

The 3rd Japan-Indonesia Rector's Conference
Parallel Working Group Sessions
Group 3: Industry and University Cooperation in Innovation

University-Industry Cooperation

Dr. Naohiro HOZUMI
Professor/Director

International Cooperation Center for Engineering
Education Development (ICCEED),
Institute for Global Network Innovation in Technology Education (IGNITE),
Toyohashi University of Technology (Toyohashi Tech)

5th November 2015@Hokkaido University

Background of Revitalization of U-I Cooperation in Japan

Revitalization of U-I cooperation from 2000

◆ Socio-economic background

◆ Lost decade (1990's)

◆ Bubble economy bursts → Long-term ailing economy

◆ Transformation of University circumstances

◆ Establishment of National University Corporation in 2004

- ◆ Develop university's autonomy and develop own characteristics to enhance education and research quality
- ◆ Institute financial system for establishing TLO
- ◆ Deregulation for personnel and financing

✓ Activities (some)

- ✓ Increase Joint Research, Funded Research
- ✓ Accepting Funded Researcher
- ✓ Raise Endowed Scholarship Fund
- ✓ Establishment of 62 Joint Research Centers (in 56 National Universities)

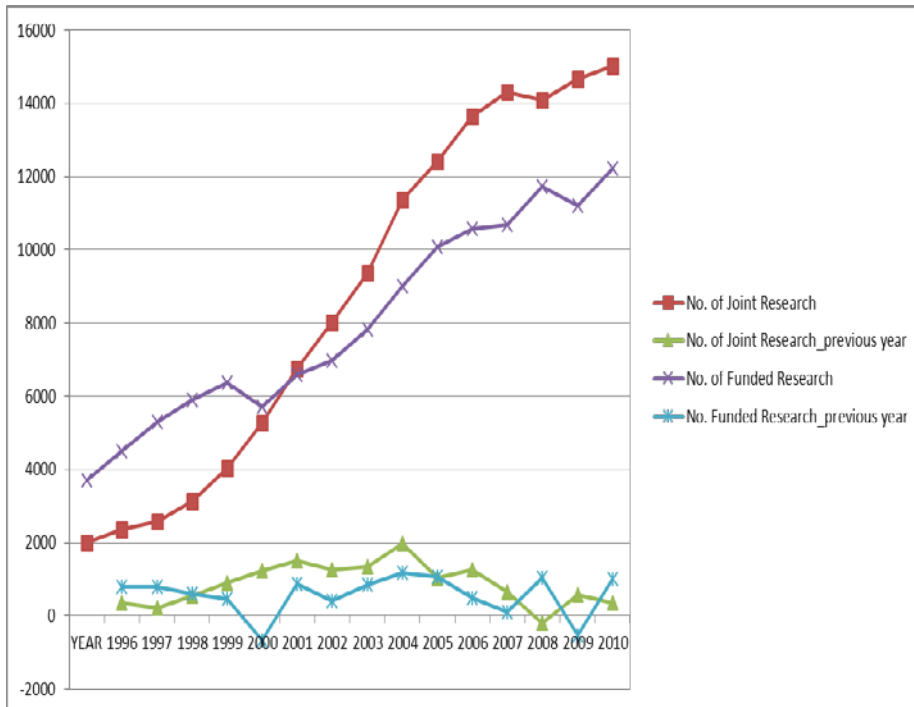
Evolution of Japanese Policies in U-I cooperation

Year	National Initiatives
1996	1 st Science and Technology Basic Plan (1996-2000)
1998	Act on the Promotion of Technology Transfer (promoted the establishment of TLO)
1999	Act on Special Measures for Industrial Revitalization
2000	Industrial Technology Enhancement Act
2001	2 nd Science and Technology Basic Plan (2001-05), Knowledge Cluster Initiative (MEXT)
2002	1 st UIG promotion conference, IP Basic Act
2003	IP office improvement program for University
2004	National University Corporation (Toyohashi TLO was established in TUT)
2006	3 rd Science and Technology Basic Plan (2006-10), Law amendment for Basic Act on Education
2008	Strategy for Regional Revitalization through S&T, Act on Enhancement of Research and Development Capacity
2011	4 th Science and Technology Basic Plan (2011-15)
2013	Program for Promoting the Enhancement of Research Universities (Research Administration Center was established in TUT)

