

# JTECS-TPA-TNI Model

-Introduction of successful case of  
technical cooperation in Japan-

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JTECS

# Outline

- Introduction of JTECS, TPA, & TNI
- Background(History)
- JTECS-TPA-TNI Model
- Activities
- Networking Mechanism
- Keys to Success for JTECS-TPA-TNI Model
- Prospects for the Future

# Introduction of JTECS,TPA,TNI

- JTECS

Objective: To contribute to industrial Development of Thailand and the neighboring countries through supporting activities of TPA and TNI

Established: July 7th, 1972

Activities:

- ① Support of Technology Promotion Association(TPA)
- ② Support of Thai-Nichi Institute of Technology(TNI)

# -TPA(Technology Promotion Association)

Objective :

1. Human Resource Development of Thai Industry
2. Technology Transfer from Japan
3. To Promote Thailand-Japan Relationship

Established : Jan. 24<sup>th</sup>, 1973

Activities : Training and Seminar

Japanese Language School

Publishing of Books

Instruments Calibration

Consulting Service



- TNI(Thai-Nichi Institute of Technology)

1. Objective : To produce highly qualified graduate in the field of industrial technology and business management.

2. Established : June, 2007

3. Faculty :

Engineering(Automotive Eng, Production Eng,etc)

IT, Industrial Mgt. , Business Administration, etc.

4. Number of Students(as of 2014) : 5,059



## Background (History)

- Rise of severe anti Japanese movement in Thailand



- Japanese Economic Cooperation had to be renewed from promoting export to adapt to the needs of Thai Recipients managed by a private sector



- METI entrusted Goichi Hozumi with this mission



**H.E. Sommai Hoontrakool**  
Chairman of Founder Committee  
of TPA  
Finance Minister  
One of Thai's best-known economists .





**Goichi Hozumi**  
1<sup>st</sup> President,  
JTECS  
Asia Students Cultural Association(ASCA)  
The Association for Overseas Technical  
Scholarship(AOTS)

Through meeting with many ex-students, Hozumi found:

1. Thai people saw Japanese economic cooperation as designed to benefit Japan, not Thai industry
2. Ex-students had great eagerness to contribute to Thai development

Hozumi proposed METI :

- To make TPA's counterpart in Japan to create and support Thai organizations  JTECS
- To establish an organization which contribute to develop Thai industry by Thai people themselves.  TPA



**JTECS** was inaugurated by Hozumi with **the renewed principle**  
**Equal-Partnership**, **Respect of Thai Autonomy**

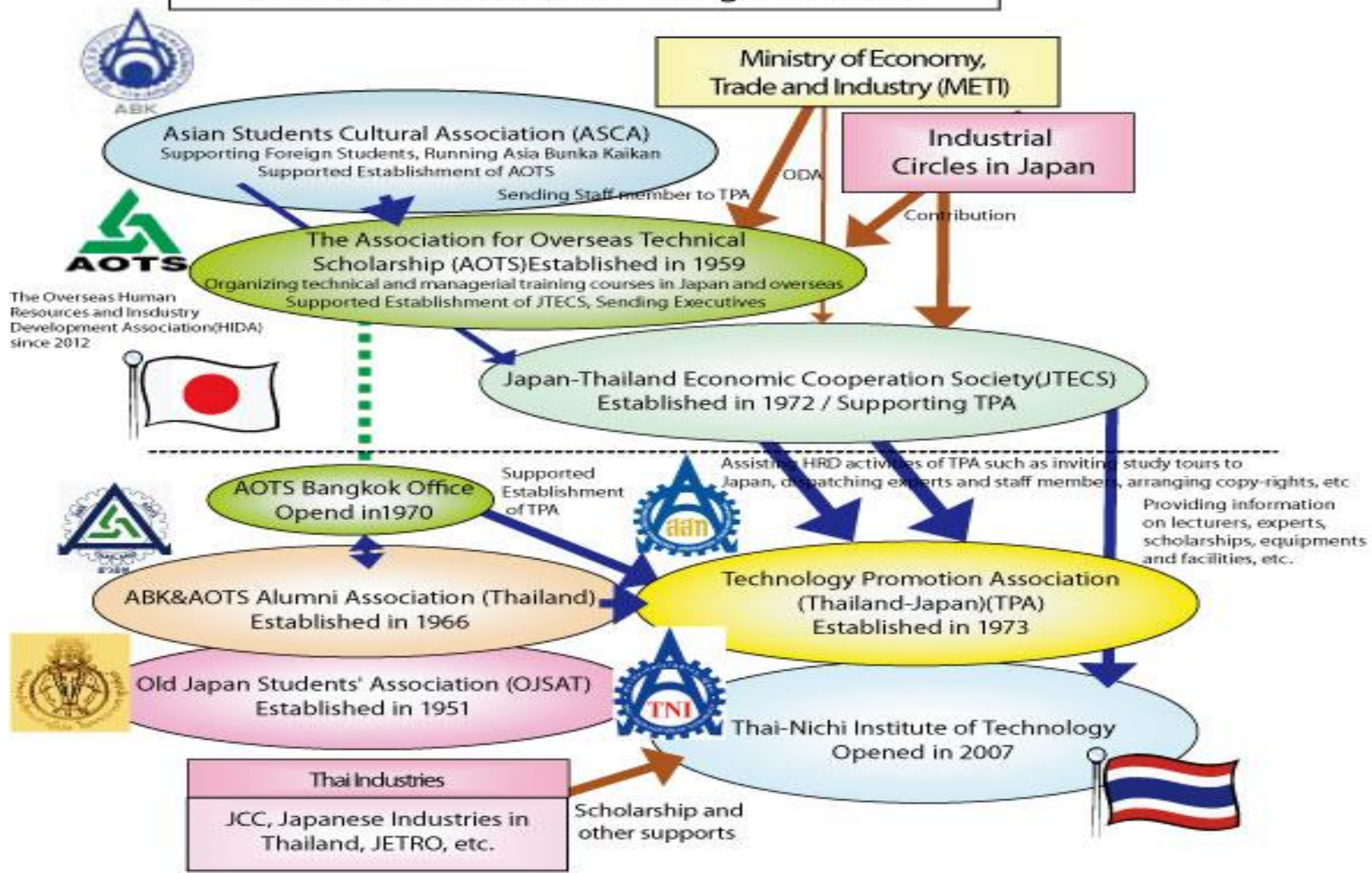
**TPA** was established by many young returnees from Japanese Univ.  
H.E. Sommai volunteered as the Chairman of Founder Committee  
to TPA

