

# Mission 5 Trillion

## CMA as a Cryogenic Force

Global Cost Management Practices

**Japanese Cost management**  
*-Hidden Competitive Edge*

*Experience sharing  
by  
**Subros Limited***

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## *Global Cost Challenges*

*Japanese thinking way*



***Japan : The nation is consciously structured to produce more than it consumes & to export more than it imports***

# INDUSTRY EVOLUTION & CHALLENGES IN VUCA WORLD

**Constant Shift of  
Market Dynamics**

**MAKE QUALITY IN  
INDIA**

**PRODUCTION AND  
MODEL COMPLEXITY**

**COST COMPETATIVENESS  
ACROSS VALUE CHAIN**

**CONSOLIDATION IN  
GLOBAL INDUSTRY**

**Changing OEM  
Needs**

**ZERO DEFECT &  
TRACABILITY**

**PLATFORM  
CONSOLIDATION**

**SHORTER PRODUCT  
LIFECYCLE**

**CHANGING POCKETS OF  
GROWTH &  
GEOGRAPHIES**

**Technology Changes**

**INDUSTRY 4.0**

**CASE (CONNECTED,  
AUTONOMOUS, SHARED,  
ELECTRIC)**

**LIGHT WEIGHT**

**INCREASE IN USAGE OF  
ELECTRONICS**

**Evolving Regulatory  
Trade Environment**

**ENMISSION NORMS-  
BSVI,CAFÉ ETC**

**SAFETY PROTECTION**

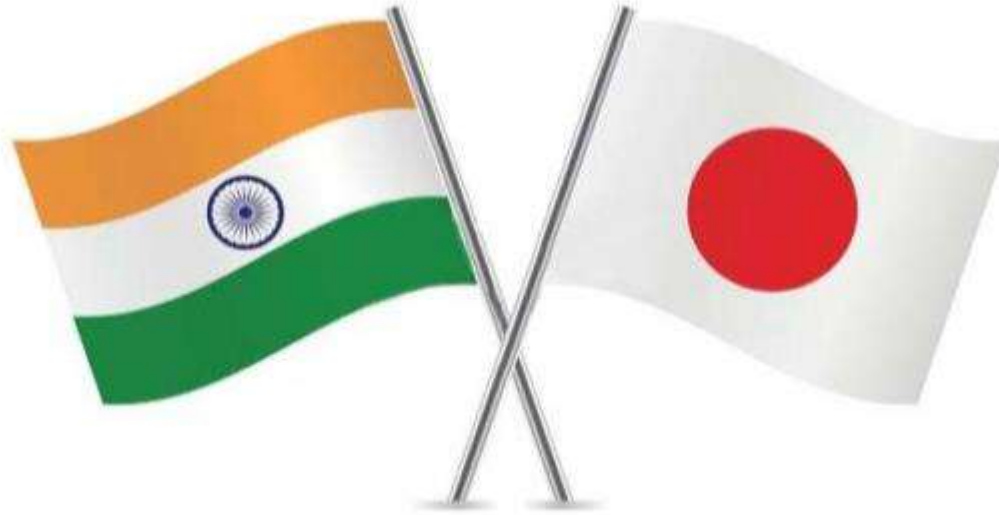
**VOLATILE CURRENCY AND  
RAW MATERIAL**

**DYNAMIC GLOBAL TRADE  
POLICIES**

*\*Volatility Uncertainty, Complexity , Ambiguity*

**NEED STRONG COST MANAGEMENT SYSTEM TO LEAD**

# Business Transition between India and Japan



**Made in Japan → Used in India**

**1980's**



**Design in Japan → Make in India**

**2000-10**

**Transition**



**Design in India → Make in India → Used in Japan**

**2010 onwards**



# Japanese way of Cost Management





# Japan : Leader in Technology

Japan as a country is viewed as a success in global manufacturing



- ❖ Japan is the world's **most innovative countries** leading several measures of global patent filings
- ❖ Japan currently holds a unique opportunity to **drive technologies** that are important for future of many countries including India
- ❖ These **proven technological capabilities** give lot of collaboration initiatives between Indian companies and Japanese companies to drive the future

*India Japan business cooperation committee is an initiative which furthermore bears the promise of acting as an incubator for new collaborations between Japanese and Indian Companies*

# Need for cost Management in Japan

**Critical Phase  
Between  
1960-1990**

**Loss of  
International  
competitiveness**

**decrease in  
Currency  
valuation**

**Decrease in  
domestic  
product  
demand**

**Low  
economic  
growth**

## Fundamental changes to bring Industrial revaluation

**Globalization**

To increase in demand and support currency thru exports

**Automation and  
extensive use of  
Information technology**

To Improve productivity, scale. Technological advantage which is core strength of Japan

