



Institute of
Quality & Reliability

Guidelines for selection and defining Six Sigma Projects

Six Sigma is improvement methodology for breakthrough improvement. Company must strive for a sigma level that will give them a competitive advantage.

One of simple approaches to start is find areas where executives/managers have to spend too much time in firefighting or solving problems that recur like fashions. This could be

- ❑ Customers' calls for delivering parts, failures, information,
- ❑ Productivity issues,
- ❑ Supplier delivery problems,
- ❑ Supplier quality problems,
- ❑ Large work-in-progress,
- ❑ Long product development times,
- ❑ Large people attrition rates,
- ❑ Too much time to get data,
- ❑ Incorrect data,
- ❑ Long lead time to prepare financial statement etc..

These are actually trouble areas that indicate opportunities for improvement.

Another approach is to use theory of constraints (TOC). We need to identify which of the processes restrict us from meeting our goals. Primary goal of companies (in business) is to make profit. In simpler words, TOC aims at identifying bottlenecks in the value chain. Bottlenecks are opportunities for improvement.

We can use combination of these or other approaches to identify opportunities for improvement.

No company has actually achieved 6 Sigma level i.e. 3.4 PPM in all processes. Thus Six Sigma Projects need not achieve 3.4 PPM but should achieve breakthrough improvement, typically 50 to 70% improvement over the current level.

Six Sigma projects can be selected carefully considering:

- ❑ **Areas of Customer dissatisfaction**
 - Review input data for customer satisfaction surveys, informal inputs, complaints data, market share trends, lost customers, warranty data, service levels
- ❑ **Strategic Goals of the company**
 - These could be reduction of cycle time to deliver, improving reliability, reducing inventory, Improving yield, reduce cost of poor quality, reduction in development cycle time, improve equipment utilization, supply chain performance,
- ❑ **Areas of inefficiency and waste:**
 - Rework data, number of inspectors doing “sorting”, 100% inspection points, process capability data, handling, long lead times, large work in process, long transaction cycle times
 - Inaccurate databases such as inaccurate stock levels, incorrect bill of material, incorrect process cycle time data, Incorrect customer data base
- ❑ **Financial Benefits:**
 - Green Belt projects should have savings of the order of 20 to Rs. 25 lacs or give a very strong competitive advantage that can be converted in to top line advantage

Some useful questions for project selection and scope:

- ❑ Does the project strongly relate to business goals?
- ❑ Does it have significant impact on customer satisfaction?
- ❑ Is the project clearly defined?
- ❑ Can we expect good savings and benefits?
- ❑ Can the project be completed in 3 to 6 months
- ❑ Is it too large? (Boiling the ocean!)
- ❑ Is it too small?
- ❑ Is it too difficult or too easy?

Some examples of Six Sigma Projects:

- ❑ Reduce Scrap % of expensive parts from 4% to 1%
- ❑ Reduce transaction Cycle time from 9 days to 4 days
- ❑ Improve accuracy of bill of material from 94% to 99%
- ❑ Improve accuracy of stores from 96% to 99%
- ❑ Improve Right First Time of assembly from 66% to 85%
- ❑ Reduce Customer defects from 30,000 PPM to 5,000 PPM
- ❑ Improve yield from 75% to 90%
- ❑ Improve utilization of lab equipment from 35% to 70%
- ❑ Reduce power consumption per unit production

- Reduce product development time from 6 months to 3 months
- Reduce Supplier PPM by 40%
- Improve Supplier Delivery performance from 85% to 97%
- Improve productivity by 30%