

## Reducing order lead time using six-sigma methodology: case study order lead time from company XYZ to distributor ABC

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### Abstrak

In January 2005, to continuously improving and delivering the customer value, which helping customers and distributors to meet their needs and satisfaction, Company XYZ distributes the VOC (Voice of Customer) to Distributor ABC as a Local Distributor of Company XYZ in Indonesia for Specialty Chemicals Products. The feedback from Distributor ABC indicates that one key point, which considered as very important and prioritized to be improved by Company XYZ is the Order Lead Time.

As the response, Company XYZ in Indonesia, lead by Distributor Coordinator of Company XYZ initiates and performs this Six-Sigma Project to reduce the Order Lead Time. Order Lead Time is defined as the amount of time required from the submitted Purchase Order (PO) by Distributor ABC to the time the Distributor ABC received the order. The term and condition of the Order from Distributor ABC to Company XYZ is Free On Board (FOB) Singapore. The scope of the project will be limited to the Consumable Products imported from Manufacturing/Blending Plant located at China, which contribute about 75% of total products ordered by Distributor ABC.

The Distributor ABC expects to have fast and on time delivery, in order to have a better management of local inventory in Indonesia, and reducing the inventory level in the warehouse that in return will significantly reduced the inventory cost. To anticipate late delivery to the End Customer, Distributor ABC provides 3 months of inventory level at the warehouse in Indonesia.

To find the best solution on how to reduce the Order Lead Time, the problem solving methodology of Six-Sigma DMAIC (Define-Measure-Analyze-Improve-Control) has been using as a tool to find the source of variation, solving the problem, and improving the existing process. The project is based on the baseline data from October 2004 to March 2005 and project implementation from April to September 2005.

The Six-Sigma Project result shows that the major problem was occurred due to the availability of the raw material in Company XYZ Blending Plant at China and the availability of products in the Warehouse of Company XYZ at Singapore and China. Thus, as the consequences, the products should be produced "Just in Time" at the Blending Plant in China that obviously prolongs the Order Lead Time, especially when the raw material is not available.

Based on the result of Six-Sigma Project, the best solution to reduce the Order Lead Time and to manage the inventory Control is by using a Forecast Order. Forecast Order will help Company XYZ to manage and provide buffer stock at Singapore and China Warehouse and also prepare the raw material in the Blending Plant at China. Since the products are available in the Company XYZ Warehouse, the Order Lead Time to

Distributor ABC could be reduced.

The implementation of Forecast Order and inventory management has been giving a significant impact on the Order Lead Time. The implementation of the Forecast Order in April till September 2005 shows that the Order Lead time can be reduced from the average of 45 days to 17 days. Distributor ABC is also able to reduce the inventory level at the warehouse in Indonesia from 3 months to 1 month. The inventory cost could be reduced by approximately 73%.