelligent yard management. VW's TOMCADS system would inform SyncroTESS of a vehicle's impending arrival. At that time, the car would be inspected and " in the event of any defects" the car would be " returned to production and SyncroTESS (would) re-plan the car's route allowing for repairs. " Otherwise, the synchronization system would work to optimize the flow of the vehicle inventory from each yard in great detail; from the flow of each vehicle within specific yards, to the order in which vehicle would be loaded as cargo to reduce wasted movement.

The successful impact of the synchronization of transport management systems was made evident when Bjorn Beckmann, head of Logistics Planning group at VW Mexico, explained that, " As a result of the (now) large number of cars leaving and entering our operations, most cars do not remain longer than 1.5 days in the yards. " This lower lead-time in delivering the finished inventory is beneficial to both responsive and efficient supply chains, satisfying the demand of both types of production vehicles. The authors would then go on to describe how SyncroTESS has evolved to include GPSTechnology to further track the movement of inventory in real time. The full integration of the logistical system has allowed VW Mexico to create a more complete picture of its inventory flow. In fact, In addition to Audi and VW, BMW and Daimler have also adopted synchronization technology to optimize the execution of their supply chain with a typical " break-even

period of two years. " The conclusion drawn from the authors essentially reinforced Fisher's stance that the implementation of the proper supply chain for a given product, despite the cost, is ultimately more beneficial to a company than focusing on cost alone.