



Hitotsubashi University  
Institute of Innovation Research

Hitotsubashi University  
Institute of Innovation Research



# ANNUAL REPORT 2006 – 2007

IIR

Hitotsubashi University  
Institute of Innovation Research

IIR



# ANNUAL REPORT FY2006 – FY2007

## ANNUAL REPORT FY2006 – FY2007

### INDEX

About IIR	i
I. Research Activities	01
1) Innovation Research Forum	02
2) Joint Research Projects	06
3) International Conferences	20
4) Endowed Chair	31
II. Researchers	33
1) Full-time Researchers	34
2) Visiting Researcher	58
3) Foreign Visiting Researchers	59
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	75
4) IIR Innovatin Video Library	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

R

Hitotsubashi University  
Institute of Innovation Research

I

## 1. Innovation Research Forum — Apr. 2006 ~ Mar. 2008

The following is the list of lectures given as part of the Innovation Research Forum during 2006-2007 academic year:

- |               |  |
|---------------|--|
| Mar. 27, 2008 | Akira Takeishi<br>Professor, IIR<br>“Boundaries of Innovation”   |
| Mar. 19, 2008 | Tomoyuki Shimbo<br>Junior Research Fellow, IIR<br>“Technology Imports and Firm Performance: A Case of Petrochemical Industry”  |
| Mar. 19, 2008 | Xiaomei Zhang<br>Junior Research Fellow, IIR<br>“The Current Situation and Issues of Banking in Hangzhou and Wenzhou”  |
| Mar. 19, 2008 | Yoko Furusawa<br>Research Associate, IIR<br>“A Case Study by Endowed Chair: How are Technology Start-ups Set up in Japan?”   |
| Jan. 24, 2008 | Hiroshi Shimizu<br>Post Doctoral Fellow, Department of Technology Management, Eindhoven University of Technology<br>“Competition, Knowledge Spillover, and Innovation: Technological Development of Semiconductor Lasers, 1960-1990” |
| Jan. 24, 2008 | Makoto Nirei<br>Assistant Professor, Department of Economics, Carleton University<br>“Firms Dynamics under Strategic Complementarity”  |
| Dec. 12, 2007 | Suphawan Srisophaolarn<br>Associate Professor, Kasetsart University (Thailand)/Visiting Associate Professor, IIR<br>“Innovation in the Service Sector: A Theoretical Framework and the Case Study of the Japanese Service Firms”     |
| Dec. 05, 2007 | Xiaomei Zhang<br>Junior Research Fellow, IIR<br>“The Current Situation and Issues of Banking in Hangzhou and Wenzhou”  |
| Dec. 05, 2007 | Tomoyuki Shimbo<br>Junior Research Fellow, IIR<br>“Technology Imports and Firm Performance: A Case of Petrochemical Industry”  |
| Nov. 28, 2007 | Cornelius Herstatt<br>Professor, Institute for Technology and Innovation Management, Hamburg University of Technology<br>“Product Development for the Silver Markets”  |
| Nov. 26, 2007 | Jean-François Bellis<br>Senior Partner, Van Bael & Bellis<br>“The EU Antitrust Case on Microsoft: A View from the Microsoft Attorney”  |



- Nov. 22, 2007      Sebastien Lechevalier  
Associate Professor, Ecole des Hautes Etudes en Science Sociales / Researcher of Maison Franco-Japonaise  
“The Effect of Government Consortia on the R&D Productivity of Firms: A Case Study of Robot Technology in Japan”
- Jul. 25, 2007      Sea-Jin Chang  
Professor, Korea University / Visiting Professor, Institute of Economic Research, Hitotsubashi University  
“Sony and Samsung: Portraits of Two Global Competitors”
- Jun. 19, 2007      Florian Kohlbacher  
German Institute for Japanese Studies  
“Fostering Innovation through Knowledge Co-creation in the Business Ecosystem”
- Jun. 05, 2007      Aaron Schiff and Reiko Aoki  
Postdoctoral Fellow, Japan Society for the Promotion of Science; Professor, Institute of Economic Research, Hitotsubashi University  
“Licensing and Intellectual Property Clearinghouse”
- May 24, 2007      Jinyoung Kim  
Associate Professor, Department of Economics, Korea University  
“The Influence of University Research on Industrial Innovation”
- May 10, 2007      Tadashi Nakamura and Norihisa Hasegawa  
Honorary Chairman, Noritake Itron Corporation; Managing Director, Noritake Itron Corporation  
“Development of Vacuum Fluorescent Displays at Noritake Itron Corporation”  
(COE Research Project on Okochi Prize Cases)
- Apr. 25, 2007      Annie Garanto  
Associate Professor, University of Paris X / Visiting Associate Professor, IIR  
“The Innovative Boundaries of the Firm within the Institutional Context: The Case of the Japanese Biopharmaceutical Industry”
- Apr. 12, 2007      Hiroshi Kobayashi  
Toray Industries, Inc.  
“Development of High Performance Color Filter in Liquid Crystal Display for Mobile Phone by Polyimide System”  
(COE Research Project on Okochi Prize Cases)
- Feb. 28, 2007      Makoto Kitamura  
Junior Research Fellow, IIR  
“Institutionalizing the Use of ‘Surrogate Consumer’: Its Influence on Consumers’ Decision Making”
- Feb. 28, 2007      Ng Shuk Yee Sally  
Junior Research Fellow, IIR  
“‘Car Town’ in Huadu District, Guanzhou: Its Formation and Influence on the Smaller Peripheral Cities and Towns”

- Jan. 26, 2007      Minoru Usui  
Director, General Administrative Manager, Production Engineering & Development  
Division, Seiko Epson Corporation  
“Development of an Ink Jet Printer that Produces High Resolution Text and Pictorial  
Images”  
(COE Research Project on Okochi Prize Cases)
- Dec. 22, 2006      Takeshi Nomura  
Senior Vice President, TDK Corporation  
“Development of Highly Reliable Multilayer Ceramic Capacitors with Ni Electrode”  
(COE Research Project on Okochi Prize Cases)
- Nov. 14, 2006      Iain Cockburn  
School of Management, Boston University  
“Entry, Exit and Patenting in the Software Industry”
- Sep. 27, 2006      Fumikazu Itoh  
General Manager, Production Engineering Research Laboratory, Hitachi, Ltd.  
“Development of Direct On-chip Wiring Formation System for LSIs”  
(COE Research Project on Okochi Prize Cases)
- Sep. 12, 2006      Akiyasu Okuno and Keiichi Mori  
Manager, Electric Energy Storage Solution Group, R&D Center, The Tokyo Electric Power  
Co., Inc.; Assistant Manager, NAS Development Department, NAS Battery Business, NGK  
Insulators, Ltd.  
“Development and Commercial Viability of the Sodium-sulfur Battery for Electric Energy  
Storage”  
(COE Research Project on Okochi Prize Cases)
- Jul. 26, 2006      Ng Shuk Yee Sally  
Junior Research Fellow, IIR  
“Verification of the Ownership Structure of 150 State-owned Enterprises in China”
- Jul. 26, 2006      Franz Waldenberger  
Professor, University of Munich / Visiting Professor, IIR  
“Governmental Regulations as a Risk Factor in International Business”
- Jul. 19, 2006      Nathalie Cavašin  
Visiting Researcher, Global Information and Telecommunication Institute, Waseda  
University  
“Innovation in Optical Lenses”
- Jul. 13, 2006      Kojiro Ozu and Yukiharu Takahashi  
Former Manager of Intellectual Property Division, Toshiba Corporation; Former Auditor,  
Toshiba Microelectronics Corporation  
“The Development of Microcomputer System and its LSI Family”  
(COE Research Project on Okochi Prize Cases)
- Jun. 28, 2006      Makoto Kitamura  
Junior Research Fellow, IIR  
“‘Beauty Journalist’ as a Myth: An Institutionalized Process of a Surrogate Consumer in  
Japanese Cosmetic Industry”

- Apr. 30, 2006 Akira Takeishi and Masaru Karube  
Professor, IIR; Associate Professor, IIR  
“Reasons for Innovation: Legitimacy under Uncertainty in the Case of Okochi Memorial Prize Winners”
- Apr. 26, 2006 Hwuy-Chang Moon  
Professor, Seoul National University / Visiting Professor, IIR  
“How to Enhance Business Cooperation between Korea and Japan”

## 2. Joint Research Projects — Apr. 2006 ~ Mar. 2008

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 2006-2007 academic year.

(\* = Project Leader, or Coordinator)

### ■Project on Networks and Japanese Management

#### 1. Outline of Research

Emphasizing network topology in relation to superior performance, small-world network theory has opened a new horizon for organization theory and social sciences. We intend to conduct path-finding research on interorganizational relations by seeking appropriate ways to operationalize small-world network theory.

#### 2. Time Period

FY1997-present

#### 3. Members

Toshihiro Nishiguchi\*, Jonathan Brookfield (The Fletcher School, Tufts University)

#### 4. Research Outputs during FY2006-FY2007

- (1) Nishiguchi, Toshihiro, *Global Neighborhoods: Strategies of Successful Organizational Networks*, Tokyo: NTT Publishing, 2007, 486 pages (in Japanese)

## ■ Mobile Innovation Research Program (MIRP)

### 1. Outline of Research

This research program was carried out for 7 years from 2001 to 2007 with two objectives. One was to provide knowledge and perspectives valuable for practitioners and policymakers by conducting empirical research on the mobile communication market, industry, and business. The other was to build an infrastructure to support researchers and graduate students for their mobile innovation research in Japan.

With financial support from Japanese corporations (NTT DoCoMo, KDDI, J-Phone, NEC, and Fujitsu), participating researchers inside and outside Hitotsubashi University individually carried out empirical studies of the mobile communication market, industry, and business. Also, the program provided opportunities to facilitate communications and collaborations among researchers by organizing a series of international research meetings, Mobility Roundtables, around the world (see below).

Research outcomes include papers, thesis, and books published by participating researchers and graduate students. One example is the Special Issue “The Future is UNWIRED: Organizational and Strategic Perspectives” on *Journal of Strategic Information Systems*, Vol. 14, 2005, which collected papers presented at the Austin Mobility Roundtable. Furthermore, this program was given DoCoMo Mobile Science Award in 2005 from Mobile Communication Fund in 2006 for its contribution to mobile innovation research.

Additional information can be found at <http://www.iir.hit-u.ac.jp/iir-w3/research/mobile.html>.

### 2. Time Period

FY2001-FY2007

### 3. Members

Akira Takeishi\*, Seiichiro Yonekura, Jeffrey Funk, Taro Kamioka (Associate Professor, Graduate School of Commerce and Management, Hitotsubashi University), Yoko Takeda (Associate Professor, Graduate School of Environment and Information Sciences, Yokohama National University), Tatsuo Tanaka (Associate Professor, Faculty of Economics, Keio University), Masanori Yasumoto (Associate Professor, Faculty of Economics, Shinshu University / Visiting Scholar, The Wharton School, University of Pennsylvania), Masatoshi Fujiwara (Graduate School of Commerce and Management, Hitotsubashi University), Koji Ikari (Graduate School of Environment and Information Sciences, Yokohama National University), Kyoung-Joo Lee (Graduate School of Commerce and Management, Hitotsubashi University), Yang-Joong Yun (Graduate School of Commerce and Management, Hitotsubashi University), Young-Jae Koh (Graduate School of Commerce and Management, Hitotsubashi University)

(positions and organizations are at the time of participation)

### 4. Research Activities and Outputs during FY2006-FY2007

Participating researchers carried out their research individually, and the program assisted in organizing Helsinki and Los Angeles Mobility Roundtables.

## Mobility Roundtable

A series of Mobility Roundtables had been set up and organized by this program and other institutions overseas, including University of Texas, Stockholm School of Economics, Helsinki School of Economics and Business Administration, and Hong Kong University of Science and Technology: in Tokyo, May 2002; in Stockholm, May 2003; in Austin (US), March 2004; in Hong Kong, June 2005; in Helsinki, June 2006; in Los Angeles, June 2007. See the following URLs for more details of these roundtables:

1. Tokyo Mobile Roundtable: [http://www.iir.hit-u.ac.jp/research/tmrt\\_e.html](http://www.iir.hit-u.ac.jp/research/tmrt_e.html)
2. Stockholm Roundtable: <http://web.hhs.se/cic/about/roundtable.htm>
3. Austin Mobility Roundtable: <http://www.mcombs.utexas.edu/events/roundtable/>
4. Hong Kong Mobility Roundtable: <http://www.hongkongmobility.ust.hk/>
5. Helsinki Mobility Roundtable: <http://project.hkkk.fi/helsinkimobility/>
6. Los Angeles Global Mobility Roundtable: <http://www.marshall.usc.edu/ctm/research/>

## Mobile Roundtable Organizing Committee

Per Andersson  
Center for Communication and  
Information Research  
Stockholm School of Economics,  
Sweden

Magnus Boman  
Swedish Institute of Computer  
Science  
Royal Institute of Technology,  
Sweden

Sirkka Jarvenpaa  
Center for Business, Technology, and  
Law  
University of Texas at Austin, U.S.A.

Jeffrey Funk  
Institute of Innovation Research  
Hitotsubashi University, Japan  
(Mobile Innovation Research Program)

Karl Reiner Lang  
Hong Kong University of Science  
and Technology,  
Hong Kong

Timo Saarinen  
Institute of Electronics Commerce  
Helsinki School of Economics and  
Business Administration,  
Finland

Akira Takeishi  
Institute of Innovation Research  
Hitotsubashi University, Japan  
(Mobile Innovation Research Program)

Bertil Thorngren  
Center for Communication and Information  
Research  
Stockholm School of Economics, Sweden

Virpi Tuunainen  
Institute of Electronics Commerce  
Helsinki School of Economics and  
Business Administration, Finland

Seiichiro Yonekura  
Institute of Innovation Research  
Hitotsubashi University, Japan  
(Mobile Innovation Research Program)

(positions and organizations are at the time of participation)

## ■ MOT Case/Video Case Project

### 1. Outline of Research

One of IIR's missions is to build a case database describing innovation processes in Japanese companies. Based on this recognition, we started to develop cases and video cases in 2003. The project also provides an important contribution to rapidly growing Management of Technology (MOT) educational programs in Japan. Since an innovation process tends to involve technological contents unfamiliar to non-technical persons, this project attempted to create professional movies to provide supplemental visual information.