Management Level focus

**Target Costing**

**Activity Based Costing (ABC)**

**Just In Time Manufacturing (JIT)**

**Value Engineering (VE)**

**Activity Based Management (ABM)**

# Difference in Cost Management Practise

## EUROPIEN System

Market Research

Product Characteristics

Design

Engineering

Supplier Pricing

Cost

If cost is high return to design process

Manufacturing

Periodic cost reduction

## JAPAN System

Market Research

Product Characteristics

Product Selling Price and Desired Profit

Design

Engineering

Supplier Pricing

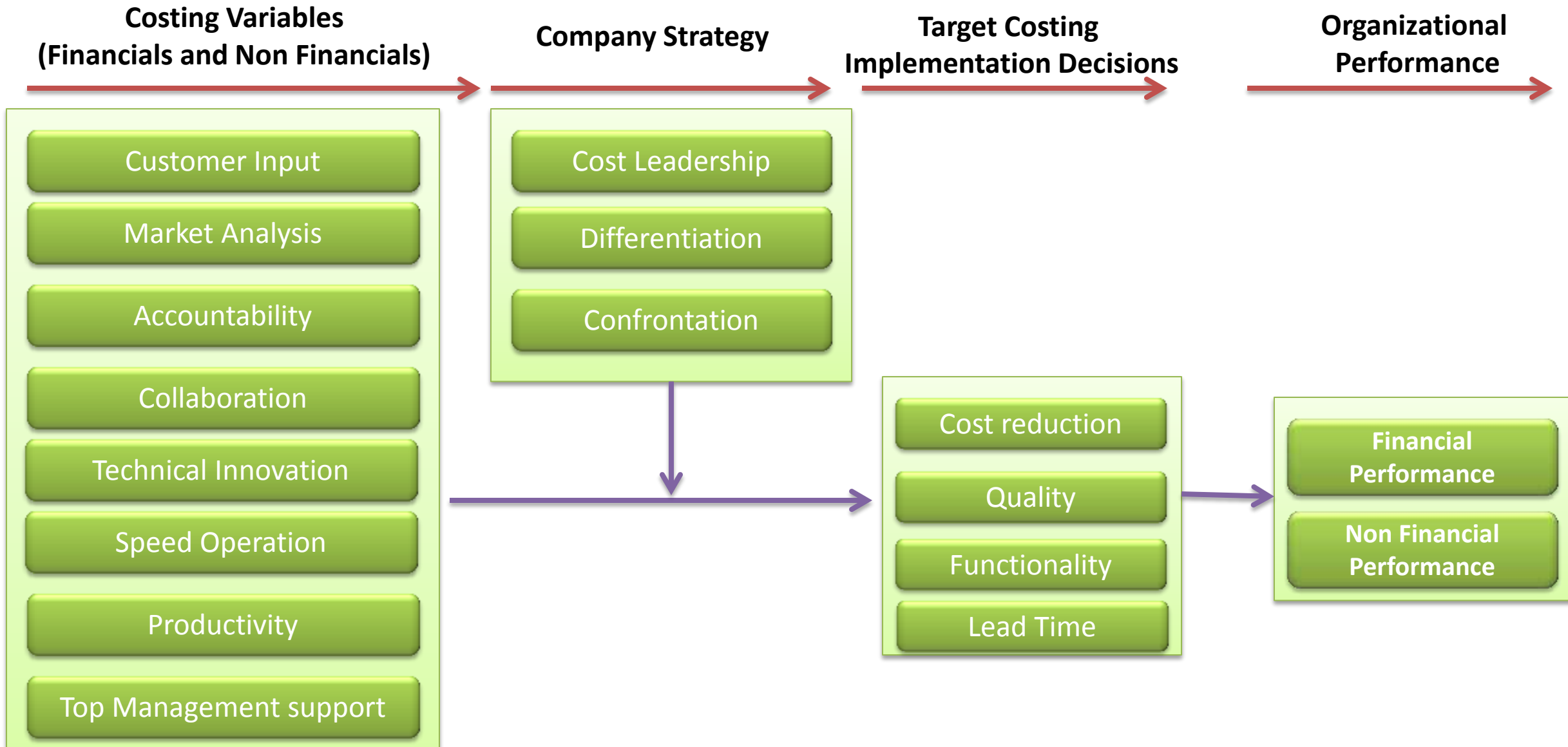
Target cost for each component forces  
Marketer, Designer & Engineers from each department to  
struggle and negotiate Trade off

Manufacturing

Continuous cost reduction

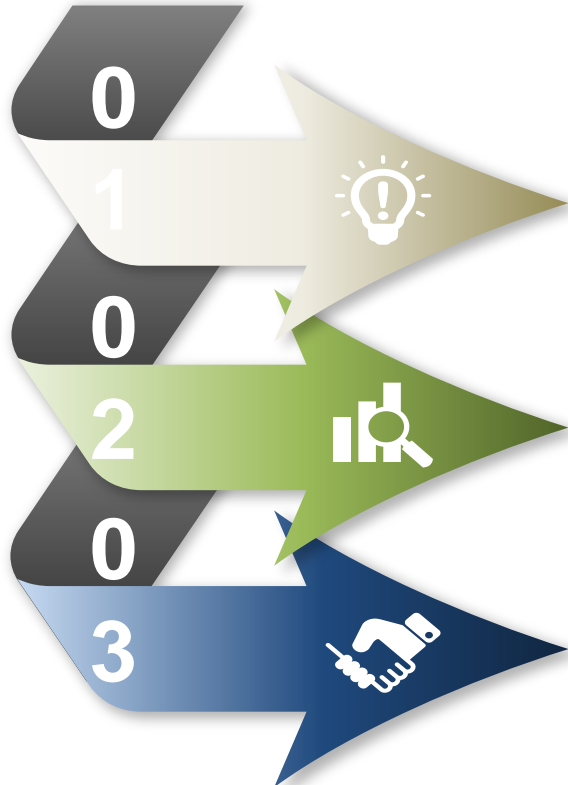


# Business Modeling link to Costing Model



# TCM Architect in Japan

Japanese manufacturers have broken down into cost management departments



## Cost planning section

- *Cost planning & estimation by blueprint,*
- *cost reduction by value engineering (VE)*

