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## Overview of Assessment Methodology

# Criteria for MAXA

A MAXA winner would be a manufacturing company or an operating unit within a company that is . . .

. . . continuously innovating to be successful in Singapore and to compete globally, . . .

. . . excellent and successful in its operating system, . . .

. . . and having sustainable elements in place

1. INNOVATION	2. OPERATING SYSTEM	3. SUSTAINABILITY
<p>Innovations in manufacturing, for example in:</p> <ul style="list-style-type: none"> <li>• Process R&amp;D/ Automation</li> <li>• Product Development</li> <li>• Supply Chain Management</li> <li>• Capability Development</li> <li>• Resource Utilisation</li> <li>• Strategic Partnerships</li> <li>• Environmental Conservation</li> </ul>	<p>Manufacturing excellence:</p> <ul style="list-style-type: none"> <li>• Operational Effectiveness</li> <li>• Quality</li> <li>• Safety</li> <li>• Costs</li> </ul>	<p>Internal factors:</p> <ul style="list-style-type: none"> <li>• Management Infrastructure</li> <li>• Mindsets and Behaviours (Culture)</li> </ul> <p>Business factors:</p> <ul style="list-style-type: none"> <li>• Robust Financials</li> <li>• Strong Customer Integration</li> <li>• Capacity for Continuous Innovation</li> </ul>



# The visit will deliver structured feedback to management while validating information

## Assessment visit overview

- 2 days on the ground visit for finalist candidates
  - Interviews of management, supervisors and frontline employees
  - Actual observation of practices on the shopfloor observation
- Team of 1 SMA professor and 1-2 McKinsey consultant specializing in manufacturing
- Immediately followed by debrief and structured feedback to management

## Outcomes

- Validate information from the MAXA application (e.g. operational KPIs, best practices in place, innovations etc.)
- Provide a report to the MAXA judges on observed strengths and improvement opportunities
- Provide independent feedback to the candidate company on observed strengths and improvement opportunities

# Sample feedback received after the assessment

## Observation of strengths

WE HAVE OBSERVED SEVERAL STRENGTHS IN YOUR ORGANIZATION

	Strength	Observation
Quality/delivery Performance	<ul style="list-style-type: none"> <li>Strong External and Internal Quality focus</li> </ul>	<ul style="list-style-type: none"> <li>High OTIF compliance</li> <li>Defect analysis capability and resolution</li> <li>Good traceability of in-transit and warranty claims</li> <li>Final inspection to protect the customers</li> </ul>
Performance Management	<ul style="list-style-type: none"> <li>Strong focus on business goals and performance management</li> </ul>	<ul style="list-style-type: none"> <li>Production lines are profit centers (business units) and financial accounting for each line</li> <li>Performance management system (right balance of company and individual performance to reward individuals, annual appraisal system)</li> </ul>
Employee satisfaction	<ul style="list-style-type: none"> <li>Very strong backing by employees</li> </ul>	<ul style="list-style-type: none"> <li>Reduced turnaround rate from 5% to ~1%</li> <li>Strong shop floor team work</li> <li>Readiness to embrace change</li> </ul>

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## Mindset and capabilities survey results

### 1. FOCUS

Definition: People are excited about what the organization does, where it is heading and how it translates to their role

- I look forward to coming to work
- The site is performing well
- The long term strategy of the company is clear to me
- As an organization we are heading in the right direction
- As an organization we have a clearly defined set of values
- I have a clear understanding of the objectives of this program
- I agree that there is an urgent need to meet these objectives
- I am motivated by long term prospects here



Notes: Sample Size = 200

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## Observation of further improvement opportunities

WE OBSERVED A FEW AREAS FOR IMPROVEMENT

	Improvement idea	Observation
Aspiration setting	<ul style="list-style-type: none"> <li>Set higher aspirations at overall organization level cascaded down to department level</li> </ul>	<ul style="list-style-type: none"> <li>OTIF goal of XX% with most of the weeks at or above the goal</li> </ul>
Performance management	<ul style="list-style-type: none"> <li>Lack of clarity of KPI at the frontline level</li> <li>Low usage of visual management</li> </ul>	<ul style="list-style-type: none"> <li>No clear quantifiable KPIs came out in discussion</li> <li>Low level of visual management tools observed in assembly line</li> </ul>
Equipment utilization	<ul style="list-style-type: none"> <li>Enhance line OEE through focusing on key loss areas</li> </ul>	<ul style="list-style-type: none"> <li>Line A OEE is 80%</li> <li>Line B OEE is improving but 5% lost in maintenance downtime</li> </ul>

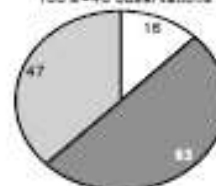
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## Supporting analysis