Under the auspices of Ministry of Economy, Trade and Industry (METI), the project produced ten cases and three video cases in 2003, six cases and two video cases in 2004, and two video cases in 2005, and two cases and one video case in 2006. Video cases were created in collaboration with a professional video producer.

### 2. Time Period

FY2002-FY2006

### 3. Members

Yaichi Aoshima\*, Shuzo Fujimura, Akira Takeishi, Seiichiro Yonekura, Masaru Karube

### 4. Outputs in FY2006

Two cases and one video case are as listed below.

Text (in Japanese)

(1) Sonny: FeliCa (A) Issues in Business Incubation and Technological Development

(2) Sonny: FeliCa (B) Business Model Development

DVD

(1) Sonny: Contactless IC Card Technology 'FeliCa' (60 minutes)

## ■ COE Semiconductor Forum

### 1. Outline of Research

The purpose of this project is to analyze the economic and management related reasons that the international competitiveness of the semiconductor (particularly devices and equipment) manufacturing industry has been rapidly declining since the late 1990s. It also aims at finding ways of overcoming that decline. The major point of difference separating this research from conventional studies is that the current research does not stop at a mere sociological analysis, but also seeks to delve into the technological aspects that have characterized the semiconductor manufacturing industry. At the same time, we analyze the characteristics of each era in the industry with proper attention to the innovation phases. More concretely, by including in the project's membership not just the researchers and collaborators of this project's department, but people who have extensive knowledge of semiconductor development and design, and equipment and process development, we conduct a style of research similar to improvisational jazz, i.e. having the researchers from both fields work responsively with respect to each other.

The analytical methodology comprises, inter alia: 1) information gathering through interviews with various scientists and engineers who have played important roles in the semiconductor industry; 2) organizing and analyzing existing data from an integrated perspective; 3) the creation and analysis of new data and materials based on published papers, patent data, etc. In addition, we plan to carry out a questionnaire survey and examination with a more generalized approach in order to verify the validity of knowledge gathered from analyses based on these methods. The project is included as a part of Hitotsubashi University's 21st century COE programs, entitled "Dynamics of the enterprise, knowledge, and the innovation."

### 2. Time Period

FY2003-FY2007

### 3. Members

Hiroyuki Chuma\*, Yaichi Aoshima, Shuzo Fujimura

### 4. Research Activities and Outputs during FY2006-FY2007

Publications and Papers

- (1) Chuma, Hiroyuki and Norikazu Hashimoto, "Moore's Law, Increasing Complexity, and the Limits of Organization: The Modern Significance of Japanese Chipmakers' DRAM Business," RIETI Discussion Paper 08-E-001, Research Institute of Economy, Trade and Industry, January 2008
- (2) Chuma, Hiroyuki and Norikazu Hashimoto, "Why Did Japanese Chipmakers Fail in their DRAM Business?: Verification of Root Causes (1) (2)," *Nikkei Microdevices*, (1) March 2007, pp. 41-47; (2) April 2007, pp. 43-50 (in Japanese)
- (3) Chuma, Hiroyuki and Norikazu Hashimoto, "Complexity and Limits of Organization Induced by Moore's Law: Modern Significance of Up-and-down in DRAM Business," *Hitotsubashi Business Review*, Vol. 54, No. 4, March 2007, pp. 22-45 (in Japanese)
- (4) Chuma, Hiroyuki, "Search for the Factors of Weakening Competitiveness in Japanese Semiconductor Manufacturing Systems: From the View Point of Papert's Principle," *Cognitive Science*, Journal of Japanese Cognitive Science Society, Vol. 14, No. 1, March 2007, pp. 39-59 (in Japanese)
- (5) Chuma, Hiroyuki, "Increasing Complexity and Limits of Organization in the Microlithography Industry: Implications for Science-based Industries," *Research Policy*, Vol. 35, No.3, April 2006, pp. 394-411



## Presentations

- (1) Chuma, Hiroyuki, “Moore’s Law, Increasing Complexity and Limits of Organization: Modern Significance of Japanese DRAM ERA,” presented at the International Conference on Dynamics of Knowledge, Corporate System and Innovation, Hitotsubashi University 21st Century COE Program, December 4, 2007, Nagano, Japan
- (2) Chuma, Hiroyuki, “Moore’s Law, Increasing Complexity and Limits of Organization: Modern Implications of Japanese DRAM ERA,” presented at the IIR Decennial International Symposium on Frontiers of Innovation Research: Towards an Internationally Competitive Nation, March 4-5, 2007, Tokyo
- (3) Chuma, Hiroyuki, “Moore’s Law, Increasing Complexity and Limits of Organization,” presented at the International Conference on Development of Semiconductor and Innovation, National Institute of Science and Technology Policy (NISTEP), Ministry of Education, Culture, Sports, Science and Technology, Japan, February 8, 2007, Tokyo

## ■ COE 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 the 21st Century COE Program “Dynamics of Knowledge, Corporate System and Innovation” at Hitotsubashi University.

### 2. Time Period

FY2003-FY2007

### 3. Members

Akira Takeishi\*, Yaichi Aoshima, Masaru Karube, Toshihiko Kato (Graduate School of Commerce and Management, Hitotsubashi University), Takeshi Matsui (Graduate School of Commerce and Management, Hitotsubashi University), Hideaki Kohzu (Former COE Visiting Professor, IIR), Junji Miyahara (Tokyo University of Science / Former professor, IIR), Fumihiko Ikuine (Bunkyo Gakuin University / Former Lecturer, IIR), Eishi Fukushima (Faculty of Business Administration, Hosei University)

#### 4. Research Activities and Outputs during FY2006-FY2007

For five years, we have picked up twenty five cases, of which twenty have already been completed. The finished cases are made available on our website at [http://www.iir.hit-u.ac.jp/iir-w3/research/COEokochiprize\(A\).html](http://www.iir.hit-u.ac.jp/iir-w3/research/COEokochiprize(A).html), and some of them have been published in *Hitotsubashi Business Review* and used as educational materials. In parallel, we have started cross-case analysis to examine common features of innovation processes among the cases we have developed. The outputs from FY2006 are as listed below.

##### Publications and Papers

- (1) Takeishi, Akira, Yaichi Aoshima and Masaru Karube, "Reasons for Innovation: Legitimizing Resource Mobilization for Innovation in the Case of Okochi Memorial Prize Winners," *Organizational Science*, Vol. 42, No. 1, September 2008, pp. 4-14 (in Japanese)
- (2) Takeishi, Akira, Yaichi Aoshima and Masaru Karube, "Reasons for Innovation: Legitimizing Resource Mobilization for Innovation in the Case of Okochi Memorial Prize Winners," *Hitotsubashi Business Review*, Vol. 55, No. 4, March 2008, pp. 22-39 (in Japanese)
- (3) Takeishi, Akira, Yaichi Aoshima and Masaru Karube, "Reasons for Innovation: Legitimizing Resource Mobilization for Innovation in the Case of Okochi Memorial Prize Winners," IIR Working Paper WP#07-10, November 2007
- (4) Karube, Masaru, Akira Takeishi and Yaichi Aoshima, "Legitimizing Resource Mobilization for Innovation: Preliminary findings" IIR Working Paper #07-05, March 2007 (in Japanese)

##### Case Study

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

- (1) Takeishi, Akira, Junji Miyahara and Tomono Miki, "Fujifilm: Development of Computed Radiography System," *Hitotsubashi Business Review*, Vol. 56, No. 2, September 2008, pp. 126-147
- (2) Takeishi, Akira and Seigo Ito, "Toshiba: Development of Microcomputer System for Automobile Engine Control," *Hitotsubashi Business Review*, Vol. 55, No. 3, December 2007, pp. 116-136
- (3) Hirano, Sow and Masaru Karube, "JFE Steel: Innovation of Revamping Technique of Large Scale Blast Furnance," *Hitotsubashi Business Review*, Vol. 55, No. 2, September 2007, pp. 128-147
- (4) Takeishi, Akira, Young-Jae Koh, Kenichi Furukawa and Hideaki Kohzu, "Matsushita: Development and Commercialization of Low-current-consumption Miniaturized GaAs Power Modules for Mobile Communication Systems," *Hitotsubashi Business Review*, Vol. 55, No. 2, September 2007, pp. 110-126
- (5) Kato, Toshihiko and Hiroyuki Yamaguchi, "Kyocera: Development of Long-life Electrophotographic Process and Application for Environmentally-friendly Printer," *Hitotsubashi Business Review*, Vol. 54, No. 3, December 2006, pp. 112-123
- (6) Park, Jaewoo and Takeshi Matsui, "Nisshin Pharma: Industrial Production of Coenzyme Q10 and Improvement of its Bioavailability," *Hitotsubashi Business Review*, Vol. 54, No. 3, December 2006, pp. 124-139
- (7) Takeishi, Akira, Masafumi Kanayama and Tatsuya Mizuno, "Seiko Epson: Development of a Quartz Watch Having an Automatic Generating System," *Hitotsubashi Business Review*, Vol. 54, No. 2, September 2006, pp. 134-152

#### IIR Case Study Series (in Japanese)

- (1) Kosaka, Genjiro and Akira Takeishi, "Noritake Itron: Development and Commercialization of Vacuum Fluorescent Displays at Noritake Itron Corporation," IIR Case Study CASE#08-05, September 2008
- (2) Takanashi, Chikako, Akira Takeishi and Hideaki Kohzu, "NEC: Development of Field-Effect Transistor," IIR Case Study CASE#08-04, September 2008
- (3) Aoshima, Yaichi and Makoto Kitamura, "Seiko Epson: Development of an Ink Jet Printer that Produces High Resolution Text and Pictorial Images," IIR Case Study CASE#08-03, May 2008
- (4) Fukushima, Eishi, "Tokyo Electric Power, NGK Insulators: Development and Commercial Viability of the Sodium-Sulfur Battery for Electric Energy Storage," IIR Case Study CASE#08-02, February 2008
- (5) Kosaka, Genjiro and Akira Takeishi, "TDK: Development of Highly Reliable Multilayer Ceramic Capacitors with Ni Electrode," IIR Case Study CASE#08-01, January 2008
- (6) Sakamoto, Masaaki, "NEC: Development of Hemispherical-Grained (HSG) Silicon Storage Electrodes," IIR Case Study CASE#07-07, September 2007
- (7) Aoshima, Yaichi, "Hitachi: Development of Direct On-chip Wiring Formation System for LSIs," IIR Case Study CASE#07-06, September 2007
- (8) Takeishi, Akira and Seigo Ito, "Toshiba: Development of Microcomputer System for Automobile Engine Control," IIR Case Study CASE#07-04, August 2007
- (9) Takeishi, Akira, Junji Miyahara and Tomono Miki, "Fujifilm: Development of Computed Radiography System," IIR Case Study CASE#07-01, July 2007
- (10) Hirano, Sow and Masaru Karube, "JFE Steel: Short Term Revamping Technique of Large Scale Blast Furnace: Development of Large Block Ring Construction Method" IIR Case Study CASE#06-2, August 2006

#### Presentations

- (1) Takeishi, Akira and Yaichi Aoshima "Legitimizing Resource Mobilization for Innovation: The Case of Okochi Award Winners," presented at the International Conference on Dynamics of Knowledge, Corporate System and Innovation, Hitotsubashi University st Century COE Program, December 4, 2007, Nagano, Japan
- (2) Takeishi, Akira, "Reasons for Innovation: Legitimizing Resource Mobilization for Innovation in the Case of Okochi Memorial Prize Winners," presented at the Annual Meeting, The Academic Association for Organizational Science, Japan, October 13, 2007, Fukuoka, Japan
- (3) Takeishi, Akira, "Intrapreneurships within Large Corporations: Reasons and Consequences of Innovation in the Cases of Okochi Award Winners," presented at the IIR Decennial International Symposium on Frontiers of Innovation Research: Towards an Internationally Competitive Nation, March 4-5, 2007, Tokyo
- (4) Takeishi, Akira and Yaichi Aoshima, "Reasons for Innovation: Legitimizing Resource Mobilization for Innovation in the Case of Okochi Memorial Prize Winners," presented at the Center for Japanese Business Studies Forum, Graduate School of Commerce and Management, Hitotsubashi University, November 1, 2006, Tokyo
- (5) Takeishi, Akira, Masaru Karube and Yaichi Aoshima, "Legitimization under Uncertainty in the Cases of Okochi Award Winners," presented at the Conference of the Academic Association for Organizational Science, Japan, June 10-11, 2006, Tokyo

## ■ Project on Networks and Innovations (I)

### 1. Outline of Research

The recent advancement of small-world network theory, with its focus on the relationship between network topology and performance, is likely to broaden the horizon of organization theory and social sciences. We are developing a new framework to interpret the evolution of the mobile technology industry in Japan.

### 2. Time Period

FY2004-present

### 3. Members

Jefferey Funk\*, Toshihiro Nishiguchi

### 4. Research Activities and Outputs during FY2006-FY2007

#### Publications

- (1) Funk, Jeffrey, "Mobile Shopping: Visions from Japan," *Technological Forecasting and Social Change*, Vol. 74, No. 3, March 2007, pp. 341-356
- (2) Funk, Jeffrey, "Solving the Startup Problem in Western Mobile Internet Markets," *Telecommunications Policy*, Vol. 4, No. 1, February 2007, pp. 4-30
- (3) Funk, Jeffrey, "Technological Change within Hierarchies: The Case of the Music Industry," *Economics of Innovation and New Technology*, Vol. 16, No. 1., January 2007, pp. 1-6
- (4) Funk, Jeffrey, "The Future of Mobile Phone-based Intranet Applications: A View from Japan," *Technovation*, Vol. 26, No. 12, December 2006, pp. 1337- 1346
- (5) Nishiguchi, Toshihiro, *Global Neighborhoods: Strategies of Successful Organizational Networks*, Tokyo: NTT Publishing, 2007, 486 pages (in Japanese)

#### Presentations

- (1) Funk, Jeffrey, "Vertical Disintegration and Industry Evolution: The Case of Information Technology," presented at the Academy of Management, August 3-8 2007, Philadelphia, PA
- (2) Funk, Jeffrey., "Vertical Disintegration and Entrepreneurship: The Case of Broadcasting," presented at the Academy of Management, August 3-8, 2007, Philadelphia, PA (accepted for best paper proceedings)
- (3) Funk, Jeffrey, "New Industry Formation, Inverse Demand Curves and the Rewiring of Networks," presented at the Academy of Management, August 14-16, 2006, Atlanta, GA

## ■ Project on Networks and Innovations (II)

### 1. Outline of Research

Incorporating a new perspective of small-world network theory, we are conducting comparative field research on regional economies and enterprise networks in Japan, China, and Europe. Our group is composed of researchers with diverse national or institutional backgrounds and is expected to keep on producing new findings for years to come.