TPA kept a neutral (not pro-Japanese) attitude

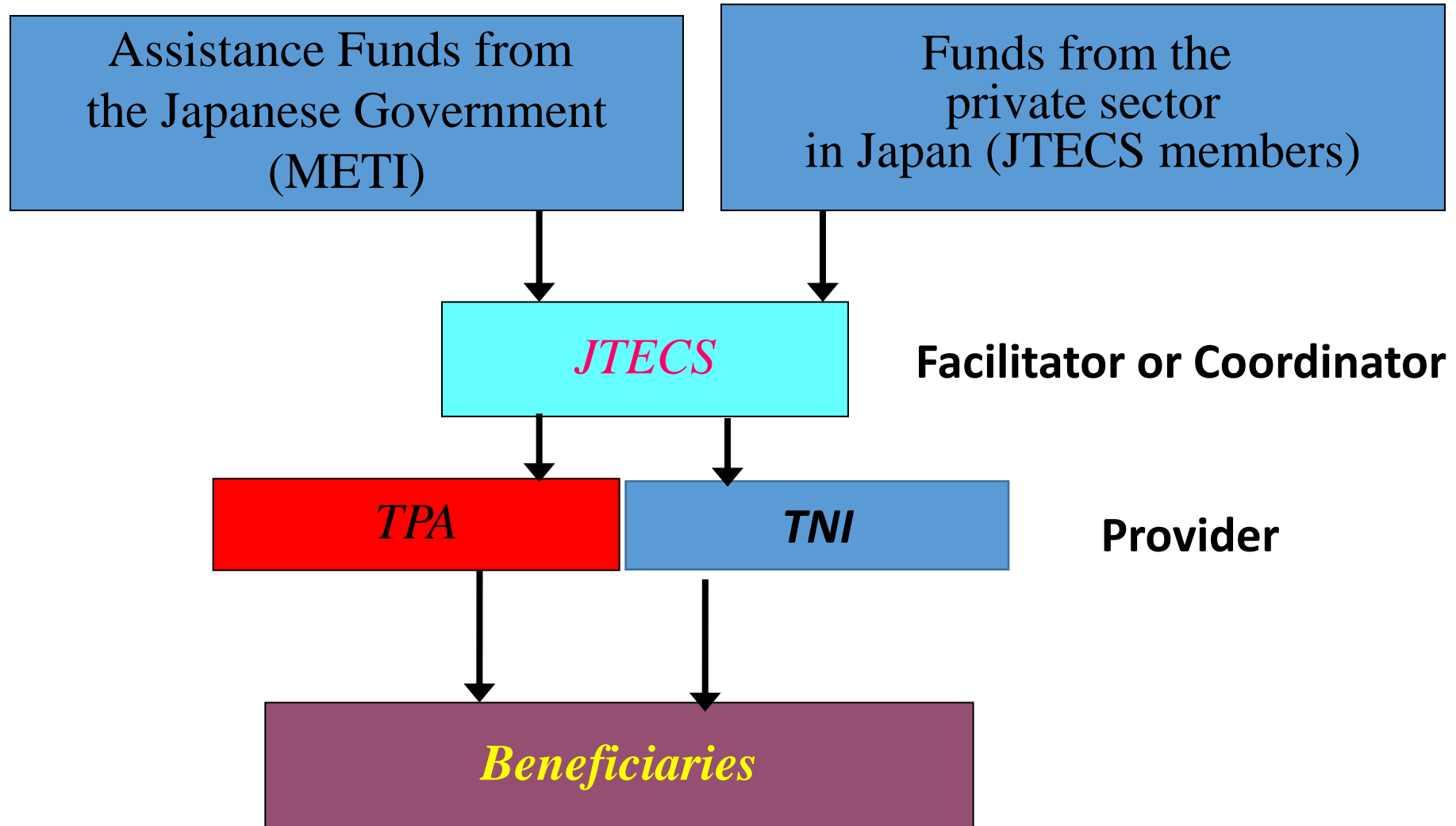
# Japan's Commitments on supporting TPA

1. TPA has the independence in operating the activities useful to Thai Society.
2. Japan side will financially support in constructing TPA building in Thailand.
3. Japan side will support in establishing the technical college in the future.
4. JTECS is the only one contact point of coordination between TPA and Japan side.
5. In order to independently operate activities by TPA, Japan will assist TPA only with financial supports or funds.

