



Hitotsubashi University  
Institute of Innovation Research

Hitotsubashi University  
Institute of Innovation Research



# ANNUAL REPORT 2010-2011



Hitotsubashi University  
Institute of Innovation Research





# ANNUAL REPORT FY2010 – FY2011

## ANNUAL REPORT FY2010 – FY2011

### INDEX

|   |    |
|---|----|
| About IIR                                   | i  |
| I. Research Activities                      | 01 |
| 1) Innovation Research Forum                | 02 |
| 2) Joint Research Projects                  | 06 |
| 3) Conferences                              | 20 |
| II. Researchers                             | 29 |
| 1) Full-time Researchers                    | 30 |
| 2) International Visiting Researchers       | 60 |
| III. Education                              | 61 |
| 1) Courses Given by the IIR Faculty Members | 62 |
| 2) The IIR Library                          | 63 |
| IV. Research Results / Publications         | 65 |
| 1) Hitotsubashi Business Review             | 66 |
| 2) Working Papers                           | 74 |
| 3) Case Studies                             | 76 |

‘To become a world-class of excellence for research in social processes of innovation’ — The Institute of Innovation Research (IIR) was established at Hitotsubashi University to achieve this aim in April 1997, as the result of the reorganization of the Institute of Business Research, whose main pursuit had been the theoretical and empirical analysis of business, society and management.

It is indispensable for a populous country with poor natural resources like Japan to generate innovation. The importance of innovation has considerably increased since 1990s when growth by catching up with Western competitors was no longer possible. At that time, however, we had only little understanding of how innovation was generated. Innovation was an agenda in the realm of technical development. People did not pay sufficient attention to the long, social process for turning technological invention into industrial development. Innovation is a complex social phenomenon in which economic, political, organizational, historical and legislative factors are correlated with each other. In order to clarify this process, there needed to be places for interdisciplinary, systematic research where people from various fields of social science could work together utilizing the knowledge of natural science. This is how the IIR was established as an interdisciplinary research institute concentrating on the innovation process.

### *Missions*

The first mission of the IIR is to study the innovation generation process systematically and empirically, understanding innovation as something to bring about economic value, and to contribute to the improvement of theoretical and practical knowledge. The role of the IIR also encompasses the clarification of social and economical impacts of innovation.

The second mission is to build a bridge between theory and practice on innovation. Since innovation is “living phenomenon,” one needs to be deeply involved in the front line of practice and understand specific problems happening there. In order to achieve the ultimate objective of facilitating innovation, there should be certain mechanisms for applying theoretical knowledge to the front line of innovation. In this sense, the IIR has to play an important role in linking theory and practice.

The third mission is to be an open research center which serves as a place for knowledge fusions between researchers from different countries. As the importance of innovation is and will be growing in East Asian countries, promoting interactions with researchers from these countries is very important for Japan in contributing to the development of this region. Thus, the IIR's missions also include the accumulation of qualitative and quantitative information on Japanese innovation.

### *Research Areas*

In order to pursue its mission of studying the innovation process systematically and empirically, the activities of IIR have covered the following areas of research since its establishment.

“Research on Technological Innovation” and “Research on Management Innovation” are the areas in which factors facilitating innovation such as technology, organizations and management methods are being studied. “Research on Entrepreneurs” analyzes the personal characteristics of entrepreneurs as innovation initiators in order to go deep into the realities of innovation. “Research on Social Networks” explores how networks of private firms, universities, individuals, and other entities and parties affect innovation.

“Business History Research” and “Technology History Research” look at the above areas of empirical research from a broader perspective, understand their historical contexts, and trace the development processes of innovation over time. “Research on Institutions for Innovation” focuses on clarifying the influences of accounting and legal systems (such as those about intellectual property rights) on innovation.

“Research on Knowledge Management” synthesizes and attempts to understand all these empirical areas of research from a broader, theoretical perspective. Finally, “International Comparative Research” involves comparison, demonstration and analysis on an international scale.

We believe that our research at the IIR offers an important opportunity to foster creativity and innovation in Japan in order to bring about transformation and development in business organizations and the economy. We wish to create a world-class, international research institute where people from all over the world can conduct research together.

# I. Research Activities



## 1. Innovation Research Forum — Apr. 2010 ~ Mar. 2012

The following is the list of lectures given as part of the Innovation Research Forum during 2010-2011 academic year:

- Mar. 14, 2012      Anja Schulze  
 Director of Swiss Center for Automotive Research at the Department of Management, Technology, and Economics (D-MTEC) of ETH Zurich  
 “Lean Product Development (The Management of Efficiency in New Product Development): A Research Project that Bridges Japan and Europe as well as Industry and Academia”  
 Florian Rittiner  
 the Department of Management, Technology, and Economics (D-MTEC) of ETH Zurich  
 “Process Management from a Knowledge Brokerage Point of View”  
 Simge Tuna  
 the Department of Management, Technology, and Economics (D-MTEC) of ETH Zurich  
 “Attention Based View to New Product Development: A Case of Set Based Concurrent Engineering in the Top Pharmaceutical Machinery Supplier”  
 Stefano Brusoni  
 Professor, the Chair of Technology and Innovation Management at the Department of Management, Technology, and Economics (D-MTEC) of ETH Zurich  
 “Reinventing the Wheel: Knowledge Integration in the Tire Industry”
- Feb. 09, 2012      Junichiro Masada  
 General Manager, Gas Turbine Engineering Department, Power Systems Mitsubishi Heavy Industries, Ltd.  
 “Development and Industrialization of High-Efficiency, High-Temperature Gas Turbine” (G-COE Research Project on Okochi Prize Cases)
- Jan. 26, 2012      Hitoshi Tanaka  
 Associate Professor, Faculty of Economics, Hokkai-Gakuen University  
 “Intellectual Property Rights and Foreign Direct Investment: A Welfare Analysis (co-authored with Tatsuro Iwaisako)”
- Jan. 26, 2012      Martin Hemmert  
 Professor, Business School, Korea University  
 “Relational Governance in New Product Development Collaborations: Evidence from Korea”
- Jan. 19, 2012      Kazunobu Tanaka  
 Principal Fellow, Center for R&D Strategy, Japan Science and Technology Agency  
 “R&D Strategies and Science and Technology Systems: Nanotechnology -Grand Design in Japan”
- Jan. 16, 2012      Takashi Shimizu  
 Associate Professor, Department of Advanced Social and International Studies, University of Tokyo  
 “The Demography of Corporations in Japan”
- Jan. 13, 2012      Minoru Hirata  
 Manager, Foundry Business Headquarters, Foundry Equipment Engineering Group, SINTOKOGIO, LTD.  
 “Development of Aeration Sand Filling Technology in Green Molding Process” (G-COE Research Project on Okochi Prize Cases)



- Dec. 14, 2011 Minna Autio and Jaakko Autio (University of Helsinki)  
 "Consumer-driven Innovation in Retail Service Culture/ Empowering Employees and Activating Consumers"  
 Anssi Smedlund (Aalto University)  
 "Value Co-Creation in Service Platform Business Models"  
 Otto Makela (Aalto University)  
 "The Business Model as a Tool of Improving Value Creation"  
 Naoto Nadayama (Aalto University)  
 "Acceleration of Change in the Firm -Participant Observation Research in Finnish Companies"
- Dec. 01, 2011 Toshihiko Nomi and Sadao Nagaoka  
 Senior Analyst for Academia-Industry-Government, Cooperation Promotion, Ministry of Economy, Trade and Industry / Professor, Institute of Innovation Research  
 "Industry-Academia-Government Collaboration and Knowledge Transfer Process"
- Nov. 30, 2011 Horst Otto Hanusch  
 Visiting Professor, Institute of Innovation Research; Professor, University of Augsburg  
 "Governance in Stormy Times: Explaining and Fighting the Current Crisis in a CNSE-Framework"
- Nov. 24, 2011 Akira Yamazaki  
 Researcher, Institute of Innovation Research; Professor, Chiba Institute of Technology  
 "Study of the Management for Successful R&D Projects Supported by Public Funds"
- Nov. 17, 2011 Hiroyuki Tomizawa and Takayuki Hayashi  
 Director of Research Unit for Science and Technology Analysis and Indicators, National Institute of Science and Technology Policy (NISTEP), Ministry of Education, Culture, Sports, Science and Technology (MEXT) / Associate Professor, Department of Research for University Evaluation, National Institution for Academic Degrees and University Evaluation (NIAD-UE)  
 "Science of Science, Technology and Innovation Policy: Indicators, Scientometrics and Research Evaluation"
- Oct. 26, 2011 Fernando Suarez  
 Visiting Professor, Institute of Innovation Research; Chair, Strategy & Innovation Department, Boston University School of Management  
 "Research on Industry Life Cycles: Origin, Evolution and Current Trends"
- Aug. 01, 2011 Masashi Shirabe  
 Associate Professor, Tokyo Institute of Technology  
 "The Use of Scientometrics in Research Funding Programs"
- Jun. 17, 2011 Edmund Kitch  
 Professor, Virginia Law School  
 "Prospect Theory View of the Role of Patent System: Lessons from Bayh-Dole Experiences"  
 (Innovation Forum Jointly with Industry/Labor Workshop and with Law/Economics Study Group)
- Jun. 03, 2011 Shigeru Harashima  
 Senior Manager, Department of Production Engineering, Denso Corporation  
 "Development of Environment-Conscious Oil-filter and its Production System"  
 (G-COE Research Project on Okochi Prize Cases)
- May. 25, 2011 Khare Prajakta Amit  
 Adjunct Lecturer, Institute of Innovation Research  
 "SME Clusters in India: Possibility of Drawing Lessons from Japan"

- Mar. 07, 2011 Isamu Hanyu and Satoshi Takechi and Koji Nozaki  
General Manager, Technology Research, Fujitsu Semiconductor Limited / Manager, Intellectual Property Unit, Standardization Promotion Department, Fujitsu Semiconductor Limited / Research Fellow, Device & Materials Laboratories, Fujitsu Laboratories Limited  
“Technical Innovation in ArF Resist Material for LSI Production to 90nm-Era and Beyond”  
(G-COE Research Project on Okochi Prize Cases)
- Feb. 04, 2011 Csonka Laszlo  
Research Fellow, IKU Innovation Research Centre, Financial Research Corp.  
“R&D and Innovation Networks in the Hungarian Automotive Industry”
- Jan. 28, 2011 Shigeto Hatanaka  
General Manager, Fuel Research Laboratory Research & Development Division, JX Nippon Oil & Energy Corporation  
“Development and Practical Application of Manufacturing Technology for Sulfur-Free Fuels”  
(G-COE Research Project on Okochi Prize Cases)
- Dec. 22, 2010 Bernard Dankbaar  
Visiting Professor, Institute of Innovation Research, and Professor of Radboud University, Nijmegen  
“Dynamics of High-Tech Industries: An Institutional Approach”
- Dec. 10, 2010 Dirk Czarnitzki  
Associate Professor, KU Leuven  
“Competing Internationally: On the Importance of R&D for Export Activity”
- Dec. 01, 2010 Satoru Ito  
Adjunct Professor of Institute of Innovation Research, Advisor of Research & Development Group at Hitachi, Ltd., and Research Advisor of Tsukuba Innovation Arena Promotion Division at Advanced Industrial Science and Technology  
“Mobile-Phone Platform Strategy in Japanese Semiconductor Makers: In Pursuit of Global over Domestic Business”  
Masao Nakaya  
Adjunct Professor of Institute of Innovation Research, and President and CEO of Semiconductor Technology Academic Research Center  
“Profitability in Semiconductor Industry and Its Interfirm Differentials: Based on the Analysis of 62 World-Leading Players”
- Oct. 14, 2010 Patricia Phumpiu  
Academic Coordinator, KTH- Royal Institute of Technology  
“National and Regional Innovation Systems in Sweden and Spain”
- Sep. 21, 2010 Kenichi Tanaka  
General Manager, Advanced Technology R&D Center, Mitsubishi Electric Corporation  
“Development and Mass Production of Artificial Retina LSI”  
(G-COE Research Project on Okochi Prize Cases)
- Jul. 23, 2010 Keizo Ishiguro and Takayuki Hayashi  
General Manager, 1st Device Development G., AVC Develop Center, Technology Planning & Development Center, AVC Networks Company / Councilor, 1st Device Development G., AVC Develop Center, Technology Planning & Development Center, AVC Networks Company, Panasonic Corporation  
“Development and Commercialization of the Products with Compact Digital Still Camera Using Optical Image Stabilizer”  
(G-COE Research Project on Okochi Prize Cases)

- Jul. 15, 2010 Tadahiro Uemura and Kenji Ueno and Yoshinari Fusaoka  
 Director (Technology), Water Treatment Division, Toray Singapore Water Research Center / General Manager for Technology & Production, Water Treatment Division / General Manager, Water Treatment Division, Water Treatment & Environment Division, Toray Industries, Inc.  
 “Development of a Polyamide Composite Reverse Osmosis Membranes and their Membrane Systems”  
 (G-COE Research Project on Okochi Prize Cases)
- Jul. 07, 2010 Koichi Kubota and Jiro Ito  
 Chief Executive, Visual Instruments Operations Division / General Manager, New Domain Research & Development Center, Corporate Research & Development Div., Seiko Epson Corporation  
 “Development of a Compact and High Picture Quality LCD Data Projector”  
 (G-COE Research Project on Okochi Prize Cases)
- Jun. 17, 2010 Tsutomu Nakata and Wang Feizhou and Hiroshi Takiguchi  
 President, NAKATA MFG. Co., Ltd. / Executive Director, Corporate Technical, Nakata Mfg. Co., Limited / Executive Director, Corporate Planning, Nakata Mfg. Co., Limited  
 “Development of the Most Advanced Flexible Roll Forming Mill for Quality Tubes and Pipes”  
 (G-COE Research Project on Okochi Prize Cases)
- Jun. 08, 2010 Eric J. Iversen  
 Senior Researcher, NIFU STEP Norwegian Institute for Studies in Innovation, Research and Education  
 “Multiple Licensing Arrangements: Organizational and Analytical Issues”
- Jun. 02, 2010 Youngjin Yoo  
 Visiting Associate Professor, Institute of Innovation Research, and Associate Professor of Temple University  
 “Digital Innovation and the Future of Industrial Firms”
- May. 24, 2010 Martin Jes Iversen  
 Associate Professor, Copenhagen Business School  
 “The Multinational Brewery Carlsberg as a Mirror of Danish Capitalism, 1847-2010 - Competition, Cartels and Internationalization”
- May. 19, 2010 Serguey Braguinsky  
 Associate Professor, Carnegie Mellon University  
 “High-Tech Entrepreneurship”
- Apr. 28, 2010 Akira Endo  
 Visiting Professor, Institute of Innovation Research  
 “A Gift from Nature: The Invention of Statin and the Following Innovation (III)”

## 2. Joint Research Projects — Apr. 2010 ~ Mar. 2012

At the IIR, we have the advantage of a team of researchers covering many areas of scholarship to carry out joint research into themes that have not previously been touched upon. The following are the joint research projects that researchers engaged in during the 2010-2011 academic year.

(\* = Project Leader, or Coordinator)

### ■ Industry-Academia-Government Collaboration Research Program on the Innovation Processes

#### 1. Outline of Research

During the 2008 academic year, the Institute of Innovation Research initiated a research program on the innovation process. The program, which is conducted through industry-academia-government collaboration, is supported by a special subsidy from the central government. Together with IIR faculty members, visiting faculty members and researchers also work on various projects for this program. To further the evolution of its research, in the 2011 academic year the institute newly invited Yoshiyuki Ohsugi (Advisor, Chugai Pharmaceutical Co., Ltd., Medical Affairs Division) to join the project as an adjunct professor in the biotechnology sector. In addition, during the 2010 academic year IIR invited Satoru Ito (former Chairman, Renesas Electronics Co., Ltd.) and Masao Nakaya (President and CEO, Semiconductor Technology Academic Research Center) to serve as adjunct professors in the semiconductor sector. An overview of the program and more detailed information on IIR's activities during the current academic year are available by clicking the following link:  
<http://www.iir.hit-u.ac.jp>

#### 2. Objectives

Innovation holds the key to the future growth of Japan's economy. For both the creation of knowledge and its use, innovation is a highly complex process that entails a social division of labor, and research on the entire process – from the systematic accumulation of objective data to the creation and application of knowledge based on such information – is needed to clarify optimal methods for effectively encouraging innovation. Together with promoting research concerning the innovation process (including knowledge production mechanisms and the optimal means for competing and cooperating in R&D), based on industry-academia-government collaboration, and obtaining research results that set an international standard, the research program seeks to apply the fruits of its research to strengthen the technology management capabilities of government agencies and the industrial sector, and helps shape novel policies and proposals for institutional reforms to promote innovation.

#### 3. Time Period

FY2008-present

## 4. Members

IIR Faculty Members (Project Leaders: Hiroyuki Chuma\* and Sadao Nagaoka\*)

Akira Endo, Visiting Professor, IIR / Biopharm Research Laboratories, Inc.

Satoru Ito, Professor (Special Appointment), IIR / former Chairman, Renesas Electronics Co., Ltd.

Yoshiyuki Ohsugi, Professor (Special Appointment), IIR / Scientific Director, Chugai Pharmaceutical Co., Ltd., Medical Affairs Division

Masao Nakaya, Professor (Special Appointment), IIR / President & CEO, Semiconductor Technology Academic Research Center

Masaomi Kameyama, Professor (Special Appointment), IIR / Nikon Corporation

Toshihiko Osada, Professor (Special Appointment), IIR / Fujitsu Microelectronics Limited

Gensuke Tokoro, Professor (Special Appointment), IIR / aRigen Pharmaceuticals, Inc.

Masatsura Igami, Associate Professor (Special Appointment), IIR / NISTEP

Naotoshi Tsukada, Research Associate, IIR

Yusuke Naito, A Life-laboratory

Yuji Honjo, Chuo University

Tomohiro Ijichi, Seijo University

Kenta Nakamura, Kobe University

Hideo Owan, The University of Tokyo

Katsushige Tsuno, Electron Optics Solutions

Koichiro Onishi, Osaka Institute of Technology

Yoichiro Nishimura, Kanagawa University

## 5. Research Areas

[1] Measurement of the innovation process

This research seeks to understand the realities of the knowledge production mechanism, including knowledge combinations, through means such as systematic case studies of government-supported research projects, along with questionnaire surveys and corroborative analyses utilizing patents and other statistical data.

Specifically, participants work in cooperation with the National Institute of Science and Technology Policy (NISTEP) to use the survey research know-how universities have accumulated up to now and NISTEP database information to implement large-scale questionnaire surveys of scientists, and understand parameters such as knowledge production processes, research output and research environments and inputs, and conduct empirical research on the knowledge creation processes in sciences and the processes through which innovation is created from scientific knowledge.

Researchers also work in cooperation with the New Energy and Industrial Technology Development Organization (NEDO) to advance development of theoretical research and methodologies concerning procedures for measurement of the innovation process, by using the results of past studies on innovation. In tandem with this activity, researchers elucidate and analyze the actual conditions surrounding such aspects as the mechanisms of knowledge combination and knowledge production and the knowledge commercialization process, by creating a database of NEDO-supported research projects and researchers and using this data to provide practical verification of theories and research methodologies.

## [2] Management of Technology

This research looks at the management of technology “best practices” by which the government or the industrial sector as a whole can effectively link R&D results to innovation. With the cooperation of the Semiconductor Technology Roadmap Committee of Japan at The Japan Electronics and Information Technology Industries Association (JEITA), the Ministry of Economy, Trade and Industry and the industrial sector, including manufacturers of semiconductor fabrication equipment and semiconductor devices, the program has created a research system and is investigating topics such as the mechanism by which the International Technology Roadmap for Semiconductors (ITRS) was created, the historical significance and meaning (including limits) of what the ITRS has accomplished, and the feasibility of ITRS development in the future. The program also is undertaking, with assistance from the Japan Bioindustry Association and the Japan Pharmaceutical Manufacturers Association Office of Pharmaceutical Industry Research, research on the market entry and growth mechanisms of high technology start-up firms in the biotechnology sector and the best methods for cooperation with the pharmaceuticals industry.

## [3] Policies and systems

Based on the case studies, statistical databases and international comparative research described above, the program analyzes problems that form barriers in Japan to both the creation of new industries and sustainable innovation at existing industries, and conducts research that will lead to novel proposals.

## 6. Research Activities and Outputs during FY2011

1. NEDO Project: Published findings learned from related surveys in a scientific journal as “The Innovation Process Observed through the NEDO Project.” Participants conducted interview surveys and also gathered data on inventions, and carried out research on topics such as project and firm organization, the embodiment of consortia and information sharing, and changes in the invention activities of participating researchers. The results were announced at five workshops. Together with the Ministry of Education, Culture, Sports, Science and Technology National Institute of Science and Technology Policy (NISTEP), the project initiated a descriptive study of researchers who had achieved inventions through industry-university collaboration research, with the goal of analyzing processes from seed discovery to the application of results.

