

# **Success factors analysis of NEDO project by interview survey**

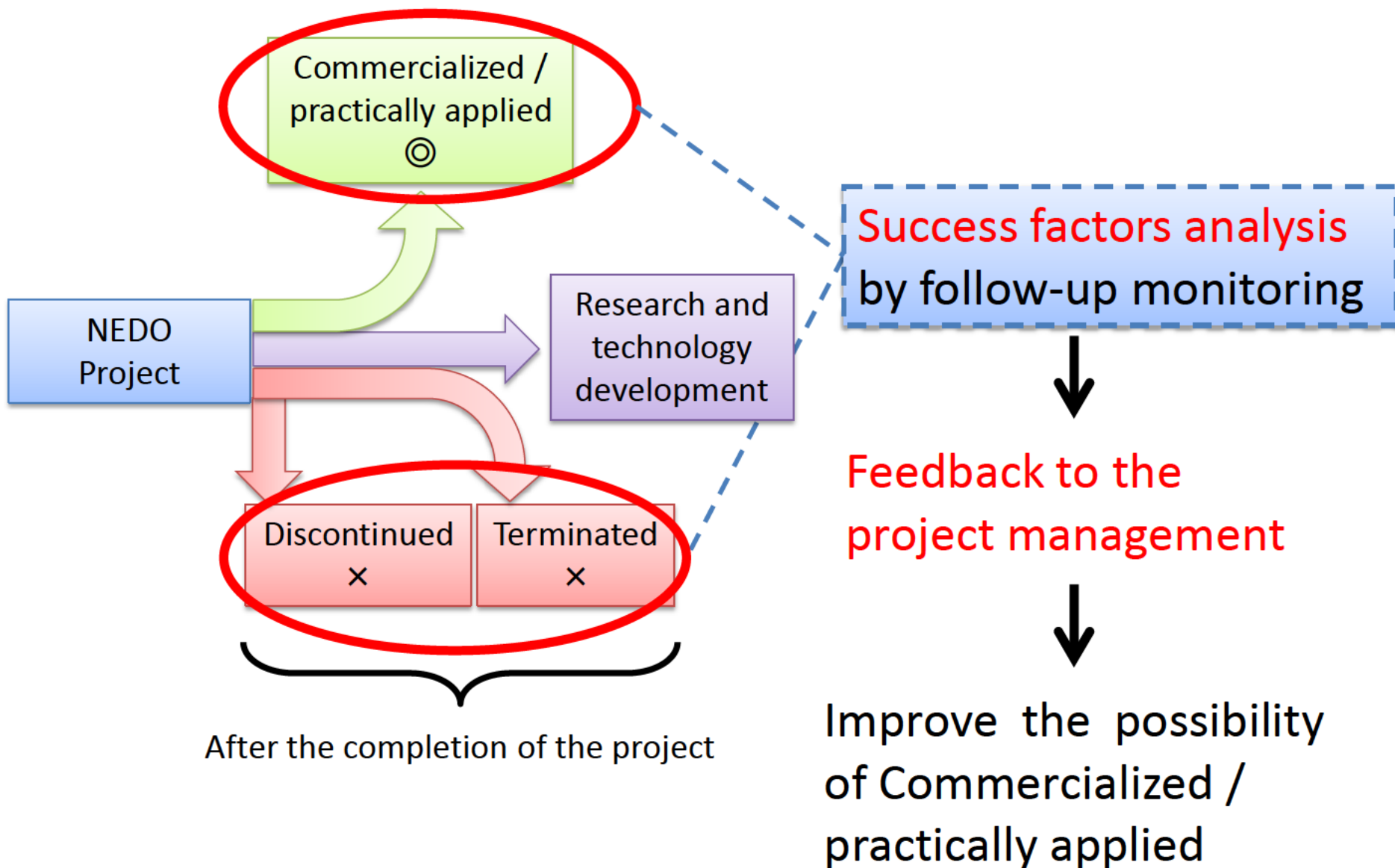
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NEDO