## Cost control section –

- *profit planning,*
- *budget control,*
- *cost accounting*

## Cost improvement section

- *promotion of cost improvement activities at the factory*

## Key Objectives:

Establish a target profit

Lower the company's  
breakeven point

New product plans  
(In line with Management plans)

life cycle of each model  
including change or modification

# Japanese way of Cost Management

Market driven costing system in which cost targets are set by considering customer requirements and competitive offerings.

## Process to Production

Product Planning → Sample Design → Final Design → Preparation for Production → Mass Production

## Cost Management Activity

### Target Costing Activity

Activity to Reach Target Cost Before Mass Production

→ Newly Developed Product

→ Next Type Product

### Kaizen Costing Activity

Reduce Actual Cost Through continuous improvement efforts

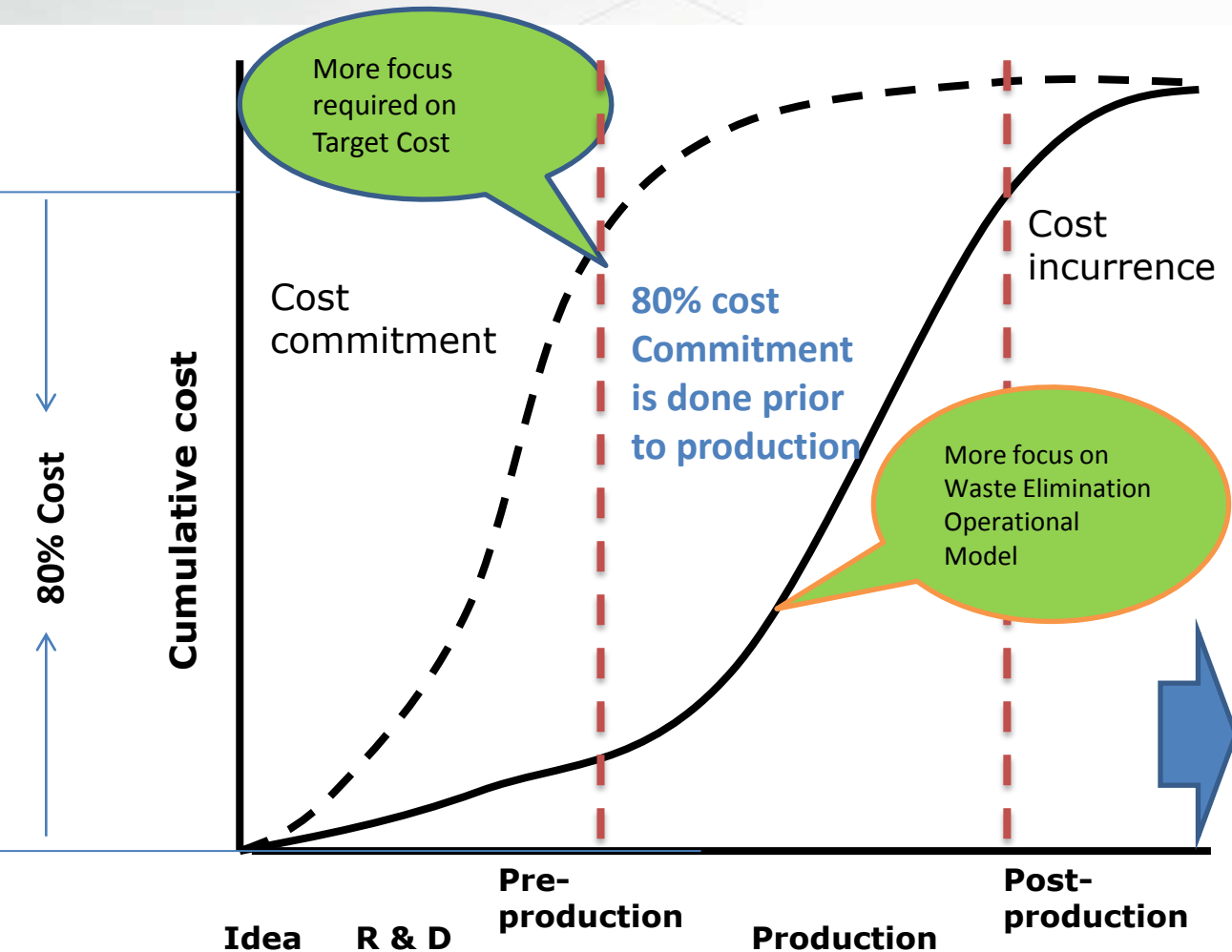
→ Per Each Product

→ Per Function

- Process Improvement
- Productivity, etc.

