[7] Chapter [5] Hemp

DPU and DPMO - calculation of Sigma level

① DPU – DPMO

→ DPU = defects Per unit.

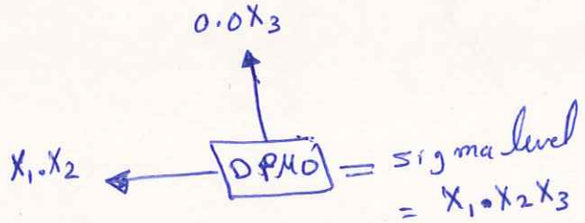
= number of defects in a given unit of product or process.

= No. of defects detected / No. of units processed.

→ DPMO = Defects Per Million opportunities

= DPU X 1000,000 / opportunities for error in that unit.

→ Sigma level :- once you calculate DPMO Then from the table check the location of DPMO number



② Defects, units and opportunities

→ find customer VOC → CTQ (Products or service characteristics that must be met to satisfy customer.)

→ defects in product or service
- does not meet ~~CTQ~~ Customer specification
- does not ~~that~~ meet Custom Satisfaction
- does not fulfill functional or physical requirments.

→ units of product or service
- quantified by Customers.
- physical or Service
- has start and stop points.

→ opportunities for error.
- Chances per unit to have defect
- Measurable and observable
- direct related to CTQ.
- number of opportunities ~~one~~ is related to Complexity of product or service.

NOTES:-

- Total DPMO = Total DPU X 1000,000 / Total opportunities
→ This will give Total sigma level

- CTQ has → Name, Measure, specification
- Total opportunities in process = Sum of all opportunities in all ~~process~~ sub processes.
- Total of DPU = Sum of all sub DPU in all sub Processes.

(8) Chapter [6] Map.

Cost in quality - Impact on a level of the process

↓

Cost of quality (CoQ)

any cost attributed to quality

① → Cost of non Conformance (Cost of Poor quality)

- a → Internal failure :-
  - resulting from defects befor delivery to external Customer
    - Costs of labor or machine hr. lost in scraped items.
    - Cost of rework
    - Cost of retesting and re inspection
    - Cost of machine & Server down Time
    - Cost of Corrective action
- b → External failure
  - Cost in curs after delivery to external customer
    - service Cost due to Customs Complain
    - Cost of replacement
    - Cost of returned good
    - Cost of product recalls
    - Cost of mistakes in product advertisement.

c → Hidden Cost
- potential lost sales
- extera processing cost due to defect
- legal claim.

Non Conformance Cost = Cost of making mistakes = Cost of Poor quality

= IF + EF + Hiddden Cost

② → Cost of Conformance

- a → Appraisal cost (inspection, consultations) determine the degree of Conformance to quality requirment
  - Cost → In words, in process and Final inspection
  - destructive Test losses
  - preparing & Conducting audit.
  - Cost of maintenance & Calibration of Test instrument
  - Cost of admin machinary and organization for inspection, Test and appraisal
- b → Cost of prevention (quality plan, audit)
  - Preventing error/minimize failure.
    - acquiring quality data For analysis
      - Pilot Production
      - Engineering quality at design stage.
      - Quality Planning
      - Process Control and design of Process Control system
      - Training for quality
      - Preventive maint.

Cost of Conformance = Cost of Appraisal + Cost of prevention.

- Cost of quality invers proportional with of level.
- Phil Crosby : CoQ as % of sales can vary From 1% to 40%.

⑨ Chapter 1 map.

Motorola Journey from 3.4 to 6σ.

①

→ SIP (Strategic point of inflexion)
- organization development start going down.

→ Valley of Death:-
Point where the organization will take action and grow up again or Ignor problems Do nothing so it will die.

②

definition of 6σ
↳ process improvement methodology that aim
to
↳ reduce defects to 3.4 DPMO
↳ eliminate Causese of variation
↳ using statistical processes
↳ focus on Voc

(10) Chapter (8)

Six Sigma Basic Principles

(1) Genuine focus on Customer
- (1) really understand Their needs
- (2) on going basis measure Customer satisfaction To identify correct CTQs which will lead to correct CTPs
- (3) in 6σ Customer focus is Top Priority

(2) Data-AND-fact Driven management.
- (1) clarifying which measures are key To achieve The bussiness Performance (CTPs)
- (2) applies data and analysis To build understanding of CTPs

Six Sigma project Combine
- Process knowledge (Critical Thinking)
- Analysis of Data (Statistical Thinking)

(3) Process focus, managent and improvement.

Six Sigma focus on process Approach to achieve ~~Succes~~ success.
- (1) find CTQs.
- (2) find CTPs
- (3) improve CTPs To improve CTQs
- (4) develop monitoring system for CTPs Control chart (Process indicator) Dashboard
- 5 develop monitoring system (Control chart) for CTQ (Quality indicator)

(4) Proactive management. (acting in advance.)
- (1) Preventive action
- (2) asking why we do in such way

(5) Boundaryless Collaboration
- (1) eliminate competition between groups
- (2) Team work environment support

(6) Drive for Perfection Tolerance for failure.
- (1) improve performance (better Service/low cost/New Capability)
- (2) Mistake Can occure but Throw Risk management (Safe failure)

(7) Factors which lead to Failure in 6σ
1. Top mangent participation is missing
2. Champion is not interest
3. impatience managment
   - stop six sigma after few quick win
   - expecting To reach 6σ with a year
4. Select wrong Person for BB role.
5. Resistance to change not handled adequately.

(8) Culture Change
1. willingness To collect and analyze data
2. employem must question The existing system
3. employem must Communicate openly about The failures.
4. Proactive Thinking
5. Positive attitude
6. Cross function cooperation
7. Self discipline