Emerging Challenges in Human Resource Management of R&D Workers in Japanese Automotive Industry

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Hideki S. Tanaka (Doshisha University, ITEC)

Friday, April 19, 2013
University of Michigan
The Michigan Union, Anderson Room
Our Proposition

“Any organization totally depends on its human resources.”
Introduction

Total Employment in Japanese Auto Manufacturing & Related Industries
5.45 million (8.7%)

Total Employment (Workforce) in Japan
62.57 million (100%)

Source: The Motor Industry in Japan 2012
Introduction

Overtime Work Hours per Month (Average in Manufacturing)

Source: The Ministry of Health, Labour and Welfare

Lehman Shock

2011 Earth Quake
Focus on engineers.


Results from our recent survey among automotive engineers in Japan.

- Changes in the ways engineers work overtime and how they feel about the change.

- The ways in which reduction of overtime affected engineers’ and managers’ lives in and outside work.

- Emergent issues of engineers’ human resource development.
Data

● Automotive Survey (December 2011 - February 2012)

● Firm-level Unions in One Automotive Manufacturing Group (including manufacturers & subsidiaries)

● 1430 Union Member Engineers (Response Rate 94.5%)

387 Managers in Workplaces in which the above Engineers Work (Response rate 77.2%)

Union members & Managers = Salaried White-Collars
Managers

○ “Discretionary work system"
○ Have more control over how long they work.
○ At risk of working too many hours.
○ Not paid extra for overtime.

Union Members

○ Have less control over work time.
○ Employer decisions regarding employees’ work hours.
  ➔ Likely affect union members’ time.
○ Paid extra for overtime.
1. Work Hours
Work Hours

Presence of Policies for Reducing Overtime Work (N=34)

- Polices Present: 67.6%
- No Polices Present but Attempts are being made: 32.4%
- No Polices Present or No Attempts are being made: 0.0%
Work Hours

Changes in Overtime Reduction (Multiple Answers, N=34)

<table>
<thead>
<tr>
<th>Changes during past 5 Years</th>
<th>0%</th>
<th>10%</th>
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Impact of Lehman Shock

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Impact of 2011 Earth Quake

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<tr>
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<td>5.9%</td>
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<td></td>
<td>52.9%</td>
<td></td>
<td>41.2%</td>
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</tbody>
</table>

Less reduction  No change  More reduction

P = Policy level,  A = Attempt level
Work Hours

More Stringent Overtime Reduction in Past 5 Years

- Union Members (N=1,421): 2.9%, 32.8%, 64.3%
- Managers (N=387): 1.8%, 28.2%, 69.9%

Less stringent  No change  More stringent
Work Hours

Do Hours of Work and Amount of Work Match Each Other?

![Bar chart showing the distribution of responses among Union Members (N=1,408) and Managers (N=361). The chart indicates the percentage of responses for each category: Strongly disagree (23.4% for Union Members, 19.4% for Managers), Disagree (37.9% for Union Members, 45.7% for Managers), Agree (35.8% for Union Members, 30.5% for Managers), and Strongly agree (2.8% for Union Members, 4.4% for Managers).]
Work Hours

Hours of Work and Amount of Work

Unable to finish work on schedule (Union Member N=1410)

Subordinates unable to finish work on schedule (Manager N=377)

Work hours increased due to subordinates' leftover work (Manager N=378)

Strongly disagree  Disagree  Agree  Strongly agree
Work Hours

Distribution of Monthly Overtime Work

- 0%: 3.8%
- 0~10: 11.5%
- 10~20: 21.7%
- 20~30: 26.5%
- 30~40: 18.0%
- 40~50: 16.1%
- 50~60: 15.5%
- 60~70: 8.3%
- 70~80: 7.8%
- 80~90: 1.3%
- 90~100: 2.6%
- 100+: 3.9%
2. Impact of Overtime Reduction
Impact of Overtime Reduction

Not Enough Time to Train Subordinates and Juniors

[Bar chart showing the percentage of Union Members and Managers who disagree with the statement that there is not enough time to train subordinates and juniors.]

- Union Members (N=1,408): 8.6% strongly disagree, 30.0% disagree, 43.5% agree, 18.0% strongly agree.
- Managers (N=378): 2.1% strongly disagree, 13.0% disagree, 56.1% agree, 28.8% strongly agree.

2013/4/19
Tetsushi Fujimoto & Hideki S. Tanaka
Impact of Overtime Reduction

Skill Transmission based on On-the-Job Training

Becoming more Difficult

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Union Members: N=1,409</td>
<td>5.3%</td>
<td>27.8%</td>
<td>48.3%</td>
</tr>
<tr>
<td>Managers: N=379</td>
<td>1.6%</td>
<td>28.0%</td>
<td>51.7%</td>
</tr>
</tbody>
</table>
Impact of Overtime Reduction

More Time for Self-Studying

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
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</thead>
<tbody>
<tr>
<td>20s</td>
<td>14.1%</td>
<td>36.4%</td>
<td>47.7%</td>
<td>1.8%</td>
</tr>
<tr>
<td>30s</td>
<td>32.6%</td>
<td>47.7%</td>
<td>15.1%</td>
<td>1.7%</td>
</tr>
<tr>
<td>40s</td>
<td>37.7%</td>
<td>45.8%</td>
<td>16.5%</td>
<td></td>
</tr>
<tr>
<td>50s &amp; Over</td>
<td>14.8%</td>
<td>63.0%</td>
<td></td>
<td>22.2%</td>
</tr>
</tbody>
</table>