# JTECS-TPA-TNI & Related Organizations



# JTECS-TPA-TNI Model



# TPA Achievements : *Development Stages*

- Stage 1      Technology Transfer ( 1973-1981)
- Stage 2      Technology Promoter (1982-1997)
- Stage 3      Technology Disseminator (1998-2006)
- Stage 4      Technology Educator (2007 ~)

*As a result, TPA is currently providing main activities to Thai industries such as Technology Training, Culture & Language Training, Publishing & Technical services.*

# Stage 1 Technology Transfer(1973-1981)

## Primary Introduction of Japanese technology

- Started with a school of language and culture
  - ⇒ Japanese language course, Thai language course
- Seminar for introduction of Japanese technology by inviting Japanese experts with TPA members acting as translators
- Publication of textbooks in Thai language

# TPA Sukhumvit Building 1975



*From 1973 to Present*  
*Many Texts and Journals were published*





## Stage2 : Technology Promoter(1982-1997)

Education or training of Thai experts, trainers and consultants

 transfer of Japanese technology by Thai people themselves

1. Dissemination of QC activities(TQM, QC circle etc), Kaizen, TPM etc

2. Starting Industrial & Laboratory Calibration Center

3. TPA Robot Contest Thailand Championship

# Industrial & laboratory Instrument Calibration Center

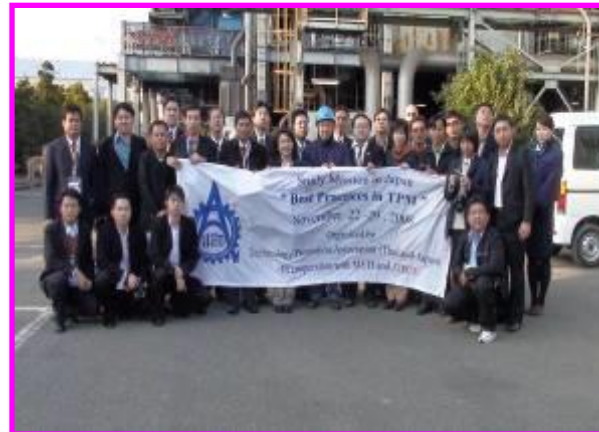


# On the Roles of Technology Promoter



Special Course by foreign experts

Study Mission



# TPA Robot Contest Thailand Championship



## Stage 3: Technology Disseminator(1998-2006)

- Starting Diagnosis and Consultancy Services  
train about 200 SME mgt. consultants with  
fund of Japanese Government
- Expansion of calibration services:  
on-site calibration service etc.  
more than 30% share in Thailand
- Increase of demand of training  
⇒ conduct of many kinds of training programs



The Opening Ceremony of TPI  
by  
HRH Princess  
Maha Chakri Sirindhorn  
27 January 1998

New Institute Building  
at Pattanakarn Branch



# Industrial & Laboratory instrument Calibration Center at TPI



- the first calibration Center in Thailand
- more than 30% share in Thailand
- conform to TIS17025(ISO/IEC17025) issued by Thai Industrial Standards Institute covering every industry
- many kind of services;  
On-site calibration service, calibration service of whole factory etc.



# Shindan Project – Diagnosis and Consultancy Services







# TPA Automation Kaizen Award Thailand Productivity Award



Kaizen Journal

## Stage 4 : Technology Educator(2007- )

- TNI was established in 2007  
to realize the dream of TPA members  
to produce highly qualified graduates in industrial  
technology and business mgt.

# Thai-Nichi Institute of Technology (TNI)



# TNI “Monozukuri”

Technology Promotion Association (Thailand-Japan)