Cost targets are achieved by focusing on products and process design and by making continuous improvement in all support processes

# Examples of Good Practices:-Cost Commitment and Incurrence



Development Stage	Development Division			Other Divisions
	Product Planning	Vehicle Design	Device Design	Purchase, Prod, Engrg., Supplier
Concept Proposal Stage	Cost target Establishment			
	Teardown analysis			
	DRO-planning stage (1)			
Planning Stage		Cost apportion		
		First-look VE		
		Study on prospect of achieving target		
		Reallocation of Cost		
		Cost target attaining plans by parts		
		First/second-look VE and T/D		
	DR 1 - Planning stage (2)			
Development and Product Preparation Stage		Second - look VE		
		Simultaneous engineering		
	DR 2 - Design			
		VE, 1 day - CR		
	DR 3 - Evaluation			
	( to Preproduction Stage)			

*Since major cost commitment is during pre production stage , hence major focus is given for Target cost realisation*

# JAPAN'S INNOVATIVE MIX OF OPERATIONS STRATEGIES WITH COST MANAGEMENT

**Total Quality Management  
(kanban)**

**Zero-defects manufacturing backed by self-accountable work teams**

**Continuous Improvement  
(kaizen)**

**Constantly discovering small new ways to improve efficiency & quality**

**Just-in-time manufacturing  
(JIT)**

**Suppliers deliver parts right when they are needed to save on warehousing costs & to promote manufacturing efficiency.**

**Flex speed design**

**Constantly shortening the time required to implement product & process improvements**

**Supplier partnerships**

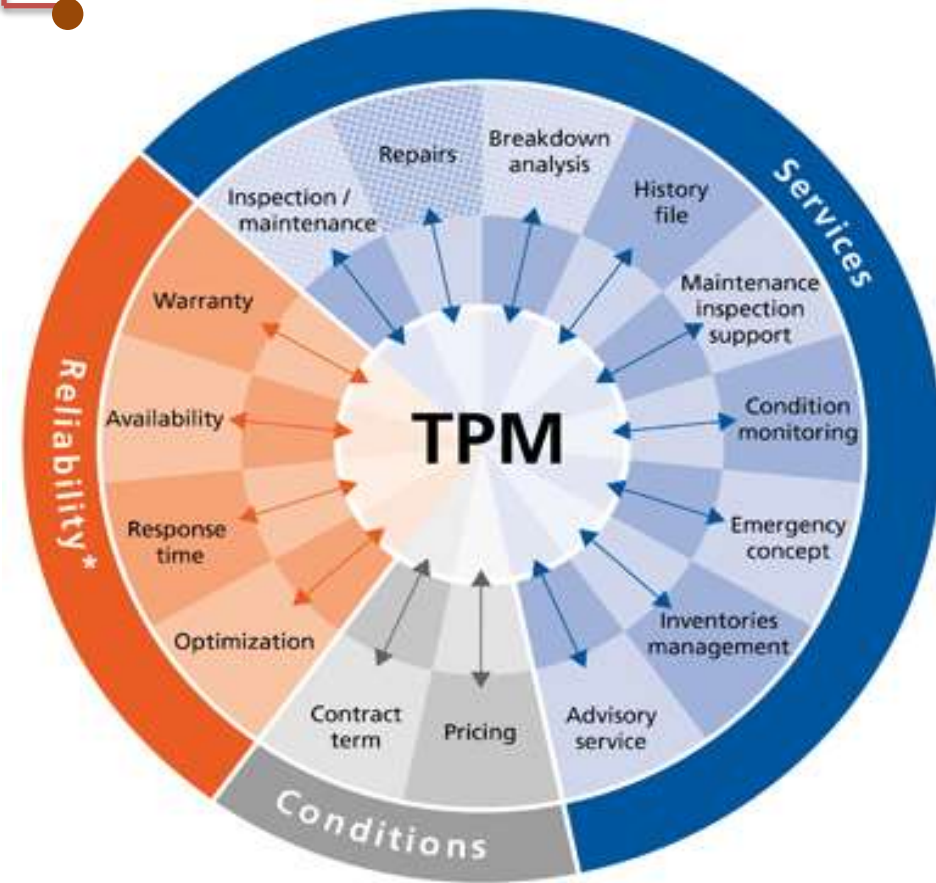
**Forming permanent relationships (rather than competitive bidding) with suppliers to ensure supply quality & manufacture flexibility**