### 2. Time Period

FY2004-present

### 3. Members

Toshihiro Nishiguchi\*, Motoko Tsujita (Ryukoku University), Tomofumi Amano (University of Tokyo), Dan Xu (Tongji University (China)), Changxiang Zhao (Junior Research Fellow, IIR)

### 4. Research Activities and Outputs during FY2006-FY2007

We conducted field work in Sweden, Poland, Dubai, etc.

#### Publications

- (1) Nishiguchi, Toshihiro, *Global Neighborhoods: Strategies of Successful Organizational Networks*, Tokyo: NTT Publishing, 2007, 486 pages (in Japanese)
- (2) Nishiguchi, Toshihiro, “An Invitation to Networking Thinking (1)-(8),” *Hitotsubashi Business Review*, Vol. 54, No.1-Vol. 55. No. 4, June 2006-March 2008 (in Japanese)

## ■ Project on Organization and Talent that Enable Innovation Based on Science Knowledge

### 1. Outline of Research

This research examines what knowledge and attitude are required for engineers to achieve innovation by turning their pure science knowledge into technology knowledge. The research also explores what kind of R&D organizations and systems are required for engineers with such knowledge and attitude to realize their potential, with main focus on the semiconductor industry, a typical science-oriented industry.

We try to clarify how relationships between innovation-enabling systems and engineers should be through interviews and questionnaire surveys of R&D engineers working for semiconductor consortia and semiconductor-related firms in Japan and the United States as well as interviews with a group of engineers who have produced outstanding outcomes in the promotion of innovation in the forms of papers and patents.

### 2. Time Period

January 2005–December 2007

### 3. Members

Shuzo Fujimura\*, Yaichi Aoshima, Noriko Taji (Meisei University,) Hiroshi Fujii (Meisei University) and Masahiro Tsujimoto (University of Tokyo)

## ■ Project on Bio-medical Venturing Business Research

### 1. Outline of Research

We must construct a system of new medicine development for the 21st century. This is not only for the progress of Japan's pharmaceutical industries, but also for the health care of the Japanese people. In the construction of the new system, it is important to nurture and support venture companies focused on biotechnology or medical technology. This project considers ways of nurturing these venture companies through the cooperation of industrial professionals, ministries and academic researchers.

To nurture and support venture companies in the biotechnology or medical technology fields, it is necessary to concentrate on a wide range of specialty areas. Established boundaries (specialty, organizations, section) must be broken down, specialists must get together and share the same goal. Such cooperation can be realized on a mutual platform. With this recognition, we promote (1) periodic meetings of the respective specialist from the industries, ministries, universities and research institutes, (2) a proposal for the support of venture companies with a focus on biotechnology or medical technology, (3) public information about the importance of venture companies focused on biotechnology or medical technology, and (4) presentation in academic societies.

### 2. Time Period

FY2004-FY2006

### 3. Members

Seiichiro Yonekura\*, Akira Takeishi, Yaichi Aoshima, Minoru Shimamoto (Graduate School of Commerce and Management, Hitotsubashi University), Keio University, Tokyo Medical and Dental University, The Japan Biotechnology Association, Nihon Keizai Shimbun, Inc.

(Observers: Ministry of Health, Labour and Welfare (MHLW), Ministry of Economy, Trade and Industry (METI), Ministry of Education, Culture, Sports, Science and Technology (MEXT), etc.)

### 4. Research Activities in FY2006

We held the International Symposium on Japan's Competitiveness and Bio Technology Innovation on September 28, 2006 in Tokyo (see the following section for the detail).

## ■ Project on Evaluation and Restructuring of R&D Capabilities of Japanese Firms: Strategy, Organization, and Governance

### 1. Outline of Research

While Japanese firms have applied for large numbers of patents in the 1990s and have been referred to maintain their outstanding technological competitiveness, many have faced low profitability. The root cause can be attributed to the fact that Japanese firms cannot fully utilize the technological potential, or the fact that they have not been deeply aware that linking the internal technological abilities with profitability is indispensable.

The aim of this project is to clarify systematically the real picture of R&D capabilities of Japanese firms and the major challenges that they face. The project is planned firstly to construct the statistical database in order to examine the performance of R&D activities, and secondly to analyze and evaluate the R&D activities of Japanese firms and the root cause of low profitability from three perspectives: valuation, strategy and governance.

### 2. Time Period

July 2004-FY2006

### 3. Members

Masaru Karube\*, Sadao Nagaoka, Tomohiro Ijichi, Tetsuyuki Kagaya (Graduate School of Commerce and Management, Hitotsubashi University), Makoto Nakano (Graduate School of International Corporate Strategy, Hitotsubashi University), Seki Obata (Keio Business School)

### 4. Research Activities and Outputs in FY2006

#### Publications and Papers

- (1) Karube, Masaru, "Top Management among Japanese Firms: Resent Trend in Functional Characteristics and CEO Turnover," IIR Working Paper WP#07-08, April 2007 (in Japanese)
- (2) Kagaya, Tetsuyuki, "Intangible Assets and Evaluation in Japanese Firms," IIR Working Paper WP#07-07, April 2007 (in Japanese)
- (3) Nagaoka, Sadao, "Assessing the R&D Management of a Firm in Terms of Speed and Science Linkage: Evidence from the US Patents," *Journal of Economics & Management Strategy*, Vol. 16, No. 1, Spring 2007, pp. 129-156
- (4) Nakano, Makoto, "Intangible Assets' Effect on Shareholders' Value," in Ichijo, Kazuo and Ikujiro Nonaka, eds., *Knowledge Creation and Management*, NY: Oxford University Press, 2007, pp. 176-197
- (5) Nagaoka, Sadao, "R&D and Market Value of Japanese Firms in the 1990s," *Journal of the Japanese and International Economies*, Vol. 20, No. 2, June 2006, pp. 155-176

#### Presentations

- (1) Karube, Masaru, "Road to the CEO among Japanese Firms: A Preliminary Findings," presented at the Seminar, Sol. C. Snider Center, University of Pennsylvania, March 2, 2007, Philadelphia, USA

## ■ Research Project on the Efficient Creation and Transfer of Upstream Inventions with a Focus on Co-inventions and Co-ownership

### 1. Outline of Research

This Research project aims at analyzing the efficient contract and institutional design for developing and commercializing upstream inventions. This project was selected by the Japan Patent Office as one of the “University Research Projects on Intellectual Property Rights” in 2006.

### 2. Time Period

FY2006

### 3. Members

Sadao Nagaoka\*, Toshiko Takenaka (University of Washington School of Law), Reiko Aoki (Institute of Economic Research, Hitotsubashi University), Masabumi Suzuki (Graduate School of Law, Nagoya University), Tomohiro Ijichi, Hajimu Morioka (Ajinomoto)

### 4. Research Activities and Outputs

International Conference

- (1) International Conference on Efficient Alliance for Commercializing Upstream Inventions with a Focus on Co-inventions and Co-ownership, Tokyo, December 11, 2006 (see the following section for the detail).

Research Reports

- (1) “Study on Effective Creation and Transfer of Upstream Research Inventions: A Focus on Jointly Owned Patent Rights,” Report of a Study in the “University Research Projects on Intellectual Property Rights,” Research Program Supported by the Japan Patent Office in FY2006 (Principal Investigator: Sadao Nagaoka), March 2007 (in Japanese).
- (2) Ijichi, Tomohiro and Sadao Nagaoka, “Management of IPRs for Upstream Research Inventions in Universities and National R&D Institutes in Japan—Results from the IIR IP Survey 2006,” Research Report, IIR, March 2007 (in Japanese)



## ■ Project on Intellectual Property and Innovation: Collaboration for Commercializing Intellectual Property Right

### 1. Outline of Research

This project analyzes the mechanism of efficient collaboration and its constraints for commercializing intellectual properties which are the outputs of R&D.

### 2. Time Period

FY2006-present

### 3. Members

Sadao Nagaoka\*, Tomohiro Ijichi (Seijo University, Former IIR Associate Professor), Yoichiro Nishimura (Kanagawa University), Reiko Aoki (Institute of Economic Research, Hitotsubashi University), Tomoyuki Shimbo (IIR Junior Research Fellow, Former Researcher at the Institute of Intellectual Property), Naotoshi Tsukada (Institute of Intellectual Property, Former Ph.D. Student at Hitotsubashi University)

### 4. Research Activities and Outputs during FY2006-FY2007

#### International Workshop

- (1) International Workshop on Management of Foreign R&D: Experiences and Lessons from Japanese and German Multinationals, organized by IIR and Mercator School of Management, Duisburg-Essen University (Germany), March 10, 2007, Tokyo (see the following section for the detail).

#### Presentations

- (1) Nagaoka, Sadao and Bronwyn H. Hall, "Diversification and R&D Performance," presented at the International Conference on R&D and Firm Performance, March 22, 2008, Kunitachi, Tokyo
- (2) Nagaoka, Sadao, "An Empirical Assessment of the Effects of Patent Thickets" (Keynote Speech), The 96th International Conference on Patent & Innovation: Economic Studies, Applied Econometric Association, June 28-29, 2007, Strasbourg
- (3) Nagaoka, Sadao and Yoichiro Nishimura, "An Empirical Assessment of the Effects of Patent Thickets," presented at the Science & Technology Policy Research, University of Sussex (SPRU) 40th Anniversary Conference on the Future of Science, Technology and Innovation Policy: Linking Research and Practice, September 11-13, 2006, Sussex
- (4) Nagaoka, Sadao, Tomoyuki Shimbo and Naotoshi Tsukada "The Emergence and Structure of Essential Patents for Standards," presented at the 11th International J.A. Schumpeter Society (ISS) Conference on Innovation, Competition and Growth: Schumpeterian Perspectives, June 21-24, 2006, Nice-Sophia-Antipolis (accepted for one of best papers)

### 3. International Conferences — Apr. 2006 ~ Mar. 2008

#### ■ International Conference on R&D and Firm Performance

*Organized by IIR*

March 22, 2008 at Hitotsubashi Sano-Shoin Hall, Kunitachi, Tokyo

This conference was held in honor of Professor Bronwyn Hall who visited IIR in early 2008. It invited 6 presentations mainly by young scholars and Ph.D. students for advice by Professor Hall and others.

##### **Keynote Speech**

*Chair: Akira Goto (Commissioner of Japan Fair Trade Commission (JFTC))*

“Financing R&D”

Bronwyn. H. Hall (University of California, Berkeley / Visiting Professor, IIR)

##### **Session I**

*Chair: Tetsuo Wada (Gakushuin University)*

[1] “R&D Activity, Patent and the Value of Invention in the Core vs. New Business: Evidence from New Japanese Inventor Survey”

Hideo Owan (Aoyama Gakuin University)

[2] “Determinants and Effects of Partner Choice in the R&D Cooperation between Small Businesses and Universities”

Hiroyuki Okamuro (Hitotsubashi University)

##### **Session II**

*Chair: Kazuyuki Motohashi (University of Tokyo)*

[3] “Diversification and R&D Performance”

Sadao Nagaoka (IIR) and Bronwyn H. Hall

[4] “Determinants of Technology Sourcing from Abroad: Home Technological Advantages and Corporate R&D Strategy”

Tomoko Iwasa (Yokohama City University)

##### **Session III**

*Chair: Yuji Honjo (Chuo University)*

[5] “Estimating Production Functions with R&D Investment and Endogeneity”

Youngak Kim (Hitotsubashi University)

[6] “On Quality of Patent and Application Behavior Related to Patent Pool”

Naotoshi Tsukada (Institute of Intellectual Property)

## ■ International Workshop on Market for Technology and Digital Products

September 12, 2007 at IIR Conference Room

This workshop addressed the mechanism of the market for technology and digital music, using theoretical models. They talked such issues as why the price of CD has roughly remained constant, despite of its apparent sales decline as well as whether it is feasible to form a patent pool with all essential patents without ex-ante commitments.

- [1] “On the Impact of Digital Music Distribution”

Kiho Yoon (Korea University / Visiting Associate Professor, IIR)

*Discussant:*

Sadao Nagaoka (IIR)

- [2] “Coalition Formation of a Standard Consortium and a Patent Pool”

Reiko Aoki (Institute of Economic Research, Hitotsubashi University)

*Discussant:*

Kiho Yoon

- [3] “Economic Analysis of Patent Law Exemption for Research on a Patented Innovation”

Sadao Nagaoka

*Discussant:*

Yoshihito Yasaki (Kogakuin University)

## ■ International Workshop on Management of Foreign R&D: Experiences and Lessons from Japanese and German Multinationals

March 10, 2007 at Hitotsubashi Mercury Tower, Kunicachi, Tokyo

### *Organizers:*

Roman Bartnik, Mercator School of Management, Duisburg-Essen University  
Sadao Nagaoka, IIR

Size and strategic importance of foreign R&D have grown strongly since the 1990s. Consequently, the coordination of R&D conducted in foreign subsidiaries, choice of knowledge sourcing and foreign R&D collaborations have become increasingly urgent issues to innovative firms in both Japan and Germany. While Japanese organizations have become famous for efficiently integrating R&D processes across organizational units and hierarchical layers, experience in managing R&D across country borders is quite limited. German companies, while being less integrative on the domestic level, have internationalized their R&D earlier and more extensively. It would thus seem that both parts can learn from each other and this workshop was held hopefully to be a first step in this direction.