Nagaoka, Sadao, Manabu Eto and Yusuke Naito, “Innovation Process as Seen from NEDO Projects,” *Keizai Kenkyū* (The Economic Review), Vol. 62, No. 3, July 2011, pp. 253-269

2. Semiconductor Industry Innovation: To clarify the characteristics of Japan’s strengths among globally-related R&D networks as a case study of state-of-the-art processing technology, an additional survey was conducted with IMEC in Belgium, LETI in France, and ALD-tool inventors in Finland, and a social networks analysis was performed based on the extensive volume of data from U.S. patents and leading academic papers. Part of the result was published in a scholarly journal. A study group was also begun with design developers from STARC and the Hitachi Central Research Laboratory, to highlight the conditions that have led to a similar tendency arising in the semiconductor design sector as well. In relation to the survey, interviews were conducted at a number of related companies in Japan and overseas. Additional interviews were conducted in Japan and overseas with regard to pattern measurement SEM for semiconductors and electron microscope sphere aberration correction technology, the first major SEM innovation in 50 years.

Chuma, Hiroyuki, “Searching for Main Characteristics of R&D Strategies in Semiconductor Industry: Viewed from Social Network Analysis,” *Keizai Kenkyū* (The Economic Review), Vol. 62, No. 3, July 2011, pp. 225-240

3. Innovation in the Biotechnology Sector: The results of a survey of start-up firms currently being conducted with the Japan Bioindustry Association were published by the American Economic Association. A related new WP also was published. A comparative analysis of the growth factors at listed biotechnology firms in Japan and the U.S. and the results of a case study on the development process for Actemra, the first antibody drug developed in Japan, were released at a research workshop.

Honjo, Yuji, Sadao Nagaoka, Kenta Nakamura and Yumi Shimizu, "Agenda for the Growth of Bio Startup Firms in Japan: Alliances and CEO Turnovers," IIR Working Paper WP #12-01, January 2012

## 7. Research Activities and Outputs during FY2010

1. As a result of implementing a "Survey Concerning the Knowledge Production Process in the Sciences" in FY 2009, responses were obtained from approximately 2,100 scientists in Japan. Based on this result, a workshop (see page 10) was held simultaneously with the release of the working paper (IIR Working Paper WP#10-7). At the workshop, a summary based on aggregate calculation of the survey responses was reported, and opinions on topics such as how to manage research in the future, science and technology policies, and "research on research" were exchanged. Further analysis was completed during the following fiscal year, and reported the result at an open workshop. A similar survey in the United States as well, and comparison of Japan and the U.S., also was published as a working paper (IIR Working Paper WP#11-09).

2. The characteristics, significance and limits of the semiconductor road map were analyzed. An analysis of the text of the same report over each year to trace the historical changes to the International Technology Roadmap for Semiconductors (ITRS), an analysis of the mutual relationship between the ITRS and Intel's R&D global strategy, which was focused on high-k/metal gate process technology and specific parameter (device and materials) technologies related to this technology, and an historical analysis and case study analysis that looked at changes in inspection equipment (CD-SEM: Scanning electron microscope) and packaging technology in the road map, were undertaken.

3. In cooperation with the New Energy and Industrial Technology Development Organization (NEDO), the follow-up survey form for NEDO-supported projects was revised, and the survey form was distributed and collected, and based on the responses (1) an analysis of the factors dividing commercialization from project discontinuation and (2) an analysis of the supplementary role of public funds were undertaken. Furthermore, together with preparing a NEDO project database a questionnaire, list of names of recipients and a patent database for the analysis were prepared with cooperation from NEDO, in order to implement a large-scale questionnaire survey covering past NEDO-supported projects and the participating researchers, and a questionnaire survey system synchronized with the database was developed. An evaluation system and management best practices for research and innovation in Japan's public sector also were studied.

4. A comparative study of Japan, the U.S. and Europe was implemented to examine the entry and growth mechanisms of Japan's biotechnology ventures and alliances between the pharmaceuticals industry and venture businesses. For the study, surveys were sent to 716 biotechnology firms in Japan with the cooperation of the Japan Bioindustry Association, and responses were returned from 276 companies, providing valuable information concerning alliances, research and development financing and assessment of intellectual property systems. The analytical results obtained from the basic statistics of the survey were published as a working paper (IIR Working Paper WP#10-3). A detailed case study on the statin innovation process also was undertaken with the cooperation of Dr. Akira Endo, the inventor and developer of statins.

## ■ GCOE Okochi Award Case Study Research Program

### 1. Outline of Research

This project aims at building up cases of innovations by Japanese firms and examining the features and challenges of Japanese firms in creating innovations. While previous studies in technology management have paid attention to product development or industry-level analysis, this project focuses on individual firms from concept creation, through development and commercialization to subsequent consequences, in order to explore a new stream of innovation research.

In this five-year project, we make individual cases each year selected from those who won the Okochi Awards, which have been given to important technological innovations annually since 1954. We also conduct cross-case analysis to explore features and challenges of Japanese firms to succeed in innovations. Each case is written jointly by faculty members at IIR and the Graduate School of Commerce and Management at Hitotsubashi University and graduate students. This project is financially supported by Global COE "Innovation in the Japanese Corporation" at Hitotsubashi University.

### 2. Time Period

FY2008-present

### 3. Members

Yaichi Aoshima\*, Hiroyuki Chuma, Manabu Eto, Masaru Karube, Kentaro Nobeoka, Hiroshi Shimizu, Takeishi Akira (University of Kyoto), Junji Miyahara (Tokyo University of Science), Masatoshi Fujiwara (Kyoto Sangyo University), Youngjae Koh (Konan University), Tomono Miki (Rikkyo University)

### 4. Research Activities and Outputs during FY2010-FY2011

Publication and Papers

- (1) Takeishi, Akira, Yaichi Aoshima and Masaru Karube, *Reasons for Innovation: Creating Legitimacy for Resource Mobilization*, Tokyo: Yuhikaku, March 2012, 506 pages (in Japanese)
- (2) Shimizu, Hiroshi and Satoshi Kudo, "How Well Does Knowledge Travel? The Transition from Energy to Commercial Application of Laser Diode Fabrication Technology," *Business and Economic History On-Line*, Vol. 9, 2011
- (3) Kosaka, Genjiro, "Individual-level and Group-level Diversity in R&D Organizations: A Comparative Analysis of the Ceramic Capacitor Industry," *Organizational Science*, Vol. 45 No. 2, 2011, pp. 74-86 (in Japanese)
- (4) Tsumita, Atsushi and Masatoshi Fujiwara, "ICT Utilization and Corporate Growth: A Comparative Study of Two Okochi Memorial Prize Winners," in Center for Japanese Business Studies, Hitotsubashi University, ed., *Frontier of Japanese Business Studies 7*, Tokyo: Yuhikaku, March 2011, pp. 89-98 (in Japanese)
- (5) Miki, Tomono and Youngjae Koh, "The Product Development Process of Digital X-ray Imaging System: A Case Study of Fujifilm Computed Radiography," *Akamon Management Review*, Vol. 10, No. 11, November 2011, pp. 755-788 (in Japanese)



## Case Study

### Hitotsubashi Business Review, Business Case Series (in Japanese)

- (1) Aoshima, Yaichi and Makoto Kitamura, "Seiko Epson: an Inkjet Printer that Produces High-Resolution Text and Images," *Hitotsubashi Business Review*, Vol. 59, No. 3, December 2011, pp. 134-156
- (2) Fujiwara, Masatohi, Tomono Miki and Yaichi Aoshima, "Toray Industries: Development of the Reverse Osmosis Membrane Business," *Hitotsubashi Business Review*, Vol. 59, No. 1, June 2011, pp. 150-167

### IIR Case Study Series (in Japanese)

- (3) Okumura, Yuichiro and Manabu Eto, "Seiko Epson: Development of 3LCD Projector and its Commercialization," IIR Case Study Case#12-01, January 2012
- (4) Komuro, Masashi and Manabu Eto, "Mitsubishi Electric: Development of Artificial Retina LSI," IIR Case Study Case#11-03, September 2011
- (5) Ito, Seigo, "Denso: Development and Commercialization of Type III Alternator for Automobiles," IIR Case Study Case#11-01, May 2011
- (6) Fujiwara, Masatoshi, Yaichi Aoshima and Tomono Miki, "Toray Industries: Development of the Polyamide Composite Reverse Osmosis Membrane," IIR Case Study CASE#10-11, December 2010
- (7) Tsumita, Atsushi and Masatoshi Fujiwara, "Nakata MFG: FFX Mill Development and Production," IIR Case Study CASE#10-10, September 2010
- (8) Kudo, Satoshi and Hiroshi Shimizu, "SONY: Semiconductor Laser Manufacturing Technology, MOCVD," IIR Case Study CASE#10-09, August 2010
- (9) Kudo, Hideo and Kentaro Nobeoka, "Panasonic: Development of IH Cooker," IIR Case Study CASE#10-07, July 2010
- (10) Kubota, Tatsuya and Yaichi Aoshima, "Yokogawa Electric: Development and Application of High Speed Confocal Microscopy," IIR Case Study CASE#10-06, July 2010
- (11) Aoshima, Yaichi and Izumi Okubo, "Nippon Steel: A Diagnose and Repair Technologies Used in Enormously Harsh Space for the Realization of Coke-Oven Restoring," IIR Case Study CASE#10-05, July 2010
- (12) Aoshima, Yaichi, Young-Jae Koh and Tatsuya Kubota, "NEC: Development of Novel Materials for ArF Resist Achieving the Mass-Production of Advanced LSIs," IIR Case Study CASE#10-04, May 2010
- (13) Miki, Tomono, Atsushi Tsumita and Yaichi Aoshima, "NHK, Victor Company of Japan: Development of Radio and Television Receiver with Functions of Speech Rate Conversion Technology," IIR Case Study CASE#10-03, April 2010

## Working Papers

Hitotsubashi Business Review, Business Case Series (in Japanese)

- (1) Aoshima, Yaichi and Tatsuya Kubota, "An Influence of Organizational Positioning of R&D Activity on Innovation Process: A Comparative Analysis of ArF Resist Materials Development," IIR Working Paper WP#11-06, April 2011
- (2) Kubota, Tatsuya, Yaichi Aoshima and Youngjae Koh, "Influence that Distance from the Divisional Environment has on the Innovation Process: A Comparative Analysis of ArF Resist Materials Development," IIR Working Paper WP#11-04, March 2011
- (3) Fujiwara, Masatohi, Tomono Miki and Yaichi Aoshima, "Toray Industries: Development of the Reverse Osmosis Membrane Business," *Hitotsubashi Business Review*, Vol. 59, No. 1, June 2011, pp. 150-167

## Conference Papers, Presentations

- (1) Koh, Youngjae and Tomono Miki, "Technology Innovations and Customer's Knowledge Accumulations," proceedings of PICMET '11 Conference, 2011 July
- (2) Kosaka, Genjiro, "Individual-level and Group-level Skill Diversity as a Driver of Innovation: A Multi-level Analysis of the Ceramic Capacitor Industry," paper presented at European Group of Organization Studies Pre-Colloquium Post-Doctoral and Early Career Scholars Workshop, University of Gothenburg, Sweden, July 2011
- (3) Aoshima, Yaichi and Tatsuya Kubota, "An Influence of Organizational Positioning of R&D Activity on Innovation Process: A Comparative Analysis of ArF Resist Materials Development," proceedings of the R&D Management Conference 2011, June 27-30, 2011, Norrköping, Sweden, presented at the R&D Management Conference 2011, Sweden
- (4) Koh, Youngjae and Tomono Miki, "Two Kinds of Core Technologies," proceedings of AJBS Conference 2011, June 2011
- (5) Miki, Tomono and Atsushi Tsumita, "Can Public Laboratory Make Innovation Happen?," proceedings of The R&D Management Conference 2011, June 2011
- (6) Kosaka, Genjiro, "Skill Diversity, Network of Engineers, and Innovation: An Exploratory Case Analysis of the Ceramic Capacitor Industry," paper presented at The Association of Japanese Business Studies Paper Development Workshop, Nagoya, June 2011
- (7) Fujiwara, Masatoshi and Atsushi Tsumita, "How Do Traditional Family Firms Integrate New Technologies?: From a Comparative Study on Two Japanese Family Firms," 7th Workshop on Family Firms Management Research, May 28, 2011, Witten, Germany
- (8) Kubota, Tatsuya, Yaichi Aoshima and Youngjae Koh, "Influence that Distance from the Divisional Environment has on the Innovation Process," proceedings of Second Asia-Pacific Innovation Conference, May 3-4, 2011, Singapore
- (9) Shimizu, Hiroshi and Satoshi Kudo, "How Well Does Knowledge Travel? The Transition from Energy to Commercial Application of Laser Diode Fabrication Technology," presented at the Business History Conference 2011 Annual Meeting, March 31-April 2, 2011, Missouri, USA

## ■ Industry-Academia-Government Collaboration Project on CO2 Reduction and Innovation

### 1. Outline of Research

How to reduce GHG (Green House Gas) without sacrificing the industry competitiveness is one of the most urgent and important issues. This research project is to scrutinize how to create technological innovation that enables both the industry competitiveness and the global environmental responsibility. Research meetings entitled “CO2 reducing innovation research meeting” with guest speakers and regular participants from universities, industries and government institutions were periodically held to discuss this issue.

### 2. Time Period

FY2009-present

### 3. Members

Seiichiro Yonekura\*, Yaichi Aoshima, Hiroshi Shimizu

### 4. Research Activities and Outputs during FY2010-Y2011

The first international symposium, “Sustainable Growth and Asian Energy Policy,” was held on March 27 in 2012 at Sano-shoin of Hitotsubashi University by inviting several speakers from Asian countries.

Reports that describe discussion at “CO2 reducing innovation research meetings” are disclosed in the following website.

<http://magicc.iir.hit-u.ac.jp>

Articles (In Japanese)

- (1) Kaneko, Shozo, “Greenhouse Gas Reduction: “Mamizu Policy”—A Powerful Driving Force for the Innovation of Japan,” *Hitotsubashi Business Review*, Vol. 58, No. 1, June 2010, pp. 22-44
- (2) Iida, Tetsunari, “Japan Needs Energy and Environmental Policy Innovation,” *Hitotsubashi Business Review*, Vol. 58, No. 1, June 2010, pp. 58-72

## ■ Project on Networks and Innovations

### 1. Outline of Research

Given a growing concern for how networks help mobilize resources more flexibly than traditional hierarchies in today's rapidly changing environments and how social capital can be usefully mobilized to sustain such resource allocation, this research focuses on identifying and analyzing the underlying determinants of successful institutional arrangements of organization and networking at two levels of analysis. First, at the organizational level we examine in some detail the emergent experiments of introducing cross-functional teams to defense systems development in the current context of defense procurement reforms among allies. Second, we investigate the emerging networking patterns of Chinese entrepreneurs from Wenzhou, Zhejiang Province, whose striking economic success has been widely recognized, in comparison with their counterparts from several locales from Fujian Province. In particular, we examine the extent to which Wenzhounese entrepreneurs' rapid rewiring patterns of their links with various transnational locales is related to their success in the light of small-world network theory that accommodates both local cohesiveness (high clustering coefficient) and efficient network information transmission (short path length). As in previous years we will continue to conduct our comparative field research in Japan, China, and Europe and will publish preliminary research results in the forms of working papers and articles in the media.

### 2. Time Period

FY2004-present

### 3. Members

Toshihiro Nishiguchi\*, Motoko Tsujita (Ryukoku University)

### 4. Research Activities and Outputs during FY2010-FY2011

We conducted extensive field research on the Chinese diaspora and returnees worldwide.

Publication and Papers (In Japanese)

- (1) Nishiguchi, Toshihiro, *Coco Chanel's Network Strategy*, Tokyo: Shodensha, October 2011, 253 pages
- (2) Nishiguchi, Toshihiro, "How to Make Your Organization Fresher," *Kakehashi*, Industrial Employment Stabilization Center of Japan, May 2012, pp. 4-8
- (3) Nishiguchi, Toshihiro, "Rewiring in Your Firm: Creating New Values from the Top Down," *Works*, RECRUIT Works Institute, February-March 2012, pp. 30-31
- (4) Nishiguchi, Toshihiro and Takahiro Morimitsu, "Target Costing and Applicability of Cross-functional Teams in Government Procurement," *Financial Review*, Policy Research Institute of Ministry of Finance, No. 104, February 2011, pp. 77-104
- (5) Nishiguchi, Toshihiro, "Network Thinking and Practice," *Communication Seed*, Keidanren Jigyo Service, April-July 2010

#### Working Papers

- (6) Nishiguchi, Toshihiro, Jiang Hong Xiang and Motoko Tsujita, “Wenzhounese Firms after the Lehman Shock: the Wenzhou Model Revisited,” IIR Working Paper WP#12-06, March 2012
- (7) Tsujita, Motoko and Toshihiro Nishiguchi, “Fujian Networks and Social Capital with Particular Reference to Fuqing Immigrants in Japan,” IIR Working Paper WP#12-05, March 2012
- (8) Nishiguchi, Toshihiro and Motoko Tsujita, “Wenzhounese Entrepreneurs’ Way to Success: The Appropriation of Networks and Social Capital,” IIR Working Paper WP#12-03, March 2012
- (9) Nishiguchi, Toshihiro and Satoru Oguchi, “Today’s Oral History: Mr. Jun’ichi Endo, Who Became Nissan’s Youngest Managing Director from within, Talks about CEO Ghosn’s Reform and the Efficacy of Cross-functional Teams,” IIR Working Paper WP#11-10, November 2011

#### Research Reports

- (10) “A Study of the Economic Procurement Model Addressing the Issues of Growing Competitive Bidding in Japanese Defense Procurement Reforms,” Defense Procurement Structure Improvement Foundation (Research Project Leader: Toshihiro Nishiguchi), March 2012
- (11) “A Study on the CPT Realization in Japanese Defense Procurement Reforms,” Defense Procurement Structure Improvement Foundation (Research Project Leader: Toshihiro Nishiguchi), March 2011

#### Presentation

- (12) Nishiguchi, Toshihiro, “Enlivening Your Organization by Rewiring,” Ministry of Defense, Joint Staff Office, Study Group of Joint Signal Corps, February 10, 2012, Tokyo (Invited Speech)

## ■ Open Innovation

### 1. Outline of Research

What is “Open Innovation” and how Japanese firms can develop competitive advantage out of it? In the past, economics and management studies have also considered the phenomenon of open innovation in relation to “make-or-buy”. However, open innovation does not simply consist of “make-or-buy”. What is important is creating a system ensuring that openness leads to strong business performance. Open innovation is a new notion, and still needs conceptual adjustments. However, this research project did not stick strongly to the discussion of open innovation definition. Its objective was to consider actual company initiatives, as well as their results and the challenges they pose, from the standpoint of innovation management. This research project explored these points through the discussions with chief technology officers of industries. It was funded by DSM Japan and has been jointly run with the Collaboration in New Product Development project.

### 2. Time Period

FY2011-2012

### 3. Members

Seiichiro Yonekura\*, Hiroshi Shimizu, Yusuke Hoshino (Musashino University), Kazuhisa Kawai (Okayama Shoka University), Takashi Hirao (Tokyo University of Science, Suwa), Kunio Miyazaki (University of Shizuoka), Shiaw Ja Eyo (Hosei University), Kenji Inayama (Meiji Gakuin University)

Ajinomoto, Amano Enzyme, Astellas Pharma, Booz & Company, Bridgestone, The Chemical Daily, Nikkan Jidosha Shimbun, Nikkan Kogyo Shimbun, Development Bank of Japan, DSP Gokyo Food & Chemical, Sumi-Eagle, Food Chemical News, Fujifilm, Goldman Sachs, TBWA/Hakuhodo, Innovation Network Corporation of Japan, Iseki Industry, Nippon Formula Feed Manufacturing, JSR, JX Nippon Oil & Energy, Kao Corporation, Kemin Industries, Kirin Kyowa Foods, Kongo Yakuhin, Kuroda Electric, Kyoto Institute of Technology, Kyowa Hakko Kirin, Marubeni, Megmilk Snow Brand, Meiji Gakuin University, Mitsubishi Chemical Holdings Corporation, Mitsubishi Corporation, National Syouji, NEC Corporation, Netherlands Press in Japan, Embassy of Netherlands in Japan, Nichia Corporation, Nichirei Foods, NineSigma Japan, Nippon Suisan Kaisha, ZENOAQ, Nissan, Nisshin Seifun Group, Okayama Shoka University, Oriental Yeast, Osaka Gas, LONZA Japan, San-Ei Gen F.F.I, Shiseido, University of Shizuoka, Taiyo Chemical Industry, Teijin, University of Tokyo, Tokyo University of Science, Suwa, Toray Industries, Toyobo, Toyota Motor Corporation, Unitec Foods, Unitika, Yakult, Fancel Corporation, GE Japan, Philips Electronics Japan, National Institute for Materials Science, 360ip, United Business Media, Health Business Magazine, Weber Shandwick, Hirofumi Suzuki's Office, DSM Japan, DSM Japan Engineering Plastics, DSM Nutrition Japan

### 4. Research Activities and Outputs during FY2010-FY2011

This research project formed a research consortium and held nine intensive workshops from 2011 to 2012. In 2012, Hitotsubashi Business Review released a themed issue on “Open-Innovation” jointly with the Collaboration in New Product Development project. In this issue, the following papers were published from the research project.

