# STANLEY BLACK & DECKER

## Industry 4.0 – Connected Factory Data Analytics

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**Stanley Engineered Fastening (SEF)**, a division of Stanley Black & Decker (SBD), manufactures and supplies fasteners for the North America industrial and automotive industries. Looking to increase efficiency and labor productivity using real-time factory data and Industry 4.0 technologies, SEF tasked the Tauber team with creating a standardized roadmap around analytics of the generated data that could be used to drive improvement at any site. Stanley gave the team a goal of achieving a savings of $350k minimum across three SEF plants, Chesterfield Plastics and Metals, Montpelier and Westridge.

After conducting benchmarking in the plants that have completed the deployment of Industry 4.0 technologies, the Tauber team cooperated with the Process Engineering(PE) Team to create a playbook that can facilitate the implementation process of such Industry 4.0 factory technology, which shows real-time data of machines. The team is responsible for developing several documents in the playbook package. First, to ensure plants can fully utilize the Industry 4.0 technology and react to issues in a timely manner, the team provided guidance on how to adjust thresholds appropriately for the displays to reflect the real production and for the alert function to be helpful. Secondly, instructions for creating issue response protocols were developed to reduce the time needed for resolving a machine issue and help plants quickly identify the stakeholders that should be notified when certain issues happen. Third, the team collaborated with the PE team to develop rules for creating downtime and defect code lists, an informational document explaining the meaning of OEE and the dimensions it includes, and instructions for reviewing data generated from the Industry 4.0 technology.

Moreover, the team is tasked to create a tool that can estimate the business value behind implementing Industry 4.0 technologies and track the savings progress of any improvement opportunities that use data from this technology. The team interviewed various stakeholders to know how each plant measures the key performance indices, then a template was created for all plants to calculate savings generated from implementing such technology. In addition, an evaluation rubric was developed to monitor the competency of operators in using the technology correctly.

In 2020, 10 SEF sites will have LiveView implemented. The LiveView implementation playbook and cost saving template are estimated to reduce 5% downtime and 10% late shipment cost in one plant, resulting in $375k direct saving for in the first year. In the next two years, LiveView will be implemented in an additional 34 SEF sites around the world. If the playbook and cost savings template are also deployed in these 34 sites, the resulting annual savings would be $543k.

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