① LSS - GB. Map

Module 1
Fundamental, Principles

- chapTer 1
  - ① introduction to 6σ
  - ② Definition of quality → Kano, VOC, CTQ
- chapTer 2
  - ① Evolution of quality - Journey from Quality To 6σ
  - ② Appraisal and prevention using RCO, ICD. (POKA YOKE)
  - ③ - Root cause analysis - correction - corrective action - preventive action
  - ④ Goals of 6σ
  - ⑤ Team formation for implementation of LSS.
- chapTer 3
  - ① cross function / Boundary less Collaboration in 6σ organization
  - ② QCD.
- chapTer 4
  - ① process approach
  - ② Identify CTPs
  - ③ improving CTPs to achieve CTQs

Module 2
Six sigma Tools and Methodologies

- chapTer 5 → DPU - DPMO calc of sigma level
- chapTer 6
  - ① Cost of quality
  - ② impact on sigma level of process.
- chapTer 7 → Motoral's Journey from 3.4 → 6.0 Sigma level.
- chapTer 8
  - ① 6σ - Basic principles
  - ② cultural change required while implementation Six Sigma
- chapTer 9
  - ① Variation process
  - ② assignable / special cause variation
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- chapTer 10
  - ① seven TOOLS of quality
- chapTer 11 → using SPC in 6σ
- chapTer 12 → DMAIC
- chapTer 13 → FMEA

Module 3
lean Management

- chapTer 14 → lean management & wastes
- chapTer 15 → value stream process Mapping (VSM)

chapter II Map

Introduction to LSS.

To improve any Process :-
1- Identify customers
2- find Voc
3- what CTQs
4- How to achive CTQs

Introduction

① Six Sigma.
- developed by motorola
- is all about bussnes results with focus on customers.
- must return on investment within short time.
- Reliance on → data Collection
  - find Root Cause For variation
  - Cross function Teams (CFTs)
  - Solution to → Reduce defects/Rejections
    - reduce rework
    - increase Customer Satisfaction

② Lean
- developed by Toyota
- delivering value to customers
- Value :- Customer willing to pay.
- Tools :- Identify → 8 waste (hiedden in an organization activities)
  - Eliminate
  - Improve efficiency.

③ LSS → lean → Speed ~~=~~ increased
- 6 Sigma → accuracy → High.

Definition of quality

Kano Model → Voc – CTQ

① Definition of quality :-
Customer Satisfaction (Kano model)
To meet ① → Stated need.
- customer asked for
  - if increased, Customer satisfaction will increase
- ② → unstated need / understand need.
  - ~~Su~~ Customer will not ask Because it should be there otherwise Product or service will not be useful.
  - if quality increase to ~~by~~ high level customer satisfaction will be neutral.
- ③ → Expectation (Excitas / Delightas)
  - satisfaction will increase but will not reduced below neutral.
  - additional feature Customer did not ~~expect~~. expect.

Type of customer
- ① External customer :- Pay for Service (outside organization)
- ② Internal customer :- inside organization

② Voc, CTQ
- ① → Voc :- Quality characteristics from customers feedback (voice of the Customer)
- ② → CTQ :- vital quality characteristics that have major impact on customer satisfaction (Critical To Quality.

③ Motorola measured quality by Terms of defects and ② level sigma =
- Defects :- if CTQs are not achived.
- Motorola quality Goals → 3.4 defects per million. with accuracy 99.9997 % = 6σ level.

③ Chapter [2] Map.

Quality Journey from quality measurmt to six sigma.

① Quality Journey

[1] - Product inspected end of the line
- inspection done by operator
- operator report to production supervisor. (no authority)
- quality is appraisal.

[2] - Product (material) inspected end of the line
- inspection done by inspection supervisor
- has authority to accept or reject
- report to workers manager
- quality is appraisal and controlled.

[3] - Material, product, production process are inspected on line. + Prevention
- Inspection is analyzed
- done by manager
- Report to General manager
- Quality Assurance → Apprisd prevention

[4] - Material, product, all processes Befor the Beginning are - Prevent and inspect
- Plan - Do, Audit, check, Act (PDCA)
- General manager / Vice president
- Report to Manging Director / President
- Quality → TQM, 6σ

② Achieving prevention

- Poka Yoke
  = Mistake proofing.
  → RCO :- (strong system)
  - Reduce Chance of occurance
  - Prevent error before occurance
  - equipment designed to stop Performing.
- ICD
  - Increase chance of Detection
  - Process Just Performed.
  - error has occured.

③ Root-Cause analysis.

