The EMMP Leadership Project serves as a capstone to the EMMP educational experience. During the third year of the program, teams of four or five students work on strategic issues of major concern to the company as identified by Ford’s senior management. These Leadership Projects require students to apply the skills and knowledge gained throughout their course work to produce a real-world impact at Ford Motor Company. The projects are not just an academic exercise, and are expected to provide significant demonstrable benefit. Some of the projects have shaped the way that Ford Motor Company does business today, and some have saved Ford tens of millions of dollars. The EMMP Leadership Project provides students an opportunity to work outside their normal functional areas – to positively impact career development by providing education and experience in areas they might not come into contact with otherwise. The cross-functional nature of the EMMP promotes the integration of financial, marketing, engineering and manufacturing perspectives into the conceptualization and planning of the projects. Students take corporate priorities and translate them into high-visibility projects, providing immediate impact to the students and the company.
EMMP LEADERSHIP PROJECT CHARACTERISTICS

PROJECTS NEED TO:
- Address complex problems that fully engage team members approximately 10 hours per person per week.
- Include case studies.
- Include data analysis.
- Use methods and tools from courses learned in the program.
- Include those responsible for the project after hand-off.
- Include implementation testing.

1. The project requires LL2 Sponsor(s).
2. The project should be included on the performance objectives of the Sponsor to ensure that the project will have both significant value to the organization and sponsor support.
3. Sponsor(s) need to understand that the projects will not be completed for approximately one year.
4. Most projects cut across organizational boundaries.
5. Student teams are formed around mutual interests and working relationships.
6. Lists of possible project ideas will be presented at bi-weekly Faculty Advisory Group meetings during the Fall Semester. One project per team will be selected in the mid-November timeframe.

EMMP LEADERSHIP PROJECT SPONSOR GUIDE

HELP THE TEAM:
- Identify relevant aligned and/or overlapping initiatives.
- Identify and engage key stakeholders who will likely cross organizational boundaries.
- Identify and engage other organizational resources, if needed.
- Overcome organizational barriers.
- Acquire relevant data.
- Identify a target area for implementation testing.
- Ensure project hand-off.

1. The project should be included on your performance objectives to ensure that the project will have both significant value to the organization and your support.
2. The project will not be completed for approximately one year.
3. The project should address complex problems that will fully engage team members approximately 10 hours per person per week.
4. The expectation is that you will be able to meet with the team approximately every 6 weeks.
5. You should assign a direct report with whom the team will meet approximately every other week.
Vehicle Architecture Tire and Wheel Range Optimization Tool

The purpose of this project was to create a cross functional tool for analyzing different tire and wheel size ranges during the pre-program phase. Current processes of studying tire and wheel range are developed in series by several groups requiring excess time, engineering resources, and management reviews. This team utilized modeFRONTIER software to develop and provide a data driven tool that allows decision makers to quickly understand the directional impact that changing tire and wheel sizing has on vehicle attributes shared across multiple departments. This tool predicted that study time would be reduced by four weeks during the pre-program phase.

Extraction Path System Development

The project purpose was to apply systems engineering to release a global process that delivers a robust extraction path system. The extraction path allows air to exit the vehicle enabling better door efforts and windshield fogging while keeping the noise out. This improvement is important for adoption of Heads-Up-Displays. This team developed and verified an analytical method to validate vehicle airflow exiting the cabin prior to building physical prototypes, enabling optimization between conflicting requirements. To ensure product quality the team also released a global Vehicle Operations procedure using existing equipment to avoid future part churn and cost.

Manufacturing Controls Engineering Investment and Implementation Strategy: Making a Business Case for Change

The project purpose was to help develop and establish a global controls strategy for the Stamping Business Unit utilizing the Powertrain Unit process. The project included: aligning planning and investment practices, reducing inefficiencies during launches, capturing investment cost savings, and promoting continuous improvement in manufacturing. This team developed a proof of concept to physically demonstrate the value of a standardized controls strategy. Based on the positive results it was found that productivity could be improved by 7%. This success provides the opportunity for Ford manufacturing to reduce investment in new equipment and streamline convoluted software architecture to eliminate inefficiencies.

Decision Process for Collaborative Robots in Ford Manufacturing

The purpose of this project was to develop a systematic, efficient, standardized process to determine optimal applications for collaborative robots that are designed to function in the same workspace layout as human operators. This newer technology provides benefits and cost-effective applications for manufacturing and assembly. This team successfully developed a pilot with an automation integrator, which proved to be successful to handle small parts in a sequencing application in assembly. After proof of pilot, the team created a phased in implementation plan and blue print with a migration plan for utilizing collaborative robots at Ford in the future.
EMMP Leadership Project Timeline

Getting to One-Pager  (August - December)
- LL2 Discussions
- Several Ideas
- Narrow List
- Select One
- Executive Approval

Project Development  (January - June)
- Project Charter
- Planning
- Detailed Scope
- Data
- Major Review

Project Execution and Hand-off  (July - December)
- Project Details
- Pilot Implementation
- Hand-off
- Final Report
- Final Presentation

“The EMMP leadership project provides the team high-level exposure while leading a large project from start to finish. It took over a year to implement, and the results are helping engineers today. I think the experience bringing it to life was invaluable, and I feel it is the most important thing I have done at my job to date.”

Mike McElroy
Interior Systems Architecture Engineer

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