Task: OPEX Improvement Project - FlightByNight Paper Airplane Company

Overview

This project addresses operational inefficiencies at **FlightByNight**, a paper airplane manufacturing company, focusing on enhancing product consistency, streamlining processes, and reducing variability in quality. Using business analysis techniques such as Six Sigma, SIPOC, and Balanced Scorecard, the project identifies key problems like inconsistent product quality, lack of process documentation, inefficient order management, and inadequate performance tracking. The outcome aims to enhance operational efficiency, improve customer satisfaction, and position FlightByNight for sustained competitive advantage.

Key Components:

1. Inconsistent Quality and Variability in Performance:

- **Problem**: Customer feedback indicated wide variability in paper airplane flight distances, with inconsistent product quality impacting customer satisfaction.
- **Solution**: Applied **Six Sigma (DMAIC)** methodology to standardize processes, reduce variability, and enhance product consistency. Key steps:
    - **Define**: Scoped the problem of performance inconsistency in paper airplanes.
    - **Measure**: Collected data on flight distances to establish performance benchmarks.
    - **Analyze**: Used root cause analysis (fishbone diagrams, Pareto analysis) to identify sources of variability.
    - **Improve**: Standardized folding techniques and builder training to reduce performance variability.
    - **Control**: Implemented control charts to monitor and maintain product consistency.

2. Lack of Process Documentation and Standard Operating Procedures (SOPs):

- **Problem**: Absence of documented procedures led to each employee using different methods, resulting in inconsistent product quality.
- **Solution**: Created **SOPs** for the entire production process. Visual flowcharts were designed to make the steps easily understandable.
    - Documented the folding and assembly processes for both the Classic and Step-Up models.
    - Standardized training materials to ensure all employees followed uniform methods, leading to reduced variability.

3. Inefficient Order and Inventory Management:

- **Problem**: Manual methods (e.g., sticky notes) for order management were prone to errors and miscommunication, leading to delays.

- **Solution**: Implemented a **Digital Order Management System** integrated with a **SIPOC (Suppliers, Inputs, Process, Outputs, Customers)** framework to optimize the flow of orders and inventory tracking. Key improvements:
    - **Digitalize Order Processes**: Automated order intake, reducing reliance on manual methods.
    - **Process Mapping**: Mapped out the order-to-fulfillment process to identify inefficiencies and optimize workflows.
    - **Inventory Control**: Established real-time inventory tracking to streamline the production and order fulfillment process.

4. Inadequate Performance Tracking and Feedback Mechanism:

- **Problem**: No system was in place to track individual employee performance or link customer feedback to specific builds, hindering continuous improvement.
- **Solution**: Implemented a **Balanced Scorecard (BSC)** to track key performance indicators (KPIs) for employee output, product quality, and customer satisfaction.
    - **KPIs Tracked**: Flight distance variability, production time, defect rates, customer satisfaction surveys.
    - **Feedback Mechanism**: Linked customer feedback directly to specific orders and builders for more actionable insights.

Skills Utilized:

- **Six Sigma (DMAIC)**: Applied DMAIC methodology to address process variability and enhance product quality.
- **SIPOC Framework**: Mapped out order management and inventory processes for process improvement.
- **Balanced Scorecard (BSC)**: Developed a performance tracking system linked to strategic objectives and KPIs.
- **Process Documentation**: Created SOPs and flowcharts to standardize the paper airplane production process.
- **Data Analysis**: Utilized data collection and statistical analysis to drive improvements in product consistency.

Conclusion:

By implementing standardized procedures, digitalizing order management, and creating performance tracking systems, the project successfully addressed FlightByNight's operational inefficiencies. The project resulted in reduced variability, improved product consistency, and enhanced customer satisfaction, positioning the company for greater competitiveness in the market.