

# Project Management Basis

Zihe ZHOU

Sibish Ragul BHARATHI

Jihene Ouled Sghaier

Vincent Rendu Sai Hemanth

JAISWAL Shubham





# **A BRIEF** **INTRODUCTION**

Basic project management techniques are significant to the success of the six sigma project. Making a project plan and conduct risk analysis can help the company reduce some potential risks and achieve the business goal.

# Project Management

**Project management** is the process of leading the work of a team to achieve goals and meet success criteria at a specified time. The primary challenge of project management is to achieve all of the project goals within the given constraints.<sup>[1]</sup> This information is usually described in project documentation, created at the beginning of the development process. The primary constraints are scope, time, budget. The secondary challenge is to optimize the allocation of necessary inputs and apply them to meet pre-defined objectives.



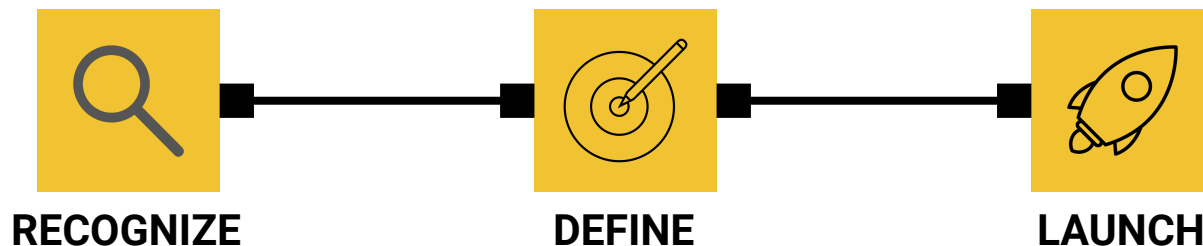
# Six Sigma Project Process

Six Sigma Project Process			
Step	Description	Focus	Deliverable
1	Project Selection		Identify project CTQ's, develop team charter, define high-level process map
2	Select CTQ characteristics	Outputs	Identify and measure customer CTQ's
3	Define Performance Standards	Outputs	Define and confirm specifications for the output
4	Measurement System Analysis	Outputs	Measurement system is adequate to measure output
5	Establish Process Capability	Outputs	Baseline current process; normality test
6	Define Performance Objectives	Outputs	Statistically define goal of project
7	Identify Variation Sources	Inputs	List of statistically significant inputs based on analysis of historical data
8	Screen Potential Causes	Inputs	Determine vital few inputs that cause changes to your output
9	Discover Variable Relationships	Inputs	Determine relationship between input and output
10	Establish Operating Tolerances	Inputs & Outputs	Specify tolerances on the vital few inputs
11	Define and Validate Measurement System on inputs in actual application	Inputs & Outputs	Measurement system is adequate to measure inputs
12	Determine Process Capability	Inputs & Outputs	Determine post improvement capability and performance
13	Implement Process Control	Inputs	Develop and implement process control plan

# Project Selection Process

The first step of the process is to select a project. There are always many process within an organization that need improvement and are suggested as projects.

**Project Selection** is a **process** to assess each **project** idea and select the **project** with the highest priority. **Projects** are still just suggestions at this stage, so the **selection** is often made based on only brief descriptions of the **project**.



# Project Charter

A **Project Charter** is a short document that defines the purpose and strategic business reasons for the project.

The project charter also serves as an informal contact to help keep the project and team on the same target as the goal of the organization.

A project charter would cover following points:

1. Problem Statement
2. Purpose
3. Benefits
4. Scope
5. Results

PROJECT CHARTER			
PROJECT TITLE 1808-		Decrease scrap in gear cell by 30%	
PROJECT TEAM		STAKEHOLDERS (Who will be affected by the project and what are their roles?)	
ROLE	NAME	ROLE / DEPARTMENT	NAME
PROJECT CHAMPION	Regina Duke	Financial verification / CFO	Nan Drew
PROJECT SPONSOR	Rob Runner	Vice President of Manufacturing	Bill Wilder
PROCESS OWNER	W.E. Coyot	Director of Engineering	James Jessup
PROJECT LEADER/BELT	Greg Green		
MASTER BLACK BELT	Mike Mejoor		
TEAM MEMBERS: (Who will participate on the team?)			
Aana Michel			
Rich Poon			
Tom Tuttle			
Rick Roberts			
PROBLEM STATEMENT: (What is the current issue with the process?)		GOAL STATEMENT: (What will the project accomplish?)	
The variation in the diameter of the gear bores causes oversize condition.		Determine cause of variation and reduce the variation to obtain a process Cpk of 1.33	
VOC – KEY CUSTOMERS: (Who will see the benefits of the project?)		COST OF POOR QUALITY (COPQ)/ OBJECTIVES: (What improvement is targeted and what is the impact?)	
Gear assembly Finance		Rolled Throughput Yield (RTY): 10 pts/wk to 7 pts/wk COPQ: Currently \$25K/year – \$20K/year Primary Metric	
SCOPE OF THE PROJECT: (What are the boundaries of the project?)		PROJECT SCHEDULE	PLAN (Planned dates)
The project will pertain only to the gear turning and holding departments.		START/KICKOFF	
		DEFINE	
		MEASURE	
		ANALYZE	
		IMPROVE	
		CONTROL	
			ACTUAL (Actual dates)

The document is a simple tool to help each team member understand the goal of the project and how the success will be measured.

