“Sustainable of Manufacturing with Lean Production System and Automotive Supplier Excellence Programme”
### Developing Local Automotive Industries

Global auto industry trends and challenges

<table>
<thead>
<tr>
<th>External</th>
<th>Customer</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Legislation (environment, safety, others)</td>
<td>• Stagnation demand and price pressure in established markets</td>
</tr>
<tr>
<td>• Raw material and energy cost</td>
<td>• Segmentation and polarization (low cost vs. premium)</td>
</tr>
<tr>
<td>• Exchange and interest rate</td>
<td>• Decreasing loyalty</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Competition</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Quickly entering every segment</td>
<td>• Global overcapacity</td>
</tr>
<tr>
<td>• Moving targets – everyone optimizing or restructuring</td>
<td>• Complex alliances, partnership, M&amp;As</td>
</tr>
<tr>
<td>• Global game (eg: aggressive Asian companies, new entrants)</td>
<td>• Consolidating ecosystem (suppliers, dealer groups)</td>
</tr>
</tbody>
</table>
Developing Local Automotive Industries

Improving the capabilities of local automotive suppliers

- **LEVEL 5**: Supplier are able to perform its own research on the product improvement, ideas, conceptual outcome and propose to the OEM.

- **LEVEL 4**: Component idea, concept and requirement given by the OEM. Supplier will come out with component design, detail specification and component manufacturing. Supplier are able to improve and giving alternative to OEM.

- **LEVEL 3**: Detail Component specification given by the OEM. Supplier responsible to perform component design, testing, production facilities and manufacture the component. Supplier are able to warrant part reliability.

- **LEVEL 2**: Component design, drawing and specification given by OEM. Supplier responsible to design and fabricate production facilities and manufacture the component.

- **LEVEL 1**: Component Specification, Design and production facilities prepared by OEM. Supplier concentrated in production and maintaining the facilities.
Developing Local Automotive Industries

Current approach of improving local automotive industries

1. Business Plan
   - Competencies
   - Strategies
   - Actions
   - Tracking
   - Managing Risk
   - Alignment

2. Operations
   - Competitive
   - Lean
   - Kaizen
   - Processes

3. People
   - Leadership
   - Culture
   - Attitude
   - Drive
   - Change
   - Management

4. Diversification
   - Realistic
     - (Competency Audit)
   - Relative
   - (Competitive Analysis)
   - Relevant
   - (Market Analysis)

5. Marketing
   - Placement
   - Price
   - Promotion
   - Product volume

6. Export
   - Growth
   - Need/Desire
   - Willingness
   - Understanding
   - Preparedness
   - Target/s
     - Country
     - Sector
     - Customer
     - Product
     - Service

Improvement Process Starts By Jumping To Stage 2 Through The Lean Production System Implementation
Developing Local Automotive Industries

Current approach of improving local automotive industries

- Improvement through the Lean Production System (LPS) programme under ATEA

<table>
<thead>
<tr>
<th>Improvement</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>WIP reduction</td>
<td>24.23%</td>
</tr>
<tr>
<td>Manpower reduction</td>
<td>18.43%</td>
</tr>
<tr>
<td>Space utilization reduction</td>
<td>13.65%</td>
</tr>
<tr>
<td>Setup time reduction</td>
<td>13.65%</td>
</tr>
<tr>
<td>Lead time reduction</td>
<td>9.22%</td>
</tr>
<tr>
<td>Productivity improvement</td>
<td>20.82%</td>
</tr>
</tbody>
</table>

Total cost saving from the previous 20 companies participated MAI-LPS programme (G1):

- Space utilization: RM 12m
- Man power: RM 0.36m
- WIP reduction: RM 4.2m
- Reject reduction: RM 1.2m
- Raw Material: Stock holding 0.6m

**Total cost saving: RM18.36 million**

Improvement focused only on the operational site
### Developing Local Automotive Industries

