**National University**

**MGT 309**

**Project Letter of Engagement**

as of11/8/2024

***Please insert the requested information***

Prepared for: (represented by Derek D. Podobas):

Prepared by (Team Coordinator): \_\_Samantha Baer\_\_\_\_\_

Team’s name: AI Innovators\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Submitted on 11/10/2024.

**Understandings:**

**1. Problem Statement:**

**What is the challenge?**

The manufacturing industries are constantly under pressure to make their operations more efficient, cost-effective, and better informed in their decision making. Management and leadership in the industry are still clutched in tradition which often relies on manual data analysis, intuition, and siloed communication that cannot keep pace with the rising complexity and speed of today's business environment. The challenge is how to incorporate artificial intelligence into organizational structure, so that efficiency will be driven, leadership decision-making will be improved, and overall managerial functions will be enhanced without jeopardizing ethical standards or downplaying worker roles.

**2. Objective:**

**What is the one key question that you will answer?**

How can artificial intelligence technologies enhance leadership and managerial functions in a for-profit manufacturing firm particularly regarding operations management, decision making, and resource optimization?

**3. Methodology (Congruous Logic):**

**How will you arrive to your answers?**

**Literature Review:** Read the in-depth reviews of academic papers, industry reports, and case studies on the application of AI in manufacturing. These will provide an insight into the current state of AI in operations management, leadership, and decision-making.

**Case Studies:** Use actual case studies of companies that already have experience using AI technologies in their business operations, such as Amazon using robotics in their warehouses, the uses of predictive maintenance by GE through its technique in machine learning, or the ways in which IBM Watson influences the decisions of businesses.

**Data Analytics:** Quantify the impact AI will have on operational efficiency, cost savings, and leadership effectiveness. This will involve looking at metrics such as inventory turnover rates, reductions in cost, speed in production, or accuracy in decision-making before and after AI was implemented.

**Expert Interviews:** Where possible, interview industry professionals or AI experts to provide insight into various challenges and opportunities with integrating AI.

**System Thinking Approach:** Apply system thinking for understanding cause-and-effect relationships created by AI in transforming managerial functions with short-term and long-term organizational structure impacts.

**4. Team’s Deliverables (in-scope):**

**At the conclusion of the project, these analysis will be completed by the team:**

**AI Technologies Applied to Operations**: The study with a view to uncovering just how certain AI technologies are being used in manufacturing operations so that production optimization, inventory management, and decision-making can be accorded due attention.

**Impact Analysis:** Assessment of the impact of AI on efficiency, cost savings, and management of resources in general within a manufacturing environment.

**Case Studies:** Examples of how AI is applied to enhance leadership and managerial functions, such as predictive analytics for enhanced decision-making effectiveness and "smart" inventory control without human intervention.

**Ethical and Risk Considerations**: An evaluation of some of the ethical considerations, including AI bias, job disruption, data privacy, with possible measures to mitigate risks.

**Competency Framework:** Discussion of new competencies that will be required to be possessed by the employees in the AI-driven manufacturing environment, together with recommendations on training and reskilling initiatives.

**5. Team’s Deliverables (out of scope).**

**These potential deliverables are not in the scope of this team’s effort (list):**

**AI Implementation Plan:** Even while the team will discuss some implications of AI, the scope of work would not include specific steps for implementation or detailed technology development plans.

Detailed Cost Analysis / ROI Projections to deploy AI technologies in a manufacturing firm.

Long-Term AI Strategy for a manufacturing firm (e.g., 5-10 years).

Development of AI Software or Tool: This project does not intend to design or develop AI software or tools but rather to analyze the effect of current AI technologies.

**6. Tentative Milestones:**

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| # | Description | Planned Data |
| a) | Literature Review and Case Studies Completion | 11/10/2024 |
| b) | Initial Analysis of AI Technologies and Applications | 11/15/2024 |
| c) | Preliminary Findings and Team Discussion | 11/20/2024 |
| d) | Development of Ethical and Risk Considerations Section | 11/22/2024 |
| e) | Competency Framework and Recommendations Drafted | 11/26/2024 |
| f) | Draft Report Completed and Shared for Review | 11/28/2024 |
| g) | Final Report Submission and PowerPoint Presentation | 12/1/2024 |

# The deadline for submitting your complete presentation is 12/1/24 by midnight.

# **End**