# Project Charter Contents

01

## Problem Statement

A **problem Statement** details what needs to be improved and sets the goals of the project. The problem statement should be as descriptive as possible.

02

## Purpose

The **Purpose** establishes the team's Goals & objectives of S6 project.

03

## Benefits

An Important part of the project charter is clearly outlining how the organization will be better efficient and earn more **Benefits** when the project is completed.

04

## Scope

The **Scope** defines the limit of the project and the range of teams activities. The boundaries of a process often help in defining the scope of the project. A well defined scope ensures an understanding of the personal and resources needed to accomplish the project's goal.

05

## Results

**Results** define the criteria and metrics for project success. This section should include measurement of the current process.

# Project Approval

Six Sigma Project must be approved by a group of specially trained six Sigma personnel based on defined selection criteria. The personnel typically include:

- Master Black Belt
- Organization Champions
- Executive Supporters





# Metrics

- Different measurements are required throughout the project which are referred as **Metrics**.
- **Some metrics are measures of the**

improvement of a characteristics such as a reduced cycle time or change in dimension or weight of product.

1. Ratio of % work completed to % budget consumed.
2. Percentage of work completed to schedule.
3. Availability of resources.



# Metrics Characteristics

- The Six Sigma team must carefully consider how the characteristics to be improved

1. The Accuracy of the equipment systems used to take measurements.
2. Linking measurements to project goals
3. Value of Information provided
4. The measurement system should be easy to install

# Project Tasks

Each project is composed of tasks that are common to every project and some other tasks that are unique. Each of these tasks will require planning and tools. These tasks include the following:

- Information processing
- Data collection
- Estimating and tracking resource costs
- Estimating and tracking labor costs
- Planning project steps
- Assuring measurable milestones
- Facilitating management involvement

# Project planning tools

There are many tools used for planning in a project such as:

- Project charter
- Gantt chart
- Project schedule
- Goal/Objective statement

The size and the complexity of the project define the number of tools used during the project and the depth with which they are used.

Each step of the Six Sigma process requires tools in order to have a clear and detailed view on the project.

# Documentation

A lack of proper documentation can lead to misunderstanding or miscommunication. This documentation includes documents concerning the entire project but there are documents that concern more specific step of the project.

The documentation for project pertain to certain areas of the project such as:

- Goals and objectives
- Stakeholders and sponsors
- Plans and schedules
- Key milestones
- Budget information
- Boundaries
- Roles and responsibilities
- Deliverables
- Metrics

# Risk and risk analysis

Risks can be defined as potential problems that may cause harm or loss.

**Level of risk =** Probability of the risk \* Associated cost, or impact, of the event

Risk analysis is a process performed to identify potential risks, the associated impacts, and develop mitigation plan. This analysis is mainly performed during the planning stage but it is important to continuously perform this analysis during the project when new risks are encountered.

Risk analysis needs tools to be performed well, such as:

- SWOT analysis
- Risk priority number/Risk priority matrix
- Formula for expected profit

These tools are used to ensure effective risk identification, impact analysis and proper mitigation planning.

# Successful risk analysis

Risk Analysis is a process that helps company identify and manage potential problems that could undermine key business initiatives or projects.

**The company must consider all aspects of potential risks like:**

- Meeting established goals/objectives
- Schedule
- Identified resources
- Safety
- Producibility
- Serviceability
- Reliability
- Customer needs/requirements



# Risk assessment assignment matrix

**It is a common tool used by organizations of all sizes for three major reasons:**

- To measure the size and scope of risk
- To determine if they have the appropriate resources to minimize the risk
- To triage and prioritize the list of risks in a legible, easy-to-read matrix

The risk assessment matrix can help identify risks at a widespread scope of a company—at the enterprise, business process, and individual process level.

**It is a tool that consist in assessing the type of the risk:**

- The severity of the impact if an event occurs
- The probability an event will occur

# Risk assignment matrix example



The key is to define what Low, Medium and High means for your project.

The low, medium and high scale is flexible and can be applied to many situations.