Overview Trends of U-I Cooperation in Japan

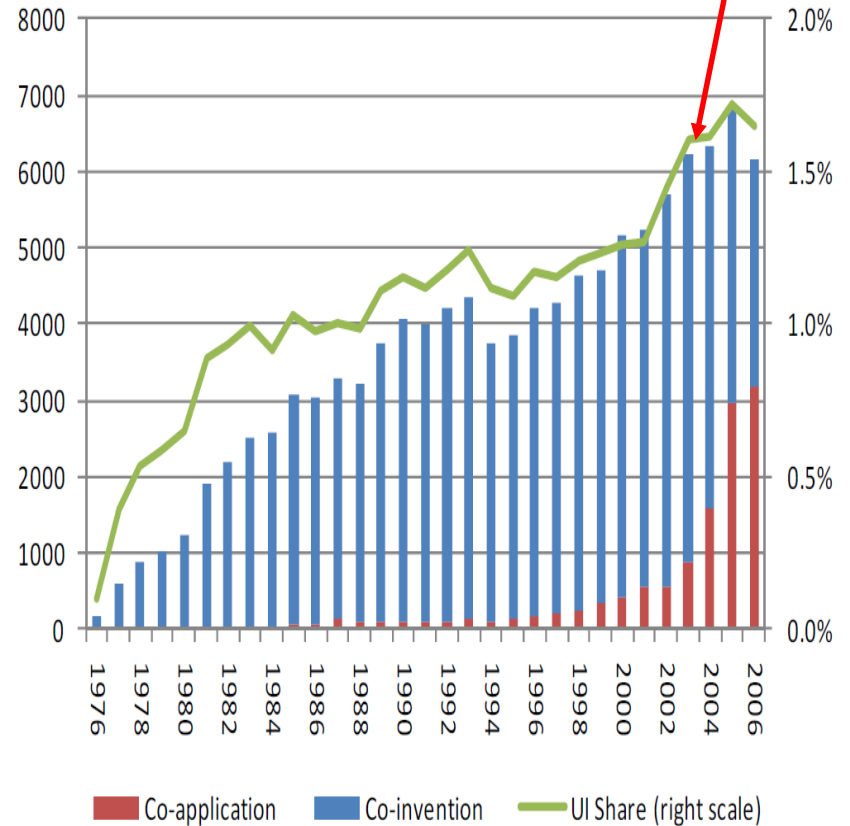
Establishment of National University Corporation

Number of U-I Joint Research



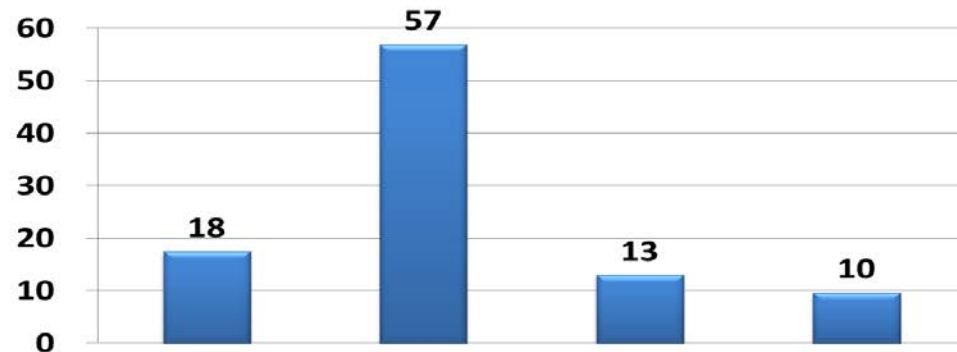
(Reference: created by author referred to JST J-Global foresight)