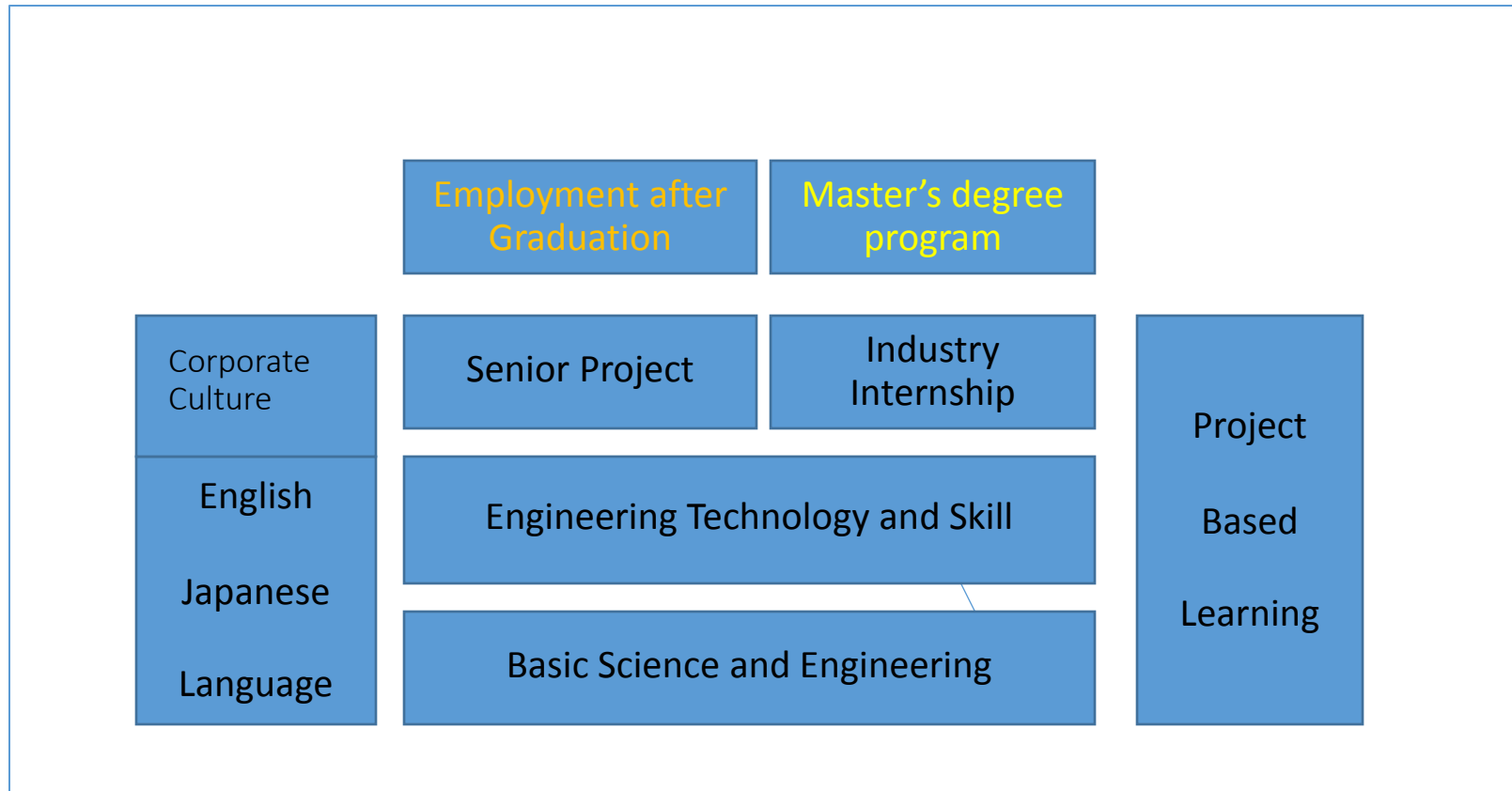
## Thai-Nichi Institute of Technology (TNI)

- Established in 2006 by Technology Promotion Association (Thailand-Japan) or TPA.
- Cooperated by Thai and Japanese, Government org. and private industrial sector.
- Aim to produce highly qualified graduate in industrial technology and business management
- **Adopt Japanese Monozukuri style teaching.**
- **Teach Japanese and Enterprise Corporate Culture**
- **Supported by Thai and Japanese industries in HRD.**
- **Strong network of Japanese Universities and Institutions.**

# TNI Monozukuri Teaching

- **Basic Science and Engineering  
(Theory and practice).**
- **Engineering technology and skill.**
- **Learn by making products or carrying out projects.**
- **Project based Learning.**
- **Use of industrial grade equipments and instruction  
by industrial professionals**
- **Industry Internship and Industry linkage**

# Outline of TNI education structure



# Fundamental Engineering Knowledge (Theory and Practice)

- Basic Science
  - Mathematics, Physics, Chemistry
- Fundamental Engineering
  - Mechanics,
  - Electrical and Electronics,
  - Material,
  - Thermodynamic,
  - Control system,
  - Computer programming,
  - Engineering drawing
  - Mechanical workshop





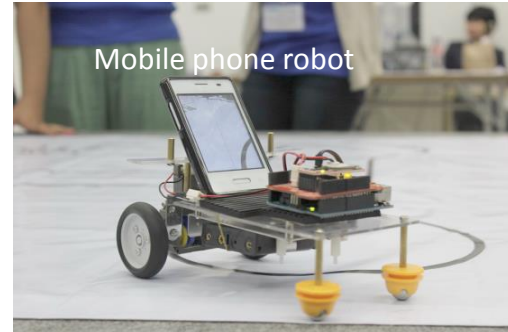
# Engineering Technology and skill (Laboratory work and Projects)

- CAD/CAM/CAE
- Mold and Die Technology
- 3-D Modeling technique and CAE
- Precision machining technology
- Machine control system
- Automatic devices and Robotic technology
- Industrial product design
- Measuring Instruments and Product testing



# Project based Learning

- Class projects
- Students projects
- Team projects for contest
- Senior Project
- Industry Internship project
- Co-research project with Industry.



# Cooperation from Industry

- Assist in Curriculum development
- Donation of scholarships and training equipments.
- Provide instructors to teach at TNI.
- Provide equipments in the factory for students training.
- Industry Internship and training.
- Sponsor of research projects and student projects.
- Employment of TNI graduates.