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Denver. USA

# Purpose of the Study



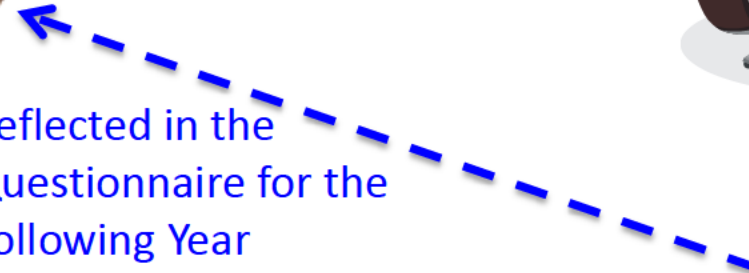
# Purpose of the Study

Questionnaires

Interviews



Reflected in the  
Questionnaire for the  
Following Year



**Analysis**

**Analysis**

Close the Gap

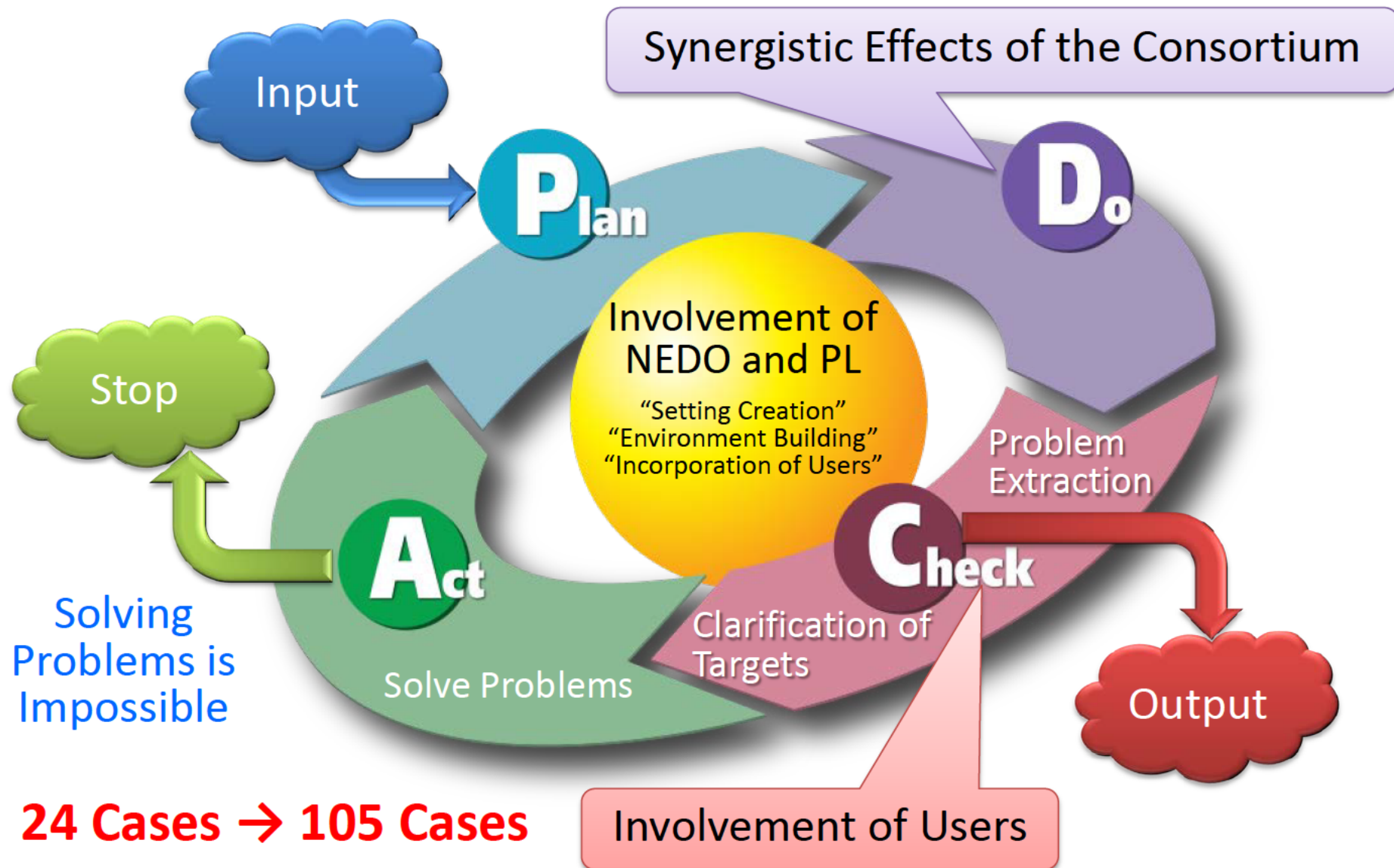
“Quantitative  
Understanding”