Trends in UIC Patents

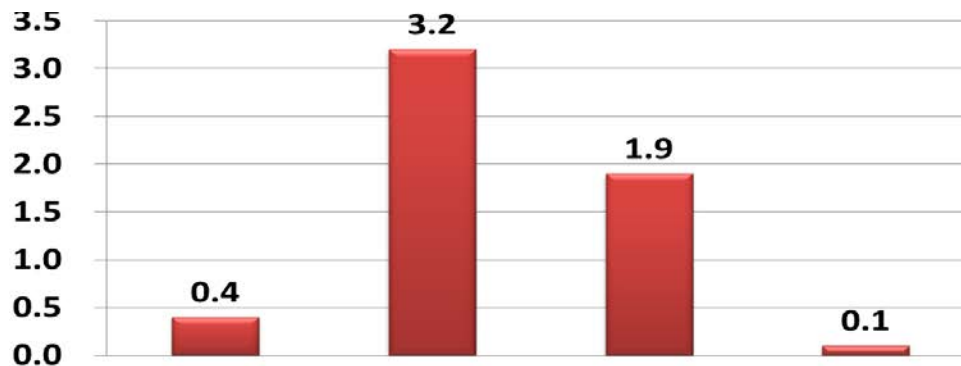


(Reference: RIETI, "Examining the University Industry Collaboration Policy in Japan: Patent analysis (Feb.,2011)")

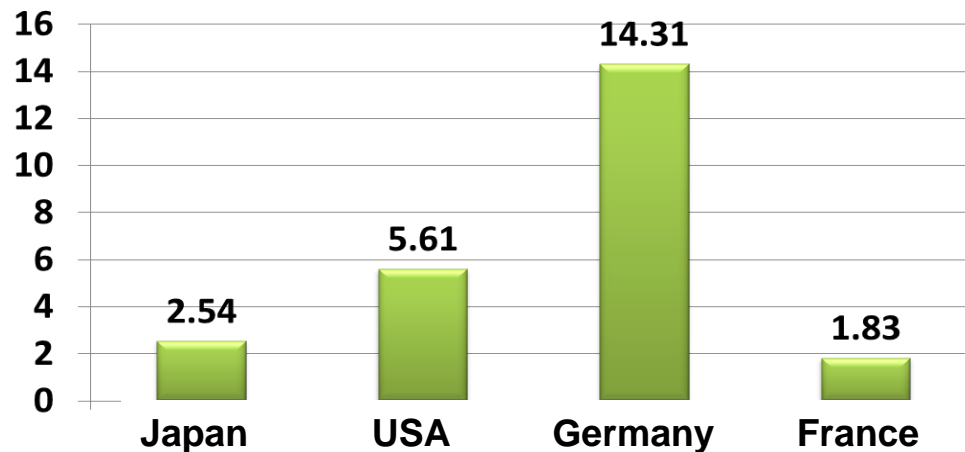
Overview Trends of U-I Cooperation in Japan



Research Fund for University in Billion USD (2009)

