




MONOZUKURI – a Tool for Excellence & Sustainable Development of MSME's

National Workshop on Enabling MSME's to be Competitive through Quality Tools
 January 13th - 14th 2012, Vigyan Bhavan
 Jointly Organized by Ministry of MSME & Quality Council of India

Presentation
 By Mr. J.P. Malhotra
 President, DLF Industries Association
 MD, Bhartiya Valves Pvt. Ltd.
 Imm. Past President, Faridabad Chamber of Commerce & Industry

1



Structure of Presentation

1. Introduction to MSME's
2. Monozukuri – Art of Japanese Manufacturing
3. 7M Framework
4. Conclusions


2



Introduction - MSME

- Major plank of India's Economic Development
- Strategic Importance due to contributions in terms of Output, Export & Employment
- To sustain & accelerate growth, MSME sector needs to be thoroughly competitive

3



Introduction - MSME


MSME's are supported by Govt. of India & its agencies as

- Ministry of MSME
- National Small Industries Corporation
- Small Industries Development Bank
- District Industries Centre

For

- Modernization
- Productivity & Quality Improvement
- Technological Needs
- Skill Development & Up gradation
- Adequate & Affordable assistance in Finance


4



Classification of MSME's

	Manufacturing	Service
Micro Enterprises	Rs. 1 Lakh to 25 Lakhs	Rs. 10 Lakhs
Small Enterprises	Rs. 25 Lakhs to 5 Crores	Rs. 10 Lakhs to Rs. 2 Crores
Medium Enterprises	Rs. 5 Crores to 10 Crores	Rs. 2 Crores to Rs. 5 Crores

5




Roadblocks in MSME's Capacity Building

Inherent

- Problem of Information Poverty
- Handling of Information – Ability to gather, process, store & distribute information
- Information base is small
- Entrepreneur has to get informed
- Entrepreneur has limited capacities

This leads to more intuitive than analytical decision making


6


Capacity Building of MSME's

1. Improve **PRODUCT**
2. Improve **PROCESS**
3. Improve **EMPLOYEE INVOLVEMENT**


Implement **MONOZUKURI**
Art of **Japanese Manufacturing**

7


Capacity Building of MSME's

1. TEI – Total Employee Involvement
2. Use of Monozukuri
 - 5S Principle
 - 7M Approach
 - Waste Elimination
3. Two Minute Inspection
Red Tag System
Passport System of Training
Use Idea - KAIZEN

8



MONOZUKURI

MONO means PRODUCT
ZUKURI means Process of Making

Monozukuri means

- Having the spirit to produce excellent products
- Ability to constantly improve the production system & process

9


MONOZUKURI

- Manufacturing Technique
- Operational Technique

People pay attention to the **ARTICLE** itself
Rather than
Flow of Making it

10



MONOZUKURI

Monozukuri is a combination of

1. Product
2. Design
3. Expertise
4. Technology
5. Science

MONOZUKURI is a system – a Tool for Enhancing Competitiveness


11


MONOZUKURI

How to go about it ?

- Improve existing products / Production Process using expertise
- Create new products / services through improvement and combination of existing technologies & expertise
- Create totally new products / services through technologies based on new scientific theories of fusion of knowledge – radical innovation
- Make use of 7M's

12



MONOZUKURI

People pay not only for function
BUT FOR

Design Information	Design
	Performance
	Appearance

So lay importance not only on **Product** but on all activities i.e. **Design Information Flow**

13



MONOZUKURI


Pleasant Design

Pleasant Appearance is a part of enhanced comfort

Quality & Comfort

The Focus must be on people providing them with things that gives satisfaction through comfort & ease of use.