Articles (In Japanese)

- (1) Yonekura, Seiichiro, “Logic behind Open Innovation: Technology, Market and Organization,” *Hitotsubashi Business Review*, Vol. 60, No. 2, September 2012, pp. 6-15
- (2) Shimizu, Hiroshi and Yusuke Hoshino, “Open Innovation Management: Exploration for New Combination and Knowledge Management,” *Hitotsubashi Business Review*, Vol. 60, No. 2, September 2012, pp. 28-41
- (3) Kawai, Kazuhisa, “Salaried Entrepreneurs and the Internalization of Technology Market: A Case Study on Open Innovation by Osaka Gas,” *Hitotsubashi Business Review*, Vol. 60, No. 2, September 2012, pp. 56-71
- (4) Hoshino, Yusuke, “Development and Industrialization through Collaboration: Case of Dyneema,” *Hitotsubashi Business Review*, Vol. 60, No. 2, September 2012, pp. 72-85

Case Study

*Hitotsubashi Business Review*, Business Case Series (In Japanese)

- (5) Hirao, Takashi and Yusuke Hoshino, “Business Case: Ajinomoto,” *Hitotsubashi Business Review*, Vol. 60, No. 2, September 2012, pp. 102-117

## ■ Collaboration in New Product Development

### 1. Outline of Research

This project explores inter-organizational collaboration in new product development. Firms traditionally organized research and development (R&D) internally and relied on outside research for only relatively simple functions or products. However, as technology has become more complex and has progressed, breakthroughs demand a range of intellectual and scientific skills that far exceed the capabilities of any single organization. It has become quite difficult if not impossible for a firm to internalize all the resources needed for in-house R&D. This research project focuses on inter-organizational collaborative R&D in new product development. By scrutinizing cases, it aims to explore knowledge management and R&D strategy in the collaboration and these impacts on the performance of new product development.

### 2. Time Period

FY2010-present

### 3. Members

Seiichiro Yonekura\*, Hiroshi Shimizu, Minoru Shimamoto, Yusuke Hoshino (Musashino University), Kazuhisa Kawai (Okayama Shoka University), Takashi Hirao (Tokyo University of Science, Suwa), Kunio Miyazaki (University of Shizuoka), Choi Eugene (Ritsumeikan University)

### 4. Research Activities and Outputs during FY2011

This research project has held four workshops since 2010. In 2012, *Hitotsubashi Business Review* released a themed issue on “Open-Innovation” jointly with the project of “Open-Innovation”. In this issue, the following papers were published from the research project.

Articles (In Japanese)

- (1) Yonekura, Seiichiro, “Logic behind Open Innovation: Technology, Market and Organization,” *Hitotsubashi Business Review*, Vol. 60, No. 2, September 2012, pp. 6-15
- (2) Shimizu, Hiroshi and Yusuke Hoshino, “Open Innovation Management: Exploration for New Combination and Knowledge Management,” *Hitotsubashi Business Review*, Vol. 60, No. 2, September 2012, pp. 28-41
- (3) Kawai, Kazuhisa, “Salaried Entrepreneurs and the Internalization of Technology Market: A Case Study on Open Innovation by Osaka Gas,” *Hitotsubashi Business Review*, Vol. 60, No. 2, September 2012, pp. 56-71
- (4) Hoshino, Yusuke, “Development and Industrialization through Collaboration: Case of Dyneema,” *Hitotsubashi Business Review*, Vol. 60, No. 2, September 2012, pp. 72-85

Case Study

*Hitotsubashi Business Review*, Business Case Series (In Japanese)

- (5) Hirao, Takashi and Yusuke Hoshino, “Business Case / Ajinomoto: the Entry into a BOP Market Targeting for Nutrition Improvement,” *Hitotsubashi Business Review*, Vol. 60, No. 2, August 2012, pp. 102-117



## ■ Magicc: Micro Analysis on Green Innovation and Corporate Competitiveness

### 1. Outline of Research

Former Democratic Party of Japan Prime Minister Hatoyama's declaration at the Copenhagen Summit of Japan's intention to reduce greenhouse gases (GHG) by 25% by 2020 compared with 1990 is still a fresh memory. On the other hand, the Great East Japan Earthquake resulting in the accident at the Fukushima Nuclear Power Station, raised a question for the construction of new nuclear plants, and even for the continued use of existing facilities. Japan currently is confronted with three serious issues, in terms of its "energy problem (stable energy supply)," "environmental problem (reduction of greenhouse gases)" and "industrial problem (long-term economic development)". The situation is like a complex simultaneous equation that at first glance appears to have no solution. Magicc is a research project aimed at solving this complex equation from the micro-perspective of management scholars by conducting in-depth fieldworks.

### 2. Time Period

FY2011-present

### 3. Members

Yaichi Aoshima\*, Hiroshi Shimizu, Yukiko Fujii, Naohiko Wakutsu, Yasushi Saito (Seinan Gakuin University), Masatoshi Fujiwara (Kyoto Sangyo University), Kazunari Matsushima (The University of Tokushima), Youngjae Koh (Konan University), Tomono Miki (Rikkyo University) and Atsushi Tsumita (Musashino University)

### 4. Research Activities and Outputs during FY2010-FY2011

A part of our research activities as well as reports of research meetings are disclosed in the following website (in Japanese).

<http://magicc.iir.hit-u.ac.jp>

#### Articles

- (1) Aoshima, Yaichi, Kazunari Matsushima, Manabu Eto, "Effects of Government Funding on R&D Performance Leading to Commercialization," *International Journal of Environment and Sustainable Development*, forthcoming
- (2) Wakutsu, Naohiko "Long-Term Effect of Emissions Trading on Green R&D," proceedings of the 12th Science Council of Asia International Symposium, Borgor, Indonesia, July 11, 2012

## 3. Conferences — Apr. 2010 ~ Mar. 2012

### ■ International Workshop on Measuring and Managing Innovation

March 16, 2012 at Kasumigaseki Knowledge Square, Tokyo

*Organized by*

IIR

*Co-organized by*

National Institute of Science and Technology Policy (NISTEP)

*Supported by*

New Energy and Industrial Technology Development Organization (NEDO)

Japan Pharmaceutical Manufacturers Association, and Japan Bioindustry Associations

#### **First Keynote Speech**

Chair: Akira Goto, National Graduate Institute for Policy Studies

“Patent Inventing and Scientific Discovery Co-evolution in High Technology”

Lynne Zucker, UCLA and NBER

(Comment) Reiko Aoki, Hitotsubashi University and the Council of Science and Technology Policy

#### **Session on Scientific Discovery Process in the US and Japan**

Chair: Hiroyuki Okamuro, Hitotsubashi University

(1) “Research in ‘Pasteur Quadrant’: How It Is Important and How It Matters?”

Sadao Nagaoka, IIR

(2) “Management of Science, Serendipity, and Research Performance: Evidence from Scientists' Survey in the US and Japan”

Hiroshi Shimizu, IIR

(Comment) Michael Darby, UCLA and NBER

Chair: Shinichi Akaike, IIR

(3) “Impacts of the Research Team Organization and Funding on Knowledge Creation in Science”

Masatsura Igami, National Institute of Science and Technology Policy (NISTEP)

(4) “Commercialization Process of Scientific Discovery”

John Walsh, Georgia Institute of Technology

(Comment) Lynne Zucker, UCLA and NBER

#### **Second Keynote Speech**

Chair: Sadao Nagaoka, IIR

“Medical Innovation, Longevity Increase, and Economic Growth”

Frank Lichtenberg, Columbia University and NBER

(Comment) Hiroshi Ohashi, University of Tokyo

#### **Bio Startup and Pharmaceutical Innovation Session**

Chair: Hiroyuki Chuma, IIR

(1) “Entry and Growth Process of Japanese Biotech Firms: Lessons from the Past Decades”

Yuji Honjo, Chuo University

(2) “Tracking the Growth Process of the Listed Bio Startups of the US and Japan: Capital Constraints vs. Seeds”

Junichi Nishimura, IIR

(Comment) Frank Lichtenberg, Columbia University and NBER

## ■ Japan-US Workshop on Knowledge Production Process in Science

June 23, 2011 at Conference Room of the MEXT, Kasumigaseki, Tokyo

*Organized by*

IIR

National Institute of Science and Technology Policy (NISTEP), Ministry of Education, Culture, Sports,  
Science and Technology (MEXT)

*Supported by*

National Science Foundation (NSF)

### **Objective**

The main objective is to present the results of the large scale surveys on the knowledge production process in science in the US and Japan and to understand the commonality and difference of the results and to draw implications on research and policy.

### **Opening Remarks**

Terutaka Kuwahara, Director General, National Institute of Science and Technology Policy  
Anne Emig, Director of the Tokyo Office, National Science Foundation

### **Part 1 Keynote Speech**

Chair: Shinichi Akaike, IIR

“How Economics Shapes Science”

Paula Stephan, Georgia State University and NBER

### **Part 2 Presentations of Key Findings from the Surveys in the US and Japan**

Chair: Reiko Aoki, Institute of Economic Research, Hitotsubashi University and CSTP

1. Knowledge Production Process

Sadao Nagaoka, IIR

2. Collaboration, Research Team and Funding

Masatsura Igami, National Institute of Science and Technology Policy

3. Commercialization of Scientific Discovery

John Walsh, Georgia Institute of Technology

Comments on the Survey Results

David Mowery, Haas School of Business, University of California at Berkeley

### **Part 3. Panel Discussions on the Implications of the Surveys and on the Research Agenda for “Science of Science & Innovation Policy”**

Chair: Sadao Nagaoka, IIR

Leading Remarks

Julia Lane, Program Director, Science of Science and Innovation Policy, National Science Foundation

Comments by Panelists

Paula Stephan, Georgia State University and NBER

Terutaka Kuwahara, Director General, National Institute of Science and Technology Policy

Shinichi Akaike, IIR

Reiko Aoki, Institute of Economic Research, Hitotsubashi University and CSTP

David Mowery, Haas School of Business, University of California at Berkeley

Anne Emig, Director of the Tokyo Office, National Science Foundation

## ■ Program for Second Asia - Pacific Innovation Conference

May 3-4, 2011 at National University of Singapore

*Organized by*

IIR

National University of Singapore

*Supported by*

The World Intellectual Property Organization (WIPO)

The Research Institute of Economy, Trade and Industry (RIETI)

### **Local Organizers**

Ivan Png, National University of Singapore

Sadao Nagaoka, Hitotsubashi University

Reiko Aoki, Hitotsubashi University

Poh Kam Wong, NUS Business School

### **Day 1: May 3rd 2011**

#### **REGISTRATION**

##### **Conference opening**

Ivan Png, National University of Singapore

Sadao Nagaoka, Hitotsubashi University and RIETI

Carsten Fink, Chief Economist of the WIPO

#### **KEYNOTE SPEECH 1**

Chair: Makoto Nirei, Hitotsubashi University

-Innovation and productivity

Bronwyn Hall, UC Berkeley and Maastricht University

#### **KEYNOTE SPEECH 2**

Chair: Ivan Png, National University of Singapore

-Preemptive Duplication in Complementary R&D Project

Jay Choi\*, University of New South Wales and Michigan State University

#### **PARALLEL SESSION 1**

P.1.1 Special Session: University Technology Transfer (sponsored by WIPO)

P.1.2 Contributed Session: R&D Competition 1

P.1.3 Contributed Session: Management of Technology

#### **KEYNOTE SPEECH 3**

Chair: Sadao Nagaoka, Hitotsubashi University

-Patent system reform

Carsten Fink, Chief Economist of the WIPO

#### **KEYNOTE SPEECH 4**

Chair: Reiko Aoki, Hitotsubashi University

-Network Dynamics: Theory and Evidence

Luis Cabral\*, IESE Business School

#### **PARALLEL SESSION 2**

P.2.1 Invited Session: Standards, Patent Pools and Innovation

P.2.2 Contributed Session: Science, University Research and University Industry

P.2.3 Contributed Session: Patent and Policy

### **PARALLEL SESSION 3**

- P.3.1 Invited Session: Trade Secrets and Incentive
- P.3.2 Contributed Session: Complexity and Spillovers
- P.3.3 Contributed Session: Financing and Commercialization

### **Day 2: May 4th 2011**

#### **KEYNOTE SPEECH 5**

Chair: Reiko Aoki, Hitotsubashi University

-Private Agreements for Coordinating Patent Rights: The Case of Patent Pools

Nancy Gallini\*, University of British Columbia

### **PARALLEL SESSION 4**

- P.4.1 Invited Session: Knowledge, Innovation and Catch-up
- P.4.2 Contributed Session: Sectoral Innovation and Industry Evolution
- P.4.3 Contributed Session: Patents and Administration

### **PARALLEL SESSION 5**

- P.5.1 Contribution Session: National Innovation Performance 1
- P.5.2 Contributed Session : R&D and Patent
- P.5.3 Contributed Session: Inventors and Scientists 1

### **PARALLEL SESSION 6**

- P.6.1 Invited session: Inventors and Invention Process
- P.6.2 Contributed Session : Copyright, and Trademark
- P.6.3 Contributed Session : National Innovation Performance 2

### **PARALLEL SESSION 7**

- P.7.1 Invited Session: IPR Law Design
- P.7.2 Contributed Session : Technology transfer and co-creation
- P.7.3 Contributed Session: R&D Competition 2

### **Adjourn**

### **Background**

The first Asia Pacific Region Innovation Conference was held in Melbourne in January 2010. Given a rapidly growing number of scholars in the Asia - Pacific region interested in innovation issues, we envisage that we will host such conferences regularly, rotating among Asia - Pacific countries. Participating institutions include:

- The Intellectual Property Research Institute of Australia (IPRIA), University of Melbourne
- Institute of Innovation Research and Center for Intergenerational Studies (Institute of Economic Research), Hitotsubashi University, Japan
- Research Institute of Economy, Trade and Industry, Japan
- NUS Business School, National University of Singapore
- IP Academy, Singapore
- University of Auckland Business School
- New Zealand Centre of International Economic Law (NZCIEL)
- College of Social Sciences, National Taiwan University
- Seoul National University
- Center for Economic Catch-up, KOREA
- School of Management, Graduate University of Chinese Academy of Science
- Intellectual Property Law Center, Drake University Law School
- World Intellectual Property Organization (WIPO)

■ Hitotsubashi University & Kwansei Gakuin University  
Osaka Workshop on Entrepreneurship and Innovation

December 11-12, 2010 at Hankyu Terminal Square 17, Osaka, Japan

*Organized by*

IIR

Kwansei Gakuin University

*Supported by*

Research Project "Empirical Studies on Entry and Industrial Dynamics in Regions",  
Hitotsubashi University

Center for Research on Contemporary Economic Systems, Hitotsubashi University

Institute of Innovation Research, Hitotsubashi University

Center for Economic Institutions, Hitotsubashi University

JSPS Grant-in-Aid for Scientific Research (A) (No. 20243018)

JSPS Grant-in Aid for Young Scientists (B) (No. 2173186)

*Co-organized by*

Okamuro, Hiroyuki, Graduate School of Economics, Hitotsubashi University

Kato, Masatoshi, School of Economics, Kwansei Gakuin University / Institute of Economic  
Research, Hitotsubashi University

**December 11th**

**Opening Remarks**

**Session 1**

Chaired by Hiroyuki Okamuro (Hitotsubashi University)

Speaker: Erik Stam (Utrecht University, the Netherlands)

“Gazelles, Industry Growth and Structural Change” (with J. W. B. Bos)

Discussant: Atsushi Ohyama (Hokkaido University)

Speaker: Serguey Braguinsky (Carnegie Mellon University, US)

“Science-based Business: Knowledge Capital or Entrepreneurial Ability? Theory  
and Evidence from a Survey of Biotechnology Start-ups” (with Y. Honjo,

S. Nagaoka, and K. Nakamura)

Discussant: Noriyuki Doi (Kwansei Gakuin University)

**Session 2**

Chaired by Nobuya Fukugawa (Tohoku University)

Speaker: Ryuichiro Tsuchiya (Ritsumeikan Asia-Pacific University)

“Firm Size and Business Startup Reasons of Japanese Workers”

Speaker: Masatoshi Kato & Hiroyuki Okamuro (Kwansei Gakuin University; Hitotsubashi University)

“What Explains Innovative Outcomes at Start-up Stage?” (with Yuji Honjo)

**December 12th:**

**Session 3**

Chaired by Yuji Honjo (Chuo University)

Speaker: Dirk Czarnitzki (Katholieke Universiteit Leuven, Belgium)

“The contribution of corporate ventures to radical innovation” (with J. M. H. Dick and K. Hussinger)

Discussant: Hiroyuki Odagiri (Seijo University)

Speaker: Luca Grilli (Politecnico di Milano, Italy)

“On the impact of venture capital financing on the growth of high-tech start-ups: separating treatment from selection effects” (with F. Bertoni and M. G. Colombo)

Discussant: Yuji Honjo

**Session 4**

Chaired by Masatoshi Kato

Speaker: Youngkwan Kwon (Seoul National University, Korea)

“The effects of technology acquisitions on the innovation performance of startups”

Discussant: Koichiro Okamura (Kwansei Gakuin University)

Speaker: Sadao Nagaoka (Hitotsubashi University)

“Knowledge creation process in science: initial findings from the scientists survey in Japan” (with M. Igami, M. Eto, and T. Ijichi)

**Closing Remark**



■ **Workshop on Knowledge Creation Process in Science: Basic Findings  
from a Large-scale Survey of Researchers in Japan**

October 4, 2010 at Kasumigaseki Bldg. 10F, Chiyoda-ku, Tokyo

*Organized by*

IIR

National Institute of Science and Technology Policy (NISTEP),  
Ministry of Education, Culture, Sports, Science and Technology

**PROGRAM**

**Opening Remarks:**

Terutaka Kuwahara, Director General, NISTEP

**Part 1: Overview of the Survey**

Chair: Makoto Nirei, IIR

[1] “The Survey Method” Masatsura Igami, NISTEP

[2] “Research Management” Sadao Nagaoka, IIR

[3] “Research Team and Funds” Tomohiro Ijichi, Seijo University

[4] “Outputs and Impacts of the Research” Manabu Eto, IIR

Q&A

**Part 2: Implications of Major Findings on Research on Research and on Science Policy**

(Panel Discussion)

Chair: Sadao Nagaoka, IIR

Comment:

Reiko Aoki, Hitotsubashi University

Terutaka Kuwahara, NISTEP

Hideo Owan, The University of Tokyo

Katsunori Wakabayashi, National Institute for Materials Science



## II. Researchers



## 1. Full-time Researchers

Profiles & List of Research Achievements — Apr. 2010 ~ Sep. 2012



**Shinichi Akaike**

### ■ Education

- 2008 Ph.D. (Industrial Technology and Management), Tokyo Institute of Technology
- 2000 Master of Science (Science and Technology Policy), University of Sussex
- 1992 Master of Arts and Sciences, University of Tokyo
- 1990 Bachelor of Agriculture, University of Tokyo

### ■ Professional Positions

- 2011 Professor, Institute of Innovation Research, Hitotsubashi University
- 2009 Assistant to Deputy Director-General and Fellow, Center for Research and Development Strategy, Japan Science and Technology Agency
- 2008 Director for International Exchange Promotion, Science and Technology International Affairs Division, Science and Technology Policy Bureau, Ministry of Education, Culture, Sports, Science and Technology (MEXT)
- 2008 Deputy Director, the same division above
- 2007 Childcare Leave
- 2006 Deputy-Director, Personnel Division, Minister's Secretariat, MEXT
- 2005 Deputy-Director, Atomic Energy Division, Science and Technology Policy Bureau, Cabinet Office
- 2002 First Secretary (Science Attache), Embassy of Japan in Sweden
- 2001 Deputy Director, International Science and Technology Affairs Division, Science and Technology Policy Bureau, MEXT