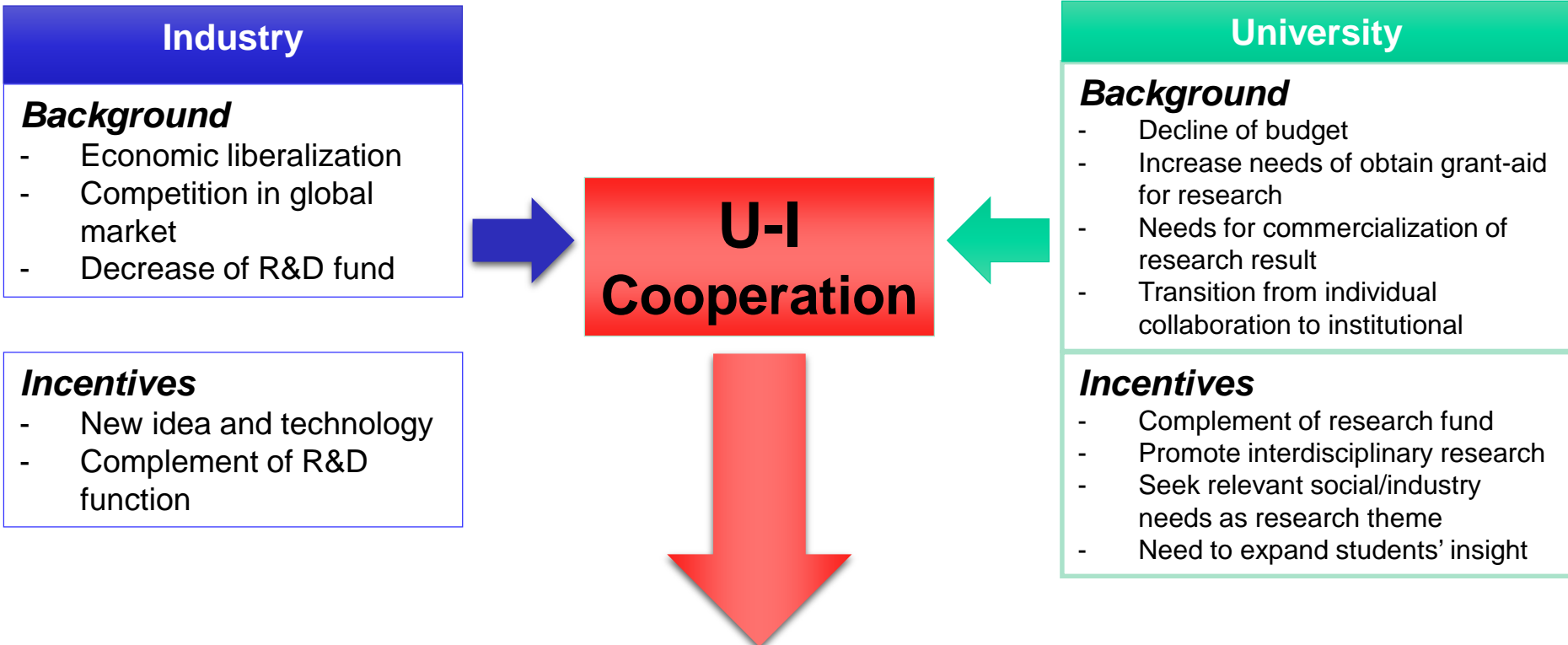


Research Fund for University from Industry in Billion USD (2009)



Industry Fund Ratio of University Research Fund in % (2009)

Incentives for U-I Cooperation



SOCIAL IMPLEMENTATION of knowledge and research results

U-I cooperation will build a bridge to meet with social needs through created knowledge (research results, technology)