14



MONOZUKURI Total Employee Involvement

- Listen to Voice of Customers
- Leadership

Top Managers	Express Vision
Middle Managers	Cheer & Motivate People to work together & eliminate waste
Line Supervisors	Coach
	Teach
	Obtain Resources
	Support Employees
	Empower Employees to Excel
	Act as facilitators
- Emphasis on Continuous Improvement
- Product based on demand not capacity
- Reduce Inventory
- Reduce Lead Time


15



Monozukuri 7 M Framework for Perfect Quality for Profit i.e. PQ

1. Men
2. Machine
3. Material
4. Method
5. Market
6. Money
7. Management


16



Men

- Agile & Flexible Workforce
- Multi skilling of Employees – Create & Retain
- Team Work
 - Share Targets
 - Fulfill Duties
 - Help Others
- People Power
 - People Maximize Profits
 - You can buy facility
 - You cannot buy organizational capability


17



Passport System of Training

- Communication Board (Notice Board)
- As many dots as many multi skills
- More Dots More Money
- Combats Absentism, Improves Productivity, Assures Quality
- Ultimately a large trained workforce
- Above all Motivates Other Employees


18



Machine

- Use Local Machines
 - Volume
 - Model
- Maintenance is easy
 - Flexible
- Operator Training
 - Production

19




Machine

Bhartiya Valves Pvt. Ltd.
Engaged in Manufacture of Gas Cylinder Valves

We have shifted from Herbert 2D Machines to Capstan of Tools Today, a local Manufacturer

- No Spares Problem
- Easy Maintenance
- Operator Training
- Ease of availability of Machines
- Cost Benefit

20




Material

- Competitive – QCD
 - Quality
 - Cost
 - Delivery
- Improvement Activities Implementable
 - A desirable requirement
- Reduce sources if possible

At **Bhartiya Valves** we have reduced source of Critical Raw Material from 5 to 2

21



Method

- Continuous Improvement
- Separation of 3 powers for Quality Control in Manufacturing
 - Legislation R&D, Production Engineering, Work Standards
 - Administration Production to assure product quality in every process
 - Judicature Quality Control, Inspection
- Activities – not to make defectives
- At **Bhartiya Valves**, QC Mandate is FINAL. Even GM/MD do not interfere.

22



Waste Elimination

1. Waste from Over Production
2. Waste of Waiting Time
3. Waste of Transportation
4. Waste of Processing
5. Waste of Inventory
6. Waste of Motion
7. Waste from Product Defectives

23

Use of 5S Principle for Waste Elimination

1. SEIRI	ORGANIZATION
2. SEITON	NEATNESS
3. SEISO	CLEANING
4. SEIKETSU	STANDARDIZATION
5. SHITSUKE	SELF DISCIPLINE

5S is a proven Capacity Building Tool for MSME's

24



4 Steps to Waste Elimination

1. Making Waste Visible
 - Remove doors from Almirahs
2. Identify Waste
 - Red Tag System
3. Cannot Generate Waste
 - Do not procure Red Tag Items
4. Work to Standards
 - Make this Standard for procurement


25



Red Tag System

1. Take out every item from store
2. Put red tag on every item
3. Keep on taking items that you require in the work place & remove Red Tag
4. After 3/6 months, you are left with Red Tag items which are not necessary for you
5. Remove / Dispose

26




Two Minute Inspection

- Each operator at Start, Middle & End of shift will pick up one piece from production.
- See visually & check important functional dimensions with gauges
- Keep ok on Green table & defective on Red Table.
- Inspector visits the station & checks for suitable action.

1. Total Employee Involvement
2. 10x2 Operator eyes are better than 1x2 inspector eyes

**RESULT – CANNOT PRODUCE DEFECTIVES
PRODUCING GOOD PRODUCTS
AS A MATTER OF COURSE**


27



MONOZUKURI JUST-IN-TIME JIT

- JIT - a philosophy of manufacturing based on
 - a) Planned elimination of all waste
 - b) Continuous improvement of productivity
- JIT - Right part in the Right Place at the Right Time
- JIT - Lean production or Stockless Production
- JIT - Reduces Inventory
Improves Profit
Return on Investment
Improves Production Quality

28



JIDOKA


Automation - Machine continues making a product even if it is bad

Autonomation - If the machine makes bad product the machine stops

JIDOKA - Autonomous Automation

Ability of Production Equipment to sense a malfunction of the machine

29



KAIZEN

KAI CHANGE
ZEN BETTER

KAIZEN means Make It Better

- Eliminate
Abolition, Discontinuance, Exclusion, Removal
- Reduce
Simplification, Centralization, Synchronization, Standardization
- Change
Alteration, Exchange, Conversion, Diversification, Separation