### ■ Research Achievements

#### 1. Conference Papers, Presentations

Akaike, Shinichi, “‘Science of Science, Technology and Innovation Policy’ Program,” presented at Seminar of OECD/DSTI, August 31, 2011, Paris, France

Akaike, Shinichi, “Japan’s ‘Science of Science, Technology and Innovation Policy’ Program and Development of Science, Technology and Innovation Indicators,” presented at the Workshop on Developing Science, Technology and Innovation Indicators for the Future, July 11, 2011, Washington, USA (Invited Speech)

(In Japanese)

Akaike, Shinichi and Kenichi Fujita, “How to Measure Impact of Science, Technology and Innovation Policy,” presented at the 26th Annual Meeting of The Japan Society for Science Policy and Research Management, October 15, 2011, Yamaguchi University

Akaike, Shinichi, Yaichi Aoshima and Sadao Nagaoka, “Development of Communities and Human Resources for ‘Science of Science, Technology and Innovation Policy,’” presented at the 26th Annual Meeting of The Japan Society for Science Policy and Research Management, October 12, 2011, Yamaguchi University



## Yaichi Aoshima

### ■ Education

- 1996 Ph.D. (Management), Sloan School of Management, Massachusetts Institute of Technology
- 1989 M.C. (Business Administration), Hitotsubashi University
- 1987 B.C. (Commerce), Hitotsubashi University

### ■ Professional Positions

- 2012~ Professor, Institute of Innovation Research, Hitotsubashi University
- 1999 Associate Professor, Institute of Innovation Research, Hitotsubashi University
- 1997 Assistant Professor, Institute of Innovation Research, Hitotsubashi University
- 1996 Assistant Professor, Institute of Business Research, Hitotsubashi University

### ■ Research Achievements

#### 1. Publications

##### 1.1. Books

(In Japanese)

- Takeishi, Akira, Yaichi Aoshima and Masaru Karube, *Reasons for Innovation: Creating Legitimacy for Resource Mobilization*, Tokyo: Yuhikaku, March 2012, 506 pages
- Aoshima, Yaichi, Akira Takeishi and Michael A. Cusumano, eds., *End of "Made in Japan"?*, Tokyo: Toyokeizaishimposha, August 2010, 374 pages

##### 1.2. Articles and Chapters in Books

- Aoshima, Yaichi, Kazunari Matsushima and Manabu Eto, "Effects of Government Funding on R&D Performance Leading to Commercialization," *International Journal of Environment and Sustainable Development*, forthcoming
- Takeda, Yoko, Yaichi Aoshima and Kentaro Nobeoka, "The Importance of Technology Integration Capabilities: Evaluating the Impact on 3D Technologies on Product Development Performance in Japan and China," *International Journal of Product Development*, Vol. 16, No. 1, 2012, pp. 26-44
- Aoshima, Yaichi, "Technological Progress Driven by Performance Illusion: Digital Still Camera Industry," in Aoshima, Yaichi, Akira Takeishi and Michael A. Cusumano eds., *End of "Made in Japan"?*, Tokyo: Toyokeizaishimposha, August 2010, Chap. 3, pp. 93-144
- Aoshima, Yaichi and Akira Takeishi, "Threat of the New Industrial System Brought by Technological Progress," *ibid.*, Chap. 8, pp. 294-323
- Aoshima, Yaichi and Akira Takeishi, "Alternatives Given to Japanese Companies," *ibid.*, Chap. 9, pp. 324-342

(In Japanese)

- Aoshima, Yaichi, “Balancing Environment, Energy, and Industry Competitiveness: Importance of the Micro-level Analysis,” *Hitotsubashi Business Review*, Vol. 59, No. 4, March 2012, pp. 78-96
- Aoshima, Yaichi and Makoto Kitamura, “Seiko Epson: an Inkjet Printer that Produces High-Resolution Text and Images,” *Hitotsubashi Business Review*, Vol. 59, No. 3, December 2011, pp. 134-156
- Fujiwara, Masatoshi, Tomono Miki and Yaichi Aoshima, “Toray Industries: Development of the Reverse Osmosis Membrane Business,” *Hitotsubashi Business Review*, Vol. 59, No. 1, June 2011, pp. 150-167
- Aoshima, Yaichi, Kazunari Matsushima and Manabu Eto, “Commercialization of Government Funded R&D: Follow-up Research Survey on NEDO Research Projects,” in Center for Japanese Business Studies of Hitotsubashi University, ed., *Frontier of Japanese Business Studies 7*, Tokyo: Yuhikaku, 2011, Chap. 7, pp. 73-87
- Yonekura, Seiichiro, Kentaro Nobeoka and Yaichi Aoshima, “No More Lost Decade for Japan: How to Revitalize Her Competitiveness,” *Hitotsubashi Business Review*, Vol. 58, No. 2, September 2010, pp. 12-31
- Takeishi, Akira, Yaichi Aoshima, Masaru Karube, Kazuyuki Motohashi, and Tomohiro Ijichi, “Status of the Two Major Japanese Industries: Positions and Performance of Automobile and Electronics Industries,” in Aoshima, Yaichi, Akira Takeishi, and Michael A. Cusumano, eds., *End of “Made in Japan”?*, Tokyo: Toyokeizaishimposha, August 2010, Chap. 2, pp. 68-92

### 1.3. Others

- Aoshima, Yaichi, “To the Memory of Steve Jobs: Committing to the Product without Being Trapped by It,” *Hitotsubashi Business Review*, Vol. 59, No. 3, December 2011, pp. 111-113

## 2. Unpublished Work

### 2.1. Working Papers

- Aoshima Yaichi and Tomono Miki, “Possibilities of Geothermal Power Generation in Japan: Notes from an Iceland Field Study,” IIR Working Paper WP#12-11, February 2012
- Aoshima, Yaichi and Tatsuya Kubota, “An Influence of Organizational Positioning of R&D Activity on Innovation Process: A Comparative Analysis of ArF Resist Materials Development,” IIR Working Paper WP#11-06, April 2011
- Kubota, Tatsuya, Yaichi Aoshima and Youngjae Koh, “Influence that Distance from the Divisional Environment has on the Innovation Process: A Comparative Analysis of ArF Resist Materials Development,” IIR Working Paper WP#11-04, March 2011
- Aoshima, Yaichi, Kazunari Matsushima and Manabu Eto, “Commercialization of Government Funded R&D: Follow-up Research Survey on NEDO Research Projects,” IIR Working Paper WP#11-02, February 2011

Takeda, Yoko, Yaichi Aoshima and Kentaro Nobeoka, “Capabilities of Technology Utilization and Technology Integration: Impact of 3D Technologies on Product Development Process and Performance in Japan and China,” IIR Working Paper WP#10-02, June 2010

(In Japanese)

Fujiwara, Masatoshi, Yaichi Aoshima and Tomono Miki, “Development of the Polyamide Composite Reverse Osmosis Membrane and Reverse Osmosis Membrane System: A Case Study of Toray Industries, Inc.,” IIR Case Study CASE#12-08, December 2010

Kubota, Tatsuya and Yaichi Aoshima, “Yokogawa Electric: Development and Application of High Speed Confocal Microscopy,” IIR Case Study CASE#10-06, July 2010

Aoshima, Yaichi and Izumi Okubo, “Nippon Steel: A Diagnose and Repair Technologies Used in Enormously Harsh Space for the Realization of Coke-Oven Restoring,” IIR Case Study CASE#10-05, July 2010

Aoshima, Yaichi, Youngjae Koh and Tatsuya Kubota, “NEC: Development of Novel Materials for ArF Resist Achieving the Mass-Production of Advanced LSIs,” IIR Case Study CASE#10-04, May 2010

Miki, Tomono, Atsushi Tsumita and Yaichi Aoshima, “NHK STRL • NHK Engineering Service • JVC: Development of Radio and TV Equipped with Speech Rate Converter,” IIR Case Study Case#10-03, April 2010

### 3. Conference Papers, Presentations

Aoshima, Yaichi, “Balancing Energy Supply, GHG Reduction, and Industry Competitiveness,” presented at the International Mini-conference on Sustainable Growth and Asian Energy Policy, hosted by IIR, March 27, 2012, Hitotsubashi University

Wakutsu, Naohiko and Yaichi Aoshima, “Long-Term Effect of Emissions Trading on Green R&D,” presented at the International Mini-conference on Sustainable Growth and Asian Energy Policy, hosted by IIR, March 27, 2012, Hitotsubashi University

Aoshima, Yaichi, “Innovation that Achieves GHG Reduction, Stable Energy Supply, and Economic Growth: Potential of the Geothermal Energy,” presented at Nordic Green Japan, Green Tech Conference and Exhibition, November 7-8, 2011, Tokyo

Aoshima, Yaichi and Kazunari Matsushima, “Commercialization of Government Funded R&D: Follow-up Research Survey on NEDO Research Project,” presented at PICMET '11 Conference, July 31-August 3, 2011, Portland, USA

Aoshima, Yaichi and Tatsuya Kubota, “An Influence of Organizational Positioning of R&D Activity on Innovation Process: A Comparative Analysis of ArF Resist Materials Development,” presented at the R&D Management Conference 2011, organized by Linköping University, June 27-30, 2011, Norshoping, Sweden

Aoshima, Yaichi, “Influence that Distance from the Divisional Environment has on the Innovation Process—A Comparative Analysis of ArF Resist Materials Development,” presented at the Second Asia-Pacific Innovation Conference, May 3-4, 2011, Singapore

Aoshima, Yaichi, “The End of ‘Made in Japan’?,” Korean Academy of Management, April 23, 2011, Seoul, Korea

(In Japanese)

Aoshima, Yaichi and Kazunari Matsushima, “Management and Performance of Government-funded R&D Projects,” presented at the Industry-Academia-Government Collaboration Workshop on Measuring and Managing Innovation, hosted by IIR, March 17, 2012, Hitotsubashi University

Aoshima, Yaichi, “Mobilizing Resources in the Innovation Process: Some Implications to Innovation Policy,” presented at Policy Seminar, January 12, 2012, Center for Research and Development Strategy of Japan Science and Technology Agency, Tokyo

Aoshima, Yaichi, “Balancing Environment, Energy Supply, and Economic Growth: Industry Development for Solving a Complex Equation,” Shizuoka Asia-Pacific Forum, November 26-27, 2011, Shizuoka

Aoshima, Yaichi and Kazunari Matsushima, “Spillover Effects of Government-Funded R&D: A Follow-up Survey for Projects Supported by NEDO,” presented at the 26th Annual Meeting of the Japan Society for Science Policy and Research Management, October 16, 2011, Yamaguchi University

Amikura, Hisanaga and Yaichi Aoshima, “Quantification of Mutual Learning between Makers and Users by Utilizing the Content Analysis and the Hedonic Regression,” presented at the 2011 Conference of the Academic Association for Organizational Science, June 3, 2011, Keio University, Kanagawa





## Hiroyuki Chuma

### ■ Education

- 1984 Ph.D. (Economics), State University of New York at Buffalo
- 1975 B.A. (Economics), Hitotsubashi University

### ■ Professional Positions

- 2009~ Committee Member, Expert Panel on Evaluation, Council for Science and Technology Policy
- 2009 Committee Member, Expert Panel on Basic Policy Promotion, Council for Science and Technology Policy (~2011)
- 2004 Affiliated Senior Fellow, National Institute of Science and Technology Policy, Ministry of Education, Culture, Sports, Science and Technology (~2007)
- 2000 Faculty Fellow, Research Institute of Economy, Trade and Industry (~2010)
- 2000 Visiting Professor, Department of Economics, Yale University (~2001)
- 1999~ Professor, Institute of Innovation Research, Hitotsubashi University
- 1993 Professor, Faculty of Economics, Hitotsubashi University
- 1992 Associate Professor, Faculty of Economics, Hitotsubashi University
- 1986 Visiting Research Fellow, Department of Economics, Yale University (~1987)
- 1985 Associate Professor, Faculty of Economics, Tokyo Metropolitan University
- 1984 Assistant Professor, Department of Economics, Southern Illinois University at Carbondale

### ■ Research Achievements

#### 1. Publications

##### 1.1. Articles and Chapters in Books

Bae, Kiu-Sik, Hiroyuki Chuma, Takao Kato, Dong-Bae Kim and Isao Ohashi, "High Performance Work Practices and Employee Voice: A Comparison of Japanese and Korean Workers," *Industrial Relations*, Vol. 50, No. 1, January 2011, pp. 1-29

(In Japanese)

Chuma, Hiroyuki, "Searching for Main Characteristics of R&D Strategies in Semiconductor Industry: Viewed from Social Network Analysis," *Keizai Kenkyū* (The Economic Review), Institute of Economic Research of Hitotsubashi University, Vol. 62, No. 3, July 2011, pp. 225-240

Chuma, Hiroyuki, "Searching for Main Causes of International Competitiveness in Science-based Industries: Viewed from Semiconductor Industries," in Fujita, Masahisa and Sadao Nagaoka, eds., *Productivity and Innovation System*, Tokyo: Nippon Hyoron Sha, March 2011, Chap. 7, pp. 317-360

Chuma, Hiroyuki, "Increasing Complexity and Agonizing Science-based Industries: Semiconductor Industry," in Aoshima, Yaichi, Akira Takeishi and Michael A. Cusumano, eds., *End of "Made in Japan"?*, Tokyo: Toyokeizaishimposha, August 2010, Chap. 5, pp. 176-227

Chuma, Hiroyuki, "What is Required for Japanese Style R&D?," *NIRA (National Institute for Research Advancement) Policy Review*, pp. 10-13, July 2010

## **2. Unpublished Work**

### **2.1. Working Papers**

(In Japanese)

Chuma, Hiroyuki, "Searching for Main Causes of International Competitiveness in Semiconductor Industry: Viewed from Social Network Analysis," IIR Working Paper WP#11-08, May 2011

Chuma, Hiroyuki, "Searching for Main Causes of International Competitiveness in Science-based Industries: Viewed from Semiconductor Industries," RIETI Policy Discussion Paper Series 10-P-015, Research Institute of Economy, Trade and Industry, November 2010

### **3. Conference Papers, Presentations**

(In Japanese)

Chuma, Hiroyuki, "Searching for Main Causes of International Competitiveness in Semiconductor Industry: Viewed from the R&D System," presented at the Industry-Academia-Government Collaboration Workshop on Measuring and Managing Innovation, organized by IIR, March 17, 2012, Hitotsubashi University

Chuma, Hiroyuki, "Searching for Main Causes of International Competitiveness in Semiconductor Industry: Viewed from Social Network Analysis," presented at the 109th Regular Meeting, organized by the Planarization and CMP Technical Committee, April 22, 2011, Tokyo

Chuma, Hiroyuki, "Searching for Main Causes of International Competitiveness in Semiconductor Industry: Viewed from Social Network Analysis," presented at the 8th ITEC International Conference, March 6, 2011, Doshisha University, Kyoto (Invited Speech)

Chuma, Hiroyuki, "What is Required for Japanese Semiconductor R&D Strategies?," presented at Nanoelectronics Technology Forum: Green Energy and Innovation Creation, organized by Japan Electronic and Information Technology Industries Association, February 17, 2011 (Keynote Speech)



## Manabu Eto

### ■ Education

- 2008 Ph.D. (Engineering), Tohoku University
- 1985 M.E. (Engineering Science), Osaka University
- 1983 B.E. (Engineering Science), Osaka University

### ■ Professional Positions

- 2011~ Director General, JETRO Geneva
- 2008 Professor, Institute of Innovation Research, Hitotsubashi University (~2011)
- 2006~ Consulting Fellow, Research Institute of Economy, Trade and Industry (RIETI)
- 2006 Director, Conformity Assessment Division, Industry Science and Technology Policy and Environment Bureau, Ministry of Economy, Trade and Industry (METI)
- 2004 National Institute of Advanced Industrial Science and Technology (~2005)
- 2000 Delegation of Japan to the OECD (~2004)
- 1995 Assistant Professor, University of Tsukuba (~1997)
- 1994 Visiting Scholar, University of New Mexico
- 1989 Science and Technology Agency (~1990)
- 1985 Ministry of International Trade and Industry (MITI)

### ■ Research Achievements

#### 1. Publications

##### 1.1. Articles and Chapters in Books

Aoshima, Yaichi, Kazunari Matsushima and Manabu Eto, “Effects of Government Funding on R&D Performance Leading to Commercialization,” *International Journal of Environment and Sustainable Development*, forthcoming

Nagaoka, Sadao, Manabu Eto and Yusuke Naito, “Innovation Process as Seen from NEDO Projects,” *Keizai Kenkyu* (The Economic Review), Vol. 62, No. 3, July 2011, pp. 253-269

Eto, Manabu, “Definitions and Functions,” in Donggeun Choi & Byung-Goo Kang, eds., *Standardization: Fundamentals, Impact, and Business Strategy* (APEC SCSC Education Guideline 3), Chap. 1, June 2010, pp. 3-36

Eto, Manabu, “Lifecycle, Organizations, and Development Procedures,” in Donggeun Choi & Byung-Goo Kang, eds., *Standardization: Fundamentals, Impact, and Business Strategy* (APEC SCSC Education Guideline 3), Chap. 2, June 2010, pp. 37-55

(In Japanese)

Eto, Manabu, “De Facto Standards and Forum Standards,” *Jidôsha Gijutsu* (Journal of Society of Automotive Engineers of Japan), Vol. 65, No. 5, May 2011, pp. 49-54

Eto, Manabu, "Intellectual Property and Standardization Strategy for Japanese Companies to Globalize in Asia," *Chizai Kanri* (Intellectual Property Management), Vol. 61, No. 4 (No. 724), April 2011, pp. 423-435

Aoshima, Yaichi, Kazunari Matsushima and Manabu Eto, "Commercialization of Government Funded R&D: Follow-up Research Survey on NEDO Research Projects," in Center for Japanese Business Studies of Hitotsubashi University, ed., *Frontier of Japanese Business Studies* 7, Tokyo: Yuhikaku, 2011, Chap. 7, pp. 73-87

Eto, Manabu, "For Standardization Activities, What Do We Expect to Competition Policy," *Kôsei Torihiki* (Journal of Fair Trade Institute), No. 720, October 2010, pp. 21-26

Eto, Manabu, "How to Use Intellectual Property and Standardization under the Global Competition Era," *Sekai Keizai Hyôron* (World Economic Review), Vol. 54, No. 4, July 2010, pp. 46-55

## 1.2. Others

(In Japanese)

Eto, Manabu, "Business Strategy and Standardization: Focus on Human Resource Development," *Tokkyo News* (Patent News), Research Institute of Economy, Trade and Industry, No. 12726, April 2010, pp. 26-34

## 2. Unpublished Work

### 2.1. Working Papers

Aoshima, Yaichi, Kazunari Matsushima and Manabu Eto, "Commercialization of Government Funded R&D: Follow-up Research Survey on NEDO Research Projects," IIR Working Paper WP#11-02, February 2011

Nagaoka, Sadao, Masatsura Igami, Manabu Eto and Tomohiro Ijichi, "Knowledge Creation Process in Science: Basic Findings from a Large-Scale Survey of Researchers in Japan," IIR Working Paper WP#10-08, December 2010

(In Japanese)

Nagaoka, Sadao, Manabu Eto, Yusuke Naito and Naotoshi Tsukada, "Innovation Process as Seen from NEDO Projects," IIR Working Paper WP#11-07, May 2011

Komuro, Masashi and Manabu Eto, "Mitsubishi Electric: Development and Commercialization of Artificial Retina Chip," IIR Case Study Case#11-03, September 2011

Nagaoka, Sadao, Masatsura Igami, Manabu Eto and Tomohiro Ijichi, "Knowledge Creation Process in Science: Basic Findings from a Large-scale Survey of Researchers in Japan," IIR Working Paper WP#10-07, November 2010

## 2.1. Research Reports

(In Japanese)

Eto, Manabu, ed., *A Guide to Standardization Business* (Experimental Version), Japanese Industrial Standards Committee (JISC), [http://www.jisc.go.jp/policy/hyoujunka\\_text/index.html](http://www.jisc.go.jp/policy/hyoujunka_text/index.html), 2010

## 3. Conference Papers, Presentations

Eto, Manabu, “Japan's View: Challenges and Vision,” presented at the 1st Korean Standards Association Symposium, October 12, 2010, Seoul, Korea

Eto, Manabu, “Strategic Use of Consensus-based Standards,” presented at the 1st Korean Standards Association Symposium, October 12, 2010, Seoul, Korea

Eto, Manabu, “Promotion & Obstacles in Testing Standards Innovations,” presented at PICMET 2010, July 23, 2010, Phuket, Thailand

Eto, Manabu, “Interpreting the Japanese Survey Results on Commercialization in Light of the Japanese Mechanism of Commercialization,” presented at the US-Japan Workshop on Scientific Collaboration and Productivity, IIR, NISTEP and Georgia Institute of Technology, March 26, 2010, Tokyo