# Cooperative Education

## Industry Internship and Training



**400 Students intern in 200 cooperative companies every year**

**4 month internship and 2 month training program**

**Pre-Internship course work prior to internship and training**

# Industry Internship Projects


- Application of TPS for improvement of standard work

**Before**



ใช้เวลา  
1.92  
วินาที

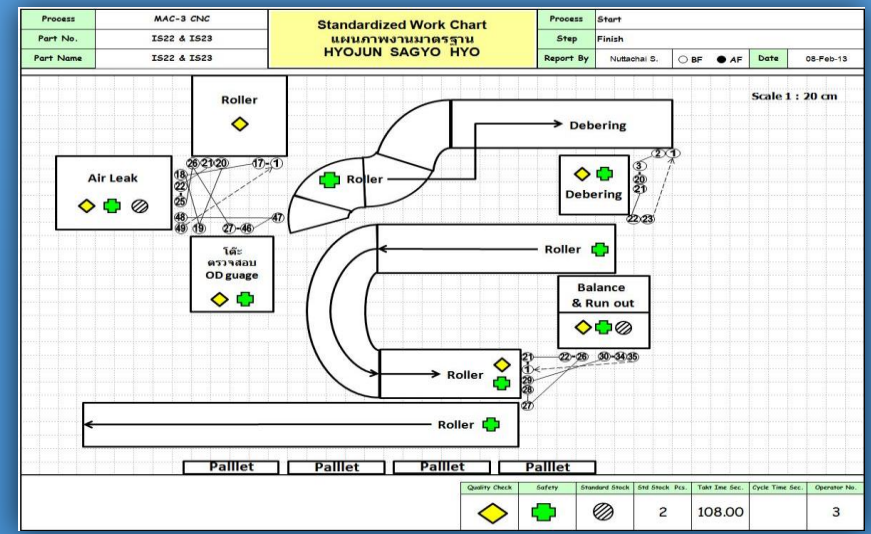
**After**



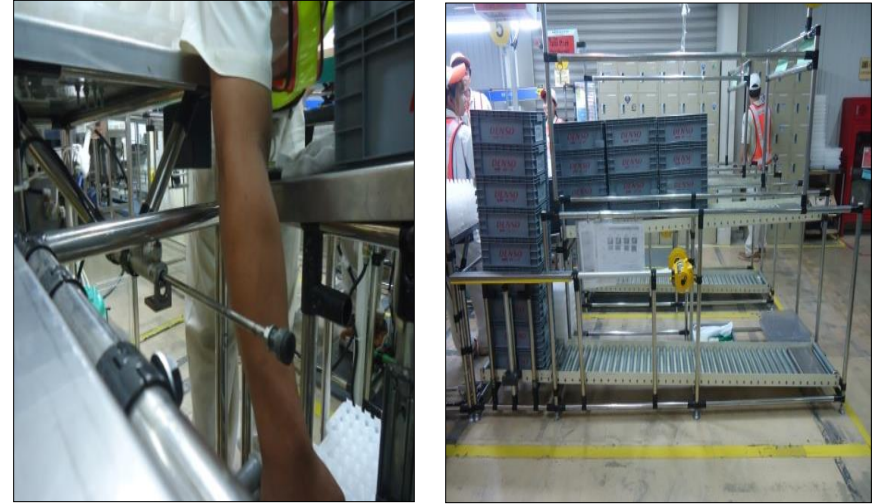
เวลา  
0.6  
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ใช้ตุ๊ก Roller กันเพื่อเป็น Stopper ต้องเอ้อมไปดึงส้อมผ่าน Stopper

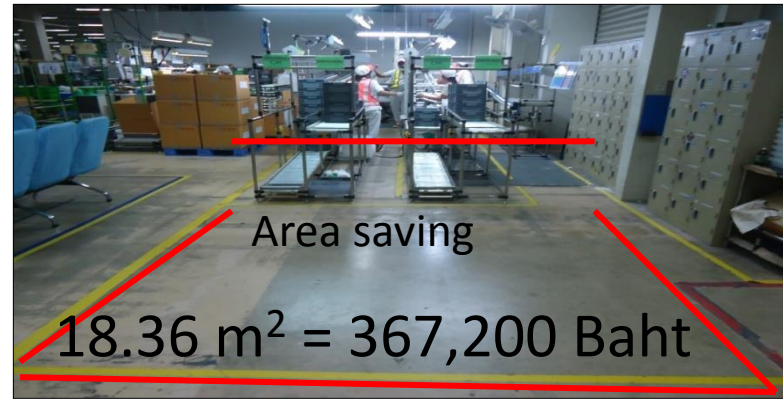
ทำตัวกันล้อโดยใช้เท้าเหยียบ ลดเวลาในการหยิบจับส้อมได้ 1.32 วินาที



## Level up Efficiency Washing Tray UC Line by Kara Kuri and Standardized work



**Installing of Kara Kuri Chutter**



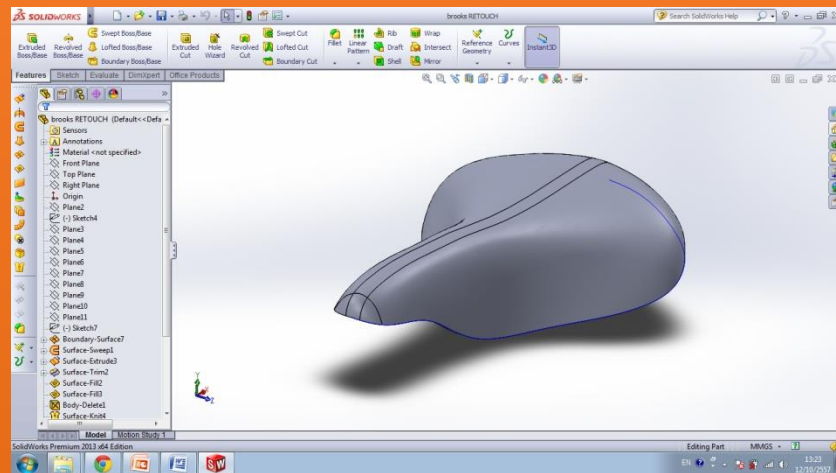
**Stock Lead time reduce 11.2 to 5.4 Hrs**