30

FCI
KAIZEN

- Before use of **MONEY**, use an **IDEA**
- Don't look at **Cost Saving**
- **Suggestion** in Morning, **Money** in Evening

To escape from the Lion,
don't run faster than the Lion
RUN FASTER FROM OTHERS

31

FCI
KAIZEN

Suggestion Scheme	KAIZEN
You suggest your ideas - I will examine & implement some of the ideas later	Idea – Implement yourself the given suggestion – Implemented idea must be submitted
Lesser worker responsibility	More worker responsibility
Propose Improvement Ideas for any activity of organization	Propose only improvement ideas which will improve your own work

Problem Recognition → Idea Generation → Implementation → Recognition & Reward

32

FCI
KAIZEN

Rewards	Something Now More Later Give Money More Money
Reward Immediately	Suggestion in the morning Reward in the evening
Reward Copying	Idea Sharing / Copying is also rewarded Motivates worker to give more suggestions

87% Japanese Company's maintain Kaizen Suggestion Scheme

33

FCI
4 Steps for QC

- Do not pass defect
- Do not make defects
- Cannot make defect
- Work to Standards

34

FCI
4 Steps for QCD


- Keep manufacturing good products
- Keep manufacturing without waste
- Keep manufacturing with on time delivery
- Work to Standards

35

Monozukuri - 7 M Framework
Perfect Quality for Profit - PQ

- 4 M Men
 Machine
 Material
 Method
- Add **Marketing** it becomes 5 M
- By Control & Making Profits comes the concept of **Money**. This becomes 6 M
- **NOW** we have to see all the 6 M working. There comes **Management**. This becomes 7 M

36



Management Is

- Innovation - in Desi Terms JUGAD
- People - the Human Capital
- Attitude - the way we look at
- Entrepreneurship - the desire to Excel

Above all **Management** is

- Commonsense - which is Not Common

37



Management is JUGAD


Early 50's
Arabian Kingdom of Yemen
Rial Disaperaing – Solid Silver Coin

Clerk in British Trading Company

- Innovative & Passionate
- Melted RIAL & Sold Silver
- Made money before it was stopped

This Clerk became trader in polyster yarn. He is ??????


38



Management is INNOVATION

- Kumbh Mela – a masterpiece of multipurpose intent
- Jumping Eras of Tecnology
 - Landline To Mobile jumped Pagers
 - Mechanical Typewriter to Desktop
jumped Electronic Typewriter
- 1990's Y2K – Indian IT readjusting datelines in Millions of Codes
- June 2007 Krishan Ganesh's Venture – "Tutor Vista" Unlimited Tutoring to US & UK School children for USD 100 via Internet.

39



Management is Attitude

Attitude to Quality
Or Otherwise
The **WAY WE LOOK AT**

KFP – Ki Pharak Penda
BFP – Bahut Pharak Penda

MSME's must change the
Chalta Hai Attitude

40




Management is Entrepreneurship

Many More

- Long Distance Publishing
- Writing every document relevant to litigation except Judgement
- Medical Diagonistics

Call It **Jugad** OR See it as **Entrepreneurship** in the world's biggest democracy. Indians are comfortable & are now a respected competitive Entrepreneurs.

41




CONCLUSION

Winning formula for enhancing competitiveness combines

- Elimination of Waste
- Use of Quality & Productivity Tools – 5S & 7M
- Total Employee Involvement
- Flow of information to all Enterprise Stakeholders
- Change the way we look at

Above All – Adopt **Monozukuri**

42



CONCLUSION

It is not the **strongest** company
or the most **intelligent**,
it is the one most
adaptable to change
will **survive** into the
future

43



CONCLUSION

- Coming Together is a Beginning
- Keeping Together is a Progress
- Working Together is a Success

We have Confidence, Trust & Hope
that Industry, Institutes & GOI
Work together for the Success of MSME's
Excellence & Sustainable Development
Enable Enhanced Competitiveness

44




Acknowledgements

- Dr. H P Kumar, CMD National Small Industries Corporation
- Quality Council of India

For the Opportunity to share my thoughts with MSME's

45



Thank You !
for your attention !!

46