### **Session I**

*Chair: Sadao Nagaoka (IIR)*

- [1] “Strategic Alliances in Global Biotech Pharma Industries”

Dr. Hans Gottinger

#### *Comment:*

Masau Takayanagi (Mitsubishi Pharma Corporation)

- [2] “Coordinating International R&D: Evidence from Japanese and German Multinationals”

Roman Bartnik (Hitotsubashi University / Duisburg-Essen University)

#### *Comment:*

Kazuhiro Asakawa (Keio University)

Koichiro Nakamura (Kao Corporation)

### **Session II**

*Chair: Hiroyuki Odagiri (Hitotsubashi University)*

- [3] “Global R&D Management by Japanese Firms: A Metanational Perspective”

Kazuhiro Asakawa (Keio University)

#### *Comment:*

Hiroyuki Okamuro (Hitotsubashi University)

Joerg Raupack (NEC-Schott Components Corporation)

- [4] “Whether and How International Research Collaboration Enhance Research Productivity?”

Sadao Nagaoka and Naotoshi Tsukada (Hitotsubashi University)

#### *Comment:*

Banri Ito (Keio University)

Matthias Wegener (Henkel Japan, Ltd./ Kinki University)

- [5] “Foreign R&D and Sourcing of Technological Knowledge by Japanese Companies”

Tomoko Iwasa (Yokohama City University)

#### *Comment:*

Yasuyuki Todo (Aoyama Gakuin University)

Dirk Ebert (Kostal Japan Co., Ltd.)

## ■ IIR Decennial International Symposium on Frontiers of Innovation Research: Towards an Internationally Competitive Nation

March 4-5, 2007 at Hitotsubashi Memorial Hall, Kanda, Tokyo

*Organized by*  
IIR and Nihon Keizai Shimbun  
*In collaboration with*  
Josuikai (Hitotsubashi alumni association)

This symposium was held to commemorate the 10th anniversary of IIR, aiming at learning the lessons on the future strategy for innovation research from the leaders of innovation research, highlighting some research outcomes of IIR and discussing their managerial and policy implications. The symposium was open to the general public of Japan.

### **Day 1: March 4, 2007**

#### **Welcome**

Sadao Nagaoka (Director, IIR)

#### **Opening Address**

Takehiko Sugiyama (President, Hitotsubashi University)

#### **Guest Speeches**

Koji Omi (Minister of Finance, Japan)

Kakutaro Kitashiro (Chairman, Japan Association of Corporate Executives)

#### **Keynote Lecture 1**

Michael A. Cusumano (Professor, Sloan School of Management, Massachusetts Institute of Technology)

“The Importance of Services Innovation in Software and Other Industries”

### **Session I: The Strengths and Weakness of Japanese Firms: From a Perspective of Innovation Process**

#### *Presentations*

Hiroyuki Chuma (IIR)

“Moore’s Law, Increasing Complexities, and Limits of Organization: Modern Implications of Japanese DRAM ERA”

Yaichi Aoshima (IIR)

“Technology and Competition in the Digital Still Camera Industry”

#### *Panel Discussion*

*Moderator: Kentaro Nobeoka (Kobe University)*

Hidemi Ishiuchi (Toshiba Semiconductor Co.)

Masahiro Konishi (Fujifilm Corporation)

Ken Kusunoki (Graduate School of International Corporate Strategy, Hitotsubashi University)

Hiroyuki Chuma

Yaichi Aoshima

## **Session II: Who Take the Central Role in Innovation: Entrepreneurs or Intrapreneurs?**

### *Presentations*

Akira Takeishi (IIR)

“Intrapreneurships within Large Corporations: Reasons and Consequences of Innovation in the Cases of Okochi Award Winners”

Seiichiro Yonekura (IIR)

“Japan’s Venture Spirit: A Scientific Approach to Entrepreneurship”

### *Panel Discussion*

*Moderator: Seiichiro Yonekura*

Ikujiro Nonaka (Emeritus Professor, Hitotsubashi University)

Hiroshi Fukino (Josuikai / NanoGeometry Research, Inc. / Former Chair of Dell, Inc., Japan)

Junji Miyahara (Tokyo University of Science)

Hiroshi Fujiwara (Internet Research Institute, Inc.)

Tetsuya Iizuka (THine Electronics, Inc.)

Akira Takeishi

## **Day 2: March 5, 2007**

### **Guest Speeches**

Hiroshi Fukino (Josuikai / NanoGeometry Research, Inc. / Former Chair of Dell, Inc., Japan)

Hiroyuki Abe (Member, Intellectual Property Strategy Headquarters Cabinet / ex-Member, Council for Science and Technology Policy, Cabinet Office)

“Towards an Industrial and Social Restructuring Based on Innovations of Japanese Origin”

### **Keynote Lecture 2**

Alfonso Gambardella (Professor, Department of Business Administration, Bocconi University)

“Innovations for Products, Innovations for Licensing: When and Why We See Them and Why We Should Care”

## **Session III: Pro-innovation Intellectual Property System**

### *Presentations*

Sadao Nagaoka (IIR)

“Competition and Collaboration in Innovation”

Tomohiro Ijichi (IIR)

“Industry-academia Collaborations and Intellectual Property Right System in Japan”

### *Panel Discussion*

*Moderator: Hiroyuki Odagiri (Graduate School of Economics, Hitotsubashi University)*

Hisashi Kato (Mitsubishi Electric Corporation)

Hajimu Morioka (Ajinomoto Co., Inc.)

Hideshi Itoh (Graduate School of Commerce and Management, Hitotsubashi University)

Sadao Nagaoka

Tomohiro Ijichi

#### **Session IV: Network and Innovation**

##### *Presentations*

Toshihiro Nishiguchi (IIR)

“Global Neighborhoods: Strategies of Successful Organizational Networks”

Jeffrey L. Funk (IIR)

“Technological Discontinuities and Vertical Disintegration: Case of IT Industry in North America”

##### *Panel Discussion*

*Moderator: Toshihiro Nishiguchi*

Kenichi Imai (Emeritus Professor, Hitotsubashi University)

Nobuaki Miyama (Ministry of Defense, Japan)

Motoko Tsujita (Ryukoku University)

Jeffrey L. Funk

##### **Closing Remarks**

Sadao Nagaoka

## ■ 20th Annual TRIO Conference on Organizational Innovation and Firm Performance

December 15-16, 2006 at Hitotsubashi Sano-Shoin Hall, Kunitachi, Tokyo

*Supported by*  
NBER-CEPR-TCER, and Hitotsubashi University

*Organizers*  
George Baker, Harvard University and NBER  
Takeo Hoshi, University of California, San Diego, NBER and TCER  
Hideshi Itoh, Hitotsubashi University and TCER  
Sadao Nagaoka, IIR and TCER

### Day 1: December 15 , 2007

#### Morning Session

*Chair: Hiroyuki Odagiri (Hitotsubashi University and TCER)*

- [1] “Strategic Alliances: Bridges Between Islands of Conscious Power”

George Baker (Harvard University and NBER)

Robert Gibbons (Massachusetts Institute of Technology, co-author)

Kevin J. Murphy (University of Southern California, co-author)

*Discussants:*

Hideshi Itoh (Hitotsubashi University and TCER)

Hodaka Morita (University of New South Wales)

- [2] “Peer-dependent Incentives and Ownership Rights”

Ola Kvaloy (University of Stavanger)

Trond E. Olsen (Norwegian School of Economics and Business Administration, co-author)

*Discussants:*

Makoto Hanazono (Nagoya University)

Paul Oyer (Stanford University and NBER)

#### Afternoon Session

*Chair: George Baker*

- [3] “Complementarities among Authority, Responsibility, and Monitoring: Evidence from Japanese Business Groups”

Hideshi Itoh

Tatsuya Kikuntani (Kyoto University)

Osamu Hayashida (Osaka Keizai University, co-author)

*Discussants:*

Wako Watanabe (Tohoku University)

Steven Tadelis (University of California, Berkeley and NBER)

---

\* This conference was supported by the Hitotsubashi University 21st Century COE program on Dynamics of Knowledge, Corporate System and Innovation.



- [4] “A Costly Contracting Approach to the Organization of Production”

Steven Tadelis

Jonathan Levin (Stanford University, co-author)

*Discussants:*

Sadao Nagaoka (IIR and TCER)

Ola Kvaloy

- [5] “Determinants of Firm Boundaries: Empirical Analysis of the Japanese Auto Industry from 1984 to 2002”

Akira Takeishi (IIR)

Yoshihisa Noro (Mitsubishi Research Institute, Inc., co-author)

Sadao Nagaoka

*Discussants:*

Tatsuya Kikutani

George Baker

- [6] “Bank Size and Lending Relationships in Japan”

Hirofumi Uchida (Wakayama University)

Gregory F. Udell (Indiana University, co-author)

Wako Watanabe

*Discussants:*

Takeo Hoshi (University of California, San Diego, NBER and TCER)

Ayako Yasuda (The Wharton School, University of Pennsylvania)

## **Day 2: December 16, 2006**

*Chair: Takeo Hoshi*

- [7] “Ability and Employer Learning: Evidence from the Economist Labor Market”

Paul Oyer

*Discussants:*

Hideo Owan (Aoyama Gakuin University)

Daiji Kawaguchi (Hitotsubashi University and TCER)

- [8] “An Economic Analysis of Platform Sharing”

Hodaka Morita (University of New South Wales)

Arghya Ghosh (University of New South Wales, co-author)

*Discussants:*

Reiko Aoki (Hitotsubashi University and TCER) et al.

## ■ International Conference on Efficient Alliance for Commercializing Upstream Inventions with a Focus on Co-inventions and Co-ownership

December 11, 2006 at Hitotsubashi Sano-Shoin Hall, Kunitachi, Tokyo

*Supported by Japan Patent Office (JPO)*

This conference was held, aiming at analyzing the efficient contract and institutional design for developing and commercializing upstream inventions. One focal issue was co-ownership of an invention.

### **Welcome**

Shinya Aramaki (JPO)

### **Session I: Empirical Analysis of Ownership and Inventor Structure of Upstream Inventions, and of the Alliance Contracts for their Development and Use**

*Chair: Hiroyuki Odagiri (Professor, Graduate School of Economics, Hitotsubashi University)*

- [1] “Structural Characteristics of Key Upstream Inventions: Co-inventions, Co-ownership and their Effects”

Sadao Nagaoka (Professor, IIR)

*Discussant:*

Tomohiko Koseki (Senior Manager of Legal Department, Toppan Printing Co., Ltd.)

- [2] “An Analysis of Industry-academia Collaborations and Intellectual Property Management Practices Based on a New Survey”

Tomohiro Ijichi (Associate Professor, IIR)

*Discussants:*

Koichi Sumikura (Associate Professor, National Graduate Institute for Policy Studies)

Masau Takayanagi (Intellectual Property Executive, Patent Attorney, Intellectual Property Department, Mitsubishi Pharma Corp.)

- [3] “Characteristics of Ex-ante Research Contracts between University and the US Life Science Industry”

Kenta Nakamura (Research Fellow, Japan Society for the Promotion of Science)

*Discussant:*

Sean O'Connor (Associate Professor, University of Washington School of Law, and Associate Director, Center for Advanced Study & Research on Intellectual Property)

### **Session II: A global Picture of Strategic Alliances and Lessons from the US Experiences**

*Chair: Reiko Aoki (Professor, Institute of Economic Research, Hitotsubashi University)*

- [4] “Alliance Formation in the Global Biotech-pharma Industries”

Dr. Hans-Werner Gottinger

*Discussant:*

Hiroshi Akimoto (Managing Director, Takeda Pharmaceutical Co., Ltd.)

- [5] “Patent Protection Scope for Upstream Inventions”

Toshiko Takenaka (Professor, University of Washington School of Law, and the Director, Center for Advanced Study & Research on Intellectual Property)

*Discussant:*

Mayumi Saito (Principal Examiner, Biotechnology Division/Examination Research Office, JPO)

- [6] “Issues in U.S. Tech Transfer Licenses, IPR Allocation, and Commercialization”

Sean O’Connor

*Discussant:*

Hideo Owan (Professor, Graduate School of International Management, Aoyama Gakuin University)

### **Session III: Efficient Contract and Institutional Design for Commercialization of Upstream Inventions**

*Chair: Sadao Nagaoka*

- [7] “Future of Industry and University Collaboration and IPRs”

Hajimu Morioka (Deputy Director, Intellectual Property Center, Ajinomoto Co., Inc.)

*Discussant:*

Reiko Aoki

- [8] “An Analysis of Legal Rules on Co-inventorship and Co-ownership, and its Implications”

Masabumi Suzuki (Professor, Graduate School of Law, Nagoya University)

*Discussant:*

Ryuta Hirashima (Associate Professor of Law, University of Tsukuba)

## ■ International Symposium on Japan's Competitiveness and Bio Technology Innovation

September 28, 2006 at Roppongi Academy Hills, Tokyo

*Organized by*  
IIR and Nihon Keizai Shimbun

*Supported by*  
Ministry of Education, Culture, Sports, Science and Technology, Japan  
Ministry of Health, Labour and Welfare, Japan  
Ministry of Economy, Trade and Industry, Japan

### **Opening Address**

Seiichiro Yonekura (Professor, IIR)

Takehiko Sugiyama (President, Hitotsubashi University)

### **Keynote Speech 1**

Scott Foraker (Vice President, Licensing, Amgen, Inc.)

“Amgen: Pioneer and Innovator in the Promise of Biotechnology”

### **Keynote Speech 2**

Kenichi Arai (Emeritus Professor, University of Tokyo)

“The Japanese Innovators who led the Pharmaceutical Innovation”

### **Keynote Speech 3**

Akira Endo (Head, Biopharm of Japan Corporation)

“The Development of Statin”

### **Panel Discussion 1: Japan's Potential as the Biotechnology Innovator**

Akira Endo

Yoshiaki Kodoi (Investment Manager, Mizuho Capital Co., Ltd.)

Makoto Shiragami (Professor, College of Pharmacy, Nihon University)

Hiroyuki Chuma (Professor, IIR)

Kenji Tsujimoto (Investment Senior Manager, Nomura Research & Advisory Co., Ltd.)

Gensuke Tokoro (President and CEO, aRigen Pharmaceuticals, Inc.)

Ei Yamada (President and CEO, AnGes MG, Inc.)

### **Panel Discussion 2: For the Future Solution of the Competitiveness**

Masaharu Ito (President, LIEVENCE)

Shunsuke Ono (Associate Professor, Graduate School of Pharmaceutical Sciences, University of Tokyo)

Koichi Kawabuchi (Professor, Tokyo Medical and Dental University)

Jin Shiomura (President, Nobelpharma, Co., Ltd.)