Benchmarking with global automotive industries

<table>
<thead>
<tr>
<th>Projects Title</th>
<th>Country</th>
<th>General Benefited</th>
</tr>
</thead>
</table>
| The Phase Manufacturing Programme (PMP)                                       | INDIA  | • Modernized auto-component industry technology  
• Improved quality  
• Imbibed good manufacturing and shop-floor practices  
• Transformed auto-component industry into a highly capable sector of the industry  
• Contributed to localizing the component base  
• Vehicle manufacturer started outsourcing more and more component  
• Developed component and setup facilities  
• Capability to manufacture the new breed of auto-components required for new generation vehicles |
| Improving the Economic and Environmental Performance of the North American Automotive Industry Supply Chain Programme | US      |                                                                                                                                                                                                                  |
|                                                                                | MEXICO  |                                                                                                                                                                                                                  |
|                                                                                | CANADA  |                                                                                                                                                                                                                  |
| Automotive Supplier Excellence Australia                                       | AUSTRALIA |                                                                                                                                                                                                               |
| Automotive Technical Expert Assistances                                       | JAPAN   |                                                                                                                                                                                                                  |
Benefit from the global Automotive Supplier Excellence Programme

• Modernized auto-component industry technology
• Improved quality
• Imbied good manufacturing and shop-floor practices
• Transformed auto-component industry into a highly capable sector of the industry
• Contributed to localizing the component base
• Vehicle manufacturer started outsourcing more and more component
• Developed component and setup facilities
• Capability to manufacture the new breed of auto-components required for new generation vehicles

AUTOMOTIVE SUPPLIER EXCELLENCE PROGRAMME (ASEP)
ASEP : Programme flow

1. An initial meeting with the Programme Director, to gain a common understanding and commitment.

2. A comprehensive 1 day company-wide assessment involving all areas of the business, to establish baseline.

3. Meeting to discuss the outputs of the assessment, including Benchmark Report and Improvement Plans.

4. Implement first 2 projects. Discuss and document Project Scoping documents including deliverables.
   - Continuous project monitoring, analysis & final review.

5. Implement additional projects.

6. Annual re-assessment to track progress and improvement.
## ASEP: Improvement Process

### 11 competency areas under 5 separate books:

<table>
<thead>
<tr>
<th>Books</th>
<th>Competency areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. People and Performance</td>
<td>5. Supply Chain Integration.</td>
</tr>
<tr>
<td></td>
<td>6. Customer Focus</td>
</tr>
<tr>
<td></td>
<td>7. New Model Introduction Capability</td>
</tr>
<tr>
<td></td>
<td>8. Manufacturing and Quality</td>
</tr>
<tr>
<td></td>
<td>9. Safety</td>
</tr>
<tr>
<td></td>
<td>10. Technology Investment.</td>
</tr>
<tr>
<td></td>
<td>11. People and Performance</td>
</tr>
</tbody>
</table>

MALAYSIA AUTOMOTIVE INSTITUTE
ASEP : Improvement Process

Book 1 : Improving Management and Leadership

Management and Leadership

The processes by which the company develops and executes strategic and operational visions

Focused Area:

1. Executive Vision
2. Strategic Planning
3. Goal Achievement
4. Benchmarking Performance
5. Change Management
6. Organizational Risk Management
7. Continuous Improvement
8. Global Product Capabilities
9. Networking Global Organizations
10. Linkages To Global MVP Platforms
11. Suppliers and Product Development
12. Innovation
13. Management Capability
ASEP : Improvement Process

Book 2 : Manufacturing and Quality

Manufacturing and Quality

The processes of managing quality through the manufacturing process.

Focused Area:

1. Customer Relationships
2. Quality Performance
3. Quality Performance
4. Lean Manufacturing
5. Delivery To Customer
6. Overall Equipment Effectiveness
7. Safety
8. PPAP Approval
9. Pre-Production Validation
10. Launch Issues
• Implementing Lean Production System as a tool for improving manufacturing process

• 2.4 Lean Manufacturing - Methods and Effectiveness

- High Quality
- Low Cost
- Reduction of production lead time
- Training of the talented people who can improve
LPS : Programme General Flow

- Company selection and nomination by MAI, PROTON and PERODUA
- Programme proposal
- LPS working committee meeting
- LPS steering committee meeting
- Top management briefing and training
- LPS seminar
- LPS interim audit
- LPS interim presentation
- LPS 6 months coaching
- LPS final audit
- LPS final presentation

Assessment And Gap Study Process
ASEP : Improvement Process

LPS : Seminar

Seminar organized by MAI as a platform for kaizen team from each companies participated in MAI-Proton-Perodua LPS programme to gain basic knowledge and fundamentals in LPS.
LPS : Assessment And Gap Study

• MAI_LPS Gap study done through:
  - Interim audit before the coaching activities started
  - Final audit after finished the 6 months coaching

• Auditors from MAI, Japanese Expert together with Local Expert from Proton and Perodua will audit participated vendors based on the LPS Level Evaluation Sheet.

