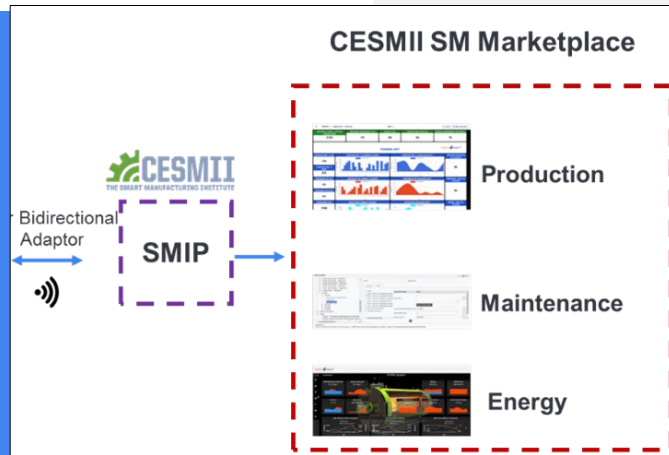


## PROJECT CASE STUDY

Development of a Suite of Marketplace Apps for Small and Medium-Sized Manufacturers



## PROJECT LEAD

5G Technologies

## PROJECT TEAM

Wipro Enterprises

# Small and Medium-Sized Manufacturers Improve Business Performance by Implementing Smart Manufacturing Tools

## PROJECT OBJECTIVE

Establish 3 Smart Manufacturing Marketplace applications within the CESMII Smart Manufacturing Innovation Platform (SMIP) in order to enable manufacturers to implement business critical use cases in a frictionless manner.

## BENEFITS TO OUR NATION

By implementing these marketplace applications, American small and medium-sized manufacturers will be better equipped to compete with domestic and overseas manufacturers. Implementation of these tools will enable the viability, growth, and reshoring of American manufacturing assets.

## BENEFITS TO INDUSTRY

Small and medium-sized manufacturers will strengthen their manufacturing capabilities and reduce operational costs by:

- Improving overall equipment effectiveness (OEE)
- Reducing energy consumption
- Increasing production capacity utilization

[MORE ON CESMII.ORG](https://www.cesmii.org)

# PROJECT DESCRIPTION

## TECHNICAL APPROACH

Develop and implement 35 use cases by leveraging the Smart Manufacturing Innovation Platform at a partner small manufacturer site. The use cases address 3 areas:

- Energy Performance Improvement (EPI)
- Production Performance Improvement (PPI)
- Asset Performance Improvement (API)

## ACCOMPLISHMENTS

- Established a Simple-to-Implement, Simple-to-Use & Do-It-Yourself (DIY) Smart Manufacturing Implementation Standard at a Small Manufacturer partner site
- Established 3 Smart Manufacturing marketplace applications designed for small and medium-sized manufacturers and integrated with the Smart Manufacturing Innovation Platform
- Established Industry-Wide Standard, Reusable Information Models (Smart Manufacturing Profiles) for 4 different types of machines at a partner site

## DELIVERABLES

- Developed 4 Smart Manufacturing machine profiles
  - CNC machine profile
  - Paint Booth profile
  - Vertical machining center profile
  - Robotic Welder profile
- Developed bi-directional adaptor between BorgConnect® and the Smart Manufacturing Innovation Platform (SMIP)
- Developed Smart Manufacturing Innovation Platform interface to the CESMII marketplace application

## REUSABLE OUTCOMES / SM MARKETPLACE

- CNC Machine, Robotic Welder, Paint Booth, and Vertical Machining Center Profiles published to the CESMII Smart Manufacturing Innovation Platform
- Energy Performance Improvement App
- Productivity Improvement App
- Asset Performance Improvement App
- Enterprise Gateway App
- Borg Connect Node
- Borg Hub
- Smart Manufacturing Innovation Platform Adapter

# RESULTS

## 15%↓

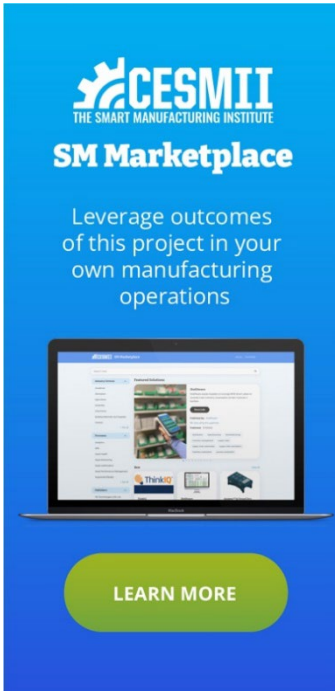
Decrease in unplanned machine downtime when implementing Asset Performance Improvement App.

## \$60k/yr

Potential savings when a typical small manufacturer implements smart Apps and eliminates paper records and non-value-added labor.

## \$15k/yr

Potential cost savings per machine due to improved overall equipment effectiveness.



The banner features the CESMII logo at the top, followed by the text 'THE SMART MANUFACTURING INSTITUTE' and 'SM Marketplace'. Below this, it says 'Leverage outcomes of this project in your own manufacturing operations'. In the center is an image of a laptop displaying the SM Marketplace interface. At the bottom is a green button with the text 'LEARN MORE'.

## PROJECT DETAIL

Budget Period: BP4  
Submission Date: 02/12/2023  
Sub-Award (contract) Number:  
4550 G ZA130  
SOP: 2341

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