(In Japanese)

Eto, Manabu, “The Establishment of the Korean Society of Standardization,” presented at the 7th Research Meeting of the Institute of Image Electronics Engineers of Japan, January 11, 2011, Tokyo

Yoshida, Junichi, Kazuo Fukui, Masaru Yamashita, Daisuke Yoshimura, Manabu Eto and Mitsuru Takeshita, “Analysis of Spinout Technologies from NEDO Project,” presented at the 25th Annual Meeting of the Japan Society for Science Policy and Research Management, October 9, 2010, Tokyo

Eto, Manabu, Masatsura Igami, Tomohiro Ijichi and Sadao Nagaoka, “Standardization as a Result of Research and Development,” presented at the 25th Annual Meeting of the Japan Society for Science Policy and Research Management, October 9, 2010, Tokyo

Eto, Manabu, “The Disadvantage of Standardization Policy of Japan,” presented at the 38th Media Commuting Conference, hosted by the Institute of Image Electronics Engineers of Japan, June 27, 2010, Kanagawa Institute of Technology

Eto, Manabu, “The Background and Consideration about the Movement toward Patent Right Restrictions in the China National Standard,” presented at the 8th Academic Research Report Meeting of the Intellectual Property Association of Japan, June 19, 2010, Tokyo



## Masaru Karube

### ■ Education

- 1998 Doctor of Commerce, Hitotsubashi University
- 1995 Master of Commerce, Hitotsubashi University
- 1993 B.A. (Commerce), Hitotsubashi University

### ■ Professional Positions

- 2006 Fulbright Visiting Scholar, Bryn Mawr College / The Wharton School of the University of Pennsylvania (~2007)
- 2002~ Associate Professor, Institute of Innovation Research, Hitotsubashi University
- 1998 Lecturer, Faculty of Business Administration, Tokyo Keizai University

### ■ Research Achievements

#### 1. Publications

##### 1.1. Book

(In Japanese)

Takeishi, Akira, Yaichi Aoshima and Masaru Karube, *Reasons for Innovation: Creating Legitimacy for Resource Mobilization*, Tokyo: Yuhikaku, March 2012, 506 page

##### 1.2. Articles and Chapters in Books

Karube, Masaru, Toshihiko Kato and Tsuyoshi Numagami, "Organizational Characteristics of Middle Managers' Deterioration as Sources of Organizational Decline," in Dariusz Jemielniak & Abigail Marks, eds., *Managing Dynamic Technology-Oriented Businesses*, Hershey PA: IGI Global, 2012, pp. 209-227

Toshihiko Kato, Tsuyoshi Numagami and Masaru Karube, "Types of Intra-Organizational Networks and Upward Strategic Communication," *Hitotsubashi Journal of Commerce and Management*, Vol. 45, No.1, October 2011, pp. 21-37

Numagami, Tsuyoshi, Masaru Karube and Toshihiko Kato, "Organizational Deadweight: Learning from Japan," *The Academy of Management Perspective*, Vol. 24, No. 4, November 2010, pp. 25-37

(In Japanese)

Kato, Toshihiko, Tsuyoshi Numagami and Masaru Karube, "Organizational Characteristics and Organizational Deadweight," in Center for Japanese Business Studies, Hitotsubashi University, ed., *Frontier of Japanese Business Studies 8*, Tokyo: Yuhikaku, March 2012, pp. 15-27

Karube, Masaru, "Innovation," *Hitotsubashi Business Review*, Supplementary Volume 1: Beginner's Guide to Management Studies, January 2011, pp. 125-131

Takeishi, Akira, Yaichi Aoshima, Masaru Karube, Kazuyuki Motohashi, and Tomohiro Ijichi, "Status of the Two Major Japanese Industries: Positions and Performance of Automobile and Electronics Industries," in Aoshima, Yaichi, Akira Takeishi, and Michael A. Cusumano, eds., *End of "Made in Japan"?*, Tokyo: Toyokeizaishimposha, August 2010, Chap. 2, pp. 68-92

### 1.3. Others

Karube, Masaru, "From My Bookshelf: *Myth and Reality of Business Books*, / Rosenzweig, Philip, *The Halo Effect*," *Hitotsubashi Business Review*, Vol. 58, No. 1, June 2010, pp. 12-31

## 2. Unpublished Work

### 2.1. Working Paper

Masaru Karube, "Determinants of Size of Corporate Headquarters in Japanese Diversified Firms," Tokyo Center for Economic Research (TCER) Working Paper, Forthcoming

## 3. Conference Papers, Presentations

Schaede, Ulrike (Chair), Christina Ahmadjian, Kazuhiro Asakawa, James R Lincoln, Thomas Roehl, Jesper Edman and Masaru Karube, "West Meets East: Research Strategies for Japan Business Studies," presented at the 2011 Academy of Management Annual Meeting, August 15, 2011, Texas, USA

Kato, Toshihiko, Tsuyoshi Numagami, Masaru Karube, Masato Sasaki, Yoshiki Murakami and Hiroshi Watanabe, "Types of Upward Communication and Organizational Characteristics in Japanese Firms," presented at the 2011 Academy of Management Annual Meeting, August 12-16, 2011, Texas, USA

Numagami, Tsuyoshi, Masaru Karube, Toshihiko Kato, Masato Sasaki, Hiroshi Watanabe and Yoshiki Murakami, "Intra-organizational Networks and Information Flows within an Organization," presented at the 30th Strategic Management Society Conference, September 12-15, 2010, Rome, Italy

Numagami, Tsuyoshi, Masaru Karube, Toshihiko Kato, Yuko Yamashita, Wataru Uehara, Masato Sasaki, Gen Fukutomi, Hiroyuki Fukuchi, Hiroshi Watanabe and Yoshinori Murakami, "Vertical Strategic Information Flow and Market Orientation," presented at the 2010 Academy of Management Annual Meeting, August 6-10, 2010, Montreal, Canada

Numagami, Tsuyoshi, Masaru Karube, Toshihiko Kato, Yuko Yamashita, Wataru Uehara, Masato Sasaki, Gen Fukutomi, Hiroyuki Fukuchi, Hiroshi Watanabe and Yoshinori Murakami, “Functions and Dysfunctions of Lateral and Diagonal Networks in Advancing Market Orientation: A Preliminary Step toward Bridging the Gap between Market Orientation Research and Intra-organizational Network Research,” presented at the 2010 European Group for Organizational Studies, July 1-3, 2010, Lisbon, Portugal

(In Japanese)

Karube, Masaru, “Determinants of Size of Corporate Headquarters in Japanese Diversified Firms,” presented at the TCER Conference “Organization Reform and Performance of Japanese Firms: Analysis of Panel Dataset,” organized by TCER and Hitotsubashi University, March 9, 2012, Hitotsubashi University





## Sadao Nagaoka

### ■ Education

- 1990 Ph.D. (Economics), Massachusetts Institute of Technology
- 1980 M.S. (Management), Massachusetts Institute of Technology
- 1975 B.E. (Engineering), The University of Tokyo

### ■ Professional Positions

- 2004 Director, Institute of Innovation Research, Hitotsubashi University (~2008)
- 1997~ Professor, Institute of Innovation Research, Hitotsubashi University
- 1996 Professor, Institute of Business Research, Hitotsubashi University
- 1992 Professor, Faculty of Economics, Seikei University
- 1990 Director of the Office for Russia and Eastern Europe, the Ministry of International Trade and Industry of Japan
- 1986 Economist, the World Bank (~1990)
- 1975 The Ministry of International Trade and Industry of Japan (~1992)

### ■ Research Achievements

#### 1. Publications

##### 1.1. Book

(In Japanese)

Fujita, Masahisa and Sadao Nagaoka, eds., *Productivity and Innovation System*, Tokyo: Nippon Hyoron Sha, March 2011, 384 pages

##### 1.2. Articles and Chapters in Books

Nagaoka, Sadao, Kazuyuki Motohashi and Akira Goto, "Patent Statistics as an Innovation Indicator," in Hall, Bronwyn H. and Nathan Rosenberg, eds., *Handbook of the Economics of Innovation*, Vol. 2, Amsterdam: North Holland, 2010, pp. 1083-1127

(In Japanese)

Nagaoka, Sadao, "Grasping the Opportunities from Globalization of Economic Growth in Innovation Management," *Chizai Kanri* (Intellectual Property Management), Nihon Chiteki Zaisan Kyokai (Japan Intellectual Property Association), Vol. 62, No. 1, January 2012, pp. 5-16

Nagaoka, Sadao, Manabu Eto and Yusuke Naito, "Innovation Process as Seen from NEDO Projects," *Keizai Kenkyū* (The Economic Review), Vol. 62, No. 3, July 2011, pp. 253-269

Nagaoka, Sadao, "Productivity Performance of Japanese Firms and Innovation Process: towards Stronger Capability Base for Growth," in Fujita, Masahisa and Sadao Nagaoka, eds., *Productivity and Innovation System*, Tokyo: Nippon Hyoron Sha, March 2011, Introduction, pp. 1-24

Nagaoka, Sadao, "Innovation Process in the US and Japan: Findings from the Inventor Surveys in the US and Japan," *ibid.*, Chapter 4, pp. 147-190

- Kim, Young Gak and Sadao Nagaoka, “Comparative Analysis of Diversification and R&D of US and Japanese Listed Firms Based on Consolidated Accounts,” in Center for Japanese Business Studies, Hitotsubashi University, ed., *Frontier of Japanese Business Studies 8*, Tokyo: Yuhikaku, Chapter 3, March 2011, pp. 29-42
- Shimbo, Tomoyuki and Sadao Nagaoka, “R&D Synergy from a Merger: Analysis of Co-inventions and Knowledge Flows from Inventor Data,” *Nihon Chizai Gakkaishi* (Journal of Intellectual Property Association of Japan), Vol. 7, No. 1, August 2010, pp. 28-36
- Yamauchi, Isamu and Sadao Nagaoka, “Does a Merger Enhance the Capability of Developing and Exploiting a New Technology?,” *Nihon Chizai Gakkaishi* (Journal of Intellectual Property Association of Japan), Vol. 7, No. 1, August 2010, pp. 14-27

## 2. Unpublished Work

### 2.1. Working Papers

- Nagaoka, Sadao, Akira Takeishi and Yoshihisa Noro, “Determinants of Firm Boundaries: Empirical Analysis of the Japanese Auto Industry from 1984 to 2002,” TCER Working Paper E-45, Tokyo Center for Economic Research, June 2012
- Nagaoka, Sadao, Masatsura Igami, John P. Walsh and Tomohiro Ijichi, “Knowledge Creation Process in Science: Key Comparative Findings from the Hitotsubashi-NISTEP-Georgia Tech Scientists’ Survey in Japan and the US,” IIR Working Paper WP#11-09, October 2011
- Nagaoka, Sadao and Hideo Owan, “Exploring the Sources of Firm-level Scale Economies in R&D: Complementary Assets, Internal and External Knowledge Inflows, and Inventor Team Size,” RIETI Discussion Paper 11-E-038, Research Institute of Economy, Trade and Industry, April 2011
- Owan, Hideo and Sadao Nagaoka, “Intrinsic and Extrinsic Motivations of Inventors,” RIETI Discussion Paper 11-E-022, March 2011
- Tsukada, Naotoshi and Sadao Nagaoka, “Standards as a Knowledge Source for R&D: A First Look at their Incidence and Impacts Based on the Inventor Survey and Patent Bibliographic Data,” RIETI Discussion Paper 11-E-018, March 2011
- Nagaoka, Sadao, “An Analysis of Unilateral and Cross-licensing Based on an Inventor Survey in Japan: Effects of Uncertainty, Rent Dissipation and a Bundle of Patents on Corporate Licenses,” RIETI Discussion Paper 11-E-004, January 2011
- Nagaoka, Sadao, “Ownership Structure and Productivity of Vertical Research Collaboration,” RIETI Discussion Paper 10-E-064, December 2010
- Nagaoka, Sadao, Masatsura Igami, Manabu Eto and Tomohiro Ijichi, “Knowledge Creation Process in Science: Basic Findings from a Large-scale Survey of Researchers in Japan,” IIR Working Paper WP#10-08, December 2010
- Braguinsky, Serguey, Yuji Honjo, Sadao Nagaoka and Kenta Nakamura, “Science-Based Business: Knowledge Capital or Entrepreneurial Ability? Theory and Evidence from a Survey of Biotechnology Start-ups,” IIR Working Paper WP#10-05, September 2010

(In Japanese)

- Nagaoka, Sadao and Young Gak Kim, “Governance Structure of Subsidiaries and Their Performance: Data Construction and Initial Findings,” TCER Working Paper J-9, July 2012
- Nagaoka, Sadao, “Entry through Diversification and Exits through Consolidation: Exploration of Their Determinants,” TCER Working Paper J-8, June 2012
- Kato, Masatoshi and Sadao Nagaoka, “Organizational Changes and Performance of Japanese Oil Refinery Industry: Impacts of the Changes of Competitive Conditions Due to Import Liberalization,” TCER Working Paper J-6, June 2012
- Kim, Young Gak and Sadao Nagaoka, “Initial Findings from a Construction of the Panel Data of Diversification of the US and Japanese Firms on Consolidated Basis,” IIR Working Paper WP#12-07, March 2012
- Honjo, Yuji, Sadao Nagaoka, Kenta Nakamura and Yumi Shimizu, “Agenda for the Growth of Bio Startup Firms in Japan: Alliances and CEO Turnovers,” IIR Working Paper WP #12-01, January 2012
- Nagaoka, Sadao, Manabu Eto, Yusuke Naito and Naotoshi Tsukada, “Innovation Process as Seen from NEDO Projects,” IIR Working Paper WP#11-07, May 2011
- Nagaoka, Sadao and Naotoshi Tsukada, “Spillovers and Risk of R&D Projects and Targeting of the Subsidies,” RIETI Discussion Paper 11-J-044, April 2011
- Nagaoka, Sadao, Masatsura Igami, Manabu Eto and Tomohiro Ijichi, “Knowledge Creation Process in Science: Basic Findings from a Large-scale Survey of Researchers in Japan,” IIR Working Paper WP#10-07, November 2010
- Honjo, Yuji, Sadao Nagaoka, Kenta Nakamura and Yumi Shimizu, “Agenda for the Growth of Bio Startup Firms in Japan: Financing, Core Technologies, Alliances and Patent System,” IIR Working Paper WP#10-03, July 2010

## 2.2. Research Reports

(In Japanese)

- “Analysis of the Mechanism of the Pending Stocks of the Requests for Patent Examinations and the Determinants of the Efficiency of the Patent Examinations,” Report on Patent Application Behaviors and Related Activities toward New Sources of Economic Growth in Japan, Institute of Intellectual Property (Chairman: Sadao Nagaoka), Chap. 4, April 2012
- “Introduction for the Report on Patent Application Behaviors and Related Activities toward New Sources of Economic Growth in Japan,” Institute of Intellectual Property (Chairman: Sadao Nagaoka), April 2012
- “An Economic Analysis of Contracts, Organization and Competition for Copyrights Licensing: Theoretical Perspective,” in *Collective Management of Copyrights and Competition Policy Abroad*, Kyoto Comparative Law Center (Chairman: Masahiro Murakami), March 2012
- A Report on the Enforcement of Essential Patents for Standards, Institute of Intellectual Property (Chairman: Sadao Nagaoka), Chap. 5, March 2012

### 3. Conference Papers, Presentations

Nagaoka, Sadao, "Research in 'Pasteur Quadrant': How It Is Important and How It Matters?," presented at the International Workshop on Measuring and Managing Innovation, IIR and National Institute of Science and Technology Policy (NISTEP), March 16, 2012, Tokyo

Nagaoka, Sadao, "Exploring the Sources of Firm Level Scale Economies in R&D: Complementary Assets, Internal and External Knowledge Inflows, and Inventor Team Size," presented at Strategy, Entrepreneurship, and Technological Change (SETChange), November 14, 2011, Philadelphia, USA

Nagaoka, Sadao, "An Analysis of Unilateral and Cross-licensing Based on Inventor Survey in Japan," presented at the Fall Meeting of the Japanese Economic Association, October 30, 2011, Tsukuba University

Nagaoka, Sadao, "Why do Firms Seek Patents and How Useful Patent Documents are for their R&D?: Some Evidence from Inventor Surveys in Japan and the US," presented at the UC Berkeley- Peking University Workshop on Innovation and IPR, May 11, 2011, Peking, China

Nagaoka, Sadao, "Exploring the Sources of Firm Level Scale Economies in R&D: Complementary Assets, Internal and External Knowledge Inflows, and Inventor Team Size," presented at the Second Asia - Pacific Innovation Conference, May 3-4, 2011, Singapore

Nagaoka, Sadao and Masatsura Igami, "Knowledge Creation Process in Science: Initial Findings from the Scientists Survey in Japan," presented at the 4th BRICK-DIME-STRIKE Workshop "The Organisation, Economics and Policy of Scientific Research," February 19, 2011, Torino, Italy

Nagaoka, Sadao, "Science-Industry Linkages and Innovation Performance," presented at the Final Conference Programme InnoS&T, February 15-16, 2011, Munich, Germany

Nagaoka, Sadao, "Studying Who Collaborates Internationally, How and Why," presented at NSF Tokyo Regional Office 50th Anniversary Symposium, October 6, 2010, Tokyo

Nagaoka, Sadao, "Ownership Structure of Collaborative Research," presented at the 5th Annual Conference of the EPIP (European Policy for Intellectual Property) Association, September 20-21, 2010, Maastricht, The Netherlands

Nagaoka, Sadao and Isamu Yamauchi, "Reform of Patent Examination Request System in Japan," presented at "The Output of R&D Activities: Harnessing the Power of Patents Data," hosted by the Institute for Prospective Technological Studies, May 27-28, 2010, Seville, Spain

(In Japanese)

Nagaoka, Sadao, "Role of Central Research Facilities for Research Consortia: Findings from NEDO Consortia," presented at the Industry-Academia-Government Collaboration Workshop on Measuring and Managing Innovation, organized by IIR, March 17, 2012

Nagaoka, Sadao, “Direction of Corporate Diversifications and Consolidations and Industry Characteristics,” presented at the TCER Conference “Organization Reform and Performance of Japanese Firms: Analysis of Panel Dataset,” organized by TCER and Hitotsubashi University, March 9, 2012, Hitotsubashi University

Nagaoka, Sadao and Young Gak Kim, “Governance Structure of Subsidiaries and their Performance: Analysis at Segments, Firm and Groups Levels,” presented at the TCER Conference “Organization Reform and Performance of Japanese Firms: Analysis of Panel Dataset,” organized by TCER and Hitotsubashi University, March 9, 2012, Hitotsubashi University

Nagaoka, Sadao, “Knowledge Creation Process,” presented at the Japan-US Workshop on Knowledge Production Process in Science, organized by IIR and National Institute of Science and Technology Policy (NISTEP) of Ministry of Education, Culture, Sports, Science and Technology (MEXT), June 23, 2011, Tokyo



## Makoto Nirei

### ■ Education

- 2002 Ph.D. (Economics), University of Chicago
- 1996 M.S. (Economics), The University of Tokyo
- 1994 B.A. (Economics), The University of Tokyo

### ■ Professional Positions

- 2008~ Associate Professor, Institute of Innovation Research, Hitotsubashi University
- 2006 Assistant Professor, Department of Economics, Carleton University (~2008)
- 2004 Assistant Professor, Department of Economics, Utah State University (~2006)
- 2001 Postdoctoral Fellow, Santa Fe Institute (~2004)

### ■ Research Achievements

#### 1. Publications

##### 1.1. Articles and Chapters in Books

- Nirei, Makoto and Vladyslav Sushko, “Jumps in Foreign Exchange Rates and Stochastic Unwinding of Carry Trades,” *International Review of Economics & Finance*, Vol. 20, No. 1, January 2011, pp. 110-127
- Mizuno, Takayuki, Makoto Nirei, and Tsutomu Watanabe, “Closely Competing Firms and Price Adjustment: Some Findings from an Online Marketplace,” *Scandinavian Journal of Economics*, Vol. 112, No. 4, December 2010, pp. 673-696