**Marketing to multiple target  
markets**

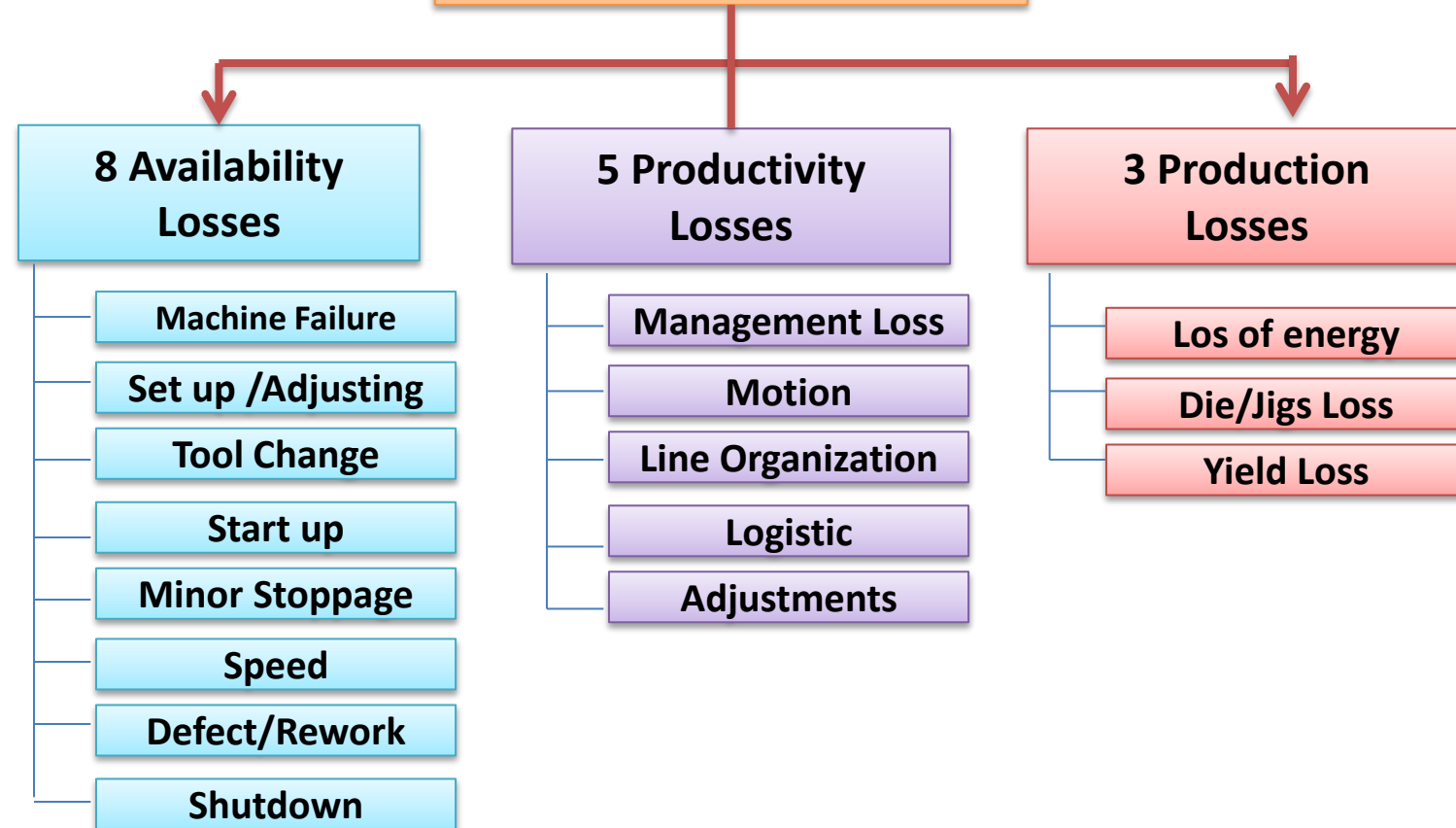
**Broad product line of alternative prices, features, & retail outlets**