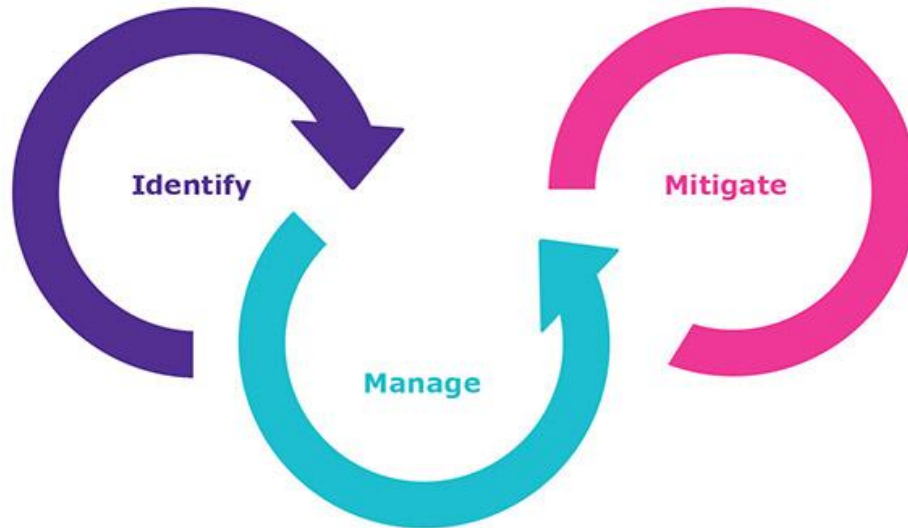
		Impact		
		Low	Medium	High
Probability	High	Low	Medium	High
	Medium	Low	Medium	Medium
	Low	Low	Low	Low



# Risk mitigation

Once a risk is identified the process of risk mitigation can begin.

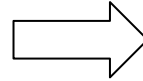
Risk mitigation involves taking action to reduce an organization's exposure to potential risks and reduce the likelihood that those risks will happen again.



# Risk mitigation process

## Risk mitigation process should:

- **Characterize** the **root causes** of risks that have been identified and quantified in earlier phases of the risk management process.
- **Evaluate** risk interactions and common **causes**.
- **Identify** alternative mitigation **strategies, methods, and tools** for each major risk.
- **Assess** and prioritize mitigation alternatives.
- **Select** and commit the resources required for specific risk mitigation alternatives
- **Communicate** results to all project participants for implementation.



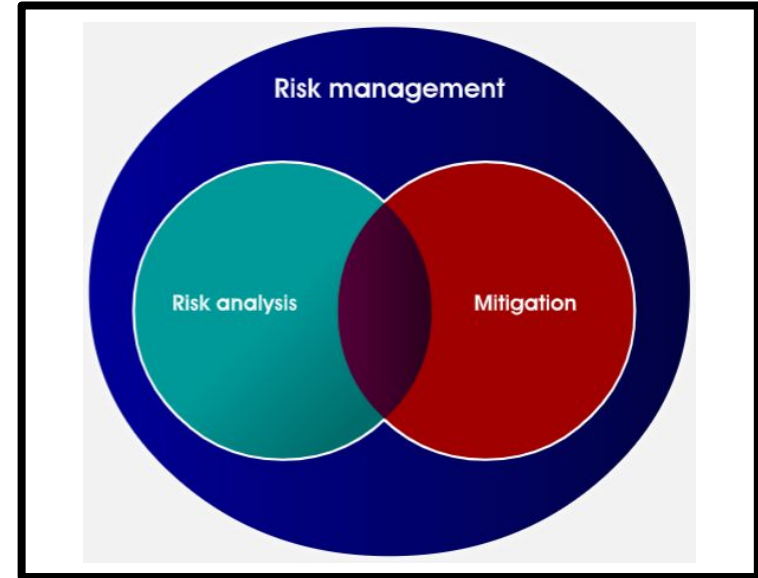
**Reduce highest assignment of risk**

Risk level	Assignment number
Low	1
Medium	2
High	3

# Risk Management

Risk management is the process of taking strategic steps to identify, assess and mitigate the risk. It includes regular progress checks to assess whether the mitigation strategies are working.

Risk analysis is specific to how each risk is evaluated, while risk management is more of a thorough process. Risk management uses risk analysis and mitigation.



When risk management is successful, the potential losses from problems can be curtailed.

# Project Closure & Lessons learned

## Project closure

The final step of the project  
Provides a complete picture of the  
successes and failures of a project

### Goals:

- Providing the project met the goals and objectives established in the project plan
- Ensuring all required documentation has been completed and stored
- Conducting a closure meeting with project sponsors to ensure agreement that the project is completed

## Lessons Learned

Assess and document what went well and  
what went wrong

Used to improve future projects

### Topics included:

- Adequacy of personnel, time, equipment and funds
- Effectiveness of project
- Adequacy of tracking
- Communication with sponsors and management
- Team performance
- Adequacy of team recognition

# CONCLUSION

Project management is a powerful business tool that can deliver many advantages to businesses of all sizes.

One of the benefits of using project management techniques is that teamwork is stimulated which has a direct impact on the organisation as a whole.

