Success Factors of NEDO Projects by “NEDO Success Stories”

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NEDO
Oct. 16, 2014
Denver, Colorado USA
Content of Presentation

1. NEDO’s Role in R&D
2. Purpose of Study
3. Methodology: Analysis of Success Factors based on *NEDO Success Stories*
4. Case Studies
5. Results of NEDO Project Success Factor Analysis
6. Summary
1. NEDO’s Role in R&D

- Promotion of R&D
- Efficient project management

Ministry of Economy, Trade and Industry (METI)
Council for Science and Technology Policy

Coordination with policy making authorities

Consortium
Combined efforts of industry, government, and academia

Industry
Universities
Research institutes
Simplified structure of R&D funding system in Japan
2. Purpose of study

- Improve the success rate of NEDO projects
- Improve NEDO project management
- Build the system for handing down the knowledge
3. Methodology

Follow-up evaluation

<table>
<thead>
<tr>
<th>Monitoring immediately after project</th>
<th>Simplified and detailed monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post 2 years monitoring</td>
<td>Post 4 years monitoring</td>
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<td>Post 6 years monitoring</td>
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Project period

Pre-Project evaluation

Interim evaluation

Post-Project evaluation

Follow-up monitoring period

• Discontinued and Terminated
• Commercialized

Success Factor Analysis

Feedback

Management Guideline/Check List

Numerical Analysis of Questionnaire → Isshiki

Case Study Analysis → Yoshida

<Next presentations>

<This Study>
“NEDO Success Stories”

<Contents of NEDO Success Stories>
- Development background
- The development path / breakthrough
- Product overview, functions and benefits
- NEDO roles and management

Project participant’s view

Analysis Methods of Success Factors

“Bean Count”: Each and every success factor is counted and categorized.

Material: NEDO Success Stories 2014

Business participants’ comments concerning contributions to the commercialization of NEDO projects are counted.
Example Cases from the **NEDO** Success Stories 2014

- PV
- Wind Power
- Fuel Cell
- Gas Turbine Power Generator
- Clean Diesel Engine
- Blu-ray Disc
- Perpendicular Magnetic Recording (HDD)
- X-ray CT Equipment
- Robot Suit HAL
4. Success Cases  [Clean Diesel Engine]

Back to the basic

Aggressive goal : 20% increase in fuel efficiency

“Comprehensive Technology Development of Innovative, Next-Generation, Low-Pollution Vehicles Project (FY2004-FY2008)”

Success Factors

- Simulation technology developed with Hiroshima University
- Prototype served as a bridge between laboratory and the enterprise division.
Success Cases [Blue-ray Disc]

Seeds
FY1995 Blue LED on sale

NEDO Project (1998 to 2002 / 9 companies)

FY2003 Blue-ray on sale

Needs
BS Digital HD Broadcasting Starts in 2001. The volume of one DVD is insufficient for recording a 2 hour movie in high quality.

The 9 participating companies collaborated and engaged in R&D.

In preparation for commercialization
Committee on Intellectual Property (IP) and International Standardization Committee are set up during Project period.

Important factor of success
The three basic parameters (spot size, wavelength, and lens numerical aperture) are set at the very beginning.

<table>
<thead>
<tr>
<th>CD</th>
<th>DVD</th>
<th>Blu-ray Disc</th>
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<tbody>
<tr>
<td>Memory Size: 700MB</td>
<td>Memory Size: 4.7GB</td>
<td>Memory Size: 25GB</td>
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<tr>
<td>Label Layer: 0.1mm</td>
<td>Label Layer: 0.6mm</td>
<td>Label Layer: 0.1mm</td>
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<td>Cover Thickness: 1.2mm</td>
<td>Cover Thickness: 0.6mm</td>
<td>Cover Thickness: 1.1mm</td>
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<td>Laser Wavelength: 780nm</td>
<td>Laser Wavelength: 650nm</td>
<td>Laser Wavelength: 405nm</td>
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<td>Lens Numerical Aperture (NA): 0.45</td>
<td>Lens Numerical Aperture (NA): 0.60</td>
<td>Lens Numerical Aperture (NA): 0.85</td>
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5. Results of NEDO Project Success Factors Analysis

<table>
<thead>
<tr>
<th></th>
<th>List of Success Factors</th>
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<tbody>
<tr>
<td>①</td>
<td>Challenges towards high risk R&amp;D</td>
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<tr>
<td>②</td>
<td>Collaborative setting for working together with other companies (even competitors)</td>
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<td>③</td>
<td>Collaboration with universities, especially mechanism clarification</td>
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<td>④</td>
<td>Incorporation of users as the receiver of the output and player of commercialization</td>
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<td>⑤</td>
<td>Advice from external expert through NEDO committees</td>
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<td>⑥</td>
<td>Demonstration experiment using the prototype</td>
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# Sheet of Analysis
*(Bean Count)*

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<th>Project</th>
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### Results of NEDO Project Success Factors Analysis

**(Aggregation of comments from 71 stories in *NEDO Success Stories 2014*)

<table>
<thead>
<tr>
<th>Success Factors</th>
<th>No. of Cases</th>
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<tr>
<td>⑥ Demonstration experiment using prototype</td>
<td>48</td>
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<tr>
<td>① Challenges towards high risk R&amp;D</td>
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<td>② Collaborative setting for working together with other companies (even competitors)</td>
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<td>③ Collaboration with universities, especially mechanism clarification</td>
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<td>④ Incorporation of users as the receiver of the output and player of commercialization</td>
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<tr>
<td>⑤ Advice from external expert through NEDO committees</td>
<td>19</td>
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6. Summary

The following success factors are identified from the NEDO success stories.

1) Demonstration experiment using prototype
2) Challenges and aggressive goals
3) Collaboration with even competitors that generate synergy effects
4) Collaboration with universities, mechanism clarification
5) Incorporation of user
6) Advice from external expert