“Concept  
Formation”



**Feedback to Project Management**

# NEDO Project Success Factors and the PDCA Cycle



# Re-Evaluation of the PDCA Cycle with Larger Sample Size

Do

Synergistic Effects of the Consortium



Collaborative and/or

Synergistic Effects of the Consortium

Check

Involvement of Users



Involvement of Supply Chains and External Evaluation

# Re-Evaluation of the PDCA Cycle with Larger Sample Size

## NE DO and PL

“Incorporation of Users”



“Incorporation of **Other Organizations**”  
“**Good Reason**”



Others



“**Passion and Crisis**”

“**External Conditions**”

“**Internal Conditions**”

# New Classification

		Factor						
		Collaborative and/or Synergistic Effects of the Consortium	Involvement of Supply Chains and External Evaluation	Clarification of Targets and Solve Problems	Involvement of NEDO and PL "Incorporation of Other Organizations" "Good Reason"	Passion and Crisis	External Conditions	Internal Conditions
Commercialized (n=49)	○: Positive	31	37	22	23	15	10	13
	●: Negative	0	0	0	0	1	4	4
	(○-●)/n	63.3%	75.5%	44.9%	46.9%	28.6%	12.2%	18.4%
Terminated (n=33)	○: Positive	13	9	0	3	0	0	3
	●: Negative	3	6	15	2	1	14	2
	(○-●)/n	30.3%	9.1%	-45.5%	3.0%	-3.0%	-42.4%	3.0%
Discontinued (n=23)	○: Positive	3	3	0	1	2	0	0
	●: Negative	9	1	13	2	4	6	7
	(○-●)/n	-26.1%	8.7%	-56.5%	-4.3%	-8.7%	-26.1%	-30.4%

# Primary Success Factors by Multiple Regression Analysis

## First Factor



Clarification of Targets and Solve Problems

## Second Factor



Involvement of Supply Chains and External Evaluation



# Primary Success Factors by Multiple Regression Analysis

## Third Factor



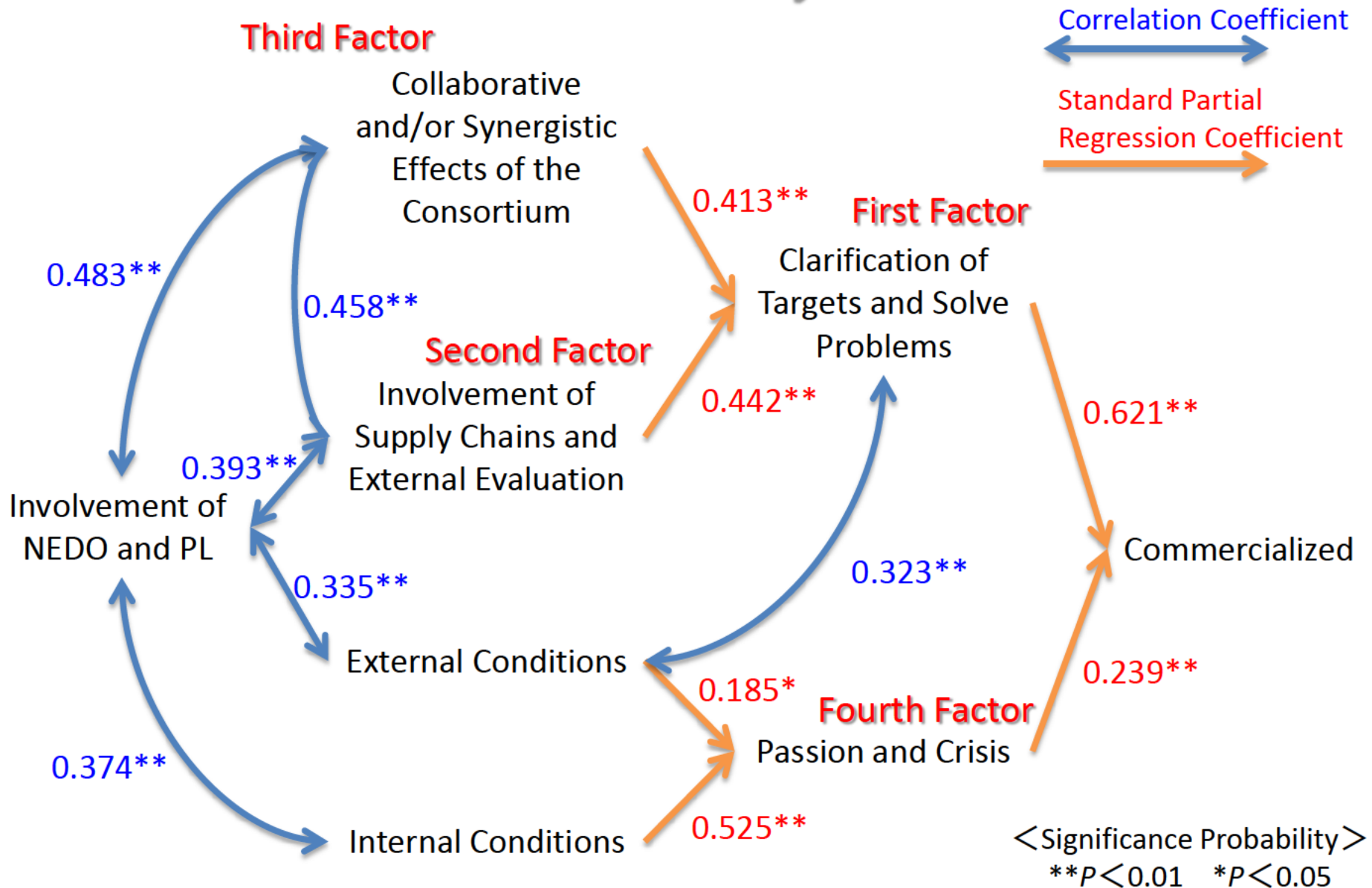
Collaborative and/or  
Synergistic Effects of the Consortium