# TPM Model Integrated with ABC Cost Drivers

## TPM Model



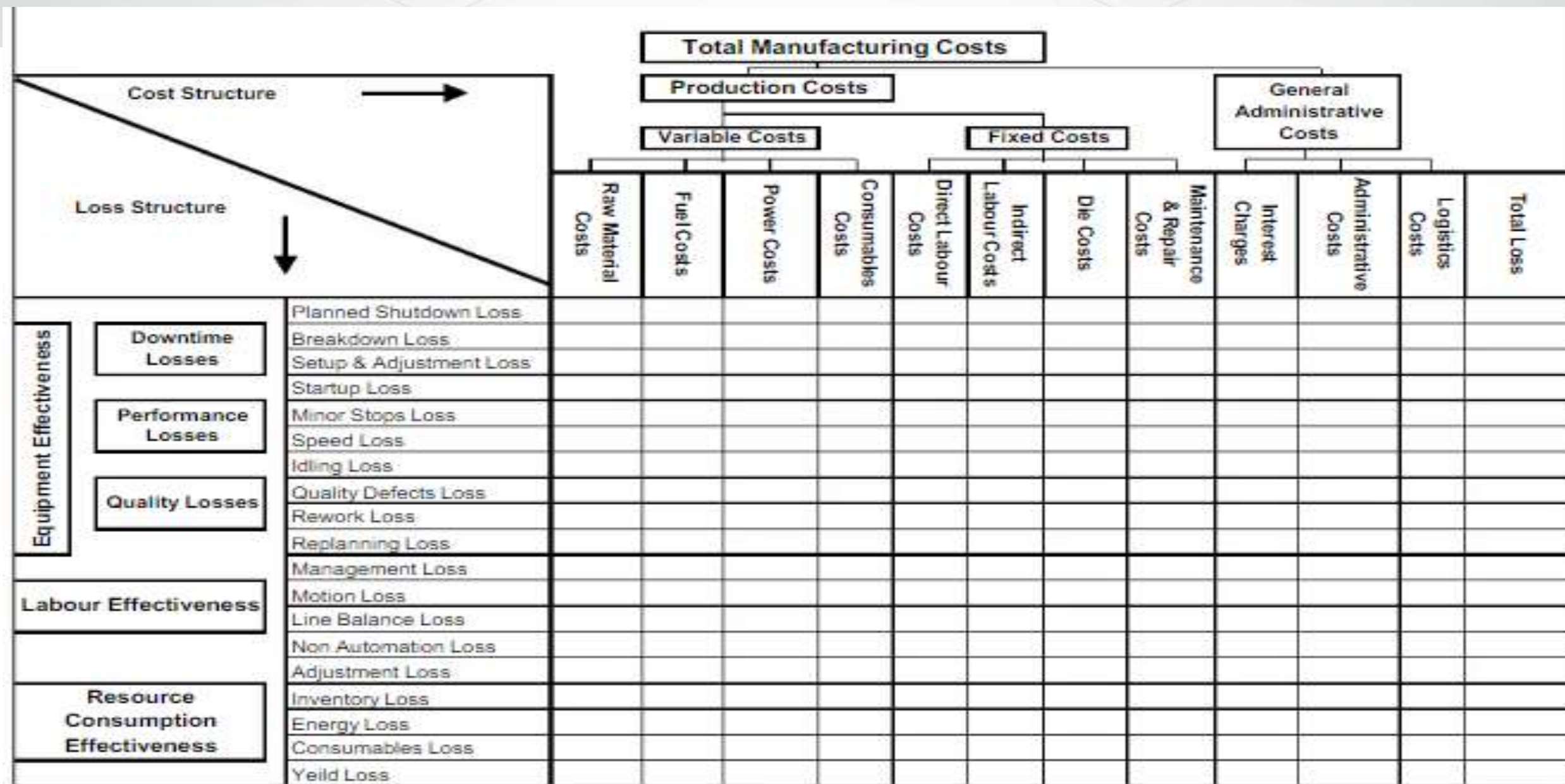
## 16 Kinds of Loss



Each Loss Tree element is link to cost drivers and Kaizen is applied to each Cost Driver



## Example of Loss Tree Mapping with Cost Driver Matrix



# Lean Management System Integrated with TCM

## Company

### Vision

- Job Security
- Social responsibility
- Environment
- Local Development

### Goals

....With targets

- Turnover/ Profit
- Lead Time
- Inventory
- Quality and On time Delivery

## Management System

### At Different Level

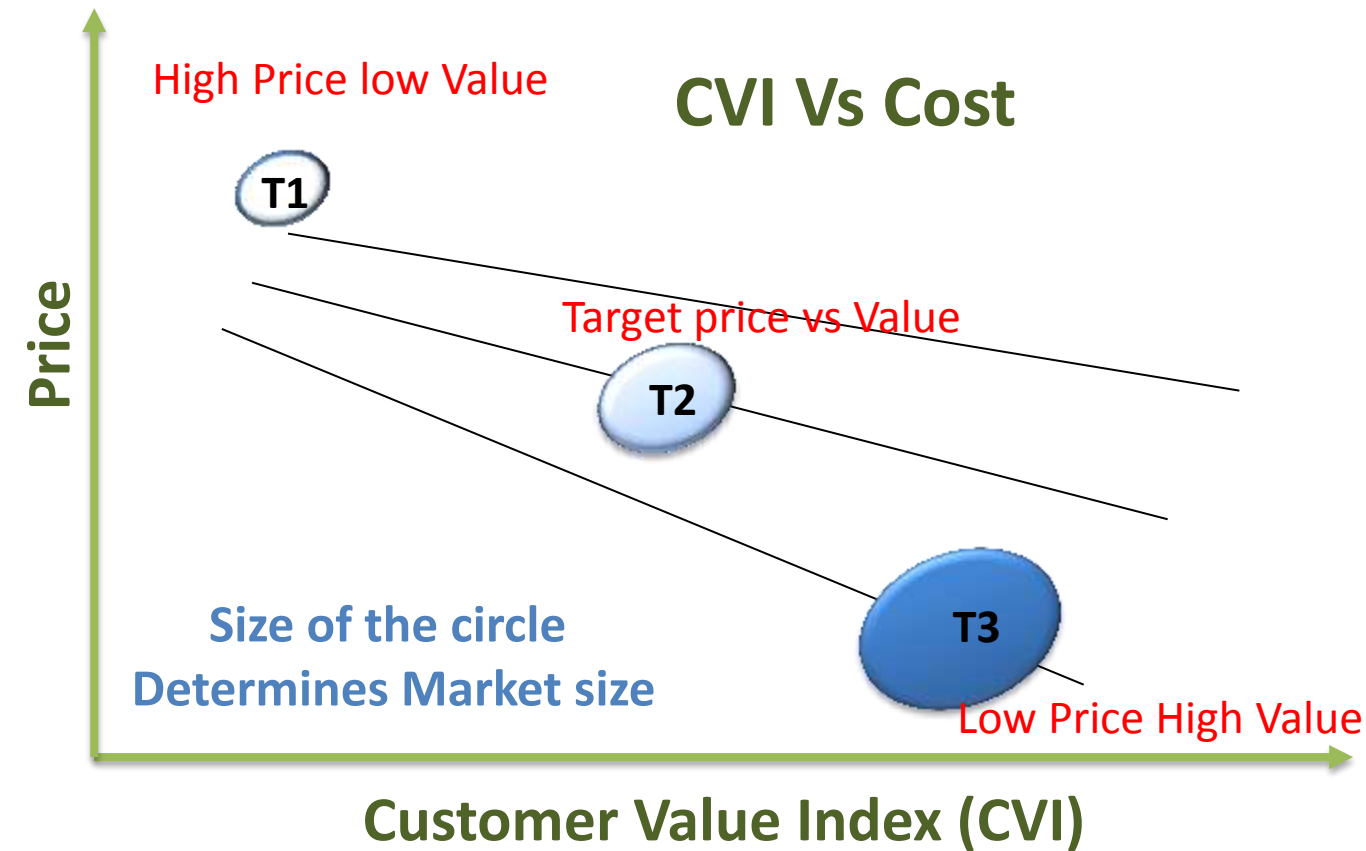
- Process Synchr..
- Tact Time Production
- JIT System
- Process Leveling
- Pull System
- One Piece Flow
- Quality Management
- Personnel Management
- Supplier Management