#### 2. Unpublished Work

##### 2.1. Working Papers

- Nirei, Makoto, Theodoros Stamatiou and Vladyslav Sushko, “Stochastic Herding in Financial Markets: Evidence from Institutional Investor Equity Portfolios,” BIS Working Papers No. 371, Bank for International Settlements, February 2012
- Murao, Tetsushi and Makoto Nirei, “Entry Barriers, Reallocation, and Productivity Growth: Evidence from Japanese Manufacturing Firms,” RIETI Discussion Paper 11-E-081, Research Institute of Economy, Trade and Industry, December 2011
- Nirei, Makoto, “Beauty Contests and Fat Tails in Financial Markets,” Research Center for Price Dynamics Working Paper No. 76, Institute of Economic Research, Hitotsubashi University, August 2011
- Guiso, Luigi, Chaoqun Lai and Makoto Nirei, “Detecting Propagation Effects by Observing Aggregate Distributions: The Case of Lumpy Investments,” EUI Working Papers, ECO 2011/25, European University Institute, June 2011
- Nirei, Makoto, “Investment Risk, Pareto Distribution, and the Effects of Tax,” RIETI Discussion Paper 11-E-015, March 2011

Nirei, Makoto and Vladyslav Sushko, “Stochastic Herding by Institutional Investment Managers,” Research Center for Price Dynamics Working Paper No. 64, Institute of Economic Research, Hitotsubashi University, November 2010

### **3. Conference Papers, Presentations**

Nirei, Makoto, “Pareto Distribution in Economic Growth Models,” presented at the Fall Meeting of the Japanese Economic Association, October 30, 2011, Tsukuba University

Nirei, Makoto, “Beauty Contests and Fat Tails in Financial Markets,” presented at the 17th Decentralization Conference in Japan, September 16, 2011, Tsukuba University

Nirei, Makoto, “Pareto Distribution in Economic Growth Models,” presented at The University of Tokyo, August 23, 2011

Nirei, Makoto, “Pareto Distribution in Economic Growth Models,” presented at the Asian Meeting of the Econometric Society, August 11-13, 2011, Seoul, Korea

Nirei, Makoto, “Information Aggregation and Fat Tails in Financial Markets,” presented at The University of Tokyo, May 10, 2011

Nirei, Makoto, “Power Laws in Economic Phenomena,” presented at Virtual Center for Advanced Studies in Institution (VCASI), September 16, 2010

Nirei, Makoto, “Pareto Distribution in Economic Growth Models,” NBER Summer Institute, July 21, 2010, Massachusetts, USA

Nirei, Makoto, “Pareto Distribution in Economic Growth Models,” presented at Chuo University, July 7, 2010



## Toshihiro Nishiguchi

### ■ Education

- 1990 D.Phil. (Sociology), University of Oxford
- 1981 M.Sc., Imperial College, University of London
- 1977 B.A., Waseda University

### ■ Professional Positions

- 2008~ Senior Research Fellow, Policy Research Institute, Ministry of Finance
- 2007~ Part-time Director, Defense Procurement Structure Improvement Foundation
- 2004 Fall; 2005 Summer  
Visiting Scholar, Center for International Studies, Massachusetts Institute of Technology
- 2002 Summer; 2003 Summer  
Visiting Senior Research Scholar, School of Public Affairs, Center for Public Policy and Private Enterprise, University of Maryland
- 2001 Summer  
Academic Visitor, The Judge Institute of Management, University of Cambridge
- 1997~ Professor, Institute of Innovation Research, Hitotsubashi University
- 1994 Associate Professor, Institute of Business Research, Hitotsubashi University
- 1991 Assistant Professor, The Wharton School, University of Pennsylvania
- 1990~ Post-Doctoral Fellow, INSEAD (European Institute of Business Administration)
- 1986 Research Fellow, International Motor Vehicle Program, Massachusetts Institute of Technology (~1989)

### ■ Research Achievements

#### 1. Publications

##### 1.1. Books

(In Japanese)

Nishiguchi, Toshihiro, *Coco Chanel's Network Strategy*, Tokyo: Shodensha, October 2011, 253 pages

##### 1.2. Articles

(In Japanese)

Nishiguchi, Toshihiro and Takahiro Morimitsu, "Target Costing and Applicability of Cross-functional Teams in Government Procurement," *Financial Review*, Policy Research Institute of Ministry of Finance, No. 104, February 2011, pp. 77-104

##### 1.3. Others

(In Japanese)

Nishiguchi, Toshihiro, "How to Make Your Organization Fresher," *Kakehashi*, Industrial Employment Stabilization Center of Japan, May 2012, pp. 4-8



Nishiguchi, Toshihiro, "Rewiring in Your Firm: Creating New Values from the Top Down," *Works*, RECRUIT Works Institute, February-March 2012, pp. 30-31

Nishiguchi, Toshihiro, "Network Thinking and Practice," *Communication Seed*, Keidanren Jigyo Service, April-July 2010

## **2. Unpublished Work**

### **2.1. Working Papers**

(In Japanese)

Nishiguchi, Toshihiro, Jiang Hong Xiang and Motoko Tsujita, "Wenzhounese Firms after the Lehman Shock: the Wenzhou Model Revisited," IIR Working Paper WP#12-06, March 2012

Tsujita, Motoko and Toshihiro Nishiguchi, "Fujian Networks and Social Capital with Particular Reference to Fuqing Immigrants in Japan," IIR Working Paper WP#12-05, March 2012

Nishiguchi, Toshihiro and Motoko Tsujita, "Wenzhounese Entrepreneurs' Way to Success: The Appropriation of Networks and Social Capital," IIR Working Paper WP#12-03, March 2012

Nishiguchi, Toshihiro and Satoru Oguchi, "Today's Oral History: Mr. Jun'ichi Endo, Who Became Nissan's Youngest Managing Director from within, Talks about CEO Ghosn's Reform and the Efficacy of Cross-functional Teams," IIR Working Paper WP#11-10, November 2011

### **2.2. Research Reports**

(In Japanese)

"A Study of the Economic Procurement Model Addressing the Issues of Growing Competitive Bidding in Japanese Defense Procurement Reforms," Defense Procurement Structure Improvement Foundation, (Research Project Leader: Toshihiro Nishiguchi), March 2012

"A Study on the CPT Realization in Japanese Defense Procurement Reforms," Defense Procurement Structure Improvement Foundation, Research Project Leader: Toshihiro Nishiguchi, March 2011

## **3. Conference Papers, Presentations**

(In Japanese)

Nishiguchi, Toshihiro, "Enlivening Your Organization by Rewiring," Ministry of Defense, Joint Staff Office, Study Group of Joint Signal Corps, February 10, 2012, Tokyo (Invited Speech)



## Kentaro Nobeoka

### ■ Education

- 2001 Ph.D. (Business Administration), Kobe University
- 1993 Ph.D. (Business Administration), Sloan School of Management, Massachusetts Institute of Technology
- 1988 M.B.A., Sloan School of Management, Massachusetts Institute of Technology
- 1981 B.S. (Engineering), Osaka University

### ■ Professional Positions

- 2012~ Director, Institute of Innovation Research, Hitotsubashi University
- 2008~ Professor, Institute of Innovation Research, Hitotsubashi University
- 1999 Professor, Research Institute for Economics & Business Administration, Kobe University (~2008)
- 1994 Associate Professor, Research Institute for Economics & Business Administration, Kobe University (~1999)
- 1981 Mazda Motor Corporation (~1989)

### ■ Research Achievements

#### 1. Publications

##### 1.1. Book

(In Japanese)

(In Japanese)

Nobeoka, Kentaro, *Theory of Management to Create Value: Strategies for Japanese Manufacturing Firms*, Tokyo: Nihon Keizai Shimbun, September 2011, 288 pages

##### 1.2. Articles and Chapters in Books

Takeda, Yoko, Yaichi Aoshima and Kentaro Nobeoka, "The Importance of Technology Integration Capabilities: Evaluating the Impact on 3D Technologies on Product Development Performance in Japan and China," *International Journal of Product Development*, Vol. 16, No. 1, 2012, pp. 26-44

(In Japanese)

Nobeoka, Kentaro, "Strategies of Japanese Manufacturing Firms and Required Human Resources," *Hinshitsu*, Nihon Hinshitsukanri Gakkai (The Japanese Society for Quality Control), Vol. 42, No. 2, April 2012, pp. 212-218

Niitsu, Yasuaki and Kentaro Nobeoka, "Business Case / Disco: Solutions as a Source of Competitive Advantage," *Hitotsubashi Business Review*, Vol. 59, No. 4, March 2012, pp. 128-140

Niitsu, Yasuaki and Kentaro Nobeoka, "Business Case / NISSHA Printing: Success with Nissha IMD," *Hitotsubashi Business Review*, Vol. 59, No. 2, September 2011, pp. 122-134

Nobeoka, Kentaro, "Importance of Accumulated-knowledge Technology: Technology that Produces Sustainable Competitiveness," *Hitotsubashi Business Review*, Vol. 58, No. 4, March 2011, pp. 160-170

Nobeoka, Kentaro, "Pitfalls of Open Innovation: Problems regarding Value Capture," *Kenkyu Gijutsu Keikaku* (The Journal of Science Policy and Research Management), Vol. 25, No. 1, December 2010, pp. 68-77

Kudo, Hideo and Kentaro Nobeoka, "Business Case / Panasonic Corporation: Product Development of IH Cooking Heater," *Hitotsubashi Business Review*, Vol. 58, No. 2, September 2010, pp. 124-141

Yonekura, Seiichiro, Kentaro Nobeoka and Yaichi Aoshima, "No More Lost Decade for Japan: How to Revitalize Her Competitiveness," *Hitotsubashi Business Review*, Vol. 58, No. 2, September 2010, pp. 12-31

### 1.3. Others

(In Japanese)

Nobeoka, Kentaro, "To the Memory of Steve Jobs: Japan has lost the Role Model," *Hitotsubashi Business Review*, Vol. 59, No. 3, December 2011, pp. 116-118

(Book Review)

Nonaka, Ikujiro and Akira Katsumi, *The Practical Wisdom of Innovation*, Tokyo: Nikkei Business Publications / *Nihon Keizai Shimbun*, November 28, 2010, p. 21

## 2. Unpublished Work

### 2.1. Working Papers

Nobeoka, Kentaro, "Technology that Produces Sustainable Competitiveness: A Comparison of Innovative Technologies and Accumulated-knowledge Technologies," IIR Working Paper WP#10-04, August 2010

Takeda, Yoko, Yaichi Aoshima, Kentaro Nobeoka, "Capabilities of Technology Utilization and Technology Integration: Impact of 3D Technologies on Product Development Process and Performance in Japan and China," IIR Working Paper WP#10-02, June 2010

Nobeoka, Kentaro, "Value Creation and Value Capture at Manufacturing Firms: Importance of Non-functional Value," IIR Working Paper WP#10-01, April 2010

### 3. Conference Papers, Presentations

Nobeoka, Kentaro, "Accumulated-knowledge Technologies: Core Capabilities of Japanese Manufacturing Firms," presented at AIB (Academy of International Business) 2011 Annual Meeting, June 26, 2011, Nagoya

Nobeoka, Kentaro, "Technology that Produces Sustainable Competitiveness: A Comparison of Innovative Technologies and Accumulated-knowledge Technologies," presented at the Mitsubishi UFJ Foundation International Conference, August 28, 2010, Kanagawa

(In Japanese)

Nobeoka, Kentaro, “Technologies that Produces Sustainable Competitiveness: Importance of Accumulated-knowledge Technologies,” presented at the Industry-Academia-Government Collaboration Workshop on Measuring and Managing Innovation, organized by IIR, March 17, 2012, Hitotsubashi University

Nobeoka, Kentaro, “Technology Management for Value Capture: Importance of Organizational Capabilities and Non-functional Value,” presented at the Kanematsu Seminar, October 21, 2010, Kobe



## Hiroshi Shimizu

### ■ Education

- 2007 Ph.D. (Economic History), London School of Economics and Political Science, University of London
- 2002 M.A. (History), Northwestern University
- 1999 M.A. (Commerce), Hitotsubashi University
- 1997 B.A. (Commerce), Chuo University

### ■ Professional Positions

- 2011~ Associate Professor, Institute of Innovation Research, Hitotsubashi University
- 2008 Assistant Professor, Institute of Innovation Research, Hitotsubashi University
- 2007 Postdoctoral Fellow, Department of Technology Management, Eindhoven University of Technology

### ■ Research Achievements

#### 1. Publications

##### 1.1. Articles and Chapters in Books

- Shimizu, Hiroshi and Satoshi Kudo, “How Well Does Knowledge Travel? The Transition from Energy to Commercial Application of Laser Diode Fabrication Technology,” *Business and Economic History On-Line*, Vol. 9, 2011
- Shimizu, Hiroshi and Yasushi Hara, “Role of Doctoral Scientists in Corporate R&D in Laser Diode Research in Japan,” *Prometheuss*, Vol. 21, No. 1, June 2011, pp. 5-21
- Shimizu, Hiroshi, “Scientific Breakthroughs and Networks in the Case of Semiconductor Laser Technology in the U.S. and Japan: 1960s-2000s,” *Australian Economic History Review*, Vol. 51, No. 1, March 2011, pp. 71-96
- Shimizu, Hiroshi, “Different Evolutionary Paths: Technological Development of Laser Diodes in the U.S. and Japan: 1960-2000,” *Business History*, Vol. 52, No. 7, December 2010, pp. 1151-1181
- (In Japanese)
- Yonekura, Seiichiro and Hiroshi Shimizu, “Industrial Association in Japan: Coevolution of Industrial Policy and Firms’ Capability,” in Shiba, Takao and Tetsuji Okazaki, eds., *Seido Tenkanki no Kigyō to Shijō* (Firms and Markets at Institutional Transition), Tokyo: Minerva Shobo, April 2011, Chap. 6, pp. 195-220
- Shimizu, Hiroshi, “Community Building Leadership in Science and Technology: Hayashi Izuo and Laser Diodes,” *Hitotsubashi Business Review*, Vol. 58, No. 4, March 2011, pp. 52-65
- Shimizu, Hiroshi, “Business History,” *Hitotsubashi Business Review*, Supplementary Volume 1: Beginner’s Guide to Management Studies, January 2011, pp. 96-103
- Shimizu, Hiroshi, “Science and Technology in the Lost Two Decades: R&D Efficiency and Changes in Resource Allocation,” *Hitotsubashi Business Review*, Vol. 58, No. 2, September 2010, pp. 58-71

## 1.2. Others

(Book Review)

Schaede, Ulrike, Choose and Focus: Japanese Business Strategies for the 21st Century / *The Journal of Asian Studies*, Vol. 69, No. 3, September 2010, pp. 916-918

(In Japanese)

Shimizu, Hiroshi, "From My Bookshelf: What is Paradigm Change? / Kuhn, Thomas, *The Structure of Scientific Revolutions*," *Hitotsubashi Business Review*, Vol. 57, No. 4, March 2010, p. 131

## 2. Unpublished Work

### 2.1. Working Papers

Fontana, Roberto, Alessandro Nuvolari, Hiroshi Shimizu and Andrea Vezzulli, "Schumpeterian Patterns of Innovation and the Sources of Breakthrough Inventions: Evidence from a Data-Set of R&D Awards," Working Papers 2012/24, Department of Economics at the School of Economics and Management (ISEG), Technical University of Lisbon, July 2012

Shimizu, Hiroshi and Yusuke Hoshino, "The Nature of Inventive Activities: Evidence from a Data-Set of the Okouchi Prizes and a Comparison with the R&D 100 Awards," IIR Working Paper WP#12-02, February 2012

(In Japanese)

Kudo, Satoshi and Hiroshi Shimizu, "SONY: Semiconductor Laser Manufacturing Technology, MOCVD," IIR Case Study CASE#10-09, August 2010

## 3. Conference Papers, Presentations

Shimizu, Hiroshi, "Management of Science, Serendipity, and Research Performance: Evidence from Scientists' Survey in the US and Japan," presented at the International Workshop on Measuring and Managing Innovation, IIR and National Institute of Science and Technology Policy (NISTEP), March 16, 2012, Tokyo

Shimizu, Hiroshi and Satoshi Kudo, "How Well Does Knowledge Travel? The Transition from Energy to Commercial Application of Laser Diode Fabrication Technology," presented at the Business History Conference 2011 Annual Meeting, March 31- April 2, 2011, Missouri, USA

Fontana, Roberto, Alessandro Nuvolari, Hiroshi Shimizu, and Andrea Vezzulli, "The Nature of Inventive Activities: Evidence from a Data-Set of R&D Awards," presented at the Schumpeter Conference 2010, June 22, 2010, Aalborg, Denmark

(In Japanese)

Shimizu, Hiroshi "Pitfalls of Open Innovation: Comparative Study of Laser Diodes in the U.S. and Japan," presented at the 54th Chubu Workshop of the Business History Society of Japan, December 17, 2011, Meijo University

Shimizu, Hiroshi, Makoto Nirei and Kota Murayama, "Management of Science, Productivity and Serendipity," presented at the 26th Annual Meeting of the Japan Society for Science Policy and Research Management, October 14, 2011, Yamaguchi University

Shimizu, Hiroshi "Collaboration and Innovation: Semiconductor Laser R&D in the US and Japan," presented at the Annual Meeting of the Business History Society of



## Seiichiro Yonekura

### ■ Education

- 1990 Ph.D. (History), Harvard Graduate School of Arts and Sciences
- 1981 M.A. (Japanese Business History), Graduate School of Social Sciences, Hitotsubashi University
- 1979 B.A. (Japanese Economic History), Faculty of Economics, Hitotsubashi University
- 1977 B.A. (Japanese History), Faculty of Social Sciences, Hitotsubashi University

### ■ Professional Positions

- 2012~ Academic Director, Center for Japanese Studies, Gordon Institute of Business Science, University of Pretoria (South Africa)
- 2008 Director, Institute of Innovation Research, Hitotsubashi University (~March 2012)
- 2004 Spring  
Visiting Professor, Institute du Management Bouygues, HEC (France)
- 2003 Co-president, Institute of Strategy, Sony Corporation (~2004)
- 2003 Spring  
Visiting Professor, Institute du Management Bouygues, HEC (France)
- 2001 Fall  
J.A. Valentine Visiting Professor, Department of Marketing, University of Otago (New Zealand)
- 1999 Director, Institute of Innovation Research, Hitotsubashi University (~2001)
- 1997~ Professor, Institute of Innovation Research, Hitotsubashi University
- 1995 Professor, Institute of Business Research, Hitotsubashi University
- 1992 Core Faculty of Global Leadership Program at the University of Michigan (An Executive Program for Action Learning) (~1995)
- 1988 Associate Professor, Institute of Business Research, Hitotsubashi University
- 1984 Assistant Professor, Institute of Business Research, Hitotsubashi University
- 1982 Senior Research Assistant, Institute of Business Research, Hitotsubashi University

### ■ Research Achievements

#### 1. Publications

##### 1.1. Books

(In Japanese)

Yonekura, Seiichiro, *Emergent Destruction: Innovation for Tomorrow*, Tokyo: Mishima-sha, June 2011, 289 pages

Takei, Yoshiaki and Seiichiro Yonekura, *How We can Survive as Social Entrepreneurs*, Tokyo: Diamond-sha, September 2010, 254 pages

##### 1.2. Articles and Chapters in Books

(In Japanese)

Yonekura, Seiichiro, "The Samurai Company: Double Creative Response in Meiji Japan: The Case of Onoda Cement," *The Doshisha Business Review* (Dōshisha Shōgaku), Vol. 63, No. 5, March 2012, pp. 1-24

- Yonekura, Seiichiro, "Emergent Destruction: Post 3.11 Reconstruction of Japan," *Chuō Kōron*, Vol. 126, No. 9, August 2011, pp. 38-46
- Yonekura, Seiichiro, "Paradigm Change after 3.11 in Japan," *Hitotsubashi Business Review*, Vol. 59, No. 1, June 2011, pp. 136-146
- Yonekura, Seiichiro, "Post 3.11 Reconstruction of Japan and Nishiyama Yataro," *Chuō Kōron*, Vol. 126, No. 5, May 2011, pp. 42-47
- Yonekura, Seiichiro, "Okuma Shigenobu: From Domestic Samurai to International Statesman," *Hitotsubashi Business Review*, Vol. 58, No. 4, March 2011, pp.6-19
- Yonekura, Seiichiro and Hiroshi Shimizu, "Industrial Association in Japan: Coevolution of Industrial Policy and Firms' Capability," in Shiba, Takao and Tetsuji Okazaki eds., *Seido Tenkanki no Kigyō to Shijō* (Firms and Markets at Institutional Transition), Tokyo: Minerva Shobo, April 2011, Chapter 6, pp. 195-220
- Yonekura, Seiichiro, "Entrepreneurship," *Hitotsubashi Business Review*, Supplementary Volume 1: Beginner's Guide to Management Studies, January 2011, pp. 132-137
- Yonekura, Seiichiro, Kentaro Nobeoka and Yaichi Aoshima, "No More Lost Decade for Japan: How to Revitalize Her Competitiveness," *Hitotsubashi Business Review*, Vol. 58, No. 2, September 2010, pp. 12-31
- Yonekura, Seiichiro and Fumihiko Ikuine, "Software Rebirth with Hardware Innovation," in Aoshima, Yaichi, Akira Takeishi, and Michael A. Cusumano, eds., *End of "Made in Japan" ?*, Tokyo: Toyokeizaishimposha, August 2010, Chapter 7, pp. 260-290

### 1.3. Others

(In Japanese)

- Yonekura, Seiichiro, "To the Memory of Steve Jobs: Excitement, Craziess and Apple," *Hitotsubashi Business Review*, Vol. 59, No. 3, December 2011, pp. 119-121
- Yonekura, Seiichiro, "No Charismatic Leader Needed: Rather Individual Emergent Power," *Omni-management*, Nipon Omni-Management Association, Vol. 234, October 2011, pp. 12-16
- Yonekura, Seiichiro, "The Heyday of the Steel Industry: Nagano Shigeo and Inayama Yoshihiro," *ABC: Asahi Business Club*, Asahi Mutual Life Insurance, No. 181, May 2011, pp. 18-21
- Yonekura, Seiichiro, "Paradigm Change after 3.11 in Japan and Innovation," *CIAJ journal*, Communications and Information Network Association of Japan, Vol. 51, No. 5, May 2011, pp. 4-10
- Yonekura, Seiichiro, "Innovation and Paradigm Change after 3.11 in Japan," *Management Trend*, Institute of Management Studies, Japan, Vol. 15, No. 4, March 2011, pp. 2-9
- (Book Review)
- Schaede, Ulrike, *Choose and Focus: Japanese Business Strategies for the 21st Century* / *Japanese Journal of Political Science*, Vol. 12, No. 1, February 2011, pp. 161-163



## 2. Unpublished Work

### 2.1. Working Paper

Yonekura, Seiichiro, “The Samurai Company: Double Creative Response in Meiji Japan: The Case of Onoda Cement,” IIR Working Paper WP#12-08, May 2012

## 3. Conference Papers, Presentations

Yonekura, Seiichiro, “Design Minimalism and Social Innovation,” presented at the inciteXchange conference, February 17, 2012, Philadelphia, USA

Yonekura, Seiichiro, “The Resilience of Japanese Companies,” presented at the Symposium on Resilient Japanese Companies: Implications for Business in Southern Africa, October 19, 2011, Johannesburg, South Africa

Yonekura, Seiichiro, “Paradigm Change after the Quake ‘the post 3.11 Japan’,” presented at the 1st Asian Research Policy Symposium, August 31, 2011, Seoul, Korea

Yonekura, Seiichiro, “Paradigm Change and Design Shift,” presented at the Jeju Forum, May 29, 2011, Jeju, Korea

Yonekura, Seiichiro, “Japan’s Creative Response to the Double Crisis in the 1970s,” presented at the The 21st CEA(UK) and 2nd CEA(Europe) Annual Conference “Global Economics Recovery: The Role of China and Other Emerging Economics,” July 12-13, 2010, U.K.