Toyohashi University of Technology at a Glance

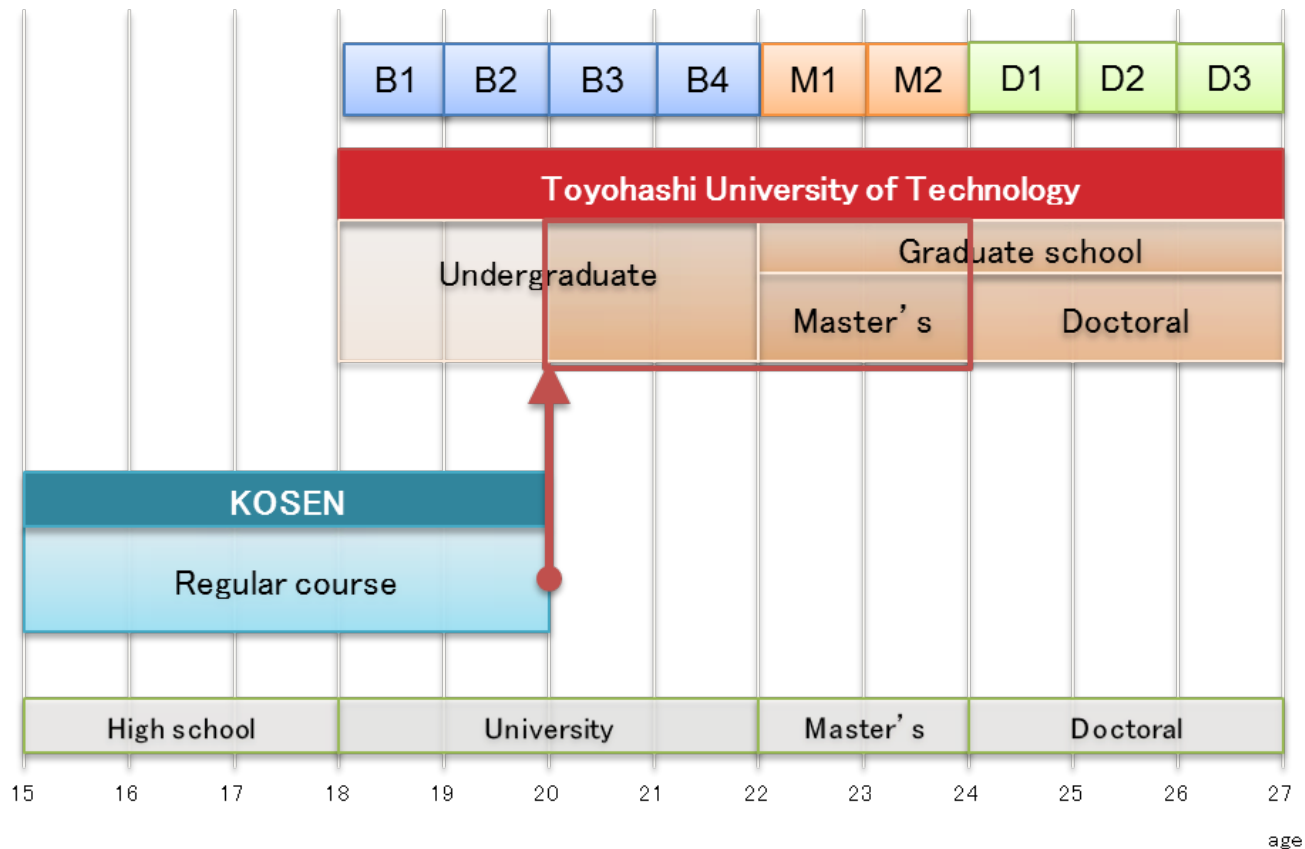
- Established in 1976
- 5 Departments for Undergraduate and Graduate Program
 - 1 Research Institute, 6 Research Centers
 - 1 Overseas Education Base in Malaysia Penang
 - 2 Overseas Offices in Indonesia (ITB) and China
- 2,240 Students
 - Undergraduate 1,215, Graduate 1,018, Research students/other 7
 - International students 167 (8% of the total students)
- Faculty 230, Staff 143
- Exchange Programs 67 Worldwide with 27 Countries
- Real Estate 355,606 m² (88 acres)

(as of May 2015)

Toyohashi University of Technology

- Unique Post-secondary STEM* Education System-

Providing Higher Education to Graduates of KOSEN (National College of Technology).
Combining 2 Years of Undergraduate and Graduate School of Master's Degree.