# INDUSTRY INTERNSHIP PROGRAM IN JAPAN

HAMANO-PRODUCTS.CO.,LTD

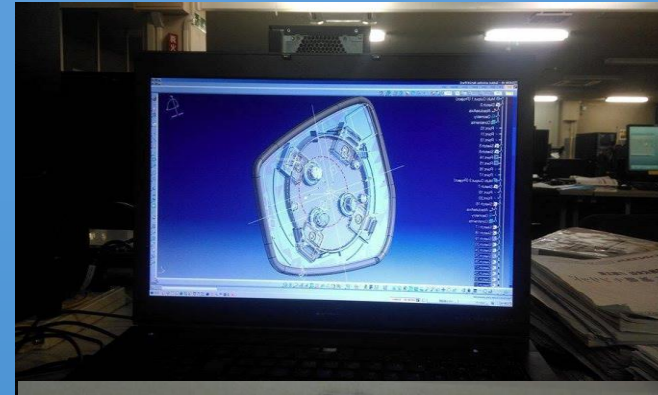
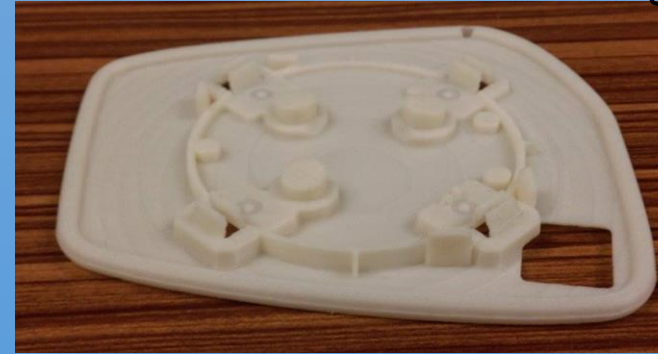
(株式会社 浜野製作所)

