

Yokado Inc. Case Study

Topic: Manufacturing and Production Metrics for Financial and Non-Financial Analysis

Mini Case Study: Improving Manufacturing and Production Metrics at Yokado Inc.

Background: Yokado Inc. is a medium-sized manufacturing Japanese company with a reputation for producing high-quality products, ranging from home appliances, electronics, automotive parts, and heavy-duty equipment. The company had successfully been in business for over 30 years with branches in North America, Europe, and Asia. However, in recent years, the company had been struggling to keep up with the competition resulting in a decline in sales and profits.

Problem: The management team at the company. realized that they needed to improve their manufacturing and production metrics to become more competitive. However, they are having challenges in identifying manufacturing and production areas that need improvement.

You and your team have been hired by the company as business analytics consultants to help address the current issues.

Questions

1. Identify at least **four areas** in the **manufacturing and production process** that needs improvement.
2. Develop at least three objectives for this project.
3. Identify metrics that support the four areas in the manufacturing and production process that needs improvement.
4. Describe how the metrics could be measured to help improve manufacturing and production performance (Be detailed and strategic in your answers)

Yokado Inc. Case Study - Solution

Identify **four areas** in the **manufacturing and production** process that need improvement:

Supply chain management: the supply chain is the network of people, companies, resources, and technology that are involved in the creation and delivery of a product. It is a crucial area in the manufacturing and production process that needs to be as much efficient as possible to allow the company to stay competitive.

Production line development: the production line is the core of every manufacturing and production process and needs special attention from the companies because its efficiency heavily impacts the ability of a company to stay on the market. It needs continuous monitoring and evaluation because it is highly sensitive to technological change and even a small improvement that gets ignored by the company and implemented by the competitors can cause great competitive disadvantages to the company.

Components maintenance: in a manufacturing and production process the key to success is to be able to produce quality products with efficiency but also to keep consistency over time. A strict plan of scheduled maintenance and audit is a very important tool for Yokado Inc to make sure to be able to meet both the time and quality demands of its customers with consistency.

Output quality control: Not being able to quickly detect defective products, track back which production machine or employee practice led to the flaw, and quickly refund or change the product to the customer is really dangerous for the company because it can lead to high costs and a loss of trust from the customers. This area needs constant attention and could be the cause of great problems if not monitored and improved over the years.

Develop **at least three objectives** for this project:

Save on transportation costs and time by monitoring each of the supply chain stages and improving supply chain management

Improve the production line efficiency to be able to always meet the customers' deadlines and stay competitive in the market.

Save money on repairs and production stops due to problems with machinery by scheduling strict controls on all the production line components.

Improve customers' satisfaction by providing a faster and better service in case of defective products and immediately activate extra maintenance to understand what caused the flaw.

Identify **metrics** that support the four areas in the manufacturing and production process that need improvement:

Supply chain management

- Cash-to-cash time – measures the time that passes from when a company sends cash to suppliers and when it receives cash from customers.
- Supply chain cycle time - measures the time it would take the company to complete a customer's order if all inventory levels were zero at the order's time.

Production line development

- Throughput rate – measures the number of units of a product produced in a given period of time.
- Schedule attainment – relates the number of units produced to the target production

Components maintenance

- Percentage of planned maintenance – measures the number of planned maintenance hours over the total number of maintenance hours.
- Maintenance cost per unit – measures the total costs for maintenance in a time frame over the number of products produced in the same period of time

Output quality control

- Return Merchandise Authorizations (RMA) – tracks the number of refunds/returns requested by customers as a percentage of the total number of orders delivered.
- Time between customer complaint and refund – measures the average time needed for a customer to receive a refund/return after reporting a defective product.

Describe how the metrics could be measured to help improve manufacturing and production performance:

The selected metrics can be measured to improve each of the four manufacturing and production areas indicated. The cash-to-cash time and supply chain cycle time help understand how efficient the company's logistics is and, compared with a specific benchmark can be used to set goals and increase the company's availability of liquidity and efficiency in responding to planned and last-minute customers' orders. The throughput rate can be compared with the market's average to allow the company to set efficiency objectives and understand if there is some technological improvement that other companies are implementing that is changing their capabilities in terms of time and efficiency. The schedule attainment is crucial to be kept monitored to understand Yokado Inc's production line performance and if there is a need for strategic changes in the line organization. The percentage of planned maintenance and the maintenance cost per unit can help the company to individuate which lines are creating the most inefficiencies and where they can improve by increasing the planned maintenance at first to reduce it later and save money and cut the unplanned interventions in the long run. The RMA and time between customer complaint and refund are key indicators of the customer's level of satisfaction, keeping them within a specific range and lowering them over time can create a competitive advantage for the company over its competitors.