Yasuhiro Suzuki (Manager, R&D Promoting Division, Ministry of Health, Labour and Welfare, Japan)

Hidemaru Yamaguchi (Managing Director, Nikko Citygroup, Ltd.)

Seiichiro Yonekura

## 4. The Hiroshi Fujiwara Endowed Chair in Venture Finance

Objective	To promote research into venture finance in Japan, and to educate the future cadre of chief financial officers (CFOs) for venture businesses
Donator	Hiroshi Fujiwara, President and CEO, Internet Research Institute, Inc.
Period	April 2002 ~ March 2008
Chaired Professor	Shuzo Fujimura

In April 2002, the Hiroshi Fujiwara Endowed Chair in Venture Finance was established at the Institute of Innovation Research. This was made possible by the generous donation of Mr. Hiroshi Fujiwara, President and CEO of the Internet Research Institute, Inc. The primary objectives of the Chair are to promote research into venture finance in Japan, and to educate the future cadre of chief financial officers (CFOs) for venture businesses.

There is a pressing need in Japan to foster the establishment and growth of venture businesses, particularly in high technology fields. Such businesses are expected to be a source of dynamism and rejuvenation for the Japanese economy. However, the rate of start-ups and closures of small and medium sized enterprises has declined in recent years, and is only about one third of that of the United States. Moreover, it is recognized that the successful development of such venture firms is contingent on sound financial management, and hence there is a need to educate specialists in finance who can contribute to such firms.

Against this background, and from his own experience as the founder of a technology venture business, Mr. Fujiwara kindly donated to the foundation of the Chair as a means of encouraging the growth of venture firms for Japan's economic vitality. The Internet Research Institute, Inc., which Mr. Fujiwara founded with other executives in 1996, comprises computer network specialists from universities and internet access providers who design internet-based technology solutions and provide a range of consulting services. The company is listed on the Tokyo Stock Exchange's Mothers (market of the high-growth and emerging stocks) market, which was created for start-up firms in 1999.

In the United States, a number of new ventures which have achieved IPO status have donated some of their capital gains to universities as a means of disseminating knowledge. Stanford is perhaps the best known example because of its position in Silicon Valley. Likewise, the creation of this new Chair at the Institute of Innovation Research is an attempt to circulate timely knowledge in Japan on business creation, and is an important step in the collaboration between industry and the university.

### ■ Research Achievement

Summary Conference was held as below, and the achievement of the Hiroshi Fujiwara Endowed Chair in Venture Finance will be summarized in a forthcoming book from Toyokeizai. IIR believes it would be a great contribution to the study of venture finance.

## ■ Summary Conference of the Hiroshi Fujiwara Endowed Chair in Venture Finance

March 10, 2008 at Sano-Shoin Hall, Kunitachi, Tokyo

### **Opening Address**

Seiichiro Yonekura (Professor, IIR)

### **Keynote Speech**

Hiroshi Fujiwara (President and CEO, Internet Research Institute, Inc.)

“Industrial Revolution and the Role of Entrepreneur”

### **The Achievement of the Hiroshi Fujiwara Endowed Chair in Venture Finance**

Shuzo Fujiwara (Visiting Professor, IIR)

### **Panel Discussion: Past, Present, and Future of the Japanese Venture Finance**

Hiroshi Fujiwara

Hiroshi Uchikoga (CEO, Visionare Corporation)

Tomoyasu Oba (President, i's Factory Co., Ltd.)


Yoichiro Hirano (President and CEO, Infoteria Corporation)

Kazutaka Muraguchi (General Partner, Nippon Technology Venture Partners, Ltd.)

*Moderator: Shuzo Fujimura*

### **Closing Remarks**

Sadao Nagaoka (Director and Professor, IIR)



## II. Researchers

R

Hitotsubashi University  
Institute of Innovation Research

I

# 1. Full-time Researchers

Profiles & List of Research Achievements — Apr. 2006 ~ Sep. 2008



**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

- 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

Aoshima, Yaichi, ed., *Misled Companies / Straying Education: A Lost Decade of Human Resource Development*, Tokyo: Toshindo, August 2008, 196 pages (in Japanese)

#### 1.2. Articles

Aoshima, Yaichi, “Mobility of R&D Workers and Technological Performance,” *Japan Labor Review*, Japan Institute for Labour Policy and Training, Vol. 5, No. 3, July 2008, pp. 33-60

(In Japanese)

Takeishi, Akira, Yaichi Aoshima and Masaru Karube, “Reasons for Innovation: Legitimizing Resource Mobilization for Innovation in the Case of Okochi Memorial Prize Winners,” *Organizational Science*, Vol. 42, No. 1, September 2008, pp. 4-14

Aoshima, Yaichi, Jinwei Zhu, Ng Shuk Yee Sally, “Business Case / Wuxi Little Swan Co., Ltd.: Development and Pitfalls of China’s Home Appliances Makers,” *Hitotsubashi Business Review*, Vol. 56, No. 1, June 2008, pp. 128-145

Aoshima, Yaichi and Ken Kusunoki, “Innovation as System Re-definition,” *Hitotsubashi Business Review*, Vol. 55, No. 4, March 2008, pp. 58-77

Takeishi, Akira, Yaichi Aoshima and Masaru Karube, “Reasons for Innovation: Legitimizing Resource Mobilization for Innovation in the Case of Okochi Memorial Prize Winners,” *Hitotsubashi Business Review*, Vol. 55, No. 4, March 2008, pp. 22-39

Aoshima, Yaichi and Osamu Suzuki, “Business Case / Sony: Contactless IC Card Technology ‘FeLica’,” *Hitotsubashi Business Review*, Vol. 55, No. 4, March 2008, pp. 108-127

Takeishi, Akira and Yaichi Aoshima, “A Product within a System: Architectural Innovation in Manufacturing Industries,” *Organizational Science*, Vol. 40, No. 4, June 2007, pp. 29-39



### 1.3. Others

- Aoshima, Yaichi, “Distress & Prospects for Japan’s Electronics Industry,” *Japan Spotlight*, Japan Economic Foundation, Vol. 27, No. 5, Sep-Oct 2008, pp. 13-15
- Burgelman, Robert A. et al.; Aoshima, Yaichi et al., tr. supervised, *Strategic Management of Technology and Innovation*, 2 vols., Tokyo: Shoeisha, July 2007 (in Japanese)

## 2. Unpublished Work

### 2.1. Working Papers

- Takeishi, Akira, Yaichi Aoshima and Masaru Karube, “Reasons for Innovation: Legitimizing Resource Mobilization for Innovation in the Case of Okochi Memorial Prize Winners,” IIR Working Paper WP#07-10, November 2007
- Gavetti, Giovanni, Yaichi Aoshima and Mary P. Tripsas, “Fujifilm: A Second Foundation,” Harvard Business School Cases #807137, March 7, 2007  
(In Japanese)
- Aoshima, Yaichi and Makoto Kitamura, “Seiko Epson: Development of an Ink Jet Printer that Produces High Resolution Text and Pictorial Images,” IIR Case Study CASE#08-03, May 2008
- Aoshima, Yaichi, “Hitachi: Development of Direct On-chip Wiring Formation System for LSIs,” IIR Case Study CASE#07-06, September 2007
- Aoshima, Yaichi and Osamu Suzuki, “Sony: FeliCa (A); Issues in Business Incubation and Technological Development,” IIR Case Study CASE#07-02, July 2007
- Suzuki, Osamu and Yaichi Aoshima, “Sony: FeliCa (B); Business Model Development,” IIR Case Study CASE#07-03, July 2007
- Karube, Masaru, Akira Takeishi and Yaichi Aoshima, “Legitimizing Resource Mobilization for Innovation: Preliminary Findings,” IIR Working Paper WP#07-05, March 2007

## 3. Conference Papers, Presentations

- Aoshima, Yaichi, “The ‘Performance Illusion’ that Deters Commoditization: The Case of the Digital Still Camera Industry,” presented at the Mitsubishi UFJ Foundation International Conference, August 26-28, 2008, Mishima, Japan
- Takeishi, Akira and Yaichi Aoshima, “Legitimizing Resource Mobilization for Innovation: The Case of Okochi Award Winners,” presented at the International Conference on Dynamics of Knowledge, Corporate System and Innovation, Hitotsubashi University 21st Century COE Program, December 14-16, 2007, Nagano, Japan
- Aoshima, Yaichi and Ken Kusunoki, “Redefining Innovation as System Re-definition,” presented at the International Conference on Dynamics of Knowledge, Corporate System and Innovation, Hitotsubashi University 21st Century COE Program, December 14-16, 2007, Nagano, Japan
- Aoshima, Yaichi, “Evolution of Digital Still Camera Industry and Firm Competitiveness,” presented at the IEEE Computer Workshop, June 2007, Vail, Colorado
- Aoshima, Yaichi, “Technology and Competition in the Digital Still Camera Industry,” presented at the IIR Decennial International Symposium on Frontiers of Innovation Research: Towards an Internationally Competitive Nation, March 4-5, 2007, Tokyo

Takeishi, Akira and Yaichi Aoshima, “Reasons for Innovation: Legitimizing Resource Mobilization for Innovation in the Case of Okochi Memorial Prize Winners,” presented at the Center for Japanese Business Studies Forum, Graduate School of Commerce and Management, Hitotsubashi University, November 1, 2006, Tokyo

Takeishi, Akira, Masaru Karube and Yaichi Aoshima, “Legitimization under Uncertainty in the Cases of Okochi Award Winners,” presented at the Conference of the Academic Association for Organizational Science, Japan, June 10-11, 2006, Tokyo



## Hiroyuki Chuma

### ■ Education

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

### ■ Professional Positions

- 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
- 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
- 1975 Taisei Corporation (~1978)

### ■ Research Achievements

#### 1. Publications

##### 1.1. Articles

Chuma, Hiroyuki, “Increasing Complexity and Limits of Organization in the Microlithography Industry: Implications for Science-based Industries,” *Research Policy*, Vol. 35, No. 3, April 2006, pp. 394-411

(In Japanese)

Chuma, Hiroyuki, “Implications of ‘The Innovation Process Survey in the Science-based Industries’,” *Journal of IEICE*, The Institute of Electronics, Information and Communication Engineers, Vol. 91, No. 9, September 2008, pp. 798-803

Chuma, Hiroyuki, “Implication of Innovation Process Survey for Japan Society of Applied Physics (JSAP),” *Oyo Butsuri* (A Monthly Publication of JSAP), Vol. 77, No. 7, July 2008, pp. 787-793

Chuma, Hiroyuki and Daiji Kawaguchi, “Does the Production-information System Introduce the Increase of Non-standard Employment?,” *Hitotsubashi Business Review*, Vol. 55, No. 3, December 2007, pp. 66-83

Chuma, Hiroyuki, “Active Introduction of Production-contracted Workers and the Manufacturing Performance: Quality, Costs, Production Leadtime, and Inventories,” *Hitotsubashi Review of Commerce and Management*, Vol. 2, No. 2, November 2007, pp. 19-34

Chuma, Hiroyuki and Norikazu Hashimoto, “Why Did Japanese Chipmakers Fail in their DRAM Business?: Verification of Root Causes (1), (2),” *Nikkei Microdevices*, (1) March 2007, pp. 41-47; (2) April 2007, pp. 43-50

- Chuma, Hiroyuki, "Search for the Factors of Weakening Competitiveness in Japanese Semiconductor Manufacturing Systems: From the View Point of Papert's Principle," *Cognitive Science*, Japanese Cognitive Science Society, Vol. 14, No. 1, March 2007, pp. 39-59
- Chuma, Hiroyuki and Norikazu Hashimoto, "Complexity and Limits of Organization Induced by Moore's Law: Modern Significance of Up-and-Down in DRAM Business," *Hitotsubashi Business Review*, Vol. 54, No. 4, March 2007, pp. 22-45
- Chuma, Hiroyuki, "(Editorial) New Era for Science Innovation," *Hitotsubashi Business Review*, Vol. 54, No. 4, March 2007, pp. 4-5
- Chuma, Hiroyuki, "Root Causes of the Weakening Competitiveness in Japanese Semiconductor Manufacturing Systems: Lagging behind in Visualization," *Nikkei Microdevices*, May 2006, pp. 43-49

## 2. Unpublished Work

### 2.1. Working Papers

- Chuma, Hiroyuki and Norikazu Hashimoto, "Moore's Law, Increasing Complexity and Limits of Organization: The Modern Significance of Japanese Chipmakers' DRAM Business," RIETI Discussion Paper Series 08-E-001, Research Institute of Economy, Trade and Industry, January 2008
- Chuma, Hiroyuki and Norikazu Hashimoto, "Moore's Law, Increasing Complexity and Limits of Organization: Modern Significance of Japanese DRAM ERA," NISTEP Discussion Paper No. 44, National Institute of Science and Technology Policy, March 2007
- Chuma, Hiroyuki et al., "Information Sharing in Joint Research and Development," RIETI Discussion Paper 07-E-019, Research Institute of Economy, Trade and Industry, March 2007
- (In Japanese)
- Chuma, Hiroyuki, "Innovation Survey on Science-based Industry I: Research Report of the Questionnaire Survey at the Japan Society of Applied Physics," NISTEP Report No. 145, National Institute of Science and Technology Policy, September 2007
- Chuma, Hiroyuki, "Innovation Survey on Science-based Industry II: Research Report of the Questionnaire Survey at the Electronics Society of the Institute of Electronics, Information and Communication Engineers," NISTEP Report No. 146, National Institute of Science and Technology Policy, September 2007
- Chuma, Hiroyuki et al., "Information Sharing in Joint Research and Development," RIETI Discussion Paper 07-J-013, Research Institute of Economy, Trade and Industry, March 2007
- Chuma, Hiroyuki, "Search for the Factors of Weakening Competitiveness in Japanese Semiconductor Manufacturing Systems: From the View Point of Meta-Integrated Skills," RIETI Discussion Paper 06-J-043, Research Institute of Economy, Trade and Industry, May 2006

### 3. Conference Papers, Presentations

Chuma, Hiroyuki, “Production System Architecture in View of Visualization & Intrinsic Motivation” (Invited Speech), SEMICON Japan 2007, SEMI Technology Symposium (STS) Session 5: Manufacturing Science, December 6, 2007, Chiba, Japan

Chuma, Hiroyuki, “Moore’s Law, Increasing Complexity and Limits of Organization: Modern Significance of Japanese DRAM ERA,” presented at the International Conference on Dynamics of Knowledge, Corporate System and Innovation, Hitotsubashi University 21st Century COE Program, December 14-16, 2007, Nagano, Japan

Chuma, Hiroyuki, “Implication of Innovation Process Survey for Japan Society of Applied Physics (JSAP),” presented at the JSAP Autumn Meeting, September 2007, Hokkaido, Japan

Chuma, Hiroyuki, “Moore’s Law, Increasing Complexity and Limits of Organization: Modern Implications of Japanese DRAM ERA,” presented at the IIR Decennial International Symposium on Frontiers of Innovation Research: Towards an Internationally Competitive Nation, March 4-5, 2007, Tokyo

Chuma, Hiroyuki, “Moore’s Law, Increasing Complexity and Limits of Organization,” presented at the NISTEP International Conference on Development of Semiconductor Industry and Innovation, National Institute of Science and Technology, Ministry of Education, Culture, Sports, Science and Technology, February 8, 2007, Tokyo



**Jeffrey L. Funk**

## ■ Education

- 1984 Ph.D. (Engineering and Public Policy), and M.S. (Mechanical Engineering/Engineering and Public Policy), Carnegie Mellon University
- 1978 B.S. (Physics), California Polytechnic State University

## ■ Professional Positions

- 2007~ Associate Professor, National University of Singapore
- 2003 Professor, Institute of Innovation Research, Hitotsubashi University
- 1996 Associate Professor, Research Institute for Economics and Business Administration, and Graduate School of Business Administration, Kobe University
- 1995 Visiting Scholar, University of Michigan
- 1991 Assistant Professor of Business, Pennsylvania State University
- 1985 Westinghouse
- 1978 Hughes Aircraft Co.

