

STONERIDGE, INC.

Value Stream Mapping and Waste Elimination In the MirrorEye Supply Chain

Student Team:

Adrien Beaufils – EGL (BSE in ME/MSE Industrial & Operations Engineering)
 Nolan Feeny – EGL (BSE and MSE in Industrial & Operations Engineering)
 Jordan Owens – Master of Business Administration

Project Sponsors:

Laurent Borne – President of Electronics Division and CTO
 Archie Nimmer – Head of Operations, EU & India
 Kyle Wolfe – AME Operations Consultant

Faculty Advisors:

Dr. Mariel Lavieri – College of Engineering
 Dr. Brian Talbot – Ross School of Business

Stoneridge Inc. is a leading global Tier 1 supplier of electrical and electronic components for use in automobiles, motorcycles, and commercial vehicles. In recent years, Stoneridge's Electronics Division (SRE) has spearheaded the development of an innovative Camera Monitor System called MirrorEye. This highly engineered product allows commercial truck operators and manufacturers to replace side view mirrors with cameras that relay video, including full color night-vision, to the driver through a set of in-cab monitors. Early tests of this system indicate a 2-3% fuel efficiency gain due to improved cab aerodynamics. In addition, increased driver visibility is projected to reduce trucking-related accidents by up to 30%.

As one of only two companies to obtain an exemption from the Federal Motor Carrier Safety Administration (FMCSA) to replace side view mirrors on commercial vehicles, Stoneridge is uniquely positioned to become a market-leader in Camera Monitor Systems. To capitalize on this momentum, Stoneridge will launch a second iteration of this product, MirrorEye 2, in January 2021. With demand forecasted to grow rapidly in the next few years, Stoneridge realized that its supply chain must adapt to meet the needs of their most complex product to date. The Tauber Team was brought in to map the MirrorEye value stream while looking for opportunities to reduce waste and create additional value.

To address this opportunity, the Tauber Team first created Value Stream Maps as requested. Next, the Team analyzed the supply chain's production capabilities by building a simulation model and creating a capacity planning framework to plan out the investments required to meet demand. The Team also recommended a consolidation of North American distribution flows at the El Paso site, while also providing suggestions to improve quality checks along the supply chain. Finally, the Team developed research-based recommendations for Stoneridge to improve its Sales & Operations Planning process.

The implementation of these recommendations is expected to yield significant benefits, including an increase in inventory turns of 282% and a reduction in days of inventory of 68% over five years, while driving major efficiency and quality improvements throughout Stoneridge's MirrorEye supply chain.