## Fourth Factor

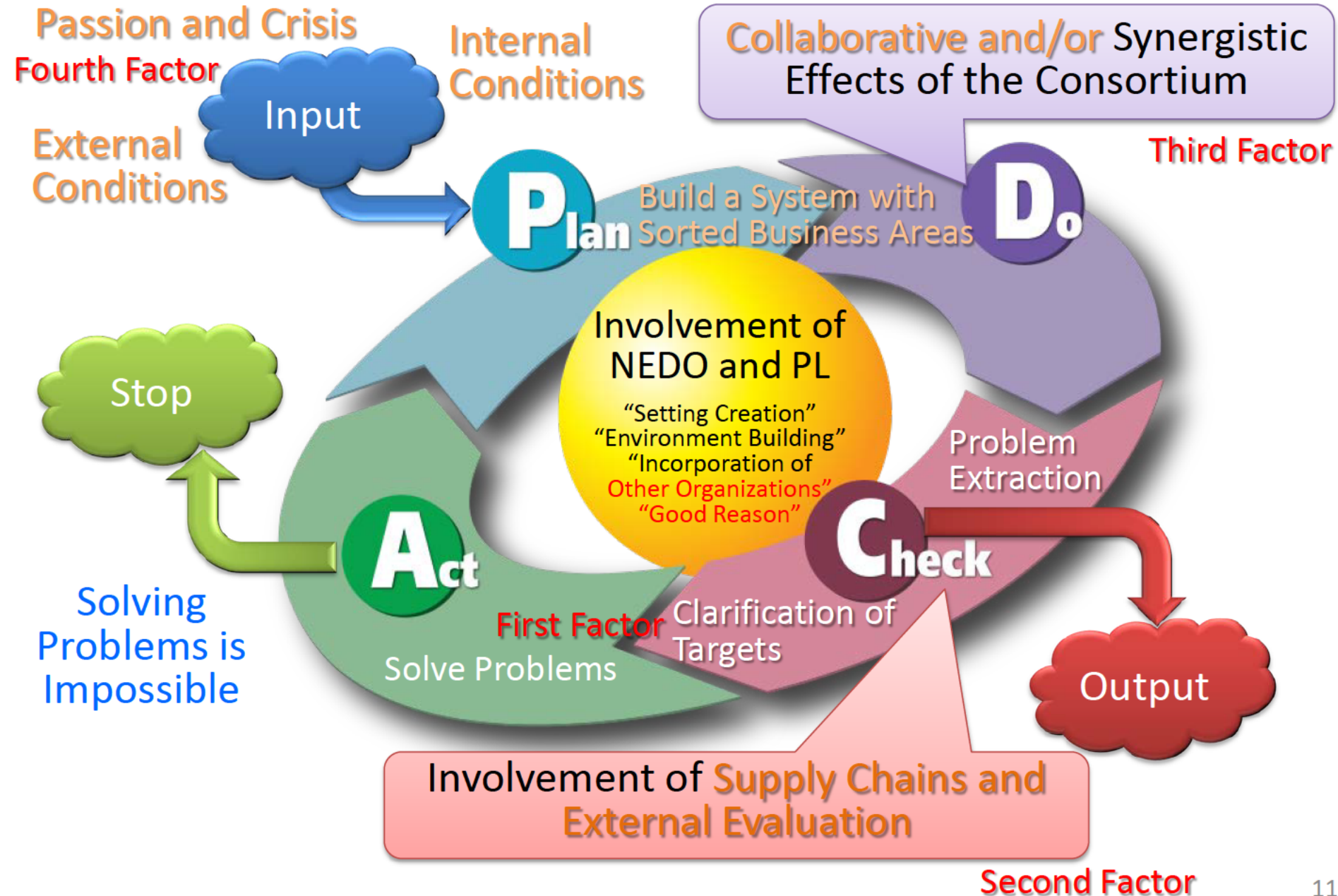


Passion and Crisis

# Pass Analysis



# NEDO Project Success Factors and the New PDCA Cycle



# Summary 1/3

~In order to obtain a **Third Factor**~

## Start Up

1. Set up the research theme based on the understanding of changes in external conditions and the business environment.
2. Set up the research area that will serve as the common foundation while building a sorted system in which the companies' **business areas do not overlap**.
3. Clarify and collectively share with the team the purposes and role assignments of the project.
4. Set up **project rules such as IP rules** at an early stage of the project.

# Summary 2/3

~ In order to obtain a **First Factor** ~

## Virtuous PDCA Cycle

↙ **Third Factor**

5. By generating **Collaborative and/or synergistic** effects of the consortium, speed up the progress of R&D and **create a testable test product at an early stage.**
  6. Implement evaluation of the test products with the **involvement of external evaluation** such as **supply chains** and public test institutes, and **provide feedback of the test/evaluation results** to the developers.
- ↖ ↗ **Second Factor**
7. Turn the project into **an iterative process of improvement and evaluation** based on evaluation results.

# Summary 3/3

~In order to obtain a **Success Factors**~

## Involvement of NEDO and PL

8. Instill a strong **passion and zeal** in the participants for commercializing their own R&D outcome.
9. To that end, NEDO and PL must **“create the project”** in the form of a consortium, **“build the environment”** for the consortium, such as preparing templates for protecting each organization’s intellectual property and rights to enable vigorous R&D activities, and, as needed, **“incorporate other organizations”** such as supply chains and public test institutes.

**Thank you for your attention.**



# Summary

1. Set up the research theme based on **the understanding of changes in external conditions and the business environment.**
  2. Set up the research area that will serve as the common foundation while building a sorted system in which the companies' **business areas do not overlap.**
  3. **Clarify** and **collectively share with the team the purposes and role assignments** of the project.
  4. Set up **project rules such as IP rules** at an early stage of the project.
  5. By generating **collective and synergistic** effects of the consortium, speed up the progress of R&D and **create a testable test product at an early stage.**
  6. Implement evaluation (tests) of the test products with the involvement of external evaluation such as supply chains and public test institutes, and provide feedback of the test/evaluation results to the developers.
  7. Turn the project into **an iterative process of improvement and evaluation** based on evaluation results.
  8. Instill a strong **passion and zeal** in the participants for commercializing their own R&D outcome.
  9. To that end, NEDO and PL must **"create the project (setting)"** in the form of a consortium, **"build the environment"** for the consortium, such as preparing templates for protecting each organization's intellectual property and rights to enable vigorous R&D activities, and, as needed, **"incorporate other organizations"** such as supply chains and public test institutes.
- Start Up**
- Virtuous PDCA Cycle**
- Involvement of NEDO and PL**