Total (N=1411)
Impact of Overtime Reduction

Product Quality and the Level of Development Becoming Inferior

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Union Member</td>
<td>8.4%</td>
<td>43.8%</td>
<td>35.3%</td>
<td>12.5%</td>
</tr>
<tr>
<td>Managers</td>
<td>5.0%</td>
<td>38.3%</td>
<td>42.7%</td>
<td>14.0%</td>
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</tbody>
</table>
Impact of Overtime Reduction

Becoming Harder to Try New Things with a Fear of Failure

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
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</thead>
<tbody>
<tr>
<td>Union Members (N=1,411)</td>
<td>7.5%</td>
<td>36.7%</td>
<td>41.8%</td>
<td>14.0%</td>
</tr>
<tr>
<td>Managers (N=379)</td>
<td>4.0%</td>
<td>39.3%</td>
<td>44.3%</td>
<td>12.4%</td>
</tr>
</tbody>
</table>
Impact of Overtime Reduction

Decreasing Communication with Colleagues

- Union Members (N=1,410):
  - Strongly disagree: 12.7%
  - Disagree: 52.5%
  - Agree: 27.6%
  - Strongly agree: 7.2%

- Managers (N=379):
  - Strongly disagree: 11.1%
  - Disagree: 58.8%
  - Agree: 28.0%
  - Strongly agree: 2.1%
Impact of Overtime Reduction

Feeling of Leaving Unfinished Work at the End of a Day

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Frequently</th>
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<tbody>
<tr>
<td>Union</td>
<td>2.1%</td>
<td>13.6%</td>
<td>43.3%</td>
<td>41.0%</td>
</tr>
<tr>
<td>Members</td>
<td>(N=1416)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Managers</td>
<td>11.8%</td>
<td>24.1%</td>
<td>21.3%</td>
<td>20.8%</td>
</tr>
<tr>
<td>(N=384)</td>
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</tbody>
</table>
Impact of Overtime Reduction

Satisfaction with Overall Working Life

- Very satisfied
- Satisfied
- Neither
- Dissatisfied
- Very dissatisfied
3. Human Resource Development
Human Resource Development

Managers’ Attitudes Toward Competencies and Qualities Required for R&D engineers (N=387)

- Problem-solving Ability: 51.2%
- Logical/Systematic Thinking: 48.3%
- Sense of Responsibility: 35.9%
- Willingness to Take Challenges: 31.8%
- Communication Skills: 24.5%
- Ability to Handle Situation: 23.5%
- Leadership: 21.7%
- Planning ability: 13.4%
- Motivation to Train Junior Colleagues: 8.3%
- Adjustability: 7.5%
- Endurance: 5.7%
- Time Management Skills: 3.4%
Human Resource Development

Do you currently feel that your ability as an R&D engineer has reached the ceiling? (By Job Rank)

- **Union Members (Total) (N=1403)**
  - Strongly disagree: 7.6%
  - Disagree: 30.9%
  - Agree: 49.4%
  - Strongly agree: 12.1%

- **General Staffs (N=782)**
  - Strongly disagree: 9.2%
  - Disagree: 26.2%
  - Agree: 51.8%
  - Strongly agree: 12.8%

- **Subsection Chiefs/Team Leaders (N=621)**
  - Strongly disagree: 5.6%
  - Disagree: 36.7%
  - Agree: 46.4%
  - Strongly agree: 11.3%
Human Resource Development

Work-Life Balance & Creativity Tendency

- Union Members (N=1349)
- Managers (N=384)

<table>
<thead>
<tr>
<th>Status</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
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</thead>
<tbody>
<tr>
<td>Work-Life Balanced</td>
<td>6.9%</td>
<td>40.7%</td>
<td>41.8%</td>
<td>10.6%</td>
</tr>
<tr>
<td>Work-Life Unbalanced</td>
<td>11.3%</td>
<td>43.1%</td>
<td>39.3%</td>
<td>6.3%</td>
</tr>
<tr>
<td>Work-Life Balanced</td>
<td>3.0%</td>
<td>24.9%</td>
<td>55.7%</td>
<td>16.4%</td>
</tr>
<tr>
<td>Work-Life Unbalanced</td>
<td>2.7%</td>
<td>35.0%</td>
<td>46.4%</td>
<td>15.8%</td>
</tr>
</tbody>
</table>
Human Resource Development

W-L Balance & Active Proposal of New Ideas

- Union Members (N=1347)
  - Work-Life Balanced (N=789)
    - 4.1% Strongly disagree
    - 48.0% Disagree
    - 39.4% Agree
    - 8.5% Strongly agree
  - Work-Life Unbalanced (N=558)
    - 6.6% Strongly disagree
    - 55.7% Disagree
    - 32.1% Agree
    - 5.6% Strongly agree

- Managers (N=384)
  - Work-Life Balanced (N=200)
    - 6.5% Strongly disagree
    - 51.0% Disagree
    - 42.5% Agree
  - Work-Life Unbalanced (N=184)
    - 1.6% Strongly disagree
    - 12.5% Disagree
    - 50.5% Agree
    - 35.3% Strongly agree
For the Future of R&D Engineers in Japanese Automotive Industry

✔ Human resources as the CORE of Japanese auto industry.

✔ Importance of revisiting the meaning of work & personal time for engineers.

“More personal time and less work time” could result in engineers’ work-life imbalance and their work motivation may decline.

⇒ Possibly affect their creative and innovative work performance.

✔ “Ability ceiling”: Perceived upper limit in ability for engineers.
Acknowledgement

This work was supported by MEXT-Supported Program for the Strategic Research Foundation at Private Universities, 2009-2014.

Special thanks to:

Sayaka K. Shinohara
All respondents in our questionnaire survey.

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Hideki S. Tanaka: hishimiz@mail.doshisha.ac.jp

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