## Lean (KAIZEN) Philosophy

### Method and Tools

- Standarisation
- TQM
- TPM
- 6 Sigma
- KANBAN/ LCC
- 5 S
- 5 GEN Philosophy
- ANDON, Pokayoke
- IE, VA,VE
- Visualization

# Examples of Good Practices:- CVI Based Target Setting



## CVI Definition :

A= Performance

B= Surface area

C= Weight

D= Volume

E= Score

F.....

More technical parameter defining your product  
add all of them to make final value vs Price

## Value engineering program to follow eight aspects

- ❖ Value target
- ❖ Zero look value engineering
- ❖ First-look value engineering
- ❖ Second-look value engineering
- ❖ Manufacturing engineering
- ❖ The Wave method
- ❖ Mini-value engineering
- ❖ Value engineering reliability program

*Each product development should be correlated with Customer value Index w.r.t. Price Target which customer is willing to pay. Feature base product costing and its relevance is key for product design*

# Toyota Production System Talks about every thing

**Best Quality → Lower Cost → Shortest Lead time → Best Safety → High Morale**  
(Through shortening the production flow by eliminating the waste)

## **Just in Time (JIT)**

**Right Part, Right amount ,Right Time**

- Takt time planning
- Continuous Flow
- Pull System
- Quick Changeovers
- Integrated Logistics

## **People and Team Work**

- \* Selection
- \* Ringi Decision making
- \* Common Goal
- \* Cross Training

## **Continuous Improvement**

### **Waste Reduction**

- \* Genchi Gebutsu
- \* Eyes on Waste
- \* 5 Why
- \* Problem Solving

## **JIDOKA**

**(In Station Quality, Make problem visible)**

- Automatic Stop
- Andon
- Peron –Machine Separation
- Error proofing
- Solve root Cause (5 Why.1 H)

**Leveled Production (Hejjunka)**

**Stable and Standardized process**

**Visual management**

**The Toyota way Philosophy**

# Key Examples of Cost Revolution in Japan

## Toyota CCC21 Program

### CCC21 (Construction of Cost Competitiveness in the 21st Century)

- ❑ In 2000, Toyota launched a cost-reduction initiative designed to improve the cost-competitiveness of its new products.
- ❑ Its goal was to carry out a radical review of the target costing which had hitherto revolved around “VA/VE” (value analysis and value engineering), by making it an essential requirement to reduce costs by 30%.
- ❑ By abandoning all current assumptions and starting from scratch.