(In Japanese)

Yonekura, Seiichiro, “Emergent Destruction: Innovation after 3.11,” presented at 2012 Joint Symposium held by Jilin University and Hitotsubashi University, March 17, 2012, Jilin, China

Yonekura, Seiichiro, “Emergent Destruction: Paradigm Change after 3.11,” The 3rd Energy and Environment Symposium, November 4, 2011, The University of Tokyo

Yonekura, Seiichiro, “The Innovation Possibility after the Quake and Tsunami on 3.11 in Japan,” Nikkei Sangyo Shimbun Forum 2011, October 17, 2011, Tokyo

Yonekura, Seiichiro, “Emergent Destruction: Paradigm Change after 3.11,” Nikkei Sangyo Shimbun Forum 2011, July 5, 2011, Tokyo

Yonekura, Seiichiro, “Innovation for Smart City Development,” Nikkei Sangyo Simbun Forum, February 18, 2011, Tokyo

Yonekura, Seiichiro, “What the Industries can Do for the CO2 Reduction,” The 2nd Energy and Environment Symposium, November 5, 2010, The University of Tokyo

## 3. International Visiting Researchers — Apr. 2010~ Mar. 2012

### **Horst Hanusch**

---

Professor, University of Augsburg  
September 29, 2011 – March 15, 2012

### **Fernando Suarez**

---

Associate Professor, Boston University  
September 21, 2011 – December 28, 2011

### **John Pyne Walsh**

---

Professor, Georgia Institute of Technology  
January 17, 2011 – July 16, 2011

### **Ben Dankbaar**

---

Professor, University of Nijmegen  
October 1, 2010 – December 28, 2010

### **Sergey Braginskiy**

---

Associate Professor, Carnegie Mellon University  
May 13, 2010 – August 12, 2010

### **Youngjin Yoo**

---

Associate Professor, Temple University  
May 13, 2010 – August 12, 2010

### III. Education



## 1. Courses Given by the IIR Faculty Members — Apr. 2010 ~ Mar. 2012

|   | Fiscal Year                       |                              |
|---|-----------------------------------|------------------------------|
|   | 2010                              | 2011                         |
| Graduate School of Commerce and Management                      |                                   |                              |
| Master's and Doctoral Program                                   |                                   |                              |
| <i>[Courses provided by the Innovation kozas]</i>               |                                   |                              |
| Advanced Innovation Management                                  | Aoshima                           | Aoshima                      |
| Innovation, Strategy and Organization                           | Nobeoka                           | Nobeoka                      |
| Interorganizational Relations                                   | Nishiguchi                        |                              |
| Network Organization  |                                   | Nishiguchi                   |
| History of Technology and Entrepreneurship                      | Yonekura                          |                              |
| Innovation, the Firm and Institution                            | Eto                               |                              |
| Innovation, Policy and Institution                              |                                   | Akaike                       |
| Economic Analysis of Innovation                                 | Nagaoka                           | Nagaoka                      |
| Innovation and Human Resource Development                       | Chuma                             | Chuma                        |
| Special Lecture: International Comparison of Innovation 1       | Nagaoka/Bragin-skiy               | Nagaoka/Walsh                |
| Special Lecture: International Comparison of Innovation 2       | Chuma/Dankbaar                    | Yonekura/Hanusch             |
| <i>[Courses provided by the Business Economics kozas]</i>       |                                   |                              |
| Advanced Industrial Economics                                   | Nirei                             | Nirei                        |
| MBA Program   |                                   |                              |
| Business Economics (Competition and Strategy)                   | Nagaoka                           | Nagaoka                      |
| Entrepreneurship  | Yonekura                          | Yonekura                     |
| Corporate Organization  | Aoshima                           | Aoshima                      |
| Technology Strategy   | Nobeoka                           | Nobeoka                      |
| Strategic Analysis  | Karube                            | Karube                       |
| Special Lecture: Innovation and Modularity                      | Chuma                             | Chuma                        |
| Workshop: Management B (Industry and Technology)                | Nagaoka                           | Nagaoka                      |
| Senior Executive Program  |                                   |                              |
|   | Karube                            | Karube                       |
| Undergraduate Program in the Faculty of Commerce and Management |                                   |                              |
| Innovation Management   | Chuma/Nishiguchi                  | Chuma/Nishiguchi             |
| Production and Operation Management                             | Karube                            | Karube                       |
| Proseminar (Intensive Readings)                                 | Nirei, Shimizu                    | Nirei, Shimizu               |
| Undergraduate Introductory Seminar I                            | Aoshima, Eto, Nishiguchi, Shimizu | Aoshima, Nishiguchi, Shimizu |
| Undergraduate Introductory Seminar II                           | Chuma, Yonekura                   | Chuma, Yonekura,             |
| Graduate School of Economics                                    |                                   |                              |
| Master's and Doctoral Program                                   |                                   |                              |
| Workshop: Industry and Labor                                    | Chuma/Nagaoka*                    | Chuma/Nagaoka*               |

Note: \* indicates a joint lecture with other faculty member(s) than those in the IIR.

## 2. The IIR Library

The IIR library has collected basic resources for research on private firms since the days of its predecessor, the Institute of Business Research (IBR), and offers its services to researchers and students inside and outside the university. The library has 96,877 books (Japanese, 76,963; Foreign, 19,914) and 874 magazines (Japanese, 623; Foreign, 251) as of April 2012.

The most distinctive characteristic of the IIR Library is that it has large collections of financial statements, company histories, and biographies and profiles of top executives. The collection of company histories includes 9,403 books (Japanese, 7,882; Foreign, 1,521), and biographies and profiles of top executives, 6,959 books (Japanese, 6,307; Foreign, 652) as of April 2012. Upon the reorganization from the IBR to the IIR, the library has made some changes in the types of books and magazines it has been available. More specifically, it has increased the number of books on innovation research, almanacs and resources on the hi-tech industry, and magazines of technology management.



IV. Research Results / Publications



## 1. Hitotsubashi Business Review — Apr. 2010 ~ Mar. 2012

To publish the findings of its research activities, the IIR issues a quarterly journal, called the *Hitotsubashi Business Review* (in Japanese). The rationale in editing the journal is to promote the theoretical and empirical study of innovation in a social and economic context. The editorial board comprises professors from several universities and company advisors, as well as IIR professors.

### ■ Contents

#### Title of Special Issues

|             |  |
|-------------|--|
| Vol.59 No.4 | “How to Close Nuclear Power Stations in Realistic Way”                     |
| Vol.59 No.3 | “Emerging Market Strategies in India”                                      |
| Vol.59 No.2 | “Financial Regulation in Transition and Financial Business”                |
| Vol.59 No.1 | “Frontiers of Knowledge Management”  |
| Vol.58 No.4 | “Leadership in History”  |
| Vol.58 No.3 | “‘COOL JAPAN’ Reconsidered: Japan's Pop Culture Industry in North America” |
| Vol.58 No.2 | “Japan's Competiveness Revisited”  |
| Vol.58 No.1 | “Green Innovation”   |

#### Featured Papers

| Issue        | Vol. / No.     | Title   | Author(s)  |
|--------------|----------------|---|--|
| Mar.<br>2012 | Vol.59<br>No.4 | “Nuclear Energy Policy Issues in Post-3/11 Era”   | Tatsujiro Suzuki<br>(Vice-Chairman, Japan Atomic Energy Commission)  |
|              |                | “Light-water Reactors as Ordinary Industrial Technology”  | Makoto Saito<br>(Professor, Faculty School of Economics, Hitotsubashi University )                                 |
|              |                | “A Prospect for the Development of Nuclear Withdrawal Engineering”                                    | Hitoshi Yoshioka<br>(Vice President&Professor, Graduate School of social and Cultural Studies , Kyusyu University) |
|              |                | “Reality of “Real Approach for Nuclear Phase-out”   | Tetsunari Iida (Excutive Direcotr, Institute for Sustainable Energy Policies)                                      |
|              |                | “New Structure for Electric Supply: Diversification of Retail Service”                                | Akihiro Sawa<br>(Executive Direcotr, International Enviromental Economic Institute)                                |
|              |                | “Balancing Environment, Energy, and Industry Competitiveness: Importance of the Micro-level Analysis” | Yaichi Aoshima<br>(Associate Professor, IIR)   |
|              |                | “Can the Japanese PV Industry Revive?”  | Minoru Shimamoto<br>(Associate Professor, Graduate School of Commerce and Management, Hitotsubashi University)     |



Featured Papers (continued)

| Issue        | Vol. / No.     | Title  | Author(s)  |
|--------------|----------------|--|--|
| Dec.<br>2011 | Vol.59<br>No.3 | “Continuity and Changes of Lifestyle in India”   | Yoshihiko Iwadare<br>(Senior Consultant, Nomura Research Institute, Ltd.)  |
|              |                | “Business Strategy of Industrial Goods Industry in Indian Market”  | Nobutaka Suzuki / Junjiro Shintaku<br>(Office of Promotion for Medical Innovation, Kyoto University Medical Science and Business Liaison Organization; Associate Professor, Graduate School of Economics, The University of Tokyo)         |
|              |                | “The Localization Strategy of Korean Firms in India: In Comparison with Japanese Firms”  | Young Won Park/ Tomofumi Amano<br>(Adjunct Associate Professor, Manufacturing Management Research Center, The University of Tokyo / Associate Professor, Graduate School of Economics, Faculty of Economics, The University of Tokyo)      |
|              |                | “The Evolution of India's Auto Industry: Growth of Auto Makers and Adverse Effects on Small Component Manufacturers in the Light of Industrial Policies” | Prajakta Khare<br>(Postdoctoral Research Fellow, IIR)  |
|              |                | “Towards a New Age of Indian Automotive Market: Market Life-cycle and Products Strategies for Emerging Markets”  | Zejian Li<br>(Research Associate, Manufacturing Management Research Center, The University of Tokyo)   |
|              |                | “Suzuki's Indian Dream: Looking for a Blue Ocean Somewhere but America”  | Takashi Shimada<br>(Representative Director, President, Indo Business Centre, Ltd.)  |
| Sep.<br>2011 | Vol.59<br>No.2 | “Trends of Financial Re-regulation and Ideas for a Desirable Prudential Policy”  | Takafumi Sato<br>(Professor, Faculty of Commerce and Management, Hitotsubashi University)  |
|              |                | “Macroprudential Approach: Framework, Implementation and Issues”   | Yuri Okina<br>(Counselor, The Japan Research Institute, Limited)   |
|              |                | “A Macroeconomic thought on Stringent Capital Requirements”  | Makoto Saito<br>(Professor, Faculty of Economics, Hitotsubashi University)   |
|              |                | “The Future of Financial Business under the New and Tighter Regulatory Regime”   | Yasuyuki Fuchita<br>(Executive Fellow, Nomura Institute of Capital Markets Research)   |
|              |                | “Global Financial Business in Historical Perspective”  | Mariko Fujii<br>(Professor, Research Center for Advanced Science and Technology, The University of Tokyo)  |
|              |                | “The Reform of Financial and Capital Markets in China after the Global Financial Crisis”   | Eiichi Sekine<br>(Chief Representative, Beijing Representative Office, Nomura Institute of Capital Markets Research)   |
| Jun.<br>2011 | Vol.59<br>No.1 | “Towards a Communication Theory of Sustainable Innovation”   | Ikujiro Nonaka<br>(Emeritus Professor, Hitotsubashi University)  |
|              |                | “Toward HRM that Supports Individual Knowledge Creation”   | Motohiro Morishima<br>(Professor, Faculty of Commerce and Management, Hitotsubashi University)   |
|              |                | “Knowledge Co-Creation: Toward User-Based Knowledge”   | Susumu Ogawa/Yoshinori Fujikawa/Satoshi Horiguchi (Professor, Graduate School of Business Administration, Kobe University; Associate Professor, ICS, Hitotsubashi University; Graduate school of Business Administration, Kobe University) |

Featured Papers (continued)

| Issue        | Vol. / No.     | Title   | Author(s)   |
|--------------|----------------|---|---|
| Jun.<br>2011 | Vol.59<br>No.1 | “Communications for Chance Discovery: Play Collaborations with Collisions”  | Yukio Ohsawa/Yoko Nishihara<br>(Professor; Lecturer, School of Engineering, the University of Tokyo)  |
|              |                | “Knowledge Creating Social Innovation: Towards a Theory of Knowledge-Creating City”                                 | Ayano Hirose<br>(Graduate School of International Corporate Strategy, Hitotsubashi University)  |
|              |                | “Re-designing Innovation System: A New Approach to Economic Growth through Knowledge Creation”                      | Osamu Yamamoto<br>(Partner, Unison Capital, Inc.)   |
|              |                | “Knowledge-based Firm and Boundary Setting: SECI Model Combined with Transaction Cost Economics”                    | Kenshu Kikuzawa/Ikujiro Nonaka<br>(Professor, Faculty of Business and Commerce, Keio University; Emeritus Professor, Hitotsubashi University) |
|              |                | “Paradigm Change after 3.11 in Japan”   | Seiichiro Yonekura<br>(Professor, IIR)  |
| Mar.<br>2011 | Vol.58<br>No.4 | “Okuma Shigenobu: From Domestic Samurai to International Statesman”   | Seiichiro Yonekura<br>(Professor, IIR)  |
|              |                | “Why Has Yasuzaemon Matsunaga Been Defeated Twice?”   | Takeo Kikkawa<br>(Professor, Graduate School of Commerce and Management, Hitotsubashi University)   |
|              |                | “Chikara Kurata: A Historical Serendipity”  | Kazuhisa Kawai<br>(Lecturer, Faculty of Business Administration, Okayama Shoka University)  |
|              |                | “Community Building Leadership in Science and Technology: Hayashi Izuo and Laser Diodes”                            | Hiroshi Shimizu<br>(Assistant Professor, IIR)   |
|              |                | “The Renewal of Idemitsu Kosan; Sazo Idemitsu's Management Philosophy and Akihiko Tenbo's Management Modernization” | Minoru Shimamoto<br>(Associate Professor, Graduate School of Commerce and Management, Hitotsubashi University)                                |
| Dec.<br>2010 | Vol.58<br>No.3 | “Japanese Content Market in US”   | Masaki Kaifu<br>(Head Representative, Producer, Woman Media, LLC)   |
|              |                | ““Cool Japan” in North America”   | Frederik L. Schodt<br>(American translator, interpreter, writer)  |
|              |                | “The Man Who Produced Power Rangers: Haim Saban and the Japanese Contents”  | Mami Toyonaga<br>(JETRO)  |
|              |                | “Dark Energy: What Fansubs Reveal about the Copyright Wars”   | Ian Condry<br>(Associate Professor, Comparative Media Studies, Massachusetts Institute of Technology)   |
|              |                | “The Ouroboros Strip, or, an Essay on Anime Orientalism”  | Ryotaro Mihara<br>(Ministry of Economy, Trade and Industry)   |
|              |                | “The “Cool Japan” Craze among Central Ministries in Japan”  | Takeshi Matsui<br>(Associate Professor, Graduate School of Commerce and Management, Hitotsubashi University)                                  |

Featured Papers (continued)

| Issue        | Vol. / No.     | Title  | Author(s)   |
|--------------|----------------|--|---|
| Sep.<br>2010 | Vol.58<br>No.2 | “No More Lost Decade for Japan: How to Revitalize Her Competitiveness”   | Seiichiro Yonekura/Kentaro Nobeoka/Yaichi Aoshima<br>(Professor; Professor; Associate Professor, IIR)   |
|              |                | “Causes of the Growth and Stagnation of the Japanese Economy from the Perspective of Modern Macroeconomic Theories”                  | Shuhei Aoki<br>(Research Fellow, IIR)   |
|              |                | “Beyond the ‘Lost Decade’ : Rethinking the Presence and Performance Analysis for Japanese Firms in Global Competition”               | Patrick Reinmoeller/Marc Baaij<br>(Professor, School of Management, Cranfield University; Associate Professor, Department of Strategic Management & Entrepreneurship, Erasmus University) |
|              |                | “Science and Technology in the Lost Two Decades: R&D Efficiency and Changes in Resource Allocation”                                  | Hiroshi Shimizu<br>(Assistant Professor, IIR)   |
|              |                | “To Recover Competitive Advantage: The Myth of Payout and Investment Policy”   | Mikiharu Noma<br>(Associate Professor, ICS, Hitotsubashi University)  |
|              |                | “Management Accounting and Competitiveness in the Japanese Financial Sector ”  | Kentaro Koga/Masayuki Tanimori<br>(Associate Professor, ICS, Hitotsubashi University; Resona Holdings, Inc.)  |
| Jun.<br>2010 | Vol.58<br>No.1 | “The Mission of Japan as a Forerunner for Addressing Emerging Problems in the World”   | Hiroshi Komiyama<br>(Chairman, Mitsubishi Research Institute, Inc.)   |
|              |                | “Greenhouse Gas Reduction: ‘Mamizu Policy’—A Powerful Driving Force for the Innovation of Japan”                                     | Shozo Kaneko<br>(Professor, Institute of Industrial Science, the University of Tokyo)   |
|              |                | “A Feasible Way for 25% Reduction of GHG Emissions”  | Takeo Kikkawa<br>(Professor, Graduate School of Commerce and Management, Hitotsubashi University)   |
|              |                | “Japan Needs Energy and Environmental Policy Innovation”   | Tetsunari Iida<br>(Executive Director, Institute for Sustainable Energy Policies )  |
|              |                | “A Half Century of Solar Power: The Challenge of Industry ‘Government’ Academic Collaboration for Technology and Market Development” | Minoru Shimamoto<br>(Associate Professor, Graduate School of Commerce and Management, Hitotsubashi University)  |