## ■ Research Achievements

### 1. Publications

#### 1.1. Articles

- Funk, Jeffrey, "Mobile Shopping: Visions from Japan," *Technological Forecasting and Social Change*, Vol. 74, No. 3, March 2007, pp. 341-356
- Funk, Jeffrey, "Solving the Startup Problem in Western Mobile Internet Markets," *Telecommunications Policy*, Vol. 14, No. 1, February 2007, pp. 14-30
- Funk, Jeffrey, "Technological Change within Hierarchies: The Case of the Music Industry," *Economics of Innovation and New Technology*, Vol. 16, No. 1, January 2007, pp. 1-16
- Funk, Jeffrey, "The Future of Mobile Phone-based Intranet Applications: A View from Japan," *Technovation*, Vol. 26, No. 12, December 2006, pp. 1337-1346

### 2. Conference Papers, Presentations

- Funk, Jeffrey, "Vertical Disintegration and Industry Evolution: The Case of Information Technology," presented at the Academy of Management, August 3-8, 2007, Philadelphia, PA
- Funk, Jeffrey, "Vertical Disintegration and Entrepreneurship: The Case of Broadcasting," presented at the Academy of Management (accepted for best paper proceedings), August 3-8, 2007, Philadelphia, PA
- Funk, Jeffrey, "Technological Discontinuities and Vertical Disintegration: Case of IT Industry in North America," presented at the IIR Decennial International Symposium on Frontiers of Innovation Research: Towards an Internationally Competitive Nation, March 4-5, 2007, Tokyo

- Funk, Jeffrey, "Technological Change within Hierarchies: The Cases of the Semiconductor and Computer Sectors," presented at the Academy of Management Asia, December 19-21, 2006, Tokyo
- Funk, Jeffrey, "The Sources and Timing of Technological Discontinuities: The Case of the Semiconductor Industry," presented at the Strategic Management Society Meeting, October 29-November 1, 2006, Vienna, Austria
- Funk, Jeffrey, "Technological Change and Methods of Standard Setting in the Mobile Phone Industry," presented at the Strategic Management Society Meeting, October 29-November 1, 2006, Vienna, Austria
- Funk, Jeffrey, "New Industry Formation, Inverse Demand Curves and the Rewiring of Networks," presented at the Academy of Management, August 14-16, 2006, Atlanta, GA
- Funk, Jeffrey, "The Sources and Timing of Technological Discontinuities and Dominant Designs," presented at the Academy of Management, August 14-16, 2006, Atlanta, GA
- Funk, Jeffrey, "Technological Change within Nested Hierarchies: The Case of the Information Technology Sector," presented at the Academy of Management, August 14-16, 2006, Atlanta, GA
- Funk, Jeffrey, "Technological Change within Hierarchies: The Case of the Computer Sector," presented at the 11th International J.A. Schumpeter Society (ISS) Conference on Innovation, Competition and Growth: Schumpeterian Perspectives, June 21-24, 2006, Nice-Sophia-Antipolis



Tomohiro Ijichi

## ■ Education

- 1994 Ph.D. (General Systems Studies - R&D Management), Graduate School of International and Interdisciplinary Studies, The University of Tokyo
- 1989 M.A. (General Systems Studies - R&D Management), Graduate School of International and Interdisciplinary Studies, The University of Tokyo
- 1987 B.Sc. (Mathematics), Faculty of Science, The University of Tokyo

## ■ Professional Positions

- 2007~ Professor, Faculty of Social Innovation, Seijo University
- 2004 Associate Professor, Institute of Innovation Research, Hitotsubashi University
- 2001 Senior Research Fellow, National Institute of Science and Technology Policy, Ministry of Education, Culture, Sports, Science and Technology
- 1998 Research Fellow, National Institute of Science and Technology Policy, Ministry of Education, Culture, Sports, Science and Technology
- 1997 Senior Researcher, Institute for Policy Sciences
- 1994 National Institute Post-doctoral Fellow, National Institute of Science and Technology Policy, Science and Technology Agency

## ■ Research Achievements

### 1. Publications

#### 1.1. Articles

- Ijichi, Tomohiro, "Introduction to the Special Issue: Policy Analysis of the Science and Technology Basic Plans," *The Journal of Science Policy and Research Management*, The Japan Society for Science Policy and Research Management, Vol. 21, No. 1, 2006, pp. 4-7 (in Japanese)
- Ijichi, Tomohiro, "Towards an Enhanced Expert-supported Policy System: Past, Present and Future Activities of the Science, Technology and Innovation Policy Group," *The Journal of Science Policy and Research Management*, The Japan Society for Science Policy and Research Management, Vol. 20, No. 4, 2005, pp. 265-273 (in Japanese)

### 2. Unpublished Work

#### 2.1. Working Papers

- Ijichi, Tomohiro and Sadao Nagaoka, "Management of IPRs for Upstream Research Inventions in Universities and National R&D Institutes in Japan," IIR, March 2007 (in Japanese)
- Ijichi, Tomohiro, "How Innovation Is Realised by Firms in Japan: Findings from Statistical Survey Data and a Suggestion for Science-based Industry," Discussion Paper Series #07-09, Corporate Innovation System Renaissance Project, National Institute of Advanced Industrial Science and Technology, February 2007 (in Japanese)
- Ijichi, Tomohiro and Hiroyuki Odagiri, "A Comparative Study of the Japanese Pharmaceutical Industry with the National Innovation Survey Data," Discussion Paper No. 43, National Institute of Science and Technology Policy, Ministry of Education, Culture, Sports, Science and Technology, November 2006 (in Japanese)



## 2.2. Research Reports

Report of the “Preliminary Study on the Measurement of Innovation,” Study Conducted by the Special Coordination Funds for Promoting Science and Technology in FY2006, Contribution of “2.3.2. Statistical Observation of Innovation Activities,” National Institute of Science and Technology Policy, Ministry of Education, Culture, Sports, Science and Technology, March 2007 (in Japanese)

Report of the “Study on Effective Creation and Transfer of Upstream Research Inventions: A Focus on Jointly Owned Patent Rights,” Report of a Study in the “University Research Projects on Intellectual Property Rights,” Research Program Supported by the Japan Patent Office in FY2006 (Principal Investigator: Sadao Nagaoka), Contribution of Chapter 2, March 2007 (in Japanese)

## 3. Conference Papers, Presentations

Ijichi, Tomohiro, “Industry-academia Collaborations and Intellectual Property Right System in Japan,” presented at the IIR Decennial International Symposium on Frontiers of Innovation Research: Towards an Internationally Competitive Nation, March 4-5, 2007, Tokyo

Ijichi, Tomohiro, “Measuring Non-technological Innovation: Experience from the Japanese Innovation Survey,” presented at the 32nd CEIES Seminar, February 5-6, 2007, Aarhus, Denmark

Ijichi, Tomohiro, “An Analysis of Industry-academia Collaborations and Intellectual Property Management Practices Based on a New Survey,” presented at the International Conference on Efficient Alliance for Commercializing Upstream Inventions with a Focus on Co-inventions and Co-ownership, December 11, 2006, Tokyo

Ijichi, Tomohiro, “Innovation and Patenting Activities of the Private Firms in Japan: An Analysis Based on the Results from the Japanese National Innovation Survey 2003 (J-NIS 2003) and Patent Data,” presented at the 21st Annual Meeting of the Japan Society for Science Policy and Research Management, October 21-22, 2006, Sendai, Japan

Ijichi, Tomohiro, “Science-based Innovation in Japan: An Assessment of the Current State Revealed by the Results from the Japanese National Innovation Survey 2003 (J-NIS 2003) and Other Relevant Data,” presented at the Symposium on Science-based Innovation: Japanese Current Status and Challenge, Corporate Innovation System Renaissance Project, National Institute of Advanced Industrial Science and Technology, October 13, 2006, 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. Books

- Numagami Tsuyoshi, Masaru Karube, Toshihiko Kato, Kazuhiro Tanaka and Minoru Shimamoto, *Organizational weights*, Tokyo: Nihon Keizai Shimbun, August 2007 (in Japanese)

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

(In Japanese)

- Takeishi, Akira, Yaichi Aoshima and Masaru Karube “Reasons for Innovation: Legitimizing Resource Mobilization for Innovation in the Case of Okochi Memorial Prize Winners,” *Organizational Science*, Vol. 42, No. 1, September 2008, pp. 4-14
- Kato, Toshihiko, Tsuyoshi Numagami and Masaru Karube, “Construct Validity of Organizational Deadweight: Findings from Second Survey,” in Center for Japanese Business Studies, Hitotsubashi University, ed., *Frontier of Japanese Business Studies*, Tokyo: Yuhikaku, March 2008, Chap. 7, pp. 130-155
- Takeishi, Akira, Yaichi Aoshima and Masaru Karube “Reasons for Innovation: Legitimizing Resource Mobilization for Innovation in the Case of Okochi Memorial Prize Winners,” *Hitotsubashi Business Review*, Vol. 55, No. 4, March 2008, pp. 22-39
- Kato, Toshihiko, Tsuyoshi Numagami and Masaru Karube, “Exploring Relationship between Organizational Structure and ‘Organizational Deadweight’: An Analysis of the Second Survey,” *Hitotsubashi Business Review*, Vol. 55, No. 4, March 2008, pp. 40-57
- Hirano, Saw and Masaru Karube, “Business Case / JFE Steel: Innovation of Revamping Technique of Large Scale Blast Furnance,” *Hitotsubashi Business Review*, Vol. 55, No. 2, September 2007, pp. 128-147
- Numagami, Tsuyoshi, Masaru Karube, Toshihiko Kato et al., “Intra-organizational Network and Organizational Deadweight,” *Annual Report of the Economic Society, Tohoku University*, Vol. 68, No. 4, March 2007, pp. 621-634

- Numagami, Tsuyoshi, Masaru Karube, Kazuhiro Tanaka, Minoru Shimamoto, Toshihiko Kato and Fumihiko Ikuine, "Operationalizing Organizational Weight," *Hitotsubashi Review of Commerce and Management*, Vol. 1, No. 1, May 2006, pp. 4-22
- Numagami, Tsuyoshi, Masaru Karube, Kazuhiro Tanaka, Minoru Shimamoto, Toshihiko Kato and Fumihiko Ikuine, "Organizational Deadweight and its Characteristics: Measurement of Organizational Deterioration," *Organizational Science*, Vol. 39, No. 4, 2006, pp. 12-26

## 2. Unpublished Work

### 2.1. Working Papers

- Takeishi, Akira, Yaichi Aoshima and Masaru Karube, "Reasons for Innovation: Legitimizing Resource Mobilization for Innovation in the Case of Okochi Memorial Prize Winners," IIR Working Paper WP#07-10, November 2007

(In Japanese)

- Karube, Masaru, "Top Management and Diversification Behaviors in Japanese Firms," Research and Statistics Department, Economic and Industrial Policy Bureau, Ministry of Economy, Trade and Industry, Japan (METI), June 2007

- Karube, Masaru, "Top Management among Japanese Firms: Resent Trend in Functional Characteristics and CEO Turnover," IIR Working Paper WP#07-08, April 2007

- Karube, Masaru, Akira Takeishi and Yaichi Aoshima, "Legitimizing Resource Mobilization for Innovation: Preliminary Findings," IIR Working Paper WP#07-05, March 2007

### 2.2. Research Reports

- Karube, Masaru, "Diversification and Organizational Structure: Findings from Japanese Firms in the 1990s," in Research and Statistics Department, Economic and Industrial Policy Bureau, METI, ed., "Research Report on Panel Data Survey of Japanese Firms in Diversification and Performance," April 2006, pp. 139-166 (in Japanese)

## 3. Conference Papers, Presentations

- Karube, Masaru, Tsuyoshi Numagami and Toshihiko Kato, "'Organizational Deadweight' as a Source of Organizational Dysfunction," presented at the 2008 Academy of Management Annual Meeting, 'The Questions We Ask', August 8-13, 2008, Anaheim, CA, USA

- Karube, Masaru, "Exploring Organizational Deterioration: 'Organizational Deadweight' as a Source of Dysfunction of Emergent Strategy in Japanese Firms," presented at the Wharton Entrepreneurial Program Visiting Scholar Seminar, October 2007, Philadelphia, USA

- Karube, Masaru, "When and How Does Market Share Matter? Exploring the Relationship between Market Share and Profitability," presented at the Wharton Entrepreneurial Program Visiting Scholar Seminar, September 2007, Philadelphia, USA

- Karube, Masaru, "Road to the CEO among Japanese Firms: A Preliminary Findings," presented at the Seminar, Sol. C. Snider Center, University of Pennsylvania, March 2, 2007, Philadelphia, USA