**Toyota sees cost savings over \$2.7 billion annually 7 years in row.**

## Suzuki 1-1-1 program

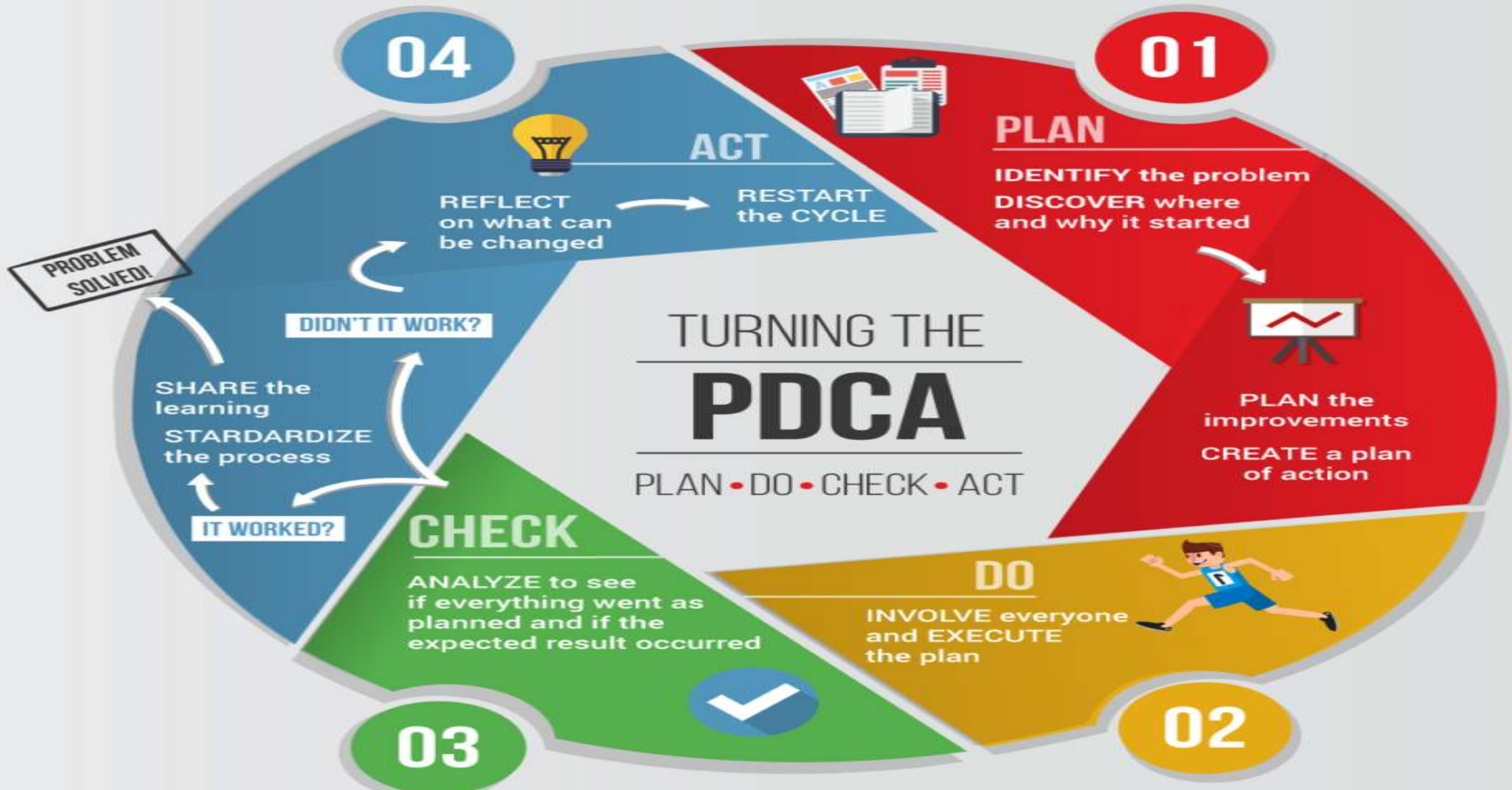
### 1-1-1 Program means each car-one component- one gram weight reduction.

- ❑ Program launched in 2014 and challenge was given to engineers to optimize on weight.
- ❑ In addition to company in-house design, manufacturing teams , suppliers and others associated are encouraged to reduce the weight of each component that goes into making cars by one gram.
- ❑ TIE study and Localisation are key projects in addition to Value Engineering to achieve 1-1-1 program.
- ❑ Huge focus on alternate light weight material.

**Suzuki realized 12~15% material cost reduction during last decade thru this structured program.**



# PDCA Approach





# Key Takeaways

- Cost Strategy and Linkage of Business model with Cot model is key for Competitive advantage



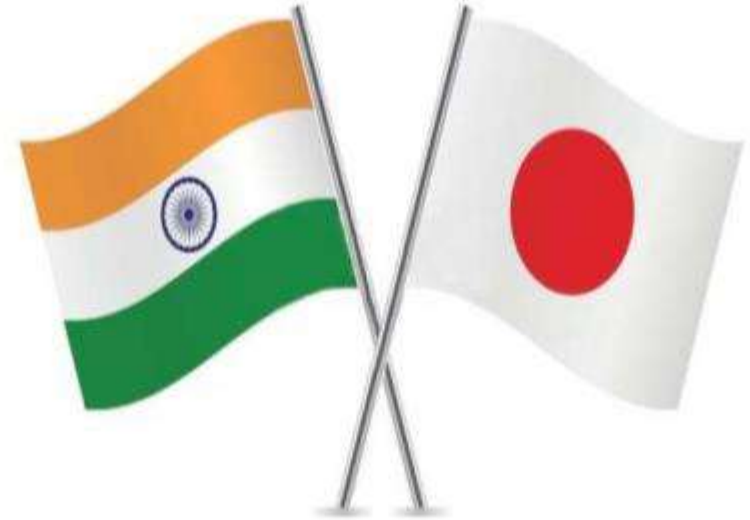
- Integrated cost management system to Different Tools TQM, TPM, JIT, KANBAN, 5 S etc.
- Each component to be independent review of target cost to be achieved thru VAVE.
- Continuous Improvement is never ending Journey
- Each Cost driver must have Kaizen /Quality Circle

***Following a benchmark cost management system will help is leading the world during growth and give us competitive advantage***

# Thank You



*Cooling the Planet*



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