* STEM : Science, Technology, Engineering and Mathematics

Toyohashi University of Technology

- Research Hub for Social Implementation-

“System for Creating Innovative Value with Technological”

Research

Institute/Centers of Interdisciplinary and Innovative Research



Electronics-Inspired Interdisciplinary Research Institute (EIIRIS)



Research Center for Agrotechnology and Biotechnology



Research Center for Future Vehicle City



Center for Human-Robot Symbiosis Research (CHRSR)



Research Centre for Collaborative Area Risk Management (CARM)

Research Administration Center (RAC)

Office for Strategic Research Policy

Office for Research and Liaison with Industry

Office for IP Management

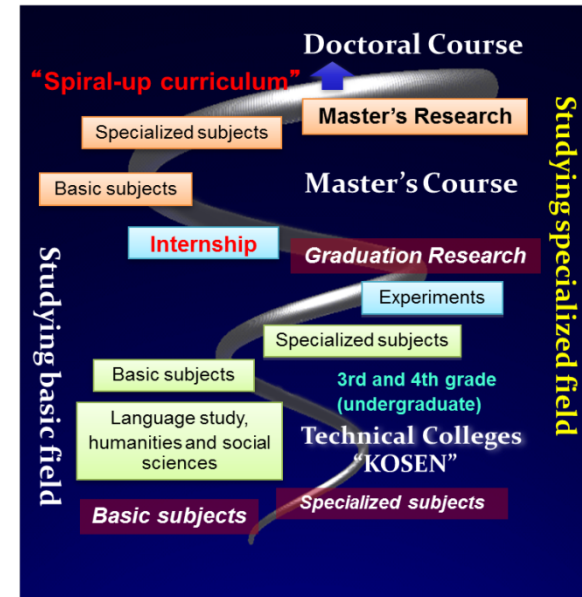
Support Office for Technological Science

RAC functions:

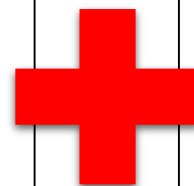
- One stop service
- “Express way for daily activities”
- Accurate commitment to proposals
- Clarified responsibilities and performing contracts
- Planning, leadership, dissemination of information

Education

Spiral-up Education Program for Engineer as future leader



- Environment for value creation
- Develop future leader as engineer
- Social implementation by utilizing research results and innovated technology
- Develop engineer for social implementation by their technology



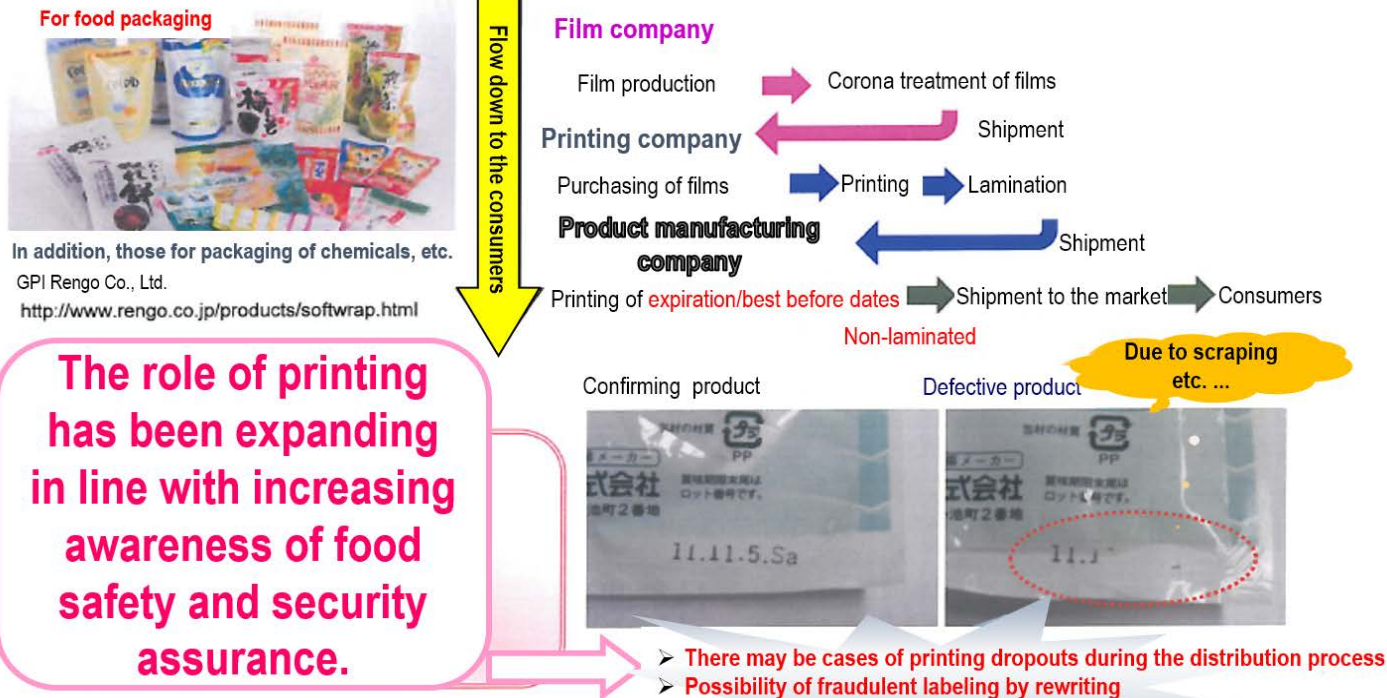
Toyohashi University of Technology's U-I Cooperation (1)