• The audit criteria based on the 11 main items with 38 sub items that falls under three major parts which are
  - Factory administration and management system
  - Just In Time (JIT) and,
  - JIDOKA.
## ASEP : Improvement Process

### LPS : Implementation Plan

#### ATEA PHASE II (2013-2015)

<table>
<thead>
<tr>
<th>G4, G5 &amp; G6</th>
<th>Upgrading G1, G2</th>
<th>MAI Special Programme</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OBJECTIVE</strong></td>
<td>Improving previous participated companies in MAI LPS Programme to be upgraded to achieve LPS Level 4 and 5.</td>
<td><strong>SIPRO PLASTIC</strong>: Painting Line Transformation Project (In Progress)</td>
</tr>
<tr>
<td><strong>DURATION</strong></td>
<td>6 Months projects based</td>
<td><strong>AUTOKEEN</strong>: Die Maintenance Special Project (In Progress)</td>
</tr>
<tr>
<td><strong>IMPLEMENTATION</strong></td>
<td>JE will be focusing on LPS, LE will focusing in Lean Six Sigma</td>
<td><strong>UCM Subang</strong>: LPS Warehousing (In Progress)</td>
</tr>
<tr>
<td>Targeting participated companies under MAI LPS Programme to achieve at least LPS Level 3</td>
<td>LE will be certified with SKM Level 3 and Lean Six Sigma</td>
<td><strong>SANYCO GRAND</strong>: TPM (Beginning soon)</td>
</tr>
<tr>
<td>6 Months projects based</td>
<td></td>
<td><strong>JEBCO</strong>: TPM (Beginning soon)</td>
</tr>
<tr>
<td>JE acts as advisor, LE as coacher</td>
<td></td>
<td><strong>HICOM AUTOMOTIVE MANUFACTURER MALAYSIA (HAMM)</strong>: Painting Projects (Beginning soon)</td>
</tr>
</tbody>
</table>

*All project are customized based on companies’ need.
Book 3: Improving Financial Practices and Performance

Financial Practices and Performance

The processes by which the company manages financial information.

Focused Area:

1. Financial Practices
2. Cost Reduction
3. Performance
4. Cost Reduction Plans
5. Technology
6. Labour Productivity
Procurement and Project Management

The processes which involves planning for all the resources such as people, goods and services

Focused Area:

1. Competitive Sourcing
2. Sourcing for Speed and Agility
3. Risk Management
4. Supplier Development Programs
5. Supplier Improvement
6. Resources for New Model Introductions
7. Comprehensiveness of New Model Introduction Process
8. Supply Line Management
9. Logistics Management
10. Pipeline Visibility
11. Procurement Team
ASEP : Improvement Process

Book 5: Improving People and Performance

People and Performance

The processes by which the company manages its workforce engagement.

Focused Area:

1. KPIs and Goals
2. Organizational Culture
3. Training and Development
4. Engagement of People
5. Market Knowledge
# ASEP : Implementation Plan

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ASEP PILOT PROJECT</td>
<td>10 companies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASEP G1-G5 PROJECT</td>
<td></td>
<td>60 companies</td>
<td></td>
</tr>
<tr>
<td>ASEP G6-G10 PROJECT</td>
<td></td>
<td></td>
<td>120 companies</td>
</tr>
</tbody>
</table>
Conclusion

The overall goal of Automotive Supplier Excellence Programme (ASEP) road mapping has been to provision aims of Malaysia automotive industry, providing a structured framework for on going improvement of our local vendors.

ASEP is designed to assist Malaysian automotive supply base in achieving competitiveness and sustainability. ASEP is viewed as a unique opportunity for vendors to position themselves on the road to growth and a sustainable future.

Through the creation of an independent, best-in-class benchmarking process and targeted supply chain development, ASEP will enable Malaysian automotive suppliers to achieve world-class capability and competency levels in the future.