# Relationship between Each Factor and Typical Comments from Interviews

Related factor		Typical comments from the interviews	
Collaborative and/or Synergistic Effects of the Consortium		○ We were given wisdom and advice, and obtained technologies and know-hows from other organizations.	Optimization
		○ The roles of each group were clear and we were each able to leverage our specialized knowledge and skills.	Collaborative effects
		○ It prevented misinterpretations of the standard documentation by individual businesses and the technology level was enhanced.	
		● Since we were conscious of each other when reporting at the report session attended by all businesses, we were not able to have deep discussions.	Prisoner's dilemma
		● It seemed that each project member was aiming at different objectives.	Working together on the same project but with different goals
Involvement of Supply Chains and External Evaluation	Collaborative and/or Synergistic Effects of the Consortium	○ We obtained information on not only the production process of our customer but also on other connections.	
		○ (We were successful) because we were provided materials from the upstream company.	
		● Development would have progressed better if the samples were provided one by one in order.	
	Clarification of Targets and Solve Problems	○ Users were narrowed down, and cost issues and needs were identified.	Virtuous PDCA Cycle
		○ The outcome is the fruit of an iterative process of development and evaluation.	
		● It was extremely difficult to meet the rising intricacy of user specifications.	
		● It was extremely difficult to meet the demands of the users with intense cost-consciousness.	

○: Positive factor ●: Negative factor

# Relationship between Each Factor and Typical Comments from Interviews

Related factor		Typical comments from the interviews
Others	Passion and Crisis	○ We had <b>a strong will to commercialize the product no matter what.</b> <span style="color: red;">Passion</span>
		○ We <b>shared a sense of crisis</b> that if we could not materialize XX, our product competitiveness would decrease. <span style="color: red;">Crisis</span>
		● The development was terminated when <b>the staff involved in the project who had strong motivation was transferred.</b>
	External Conditions	○ We were <b>watching the trend of technology enhancement speed.</b> However, <b>we had to change XX because competitors outdid us.</b>
		○ The technology was still costly in the mature market. However, a managerial decision was made to introduce this new technology from the understanding <b>based on the global trend</b> that otherwise the company's share would rapidly decrease.
		● We were able to develop the target technology but <b>a foreign manufacturer had already developed the same technology.</b>
	Internal Conditions	○ (We were successful) <b>because of the top management support and understanding.</b>
		○ (We were successful) <b>because the operation division got involved in the project.</b>
		● (The R&D activities) were <b>questioned by people of my business</b> saying "the fact that R&D on a next generation technology area that has not even been set up as an operation division is being implemented must mean that the next generation R&D is taking place because the current generation development has been a failure."
		● Since we did not coordinate with the operation division, we found out later that <b>our company's strategies did not include the test items.</b>

○: Positive factor ●: Negative factor

# Relationship between Each Factor and Typical Comments from Interviews

Related factor		Typical comments from the interviews
Involvement of NEDO and PL “Setting Creation” “Environment Building” “Incorporation of Other Organizations” “Good Reason”	Others “External Conditions”	○(●) Appropriate specifications were identified by conducting technology surveys and customer needs surveys through the project. Without the existence of NEDO project, this product would not have been developed.
	Collaborative and/or Synergistic Effects of the Consortium	○(●) Despite not having a non-disclosure agreement, the leadership of PL effectively enabled us to openly exchange information and provide technology.
		○(●) The PL and users were instrumental in forming the partnership among competitors which is normally an extremely difficult task to accomplish.
	Involvement of Supply Chains and External Evaluation	○(●) NEDO took the initiative for the implementation of cross-industry collaborations and tests within other projects.
		○(●) Because of their involvement, arrangements with related test institutes went smoothly regarding the various tests required for commercialization. We are truly grateful for this.
		○(●) The actual data belong to another company. While normally we would have not been able to obtain such data, through this project, the data were provided to us to the extent possible.
	Clarification of Targets and Solve Problems	○(●) Most of our activities consisted of repeated trials to see if it operates with Windows and to contact Microsoft to ask if our corrective actions were appropriate or not. Since Windows is a complete black box, failures must be taken in and corrected by us. However, since the company was interested in this project, they provided us information on whether or not our corrective actions were appropriate.

○: Positive factor ●: Negative factor

**Negative factors were canceled out by the involvement of NEDO and PL**