Takeishi, Akira, Masaru Karube and Yaichi Aoshima, “Legitimization under Uncertainty in the Cases of Okochi Award Winners,” presented at the Conference of the Academic Association for Organizational Science, Japan, June 10-11, 2006, Tokyo



## 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. Articles and Chapters in Books

- Nagaoka, Sadao, “Does Strong Patent Protection Facilitate International Technology Transfer?: Some Evidence from Licensing Contracts of Japanese Firms,” *Journal of Technology Transfer*, forthcoming 2008
- Nagaoka, Sadao, Akira Takeishi and Yoshihisa Noro, “Determinants of Firm Boundaries: Empirical Analysis of the Japanese Auto Industry from 1984 to 2002,” *Journal of the Japanese and International Economies*, Vol. 22, No. 2, June 2008, pp. 187-206
- “Assessing the R&D Management of Firms in Terms of Speed and Science Linkage: Evidence from the US Patents,” *Journal of Economics and Management Strategy*, Vol. 16, No. 1, Spring 2007, pp. 129-156
- Nagaoka, Sadao and Hyeog Ug Kwon, “The Incidence of Cross-licensing: A Theory and New Evidence on the Firm and Contract Level Determinants,” *Research Policy*, Vol. 35, No. 9, November 2006, pp. 1347-1361
- Nagaoka, Sadao, “R&D and Market Value of Japanese Firms in the 1990s,” *Journal of the Japanese and International Economies*, Vol. 20, No. 2, June 2006, pp. 155-176
- (In Japanese)
- Nagaoka, Sadao and Yoshimasa Komoriya, “Direct Investments by Japanese Firms in China and Korea: Motivations, Regulations and Performance,” in Abe, Kazutomo, Shujiro Urata and NEDO, eds., *China-Japan-Korea FTA*, Tokyo: Nihon Keizai Hyoron, February 2008, Chap. 3, pp. 51-77
- Nagaoka, Sadao, “What Does Economics Say of the Regulation of Monopolization?: Focusing on the Profit Sacrifice Doctrine,” *The Annual of the Japan Association of Economic Law*, No. 50, 2007, pp. 92-105

Nagaoka, Sadao and Yoichiro Nishimura, "Acquisition and Use of Domestic and Foreign Patents by Japanese Firms: An Empirical Analysis," in Institute of Intellectual Property, ed., *Managerial and Economic Analysis of Patents*, Tokyo: Yushodo, March 2007, Chap. 1, pp. 15-37

Yamauchi, Isamu and Sadao Nagaoka, "Economic analysis of examination request system," in Institute of Intellectual Property, ed., *Managerial and Economic Analysis of Patents*, Tokyo: Yushodo, March 2007, Chap. 14, pp. 373-407

Nagaoka, Sadao and Yoichiro Nishimura, "Empirical Analysis for Japanese Firms on Compensation System for Employee's Inventions: Incentive Hypothesis versus Regulation Hypothesis," *Nihonchizaigakkaishi* (Journal of Intellectual Property Association of Japan), Vol. 3, No. 3, March 2007, pp. 31-45

## 1.2. Others

Nagaoka, Sadao, "Inventors & Invention Process in Japan: Some Implications on R&D Governance," *Japan Spotlight*, Japan Economic Foundation, Vol. 27, No. 3, May/June 2008, pp. 14-16

## 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," NBER Working Paper No. 13063, April 2007

Nagaoka, Sadao, Tomoyuki Shimbo and Naotoshi Tsukada, "The Structure and the Evolution of Essential Patents for Standards: Lessons from Three IT Standards," IIR Working Paper WP#06-08, September 2006

Nagaoka, Sadao and Reiko Aoki, "Economics of Research Exemption," IIR Working Paper WP#06-04, April 2006

(In Japanese)

Nagaoka, Sadao and Naotoshi Tsukada, "Innovation Process in Japan from Inventors' Perspective: Results of RIETI Inventor Survey," RIETI Discussion Paper 07-J-046, Research Institute of Economy Trade and Industry, November 2007

Ijichi, Tomohiro and Sadao Nagaoka, "Management of IPRs for Upstream Research Inventions in Universities and National R&D Institutes in Japan," IIR, March 2007

### 2.2. Research Reports

"Study on Effective Creation and Transfer of Upstream Research Inventions: A Focus on Jointly Owned Patent Rights," Report of a Study in the "University Research Projects on Intellectual Property Rights," Research Program Supported by the Japan Patent Office in FY2006 (Principal Investigator: Sadao Nagaoka), March 2007 (in Japanese)

"Multiparty Licence and Competitive Strategy," Fair Trade Commission (FTC) Competition Policy Research Center, December 2006 (Research Project Leader: Sadao Nagaoka, in Japanese)

### 3. Conference Papers, Presentations

- Nagaoka, Sadao and Bronwyn H. Hall, “Diversification and R&D Performance,” presented at the International Conference on R&D and Firm Performance, March 22, 2008, Kunitachi, Tokyo
- Nagaoka, Sadao, “Main Findings from Inventors Survey (1): Commercialization of R&D Results,” presented at the Research Institute of Economy, Trade and Industry (RIETI) Policy Symposium on Innovation Process and Performance: Findings and Lessons from Inventors Surveys in Japan, the U.S., and Europe, January 11, 2008, Tokyo
- Nagaoka, Sadao, “Recent Challenges to the Patent System in Japan,” presented at the 5th Shanghai International IP Forum on the Impact of WTO TRIPS Agreement on the Economic Development of Asian Countries, jointly organized by Shanghai Intellectual Property Administration (SIPA), Munich Intellectual Property Law Center (MIPLC), Tongji University, Shanghai and Stanford University Law School, October 26-27, 2007, Shanghai
- Nagaoka, Sadao, “Economic Analysis of Patent Law Exemption for Research on a Patented Innovation,” presented at the International Workshop on Market for Technology and Digital Products, September 12, 2007, IIR
- Nagaoka, Sadao and Reiko Aoki, “Economic Analysis of Patent Law Exemption for Research on a Patented Innovation,” presented at the EEA/ESEM Joint Meeting (22nd Annual Congress of the European Economic Association (EEA) and 62nd European Meeting of the Econometric Society (ESEM)), August 27-31, 2007, Budapest
- Nagaoka, Sadao, “An Empirical Assessment of the Effects of Patent Thickets” (Keynote Speech), The 96th International Conference on Patent & Innovation: Economic Studies, Applied Econometric Association, June 28-29, 2007, Strasbourg
- Nagaoka, Sadao and Naotoshi Tsukada, “Whether and How International Research Collaboration Enhance Research Productivity?,” presented at the International Workshop on Management of Foreign R&D: Experiences and Lessons from Japanese and German Multinationals, IIR and Mercator School of Management, Duisburg-Essen University (Germany), March 10, 2007, Tokyo
- Nagaoka, Sadao, “Competition and Collaboration in Innovation,” presented at the IIR Decennial International Symposium on Frontiers of Innovation Research: Towards an Internationally Competitive Nation, March 4-5, 2007, Tokyo
- Takeishi, Akira and Sadao Nagaoka and Yoshihisa Noro, “Determinants of Firm Boundaries: Empirical Analysis of the Japanese Auto Industry from 1984 to 2002,” presented at the 20th Annual TRIO Conference on Organizational Innovation and Firm Performance, supported by NBER-CEPR-TCER and Hitotsubashi University, December 15-16, 2006, Tokyo (with Yoshihisa Noro)
- Nagaoka, Sadao, “Structural Characteristics of Key Upstream Inventions: Co-inventions, Co-ownership and their Effects,” presented at the International Conference on Efficient Alliance for Commercializing Upstream Inventions with a Focus on Co-inventions and Co-ownership, December 11, 2006, Kunitachi, Tokyo
- Nagaoka, Sadao and Koichiro Nishimura, “An Empirical Assessment of the Effects of Patent Thickets,” presented at the Science & Technology Policy Research, University of Sussex (SPRU) 40th Anniversary Conference on the Future of Science, Technology and Innovation Policy: Linking Research and Practice, September 11-13, 2006, Sussex

Nagaoka, Sadao, “Assessing the Relatedness of Corporate Diversification of Japanese Manufacturing Firms,” presented at the 2006 Intermediate Input-Output Meetings on Sustainability, Trade and Productivity, International Input-Output Association (IIOA), July 26-28, 2006, Sendai, Japan

Nagaoka, Sadao, Tomoyuki Shimbo and Naotoshi Tsukada, “The Emergence and Structure of Essential Patents for Standards,” presented at the 11th International J.A. Schumpeter Society (ISS) Conference on Innovation, Competition and Growth: Schumpeterian Perspectives, June 21-24, 2006, Nice-Sophia-Antipolis

Nagaoka, Sadao, “An Empirical Analysis of Patenting and Licensing Practices of Research Tools from Three Perspectives,” presented at the Conference on Research Use of Patented Inventions, organized by the Spanish National Research Council, the Spanish Patent and Trademark Office and the OECD, May 18-19, 2006, Madrid





## 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

- 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

- Nishiguchi, Toshihiro, *Global Neighborhoods: Strategies of Successful Organizational Networks*, Tokyo: NTT Shuppan, January 2007, 486 pages (in Japanese); Second print, January 2008
- Nishiguchi, Toshihiro, *Strategic Industrial Sourcing: The Japanese Advantage* (Chinese Version of *Strategic Industrial Sourcing*, Tokyo: University of Tokyo Press, 2000 (in Japanese), translated by Fan, Jian Ting), Shanghai: Shanghai University of Finance and Economics Press, April 2007, 443 pages

##### 1.2. Articles

- Nishiguchi, Toshihiro, “An Invitation to Network Thinking (1)-(8),” *Hitotsubashi Business Review* (in Japanese)
- (1) Network Theory, Vol. 54, No. 1, June 2006, pp. 98-109
- (2) Topology, Vol. 54, No. 2, September 2006, pp. 120-132
- (3) Small World, Vol. 54, No. 3, December 2006, pp. 100-111
- (4) Social Capital, Vol. 54, No. 4, March 2007, pp. 118-131
- (5) Social Network, Vol. 55, No. 1, June 2007, pp. 82-94
- (6) Social Systems, Vol. 55, No. 2, September 2007, pp. 98-109
- (7) Social-system Cycles, Vol. 55, No. 3, December 2007, pp. 104-115
- (8) Lifestyles, Vol. 55, No. 4, March 2008, pp. 98-107

## **2. Unpublished Work**

### **2.1. Research Reports**

“An Exploratory Study of New Models of Defense Procurement,” Defense Procurement Structure Improvement Foundation, 2008 (Research Project Leader: Toshihiro Nishiguchi, in Japanese)

“An International Comparative Study of Acquisitions of Defense Contractors by Foreign Capital,” Defense Procurement Structure Improvement Foundation, 2008 (Research Project Leader: Toshihiro Nishiguchi, in Japanese)

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

Nishiguchi, Toshihiro, “Global Neighborhoods: Strategies of Successful Organizational Networks,” presented at the Seminar, Information Processing Society of Japan, March 10, 2007, Kyoto

Nishiguchi, Toshihiro, “Global Neighborhoods: Strategies of Successful Organizational Networks,” presented at the Seminar, Academic Association for Organizational Science, Japan, July 20, 2007, Tokyo

Nishiguchi, Toshihiro, “Global Neighborhoods: Strategies of Successful Organizational Networks,” presented at the IIR Decennial International Symposium on Frontiers of Innovation Research: Towards an Internationally Competitive Nation, March 5, 2007, Tokyo



## Akira Takeishi

### ■ Education

- 1998 Ph.D. (Management), Sloan School of Management, Massachusetts Institute of Technology
- 1990 M.S. (Management), Sloan School of Management, Massachusetts Institute of Technology
- 1982 B.A. (International Relations), The University of Tokyo

### ■ Professional Positions

- 2008~ Professor, Graduate School of Economics, Kyoto University
- 2003 Professor, Institute of Innovation Research, Hitotsubashi University
- 1998 Associate Professor, Institute of Innovation Research, Hitotsubashi University
- 1982 Mitsubishi Research Institute, Inc. (~1994)

### ■ Research Achievements

#### 1. Publications

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

(In Japanese)

- Itami, Hiroyuki and Akira Takeishi, “(Editorial) Dynamics of Knowledge, Corporate System and Innovation,” *Hitotsubashi Business Review*, Vol. 55, No. 4, March 2008, pp. 4-7
- Takeishi, Akira, Yaichi Aoshima and Masaru Karube “Reasons for Innovation: Legitimizing Resource Mobilization for Innovation in the Case of Okochi Memorial Prize Winners,” *Hitotsubashi Business Review*, Vol. 55, No. 4, March 2008, pp. 22-39
- Takeishi, Akira and Seigo Ito, “Business Case / Toshiba: Development of Microcomputer System for Automobile Engine Control,” *Hitotsubashi Business Review*, Vol. 55, No. 3, December 2007, pp. 116-136
- Takeishi, Akira, Young-Jae Koh, Kenichi Furukawa and Hideaki Kohzu, “Business Case / Matsushita: Development of Low-current-consumption Miniaturized GaAs Power Modules for Mobile Communication Systems,” *Hitotsubashi Business Review*, Vol. 55, No. 2, September 2007, pp. 110-126
- Takeishi, Akira and Yaichi Aoshima, “A Product within a System: Architectural Innovation in Manufacturing Industries,” *Organizational Science*, Vol. 40, No. 4, June 2007, pp. 29-39
- Zhu, Ying, Akira Takeishi and Seiichiro Yonekura, “The Timing of Technological Innovation: The Case of Automotive Emission Control in the 1970s,” *Organizational Science*, Vol. 40, No. 3, March 2007, pp. 78-92
- Takeishi Akira, Masafumi Kanayama and Tatsuya Mizuno, “Business Case / Seiko Epson: Development of a Quartz Watch Having an Automatic Generating System,” *Hitotsubashi Business Review*, Vol. 54, No. 2, September 2006, pp. 134-152
- Takeishi, Akira, “Knowledge Management in the Inter-firm Division of Labor,” in Itami, Hiroyuki, Takahiro Fujimoto, Tetsuji Okazaki, Hideshi Itoh and Tsuyoshi Numagami, eds., *Readings: The Japanese Corporate System Vol. 1 Organization and Coordination*, Tokyo: Yuhikaku, May 2006, pp. 243-272

