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

National Workshop on Enabling MSME’s to be Competitive through Quality Tools
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Presentation
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Structure of Presentation
1. Introduction to MSME’s
2. Monozukuri – Art of Japanese Manufacturing
3. 7M Framework
4. Conclusions

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

Classification of MSME’s

<table>
<thead>
<tr>
<th></th>
<th>Manufacturing</th>
<th>Service</th>
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| Micro Enter.
| Rs. 1 Lakh to 25 Lakhs | Rs. 10 Lakhs       |
| Small Enter.
| Rs. 25 Lakhs to 5 Crores | Rs. 10 Lakhs to Rs. 2 Crores |
| Medium Enter.
| Rs. 5 Crores to 10 Crores | Rs. 2 Crores to Rs. 5 Crores |

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
Capacity Building of MSME's

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

Implement MONOZUKURI
Art of Japanese Manufacturing

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

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

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

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
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

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.

MONOZUKURI

Total Employee Involvement

- Listen to Voice of Customers
- Leadership
  - Top Managers: Express Vision, Cheer & Motivate People to work together & eliminate waste
  - Middle Managers: Coach, Teach
  - Line Supervisors: Obtain Resources, Support Employees in functions, Convert Employees to Excel, Act as facilitators
- Emphasis on Continuous Improvement
- Product based on demand not capacity
- Reduce Inventory
- Reduce Lead Time

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

MONOZUKURI

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

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
Machine

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

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

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

Method

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

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

Use of 5S Principle for Waste Elimination

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

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

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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

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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

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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

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JIDOKA

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

Autonomation - If the machine makes bad product the machine stops

JIDOKA - Autono mous Automa tion

Ability of Production Equipment to sense a malfunction of the machine

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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
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**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**

**Suggestion Scheme**

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

**Problem Recognition → Idea Generation → Implementation → Recognition & Reward**

**Rewards**

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

87% Japanese Company’s maintain Kaizen Suggestion Scheme

**4 Steps for QC**

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

**4 Steps for QCD**

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

**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
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**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

**Management is JUGAD**

Early 50’s
Arabian Kingdom of Yemen
Rial Disappearing – 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 polyester yarn. He is ????

**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

**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

**Management is Entrepreneurship**

Many More
- Long Distance Publishing
- Writing every document relevant to litigation except Judgement
- Medical Diagnostics

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

**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
CONCLUSION

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

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.

Acknowledgements

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- Quality Council of India

For the Opportunity to share my thoughts with MSME's

Thank You ! for your attention !!