Design of bicycle saddle



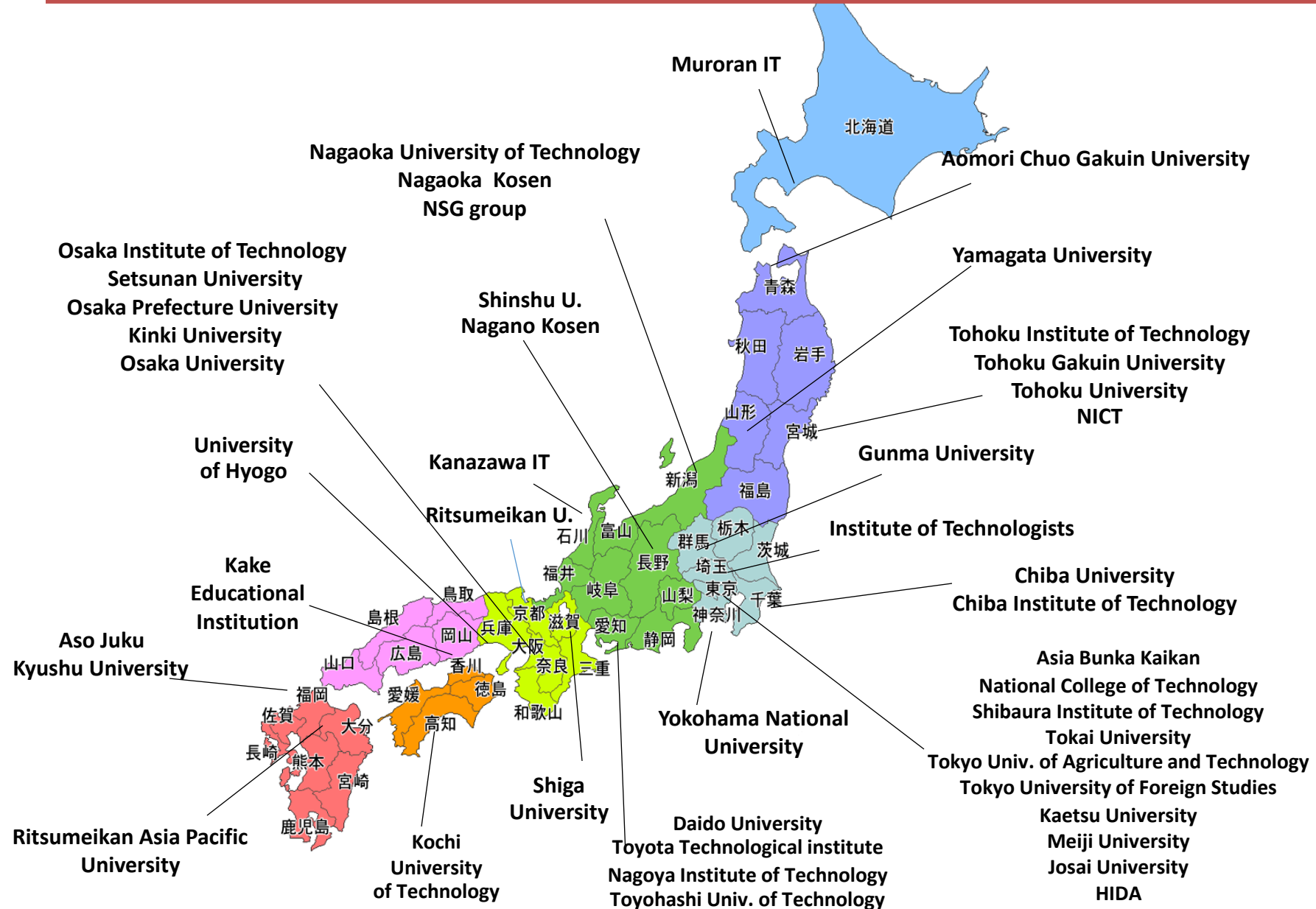
 Murakami

Shizuoka Ken  
Mold design

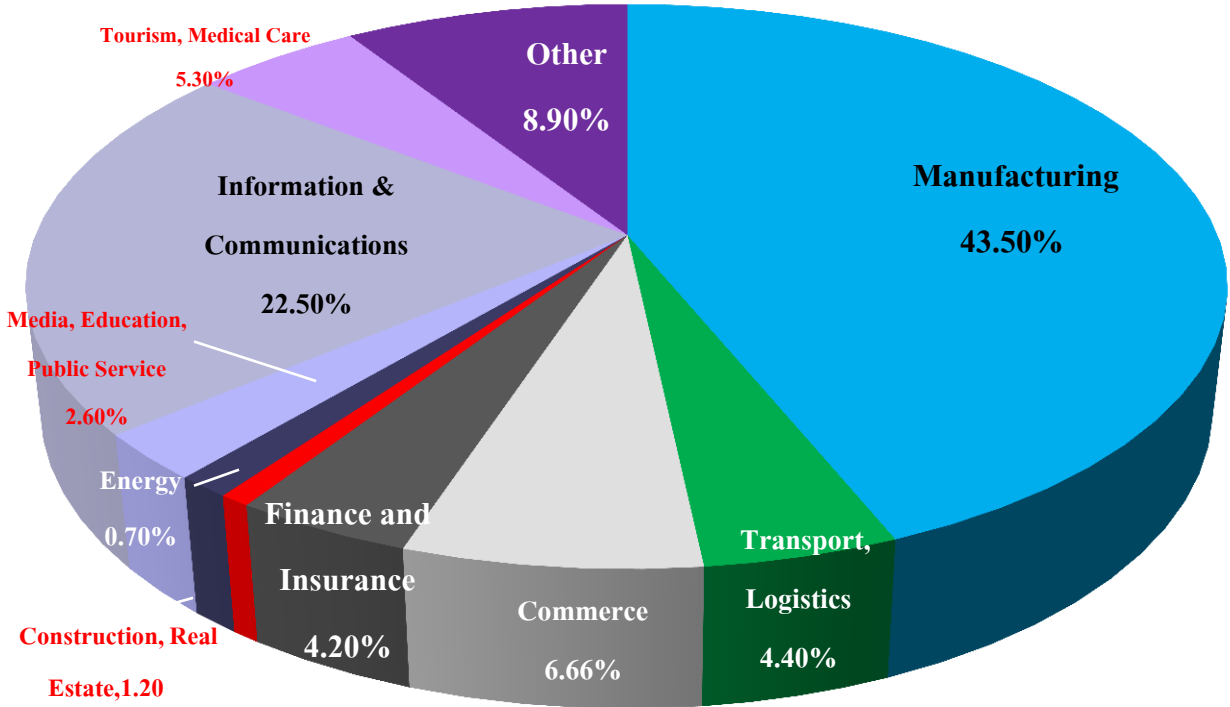




# International Collaboration(Continued)



# TNI Graduate employment 2014

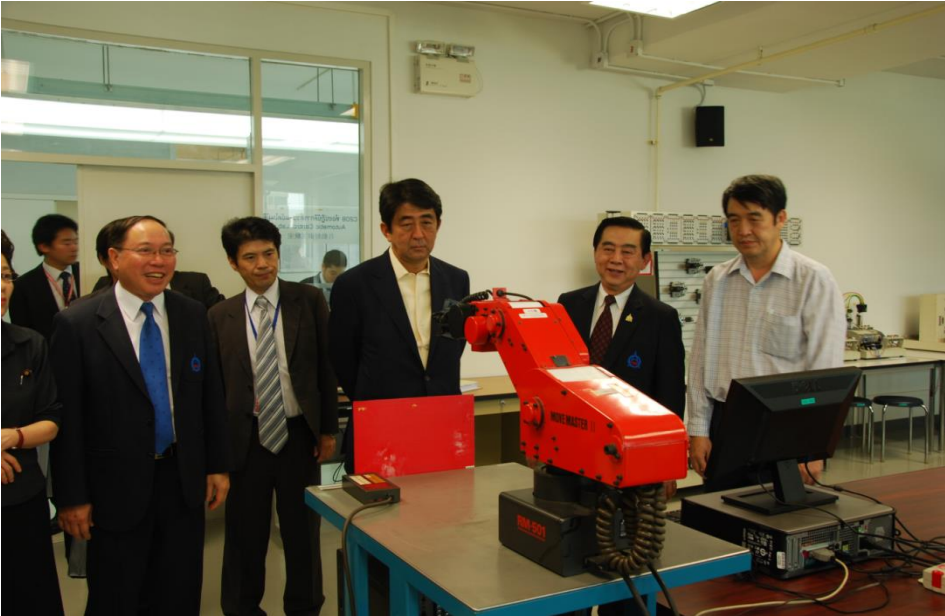


TNI Job Fair

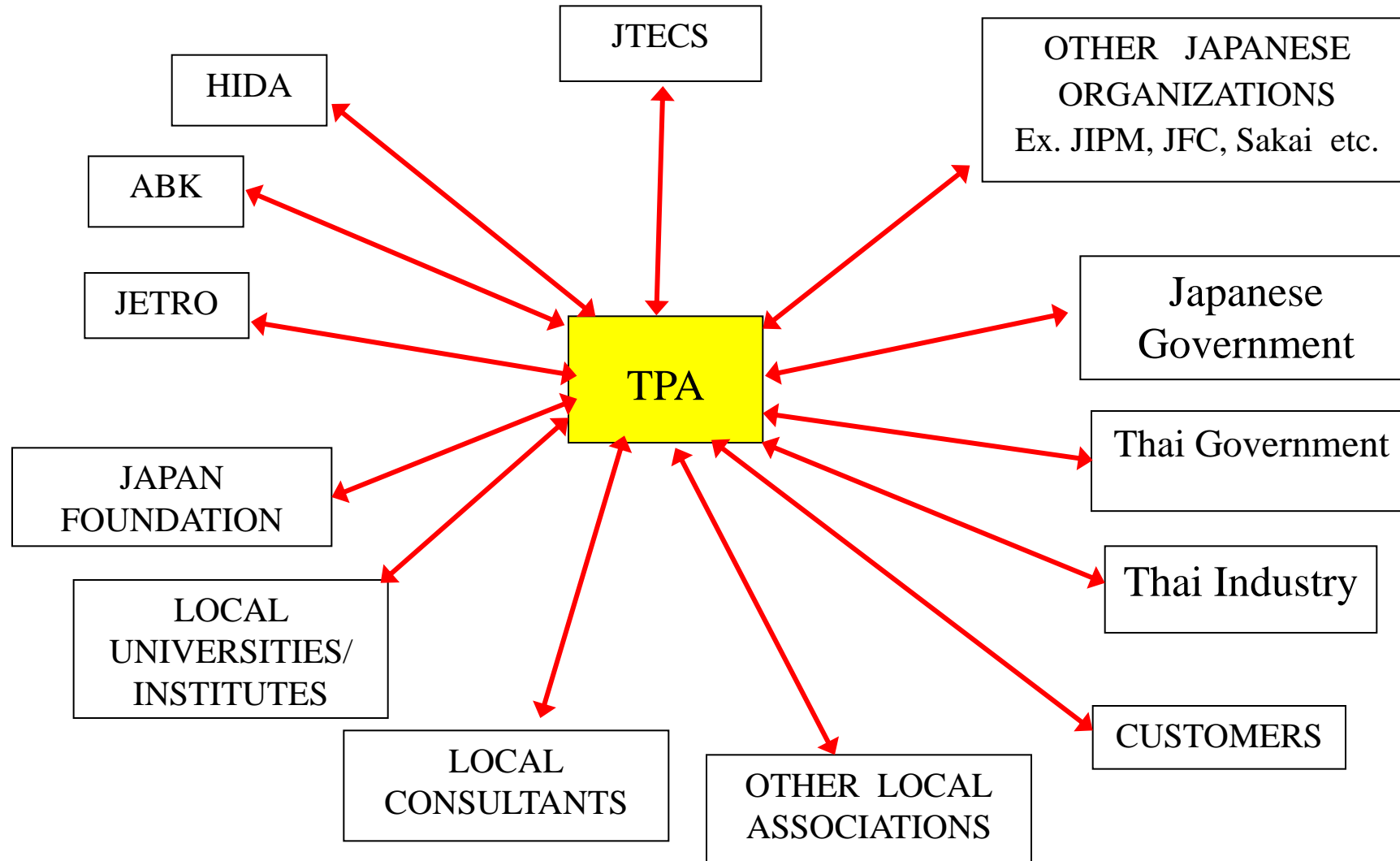




# PM Shinzo Abe gave advice on TNI Monozukuri

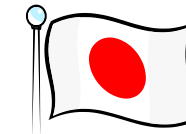
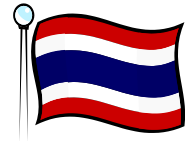


# TPA Collaborative Network





# TNI Networks



Japanese companies  
In Thailand,  
JCC, JETRO

Scholarship  
Experts  
Equipments  
Internship



Exchange of students  
and staffs  
Co-researches  
Information

Japanese Universities  
ABK

Scholarship  
Experts  
Equipments  
Internship

Experts  
Scholarship  
Equipments

Japanese Gov./Org.  
METI, MEXT, JICA  
JTECS, HIDA

Thai companies  
**FTI, TCC**  
Thai Institutions  
and Organizations

Lecturers  
Equipments  
Textbooks

**TPA**  
Technology Promotion Association  
(Thailand-Japan)

Public/Private  
Organizations  
in Japan



# **Keys to Success of JTECS-TPA-TNI Model**

- **Keeping basic principles of the founder**
- **Ideal and action of executive committee and staff**  
**Voluntary activities**
- **TPA-TNI widely recognized in the Thai society**
- **Flexible to change in needs of time**
- **Technical input from Japan**  
**through JTECS**
- **Strong Network Mechanism**

# Prospects for the Future

## 1. To provide support to educate highly qualified Thai personnel

TNI aims to be an educational center of Monozukuri to produce high-valued engineers.

and strengthen the function of R & D utilizing the network of industry- academic collaboration between Thailand and Japan.

TPA & TNI should develop industrial design and development program for engineers and entrepreneurs

## 2. To help Thailand participate in the HRD for the development of industry in neighboring countries

To transfer the existing hands-on know-how/experiences to engineers and supervisors of countries nearby

To disseminate TNI Monozukuri Teaching to neighboring countries

**Thank you very much**