Correction - Corrective action Preventive action

① Correction
- mistacke occured.
- Rectify
- Damaged control

② Corrective action
- after mistake
- find Root Cause (5 why, or fish bone)
- Build Poka Yoke in process To Prevent occurance
  = kill The Root Cause.

③ Preventive action
- extend The learning to The other dipartment
- Build Poka yoke in The 1st place To prevent occurance
- Globalize
- Think proactive
  = 6 Sigma

④ Lss. Goals.

① reduce defects to reach 6σ
② Eliminate wasteful Practice
③ fullfilling customers present and future needs

all These will lead To increase ROI (Profits) of organizations

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Chapter [2] map

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Six Sigma Team.

① Top management
- MD
- CEO
- VP
- Director
  1. Provide BB Project
  2. Provid resources
  3. Decisions to chnge proces.

MBB Support

② HOD
- Process owner
- champion
- sponsor
  1. Provide Process Knowledge.
  2. Critical Thinking.
  3. arranging Resource
  4. Timely decision for TOP mayemit
  5. Motivate 6σ Team.

③ Middle management → BB
1. full time in BB Project 3–5 Years
2. use SS Tools statistical Tech. & Thinking.
3. lead GBs, YBs

④ Middle and Junior Managment → GB
1. Part Time on BB Projects
2. Collecting Data
3. analysis
4. Brain storming.

⑤ Supervisor Team leadin → YB
1. data Collection
2. Brain storming.

⑥ operator workes → WB
1. Participate in Brainstorming.

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6σ — TQM.

① 6 Sigma.
- developed by motorola.
- using Concepts from TQM.
- Cross function
- Six sigma Team.
- focus in areas effecting managmnt
- Methodology using
  - data collection
  - data ~~analysis~~ anlyst
  - Root Cause analysis.
- measured quality by sigma level.
- Profit/saving is measured at the end.

③ TQM
- by Japan Dr. Deming / Juran
- Cross function Team
- normal Team. (supervisor...
- focus on areas effecting day ~~to~~ day operation
- Methodolog
  - data collection
  - data analysis
  - Root Cause analysis.

⑤ Chapter [3] map

Cross function / Boundary less collaboration in GC organization (QCD)

① Traditional organization

- Vertical function
- function Target = KPI
- achieve managment Target or Goals
  - ① profitabilty
  - ② (Sales Turn over)
  - ③ Market_share.
  - ④ (share_prices)

But These are not important for Customer

② QCD(S) are important for customer

- ① Q → quality
  - ① Product quality
  - ② Support quality
    - Befor sales
    - after Sales.
- ② (C) cost
- ③ (D or S) Delivery or Schedule.

→ Toyota Refer to QCD goals as Superordinate compare To function Goals, because it add value to Customer.

→ Cross function, Boundary less goals are QCD

③ Traditional managment (Vs) GC managment.

Traditional management	GC management
① focus on function goals	① focus on QCD goals
② Conflict may happen between DPT.	② Achieved cross function Cooperation
③ organization Centric	③ Customer Centric
④ Provide value to organization	④ provide value to Customers
⑤ Management Goals achived	⑤ management Goals achieved
⑥ This strategy will work in lessor no Competitive	⑥ will succeed even in situation of high Competitive.
⑦ May not create Good will and layalty for organization in long Run.	⑦ ensure long run good will and loyalty of Customer.

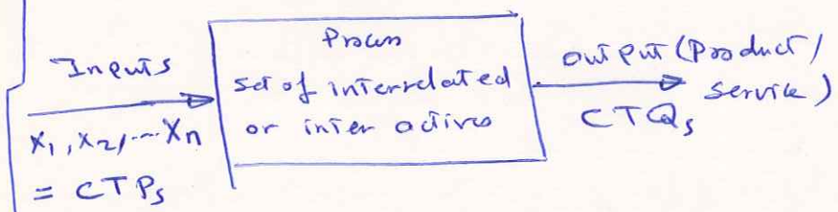
⑥ Chapter 4 Map.

Process approach – CTPs, Dashboard.

① Process approach.

= application of system processes
+ identification and interaction of these Processes
+ management

→ Process model



→ Effectiveness of Process
= ability to achieve
Customer satisfaction (CTQs)

→ Efficiency of process
= Proper use of resources.
To do same Task.

② To improve any process we need

① Identify Measurable outputs → CTQs

② Identify Measurable, Controlled input/factors
The have major impact on CTQ → CTPs

③ improve CTPs → Benchmarking
→ root cause analysis

④ Focus on improving CTPs
To achieve CTQs

⑤ Ensure that process must have
an owner