Case 1 (Joint Research)

“Development of Surface-Treated Printable Soft Packaging Film”

- University seeds and Industry needs matching by regional Industry and Enterprise support organization
- Funded by local government

Contents of the Research



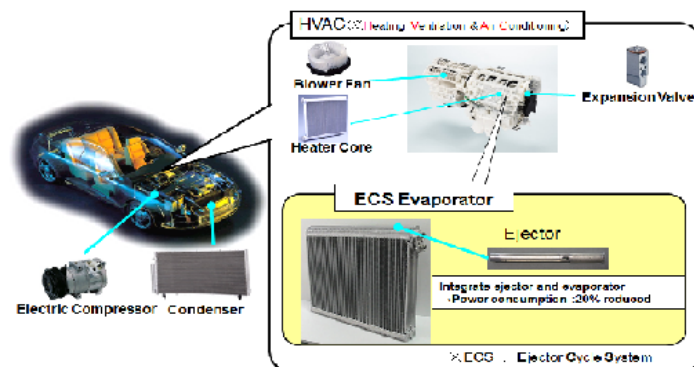
Toyohashi University of Technology's U-I Cooperation (2)

Case 2 (Education and Research)

“Endow course by DENSO Co.,Ltd.”

- Duration: April 2014 ~ March 2016 (3yrs)
- Amount of endow: 72,000,000 JPY
- Incentives:

- Research:** Development of cutting-edge energy saving technology for air-conditioning
- Education:** Involvement of student (one of the research theme for laboratory)



Merit for Industry

Develop product with cutting-edge energy saving air-conditioner

Merit for University

Develop human resource who are highly capable of energy-saving and two-phase flow technology

Future Vision of Toyohashi University of Technology

Create next future of society and economy by utilizing
TUT advantages and features

Toyohashi University of Technology

Technological Science Research Hub for Social Implantation by Open Application (Tentative)

-Formulate Research Platform Innovative Creation through University-Industry Collaboration-

Innovative System Research Unit

<Joint research Project>

Research in
innovative creation
for social
implementation

Leading
regional
industries

Medical
corporation

Social System Research Unit

< Joint research Project >

Research in regional-
based problem
solving

industries
committee

Leading IT
industries

Leading (Interdisciplinary Research Unit

<Joint Research Laboratory>

World-leading research in
specific theme

National R&D
corporation

Overseas
Universities

Research Administration Center (RAC)

MEXT Initiatives (Competitive Fund)

21 COE (2 programs)/Global COE/Leading Graduate School Program/Top Global University/Program
for Promoting the Enhancement of Research Universities

Thank you very much for
your kind attention!