## Business Cases

| Issue     | Vol./No.    | Title   | Author(s)  |
|-----------|-------------|---|--|
| Mar. 2012 | Vol.59 No.4 | Disco: Solutions as a Source of Competitive Advantage   | Yasuaki Niitsu / Kentaro Nobeoka (Graduate School of Commerce and Management, Hitotsubashi University; Professor, IIR)   |
|           |             | Karaoke Machine Industry: How Did Two Companies Dominate the Market?  | Sakuya Yoshimura / Tatsuya Kubota (Faculty of Commerce and Management, Hitotsubashi University; COE Fellow, Graduate School of Commerce and Management)  |
| Dec. 2011 | Vol.59 No.3 | Seiko Epson   | Yaichi Aoshima / Makoto Kitamura (Associate Professor, IIR; Associate Professor, Faculty of Business Administration, Tokyo Keizai University)  |
|           |             | Kyoto Municipal Horikawa Senior High School   | Makoto Ikeuchi / Hideki Karino / Shin Shimizu / Shinsuke Takeda / Yu Ryu (Graduate School of Commerce and Management, Hitotsubashi University)   |
| Sep. 2011 | Vol.59 No.2 | Suruga Bank   | Ryuji Yasuda (Professor, Graduate School of International Corporate Strategy, Hitotsubashi University)   |
|           |             | NISSHA Printing Co., Ltd.   | Yasuaki Niitsu / Kentaro Nobeoka (Graduate School of Commerce and Management, Hitotsubashi University; Professor, IIR)   |
| Jun. 2011 | Vol.59 No.1 | Toray Industries, Inc.: Development of the Reverse Osmosis Membrane Business  | Masatoshi Fujiwara / Tomono Miki / Yaichi Aoshima (Associate Professor, Kyoto Sangyo University; Assistant Professor, Rikkyo University; Associate Professor, Institute of Innovation Research, Hitotsubashi University) |
|           |             | Asahi Breweries: Retaining and Transforming the Traditional Way of Human Resource Development in Workplaces               | Ikutaro Enatsu (Associate Professor, School of Economics, Nagoya University)   |
| Mar. 2010 | Vol.58 No.4 | The Strategy of Yamaha Corporation That Entered to Electronic Piano Market and Competed with Other Company in 1970s-2000s | Nobutaka Suzuki / Eiichi Kobayashi / Ryoichi Takase (Management Education and Research Center, the University of Tokyo; Senior Consultant, Daiwa Institute of Research; Graduate School of Economics, Kyoto University)  |
|           |             | Tokyo Electric Power Company, Inc. and NGK Insulators, Ltd.   | Eishi Fukushima (Professor, Faculty of Business Administration, Hosei University)  |
| Dec. 2010 | Vol.58 No.3 | VIZ Media, LLC  | Takeshi Matsui (Associate Professor, Graduate School of Commerce and Management, Hitotsubashi University)  |
|           |             | Bandai Entertainment, Inc.  | Ryotaro Mihara / Mayuka Yamazaki (the Ministry of Economy, Trade and Industry; Senior Research Associate, Japan Research Center, Harvard Business School)  |
| Sep. 2010 | Vol.58 No.2 | Panasonic Corporation   | Hideo Kudo / Kentaro Nobeoka (Prof., Graduate School of Economics, Kyoto (Assistant Professor, School of Management, Tokyo University of Science; Professor, IIR)  |
|           |             | Sekisui Chemical Co., Ltd.  | Noriko Taji / Tomofumi Amano (Professor, Faculty of Business Administration, Hosei University; Associate Professor, Graduate School of Economics, The University of Tokyo)   |

## Business Cases (continued)

| Issue        | Vol./No.       | Title                    | Author(s)  |
|--------------|----------------|--------------------------|--|
| Jun.<br>2010 | Vol.58<br>No.1 | Lawson, Inc..            | Takashi Nishimura<br>(Associate Professor, Faculty of Integrated Arts and Sciences, The University of Tokushima)                     |
|              |                | DENSO WAVE INCORPORATED. | Osamu Suzuki<br>(Associate Professor, Institute of Business and Accounting, Professional Graduate School, Kwansai Gakuin University) |

## Columns

| Issue                   | Vol./No.                    | Title                                      | Author  |
|-------------------------|-----------------------------|--|---|
| Sep. 2011-<br>Mar. 2012 | Vol.59 No.2-<br>Vol.59 No.4 | The Story of Accidental Innovations(1)-(3) | Kiyonori Sakakibara<br>(Professor, Hosei Business School of Innovation Management)          |
| Sep. 2010-<br>Mar. 2012 | Vol.58 No.1-<br>Vol.59 No.4 | Jinseigiron (2)-(6)                        | Toshihiro Kanai<br>(Professor, Graduate School of Business Administration, Kobe University) |

## Leaders of MOT

| Issue         | Vol./No.       | Interviewee  | Interviewer(s)                                      |
|---------------|----------------|--|---|
| Mar.<br>2012  | Vol.59<br>No.4 | Masayoshi Tsuchiya<br>(Director, Sony Corporation Creative Center, Sony Corporation) | Kentaro Nobeoka<br>Yaichi Aoshima<br>Atsushi Osanai |
| Dec..<br>2011 | Vol.59<br>No.3 | Seiichi Kiyama<br>(Energy Device Company, Sanyo Electric Co., Ltd.)                  | Kentaro Nobeoka<br>Yaichi Aoshima                   |
| Sep.<br>2011  | Vol.59<br>No.2 | Hozumi Sato<br>(JSR Corporation)   | Hiroyuki Chuma<br>Kentaro Nobeoka<br>Yaichi Aoshima |
| Jun.<br>2011  | Vol.59<br>No.1 | Kazuo Nishikawa<br>(Sharp Corporation)   | Kentaro Nobeoka<br>Yaichi Aoshima                   |
| Mar.<br>2011  | Vol.58<br>No.4 | Yuzo Toda<br>(Senior Vice President, Fujifilm Corporation)                           | Kentaro Nobeoka<br>Yaichi Aoshima                   |
| Dec.<br>2010  | Vol.58<br>No.3 | Taro Shimada<br>(Siemens Product Lifecycle Management Software Inc.)                 | Kentaro Nobeoka<br>Yaichi Aoshima                   |
| Sep.<br>2010  | Vol.58<br>No.2 | Minoru Usui<br>(President, Seiko Epson Corporation)                                  | Kentaro Nobeoka<br>Yaichi Aoshima                   |
| Jun.<br>2010  | Vol.58<br>No.1 | Koichi Matsuzawa<br>(President, Kirin Brewery Company, Limited.)                     | Kentaro Nobeoka<br>Yaichi Aoshima                   |

## Serials

| Issue                   | Vol./No.                       | Title                                   | Author(s)   |
|-------------------------|--------------------------------|---|---|
| Mar. 2012               | Vol.59 No.4                    | Introduction to Business Economics (1)  | Noriyuki Yanagawa<br>(Professor, Graduate School of Economics, The University of Tokyo) |
| Jun. 2011-<br>Sep. 2011 | Vol.58 No.1-3<br>Vol.59 No.1-3 | Frontiers in Service Management (1)-(6) | Yoshinori Fujikawa<br>(Associate Professor, ICS, Hitotsubashi University)               |
| Mar. 2011<br>Mar. 2012  | Vol.58 No.4<br>Vol.59 No.4     | Porter Prize 2010<br>Porter Prize 2011  | Emi Osono<br>(Associate Professor, ICS, Hitotsubashi University)                        |

## Commentaries on Key Words

| Issue     | Vol./No.    | Title                  | Author   |
|-----------|-------------|------------------------|--|
| Mar. 2012 | Vol.59 No.4 | Auditor Independence   | Kenichi Yazawa<br>(Associate Professor, School of Business, Aoyama Gakuin University)                        |
| Dec. 2011 | Vol.59 No.3 | User Innovation        | Hidehiko Nishikawa<br>(Professor, Faculty of Business Administration, Hosei University)                      |
| Sep. 2011 | Vol.59 No.2 | Tunneling              | Yasuharu Aoki<br>(Assistant Professor, Faculty of Commerce, Nagoya University of Commerce and Business)      |
| Jun. 2011 | Vol.59 No.1 | Tacit Knowledge        | Toru Hirata<br>(Professor, School of Economics, College of Human and Social Sciences, Kanazawa University)   |
| Mar. 2011 | Vol.58 No.4 | BOP                    | Takashi Kumon<br>(Asia Business Consultant, Research Fellow, School of Engineering, the University of Tokyo) |
| Dec. 2010 | Vol.58 No.3 | Simulcast              | Tadashi Sudo<br>(Animeanime.jp)  |
| Sep. 2010 | Vol.58 No.2 | Boundary of Employment | Tomoyuki Shimanuki<br>(Assistant Professor, C&M, Hitotsubashi University)                                    |
| Jun. 2010 | Vol.58 No.1 | Sensory Marketing      | Park Jae Woo<br>(Associate Professor, Faculty of Commerce and Economics, Chiba University of Commerce)       |

## Management Forum

| Issue     | Vol./No.    | Interviewee   | Interviewer(s)                       |
|-----------|-------------|---|--------------------------------------|
| Mar. 2012 | Vol.59 No.4 | Carl-A.Fechner<br>(Journalist / Movie Director/Producer)  | Seiichiro Yonekura                   |
| Dec. 2011 | Vol.59 No.3 | Sinha Sanjeev<br>(President, Sun and Sands Advisors Co.,Ltd)  | Seiichiro Yonekura                   |
| Sep. 2011 | Vol.59 No.2 | Ian Bremmer<br>(President, Eurasia Group)   | Seiichiro Yonekura                   |
| Jun. 2011 | Vol.59 No.1 | Takeo Kikkawa<br>(Professor, Graduate School of Commerce and Management, Hitotsubashi University, ) | Seiichiro Yonekura                   |
| Mar. 2011 | Vol.58 No.4 | Kiyoyuki Okuyama<br>(Industrial Designer)   | Seiichiro Yonekura                   |
| Dec. 2010 | Vol.58 No.3 | Seiji Horibuchi<br>(CEO, VIZ Pictures, Inc.)  | Seiichiro Yonekura<br>Takeshi Matsui |
| Sep. 2010 | Vol.58 No.2 | Sakane Masahiro<br>(Chairman, Komatsu Ltd.)   | Seiichiro Yonekura                   |
| Jun. 2010 | Vol.58 No.1 | Soichiro Fukutake<br>(Chairman, SIM-Drive)  | Seiichiro Yonekura                   |

## Reviewed Articles

| Issue     | Vol./No.    | Title  | Author(s)  |
|-----------|-------------|--|--|
| Mar. 2012 | Vol.59 No.4 | “The Effect of Competitive Strategies on Business Performances in Japan: An Empirical Study”           | Yoshihiro Takeshige<br>(Asahi Life Asset Management Co.,Ltd.)                                      |
| Dec. 2011 | Vo.59 No.3  | “Entrepreneurial Strategic Orientation as the Strategic Engine for the Growth of Small Firms”          | Yoshihiro Eshima<br>(Professor, Faculty of Business Administration, Osaka University of Economics) |
| Jun. 2011 | Vol.59 No.1 | “User Innovation and Brand Community: Emergence of Meanings for Consumer Goods”                        | Mitsutoshi Otake<br>(Graduate School of Commerce and Management, Hitotsubashi University)          |
| Mar. 2011 | Vol.58 No.4 | “Importance of Accumulated-knowledge Technology: Technology that Produces Sustainable Competitiveness” | Kentaro Nobeoka<br>(Professor, IIR)  |

## 2. Working Papers — Apr. 2010 ~ Mar. 2012

|          |           | Title  | Author(s)   |
|----------|-----------|--|---|
| WP#12-07 | Mar. 2012 | “Construction of a Diversified Database Using the Consolidated Operating Results of Listed Japanese and U.S. Companies and Basic Findings”(in Japanese)                          | Young Gak Kim / Sadao Nagaoka                                     |
| WP#12-06 | Mar. 2012 | “Wenzhounese Firms after the Lehman Shock: the Wenzhou Model Revisited”(in Japanese)   | Toshihiro Nishiguchi/<br>Jiang Hong Xiang/<br>Motoko Tsujita      |
| WP#12-05 | Mar. 2012 | “Fujian Networks and Social Capital with Particular Reference to Fuqing Immigrants in Japan”(in Japanese)  | Motoko Tsujita / Toshihiro Nishiguchi                             |
| WP#12-04 | Feb. 2012 | “Potential for Geothermal Energy Development in Japan: Lessons from Iceland  | Yaichi Aoshima / Tomono Miki                                      |
| WP#12-03 | Mar. 2012 | “Wenzhounese Entrepreneurs' Way to Success: The Appropriation of Networks and Social Capital”  | Toshihiro Nishiguchi/<br>Motoko Tsujita                           |
| WP#12-02 | Feb. 2012 | “The Nature of Inventive Activities: Evidence from a Data-Set of the Okouchi Prizes and a Comparison with the R&D 100 Awards”(in Japanese)                                       | Hiroshi Shimizu / Yusuke Hoshino                                  |
| WP#12-01 | Jan 2012  | “Agenda for the Growth of Biotech Startups in Japan.”  | Yuji Honjo / Sadao Nagaoka / Kenta Nakamura / Yumi Shimizu        |
| WP#11-10 | Oct 2011  | “Today's Oral History: Mr. Jun'ichi Endo, Who Became Nissan's Youngest Managing Director from within, Talks about CEO Ghosn's Reform and the Efficacy of Cross-functional Teams” | Toshihiro Nishiguchi/<br>Satoru Oguchi                            |
| WP#11-09 | Oct 2011  | “Knowledge Creation Process in Science: Key Comparative Findings from the Hitotsubashi-NISTEP-Georgia Tech Scientists' Survey in Japan and the US”                               | Sadao Nagaoka / Masatsura Igami / John P. Walsh / Tomohiro Ijichi |
| WP#11-08 | May 2011  | “Searching for the Causes of Weakening International Competitiveness in Japanese Semiconductor Industry: Social Network Approach”  | Hiroyuki Chuma  |
| WP#11-07 | May 2011  | “Innovation Process as Seen in the R&D Consortia Supported by NEDO”  | Sadao Nagaoka / Manabu Eto / Yusuke Naito / Naotoshi Tsukada      |
| WP#11-06 | Apr. 2011 | “An Influence of Organizational Positioning of R&D Activity on Innovation Process: A Comparative Analysis of ArF Resist Materials Development ”                                  | Yaichi Aoshima / Tatsuya Kubota                                   |
| WP#11-05 | Apr. 2011 | “A Model of Technology Transfer in Japan's Rapid Economic Growth Period”   | Shuhei Aoki   |
| WP#11-04 | Mar. 2011 | “Influence that Distance from the Divisional Environment has on the Innovation Process: A Comparative Analysis of ArF Resist Materials Development”                              | Tatsuya Kubota / Yaichi Aoshima / Youngjae Koh                    |
| WP#11-03 | Mar. 2011 | “A Profitability Analysis of Semiconductor Industry: Empirical Analysis by Financial Panel Data of Semiconductor Companies”  | Masao Nakaya  |
| WP#11-02 | Feb. 2011 | “Commercialization of Government Funded R&D: Follow-up Research Survey on NEDO Research Projects”  | Yaichi Aoshima / Kazunari Matsushima / Manabu Eto                 |



|                       |           | Title  | Author(s)  |
|-----------------------|-----------|--|--|
| WP#11-01              | Jan. 2011 | Paradigm Innovation through the Strategic Collaboration between TORAY & UNIQLO: Evolution of A New Fast Fashion Business Model                                   | Eugene K. Choi   |
| WP#10-09              | Dec. 2010 | “Digitalization and InnovationI”   | Youngjin Yoo   |
| WP#10-08              | Dec. 2010 | “Knowledge Creation Process in Science: Basic Findings from a Large-Scale Survey of Researchers in Japan (English Version)”                                      | Sadao Nagaoka / Masatsura Igami / Manabu Eto / Tomohiro Ijichi   |
| WP#10-07_1<br>10-07_2 | Nov. 2010 | “Knowledge Creation Process in Science: Basic Findings from a Large-Scale Survey of Researchers in Japan” (in Japanese)  | Sadao Nagaoka / Masatsura Igami / Manabu Eto / Tomohiro Ijichi   |
| WP#10-06              | Sep. 2010 | “Lithography and ITRS”   | Masaomi Kameyama   |
| WP#10-05              | Sep. 2010 | “Science-Based Business: Knowledge Capital or Entrepreneurial Ability? Theory and Evidence from a Survey of Biotechnology Start-ups”                             | Serguey Braguinsky / Yuji Honjo / Sadao Nagaoka / Kenta Nakamura |
| WP#10-04              | Aug. 2010 | “Technology that Produces Sustainable Competitiveness: A Comparison of Innovative Technologies and Accumulated-Knowledge Technologies”                           | Kentaro Nobeoka  |
| WP#10-03              | Jul. 2010 | “Agenda for the Growth of Biotech Startups in Japan: Finance, Sources of Core Technology, Alliance and the Role of Patent System”                                | Yuji Honjo / Sadao Nagaoka / Kenta Nakamura / Yumi Shimizu       |
| WP#10-02              | Jun. 2010 | “Capabilities of Technology Utilization and Technology Integration: Impact of 3D Technologies on Product Development Process and Performance in Japan and China” | Yoko Takeda / Yaichi Aoshima / Kentaro Nobeoka                   |
| WP#10-01              | Apr. 2010 | “Value Creation and Value Capture at Manufacturing Firms: Importance of Non-functional Value”  | Kentaro Nobeoka  |

### 3. Case Studies — Apr. 2010 ~ Mar. 2012

(In Japanese)

|            |           | Title  | Author(s)  |
|------------|-----------|--|--|
| CASE#12-01 | Jan. 2012 | “Seiko Epson Corporation: Development and Commercialization of the 3LCD Projector”   | Yuichiro Okumura / Manabu Eto  |
| CASE#11-04 | Sep. 2011 | “DENSO CORPORATION: Development and Commercialization of Electronically Controlled Fuel Injectors (EFI)”   | Seigo Ito  |
| CASE#11-03 | Sep. 2011 | “Mitsubishi Electric Corporation: Development and Mass Production of Artificial Retina LSI”  | Komuro / Manabu Eto  |
| CASE#11-02 | Sep. 2011 | “Reorganization of Kozantei Ubuya Co., Ltd.”   | Izumi Asakura / Kohei Kawazoe / Ryosuke Kogure / Tomohisa Hamada / Kenta Fujimori / Ryota Yanagisawa |
| CASE#11-01 | May 2011  | “DENSO CORPORATION: Development and Commercialization of Type 3 Alternator for Automobiles”  | Seigo Ito  |
| CASE#10-11 | Dec. 2010 | “Toray Industries, Inc.: Development of the Polyamide Composite Reverse Osmosis Membrane and Reverse Osmosis Membrane System”  | Masatoshi Fujiwara / Yaichi Aoshima / Tomono Miki  |
| CASE#10-10 | Sep. 2010 | “Nakata Manufacturing Co., Ltd.: Development and Practical Application of the FFX Mill”  | Atsushi Tsumita / Masatoshi Fujiwara   |
| CASE#10-09 | Aug. 2010 | “Sony Corporation: Development and Mass Production of Compound Semiconductor Devices using the MOCVD Method”   | Satishi Kudo / Hiroshi Shimizu   |
| CASE#10-08 | Jul. 2010 | “Reorganization of Takai Tofu & Soymilk Equipment Co.”   | Yusuke Imai / Kei Iwasaki / Tadashi Saimu / Yuichiro Suzuki / Masatomo Yamada                        |
| CASE#10-07 | Jul. 2010 | “Panasonic: Development of the IH Cooking Heater”  | Hideo Kudo / Kentaro Nobeoka   |
| CASE#10-06 | Jul. 2010 | “Yokogawa Electric Works, Ltd.: High-speed Confocal Microscope Development and Commercialization Process”  | Tatsuya Kubo / Yaichi Aoshima  |
| CASE#10-05 | Jul. 2010 | “Nippon Steel Corporation: Coke Oven Diagnosis/Repair Technology”  | Yaichi Aoshima / Izumi Okubo   |
| CASE#10-04 | May 2010  | “NEC Corporation: Development of ArF Resist Material that Enables Mass Production of State-of-the-Art LSI”   | Yaichi Aoshima / Youngjae Koh / Tatsuya Kubo   |
| CASE#10-03 | Apr 2010  | “NHK Science & Technical Research Laboratories, NHK Engineering Services, Inc. and Victor Company of Japan, Ltd.: Development of Radios and Televisions Equipped with Speech Rate Conversion Technology” | Tomono Miki / Atsushi Tsumita / Yaichi Aoshima   |

‘The new combinations appear discontinuously, then the phenomenon characterising development emerges.’

Joseph A. Schumpeter  
*The Theory of Economic Development*

---

Institute of Innovation Research  
Hitotsubashi University

2-1 Naka, Kunitachi, Tokyo 186-8603, Japan

Tel: +81-(0) 425-80-8411

Fax: +81-(0) 425-80-8410

<http://www.iir.hit-u.ac.jp/iir-w3/index.html>

---

