Globalization of NPW (Nissan Production Way)

Introduction of Global Training Center

November 29th, 2006
Nissan Motor Co.
EVP  Tadao Takahashi
• **Nissan Production Way (NPW)**

• **New Challenge for Globalization**

• **Global Human Resources Development: GTC**
Nissan Production Way: Two never ending

Never ending quests to identify problems and put in place solutions

Never ending synchronization (Douki) our manufacturing with the customers
• **Nissan Production Way (NPW)**

• **New Challenge for Globalization**

• **Global Human Resources Development: GTC**
Globalization of production

(k units)

2003 : Over 50 %

Overseas
Japan
Introduction of Nissan Motor

Vehicle plant (Including KD) : 27
Power Train plant : 25
Global plant launching history

- **Japan**
  - Yokohama
  - Nissan Shatai
  - Oppama
  - Tochigi
  - Kyushu
  - Iwaki

- **Europe**
  - Spain
  - UK

- **NAFTA**
  - Mexico
  - USA

- **Mercosur**
  - Brazil

- **ASIA**
  - Taiwan
  - Thailand
  - China
  - Indonesia
  - South Africa

- **AFRICA**
  - Egypt

- **NPW**
  - '94

- **Years**
  - '50s
  - '60s
  - '70s
  - '80s
  - '90s
  - 2000
  - '05
70 new model launches in Nissan Value-Up

<table>
<thead>
<tr>
<th></th>
<th>FY05</th>
<th>FY06</th>
<th>FY07</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NAFTA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Europe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>China</td>
<td></td>
<td></td>
<td>42/70</td>
</tr>
<tr>
<td>Thailand GOM others</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Internal benchmarking

As comparing performance globally, Best Practices are exchanged.

Best Practice

Best practice

Common index

Internal benchmarking
Standardization of hardware:
NIMS (Nissan Integrated Manufacturing System)

Multi-model mixed production  Example from body welding line

- Additional models
- Halve lead time
- Halve investment

Jig part
NC locator part
Overseas support: 3G + 1 strategies

- Improve Manufacturing Capability
- Centralized New Model Trial
- Launching Support
- Global Training Center
- Global Production Engineering Center
- Global Launching Expert
- Global Package Design Center

3G Strategies

Trial

Start of production
• **Nissan Production Way (NPW)**

• **New Challenge for Globalization**

• **Global Human Resources Development: GTC**
## Overall of GTC

<table>
<thead>
<tr>
<th></th>
<th>Oppama</th>
<th>Yokohama</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Job Category</strong></td>
<td>Vehicle Mfg, Logistics, Quality Assurance</td>
<td>Maintenance, Power Train Mfg</td>
</tr>
<tr>
<td><strong>Area</strong></td>
<td>5,000 m²</td>
<td>1,300 m²</td>
</tr>
<tr>
<td><strong>Capacity</strong></td>
<td>50 members</td>
<td>10 members</td>
</tr>
</tbody>
</table>
# Main training courses

<table>
<thead>
<tr>
<th>Manufacturing</th>
<th>Vehicle</th>
<th>Power train</th>
<th>Engine Assy</th>
<th>Machine</th>
<th>Casting</th>
<th>Common</th>
<th>Skill</th>
<th>Genba kanri</th>
<th>Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material handling</td>
<td>QA</td>
<td>Maintenance</td>
<td>Equipment</td>
<td>Press die</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Main training courses**
  - **Basic skill**
  - **Advanced skill/application skill**
  - **Daily management**
  - **New model management**

**Course expansion**
Globally standardized “Training Way”

Master Trainer System

<table>
<thead>
<tr>
<th>14 Regions</th>
<th>NMISA</th>
<th>NNA</th>
<th>NMUK</th>
<th>DFL</th>
<th>NSA</th>
<th>SNA</th>
<th>OTHER</th>
<th>NML</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NPW office</td>
<td>NPW office</td>
<td>NPW office</td>
<td>NPW office</td>
<td>NPW office</td>
<td>NPW office</td>
<td>NPW office</td>
<td>B20</td>
</tr>
<tr>
<td></td>
<td>RTC</td>
<td>RTC</td>
<td>RTC</td>
<td>RTC</td>
<td>RTC</td>
<td>RTC</td>
<td>RTC</td>
<td>GTC</td>
</tr>
</tbody>
</table>

Basic skills

Advanced skills

Global Master Trainer
Global “human resources” development through master trainer

20 times speed as conventional way (direct training)
Globally standardized “Teaching Material”

Introduce best practices of training materials to all plants in the world
E.g. RTC in Thailand
Global human resources development Keyword: Visualization

“Language” barrier

Hoja de Operacion Estandar

No language: Visual Manual

Standard Operation Sheets
Correct procedure and key points are visualized.
**History of courses** *(No. of master trainers as of Nov. ’06)*

<table>
<thead>
<tr>
<th>Oct ’05</th>
<th>Dec</th>
<th>Jan ’06</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>TTL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vehicle MFG</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>97</td>
</tr>
<tr>
<td>Mexico</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Thailand</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>China</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Indonesia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Spain</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>11</td>
</tr>
<tr>
<td>Mexico</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>11</td>
</tr>
<tr>
<td><strong>Powertrain MFG</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Mexico</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>Maintenance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>Mexico</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>China</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>US</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td><strong>Material Handling</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Mexico</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>China</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Indonesia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>Quality Assurance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>Mexico</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>China</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Indonesia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>China</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Japan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

**138 Master trainers were born.**
Nissan Manufacturing
Sprit to be Worldwide