**Lean Six Sigma**

**NMIMS Centre for Distance and Online Education (NCDOE)**

**Internal Assignment Applicable for June 2025 Examination**

**Q1. A growing FMCG (Fast-Moving Consumer Goods) company in India is experiencing delays and inefficiencies in its order fulfillment process. Many distribution managers have raised concerns that the current manual methods for processing orders are causing significant delays and errors. The Operations Director, aware of your Lean Six Sigma training, has appointed you as the project leader to analyze and improve the order fulfillment process. Currently, the company relies mainly on emails and phone calls for order processing and does not have an integrated IT system in place. Create a flowchart using a SIPOC diagram to map out the order fulfillment process, clearly explaining the various steps and decision tasks involved in a typical order processing scenario. Also differentiate verification and validation with examples relevant to process design in order fulfillment, and list techniques commonly used in validation activities for new process design.**

**Answer:**

**Introduction:**

In the world of FMCG (Fast-Moving Consumer Goods), efficient order fulfillment is essential to meet customer demands and maintain a competitive edge. However, inefficiencies in the order processing process—such as manual communication through emails and phone calls—can lead to delays and errors. These issues not only impact customer satisfaction but also strain operational resources. Lean Six Sigma, a methodology that focuses on improving processes by eliminating waste and reducing variation, can be an effective solution in such cases. As a Lean Six Sigma project leader, it is crucial to analyze the current state of order fulfillment and identify opportunities for improvement. This involves mapping out the order fulfillment process using a SIPOC (Suppliers, Inputs, Process, Outputs, and Customers) diagram, which will help visualize the key steps and decision points. Additionally, understanding the distinction between verification and validation is important for ensuring that the newly designed process meets both functional and quality requirements.

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**Q2. Imagine you work in an organization that operates a chain of quick-service restaurants. Choose a specific process in your organization—such as the order processing and food preparation process—and break it down into smaller activities. Identify and classify these activities into Non-Value Added (NVA), Business Value Added (BVA), and Value Added (VA) categories. Also considering that you are the project leader of a Six Sigma project aimed at improving the order processing and food preparation process. List and describe the responsibilities of team members at various Six Sigma belt levels—Master Black Belt (MBB), Black Belt (BB), Green Belt (GB), Yellow Belt (YB), and White Belt (WB)—as they contribute to this project.**

**Answer:**

**Introduction:**

In a chain of quick-service restaurants, efficient order processing and food preparation are essential for maintaining customer satisfaction and operational effectiveness. These processes are often complex, involving multiple steps that can lead to inefficiencies, delays, and errors. To optimize these processes, Six Sigma methodologies can be used to analyze, measure, and improve the efficiency and effectiveness of each activity. Six Sigma focuses on reducing defects and improving process performance by identifying and classifying activities into Value Added (VA), Business Value Added (BVA), and Non-Value Added (NVA) categories. By understanding these distinctions, the organization can eliminate waste and streamline operations. As a project leader for a Six Sigma initiative, it is important to coordinate a team of individuals at different Six Sigma belt levels, each with specific responsibilities and roles. This collaboration ensures that all stages of the project are handled with expertise and precision, ultimately leading to improved order processing and food preparation.

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**Q3A. Imagine yourself as a Six Sigma project leader for an online food delivery service in India. Your goal is to improve operational efficiency and enhance customer satisfaction by identifying and addressing potential issues. Develop a fishbone (Ishikawa) diagram to outline five potential issues encountered by online food delivery services that accept customer orders via their mobile app.**

**Answer:**

**Introduction:**

Online food delivery services have rapidly grown in India due to convenience, but they face several operational challenges that can impact both customer satisfaction and efficiency. As a Six Sigma project leader, it's essential to identify and address these issues systematically. One effective way to visualize potential problems is by using a Fishbone (Ishikawa) diagram, which helps to break down the root causes of problems. This approach allows the team to identify key areas such as app functionality, delivery logistics, and communication that can be improved to streamline operations.

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**Q3B. Imagine yourself as a Six Sigma project leader for an online food delivery service in India. Your goal is to improve operational efficiency and enhance customer satisfaction by identifying and addressing potential issues. Explain the sequential stages of Failure Mode and Effects Analysis (FMEA), providing illustrative examples for each step in the context of an online food delivery service.**

**Answer:**

**Introduction:**

Failure Mode and Effects Analysis (FMEA) is a systematic approach used to identify, evaluate, and address potential risks in a process. In the context of an online food delivery service in India, the aim is to ensure that the service operates smoothly and that customers are satisfied with both the timeliness and quality of their food. As a Six Sigma project leader, my goal is to use FMEA to pinpoint any operational issues that could lead to inefficiencies or dissatisfaction and implement corrective measures to improve the overall service.

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