### MANPOWER UTILIZATION

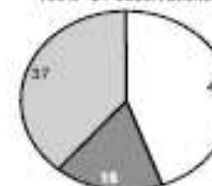
Shop floor work sampling: Shop 1

100% = 45 observations



Shop floor work sampling: Shop 2

100% = 21 observations



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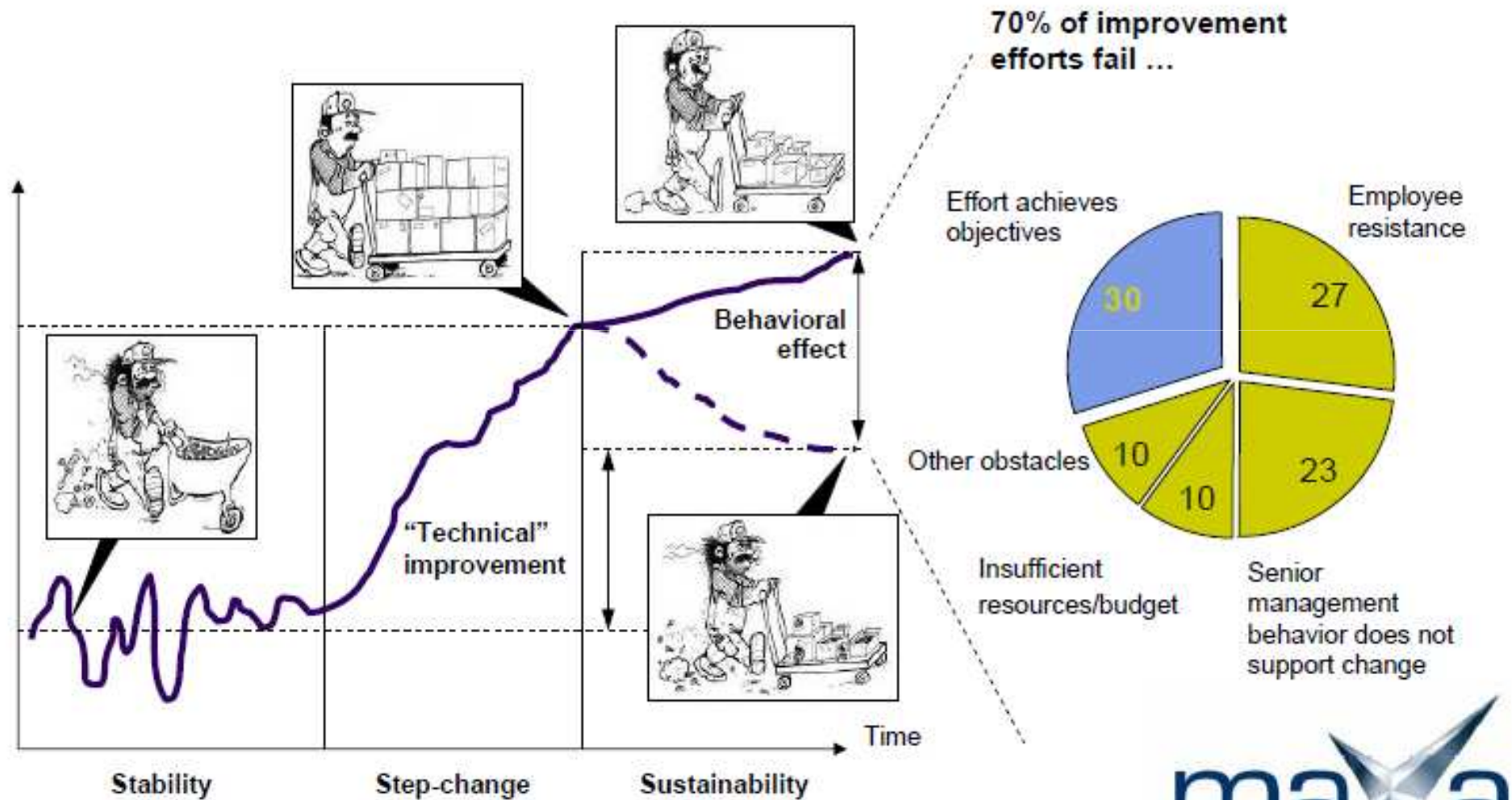


## Some Key Considerations

1. The company has made significant achievements that are benchmarked internationally
2. The company's Singapore operation has innovations and practices that have contributed to its success
3. The company's Singapore operation has clear strategic plans
4. There is a culture and mindset for continuous innovation that enables it to remain competitive

# Behavioral effects are key to Sustainable Performance

■ Success  
■ Failure



Source: McKinsey Manufacturing Practice



## Outline

1. Product Innovation
2. Manufacturing Process Innovation
3. Manufacturing Systems Innovation
4. Strategic Innovations
5. Evidence of Impact of Innovations
6. Environment and Culture For Innovation

## 1. Product Innovation

- Good capability for product innovation and new product development

## 2. Manufacturing Process Innovation

- New process technology to enhance competitiveness
- New automation for increased flexibility and enhanced quality
- Development of new manufacturing processes for environmental conservation

## 3. Manufacturing Systems Innovation

- New methods of factory control allowing rapid readjustment to market
- Exploitation of capabilities across the entire value chain (e.g. R&D, product design, production, supply chain management and sales & marketing) resulting in improved performance

## 4. Strategic Innovations

- Novel logistics plans to exploit the Singapore transportation nexus
- Supplier development initiatives to enhance the capabilities of local supporting industry
- Strategic partnerships with suppliers or customers to reduce time to market
- Proactive employee education and training to stay ahead of product and process changes
- Exemplary total quality or lean improvement methods with built-in teaching mechanisms.
- Unique partnering with local educational institutions or research institutes to improve knowledge transfer

## 5. Evidence of Impact of Innovations

- Design and innovation has made a significant, and preferably quantifiable, contribution to the company/plant's success

## 6. Environment and Culture For Innovation

- Innovation, and Intellectual Property (IP) awareness, is high on the management agenda at the company/plant
- There is evidence of a properly constituted R&D/design and innovation strategy
- There is evidence that the company/plant has accelerated its rate of innovation
- There is evidence that R&D/design and innovation activities are managed as a continuous process