

## Chapter-10 Quality Management

### CMM

- CMM stands for Capability Maturity Model.
- CMM is a method to evaluate and measure the maturity of the software development process of an organization.
- CMM measures the maturity of a software development process on a scale of 1 to 5.

### RAMWE

- A process is said to be mature, if it is well defined, Repeatable, Measured, Analyzed, Improved and effective.
- CMM was initially developed for software development but later it was developed for product management, people management, quality assurance, supplier sourcing etc.

### CMMI

- Capability Maturity Model Integration.
- It was formed to solve the problem of using multiple CMMs.
- CMMI is a framework which incorporates multiple CMM disciplines such as Software CMM, People CMM, Product CMM etc.
- It can be applied to product manufacturing, people management, software development etc.

Currently there are four CMMI disciplines:

- ① System Engineering
- ② Software Engineering
- ③ Integrated Product & Process Development
- ④ Supplier sourcing

6σ (six-sigma)

- It is a business driven structured approach for:

- improving processes
- Lowering Defects
- Reducing process variability
- Reducing costs
- Increasing customer satisfaction
- Increase Profit

The central idea behind six sigma is:

If we can measure how many 'defects' we have in a process, we can systematically figure out how to eliminate them and get as close to "zero defects" as possible.

In 6σ, the expected defect rate is 3.4 per million opportunities i.e. 99.9997% perfect.

Benefits:

- sets a performance goal for everyone.
- accelerates the rate of improvement
- Generates sustained success.

Six-sigma<sup>is</sup> a standard given to any organization based on quality of produced product.



## ISO

- International Organization of Standardization.
- It is a body responsible for setting international standard composed of representatives from various national standards organizations.
- Its headquarter is Geneva, Switzerland and currently works on 162 countries.
- It promotes worldwide industrial and commercial standard.
- It is independent and non-governmental organization.
- It defines standards on various sectors such as cement factory, Agricultural product, metal industry, software company, food industry etc.

It is based on PDCA cycle and 8 Quality Management Principle.

Plan  
Do  
check  
Act

- ① Customer focus
- ② Leadership
- ③ Involvement of People
- ④ Process Approach
- ⑤ System Approach of Management
- ⑥ Continual Improvement
- ⑦ Factual approach to decision making
- ⑧ Mutually beneficial supplier relationship.