## 2. Unpublished Work

### 2.1. Working Papers

Takeishi, Akira, Yaichi Aoshima and Masaru Karube, “Reasons for Innovation: Legitimizing Resource Mobilization for Innovation in the Case of Okochi Memorial Prize Winners,” IIR Working Paper WP#07-10, November 2007

Nagaoka, Sadao, Akira Takeishi and Yoshihisa Noro, “Determinants of Firm Boundaries: Empirical Analysis of the Japanese Auto Industry from 1984 to 2002,” NBER Working Paper No. 13063, April 2007

Zhu, Ying, Akira Takeishi and Seiichiro Yonekura, “The Timing of Technological Innovation: The Case of Automotive Emission Control in the 1970s,” IIR Working Paper WP#06-05, May 2006

(In Japanese)

Kosaka, Genjiro and Akira Takeishi, “TDK: Development of Highly Reliable Multilayer Ceramic Capacitors with Ni Electrode,” IIR Case Study CASE#08-01, January 2008

Takeishi, Akira, Junji Miyahara and Tomono Miki, “Fujifilm: Development of Computed Radiography System,” IIR Case Study CASE#07-01, July 2007

Karube, Masaru, Akira Takeishi and Yaichi Aoshima, “Legitimizing Resource Mobilization for Innovation: Preliminary Findings,” IIR Working Paper WP#07-05, March 2007

## 3. Conference Papers, Presentations

Takeishi, Akira and Tsuyoshi Numagami “Boundaries of Innovation and Social Consensus Building: Challenge for Japanese Firms,” presented at the International Conference on Dynamics of Knowledge, Corporate System and Innovation, Hitotsubashi University 21st Century COE Program, December 14-16, 2007, Nagano, Japan

Takeishi, Akira and Yaichi Aoshima, “Legitimizing Resource Mobilization for Innovation: The Case of Okochi Award Winners,” presented at the International Conference on Dynamics of Knowledge, Corporate System and Innovation, Hitotsubashi University 21st Century COE Program, December 14-16, 2007, Nagano, Japan

Takeishi, Akira, “Firm Boundaries of Japanese OEMs from 1984 to 2002,” presented at the Korean Academy of Motor Industry, October 2007, Seoul, Korea

Takeishi, Akira, “Reasons for Innovation: Legitimizing Resource Mobilization for Innovation in the Case of Okochi Memorial Prize Winners,” presented at the Annual Meeting, The Academic Association for Organizational Science, Japan, October 13, 2007, Fukuoka, Japan

Takeishi, Akira and Yoshihisa Noro, “Determinants of Firm Boundaries: The Case of the Japanese Auto Industry,” presented at the 15th GERPISA International Colloquium, June 2007, Paris, France

Takeishi, Akira and Yoshihisa Noro, “Firm Boundaries: Their Changes and Determinants in the Japanese Auto Industry,” presented at the Conference of the Academic Association for Organizational Science, Japan, June 3, 2007, Kyoto, Japan

- Takeishi, Akira, “Intrapreneurships within Large Corporations: Reasons and Consequences of Innovation in the Cases of Okochi Award Winners,” presented at the IIR Decennial International Symposium on Frontiers of Innovation Research: Towards an Internationally Competitive Nation, March 4-5, 2007, Tokyo
- Takeishi, Akira, Sadao Nagaoka and Yoshihisa Noro, “Determinants of Firm Boundaries: Empirical Analysis of the Japanese Auto Industry from 1984 to 2002,” presented at the 20th Annual TRIO Conference on Organizational Innovation and Firm Performance, supported by NBER-CEPR-TCER, and Hitotsubashi University, December 15-16, 2006, Tokyo
- Takeishi, Akira and Yaichi Aoshima, “Reasons for Innovation: Legitimizing Resource Mobilization for Innovation in the Case of Okochi Memorial Prize Winners,” presented at the Center for Japanese Business Studies Forum, Graduate School of Commerce and Management, Hitotsubashi University, November 1, 2006, Tokyo
- Zhu, Ying, Akira Takeishi and Seiichiro Yonekura, “The Timing of Technological Innovation: The Case of Automotive Emission Control in the 1970s,” presented at the 11th International J.A. Schumpeter Society (ISS) Conference on Innovation, Competition and Growth: Schumpeterian Perspectives, June 21-24, 2006, Nice-Sophia-Antipolis
- Takeishi, Akira, Masaru Karube and Yaichi Aoshima, “Legitimization under Uncertainty in the Cases of Okochi Award Winners,” presented at the Conference of the Academic Association for Organizational Science, Japan, June 10-11, 2006, Tokyo
- Takeishi, Akira and Kyoung-Joo Lee, “Business Ecosystem and Reverse Salient: The Development of the Mobile Music Business in Japan and Korea,” presented at the Helsinki Mobility Round Table 2006, June 1-2, 2006, Helsinki



## Seiichiro Yonekura

### ■ Education

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

### ■ Professional Positions

- 2008~ Director, Institute of Innovation Research, Hitotsubashi University
- 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

Yonekura, Seiichiro, *Entrepreneurial Breakthroughs*, Tokyo: Goma Books, December 2006, 207 pages (in Japanese)

##### 1.2. Articles

Reinmoeller, Patrick and Seiichiro Yonekura, "Corporate Resilience by Design: Managing Design Innovation," *Hitotsubashi Business Review*, Vol. 55, No. 2, September 2007, pp. 6-24 (in Japanese)

Zhu, Ying, Akira Takeishi and Seiichiro Yonekura, "The Timing of Technological Innovation: The Case of Automotive Emission Control in the 1970s," *Organizational Science*, Vol. 40, No. 3, March 2007, pp. 78-92 (in Japanese)

### 1.3. Others

Yonekura, Seiichiro, “Steel,” *Oxford Encyclopedia of the Modern World* (Peter N. Stearns of George Mason University, the editor in chief), Oxford University Press, forthcoming 2008

Yonekura, Seiichiro and Rieko Ota, tr. “Historical Learning for the 21 st Century: The Last Words of Professor Alfred D. Chandler, Jr. (1)-(4),” *Hitotsubashi Business Review*, Vol. 55, No. 1-4, June 2007-March 2008 (in Japanese)

## 2. Unpublished Work

### 2.1. Working Papers

Zhu, Ying, Akira Takeishi and Seiichiro Yonekura, “The Timing of Technological Innovation: The Case of Automotive Emission Control in the 1970s” IIR Working Paper WP#06-05, May 2006

## 3. Conference Papers, Presentations

Yonekura, Seiichiro, “Japan’s Venture Sprit: A Scientific Approach to Entrepreneurship,” presented at the IIR Decennial International Symposium on Frontiers of Innovation Research: Towards an Internationally Competitive Nation, March 4-5, 2007, Tokyo

Yonekura, Seiichiro, “Japan’s 21st Century Vision: Innovation as the Engine of the Growth,” presented at the Vision 2030 Global Forum, supported by National Research Council for Economics, Humanities and Social Sciences, Korea, February 1-2, 2007, Seoul

Yonekura, Seiichiro and Hiroshi Shimizu, “Entrepreneurship in Japan, Nineteenth and Twentieth Centuries,” presented at the History of Entrepreneurship Conference, supported by Ewing Marion Kauffman Foundation and NYU Stern’s Berkley Center for Entrepreneurial Studies, October 19-21, 2006, New York

Zhu, Ying, Akira Takeishi and Seiichiro Yonekura, “The Timing of Technological Innovation: The Case of Automotive Emission Control in the 1970s,” presented at the 11th International J.A. Schumpeter Society (ISS) Conference on Innovation, Competition and Growth: Schumpeterian Perspectives, June 21-24, 2006, Nice-Sophia-Antipolis

## 2. Visiting Researcher — Apr. 2006 ~ Mar. 2008



**Shuozo Fujimura**

### ■ Education

- 1993 Ph.D., Chiba University
- 1978 B.Sc., Chiba University

### ■ Current and Previous Positions

- 2005~ Professor, Graduate School of Innovation Management, Tokyo Institute of Technology
- 2002 Visiting Professor of the Hiroshi Fujiwara Endowed Chair in Venture Finance, Institute of Innovation Research, Hitotsubashi University (~2008)
- 1998~ ANNEAL Corporation
- 1978 Fujitsu, Ltd.



### 3. Foreign Visiting Researchers — Apr. 2006~ Mar. 2008

#### **Bronwyn Hall**

---

Professor, University of California, Berkeley  
4 January 2008 - 31 March 2008

#### **Suphawan Srisuphaolarn**

---

Associate Professor, Kasetsart University (Thailand)  
1 October 2007 - 28 December 2007

#### **Kiho Yoon**

---

Associate Professor, Korea University  
2 July 2007 - 28 September 2007

#### **Annie Garanto**

---

Associate Professor, University of Paris X  
1 April 2007 - 30 June 2007

#### **Franz Waldenberger**

---

Professor, University of Munich  
1 July 2006 - 30 September 2006

#### **Hwy-Chang Moon**

---

Professor, Seoul National University  
1 April 2006 - 30 June 2006





### III. Education

A large, white, stylized letter 'R' is centered within a gray rectangular area.

Hitotsubashi University  
Institute of Innovation Research

A large, white, stylized letter 'I' is centered within a gray rectangular area.

## 1. Courses Given by the IIR Faculty Members — Apr. 2006 ~ Mar. 2008

	Fiscal Year	
	2006	2007
Graduate School of Commerce and Management		
Master's and Doctoral Program		
<i>Courses provided by the Innovation kozas</i>		
Advanced Innovation Management	Aoshima	Takeishi
Innovation and Corporate Strategy	Takeishi	
Innovation, Strategy and Organization		Aoshima
Interorganizational Relations	Nishiguchi	Nishiguchi
Information Network Theory	Funk	Funk
History of Technology and Entrepreneurs	Yonekura	Yonekura
Innovation, the Firm and Institution	Ijichi	
Innovation, Industrial and Economic Growth	Nagaoka	
Economic Analysis of Innovation		Nagaoka
Innovation and Human Resource Development	Chuma	Chuma
Special Lectures (including those by the IIR Visiting Professors)	Moon	Garanto/Yonekura
MBA Program		
Business Economics	Nagaoka	Nagaoka
Entrepreneurship	Yonekura	Yonekura
Corporate Organization	Aoshima	Aoshima
Technology Strategy	Takeishi	Takeishi
Venture Finance	Fujimura	Fujimura
Internet Strategy	Funk	
Special Lecture: Engrepreneurship and and New Industries		Funk
Workshop: Industry	Nagaoka /Ijichi	Nagaoka
Workshop: Innovation	Chuma/Fujimura	Chuma
Senior Executive Program		
Case Study		Aoshima
Undergraduate Program in the Faculty of Commerce and Management		
Special Lecture: Innovation Management	IIR Faculty Members	Chuma/Nishiguchi/Aoshima
Graduate School of Economics		
Master's and Doctoral Program		
Workshop: Industry and Labor	Chuma / Nagaoka / Ijichi*	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 93,481 books (Japanese, 74,241; Foreign, 19,240) and 857 magazines (Japanese, 608; Foreign, 249) as of April 2008.

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 8,561 books (Japanese, 7,058; Foreign, 1,503), and biographies and profiles of top executives, 6,835 books (Japanese, 6,184; Foreign, 651) as of April 2008. 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



Hitotsubashi University  
Institute of Innovation Research



## 1. Hitotsubashi Business Review — Apr. 2006 ~ Mar. 2008

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.55 No.4	“Dynamics of Knowledge, Corporate System and Innovation”
Vol.55 No.3	“Japanese Employment System: The New Reality”
Vol.55 No.2	“Design and Competitiveness”
Vol.55 No.1	“The Theory of New Gemba-Power”
Vol.54 No.4	“New Era for Science Innovation”
Vol.54 No.3	“New Trends of Risk Control, Management and Governance”
Vol.54 No.2	“Forefront of Services Sciences, Management and Engineering”
Vol.54 No.1	“Scientific Sales Force Management”

#### Featured Papers

Issue	Vol. / No.	Title	Author(s)
Mar. 2008	Vol.55 No.4	“Organization Accumulates Knowledge, Market Utilizes”	Hiroyuki Itami (Professor, C&M, Hitotsubashi University)
		“Reasons for Innovation: Legitimizing Resource Mobilization for Innovation in the Case of Okochi Memorial Prize Winners”	Akira Takeishi/Yaichi Aoshima/Masaru Karube (Professor; Associate Professor; Associate Professor, IIR)
		“Exploring Relationship between Organizational Structure and ‘Organizational Deadweight’: An Analysis of the Second Survey”	Toshihiko Kato/Tsuyoshi Numagami/Masaru Karube (Associate Professor; Professor, C&M, Hitotsubashi University; Associate Professor, IIR)
		“Innovation as System Re-definition”	Yaichi Aoshima/Ken Kusunoki (Associate Professor, IIR; Associate Professor, ICS, Hitotsubashi University)
		“International Comparison of Profitability Dispersion”	Makoto Nakano (Associate Professor, ICS, Hitotsubashi University)



## Featured Papers (continued)

Issue	Vol. / No.	Title	Author(s)
Dec. 2007	Vol.55 No.3	“Major Issues on Japan's Labor Market Reform”	Naohiro Yashiro (Professor, College of Liberal Arts, International Christian University)
		“New Internalization of Youth Employment”	Yuji Genda (Professor, Institute of Social Science, University of Tokyo)
		“Myths and Facts about Job Change”	Yukio Okubo (Director, Works Institute, Recruit Co., Ltd.)
		“What Do Older Japanese Want?: Evidence from the Work Survey of Older People”	Isao Ohashi (Professor, Eco., Hitotsubashi University)
		“Does the Production-information System Introduce the Increase of Non-Standard Employment?”	Hiroyuki Chuma/Daiji Kawaguchi (Professor, IIR; Associate Professor, Eco., Hitotsubashi University)
		“Managing Flow: A Process Theory of the Knowledge-based Firm”	Ikujiro Nonaka/Toru Hirata/Ryoko Toyama (Emeritus Professor, Hitotsubashi University; Professor, Faculty of Economics, Kanazawa University; Associate Professor, School of Knowledge Science, Japan Advanced Science and Technology, Hokuriku)
Sep. 2007	Vol.55 No.2	“Corporate Resilience by Design: Managing Design Innovation”	Patrick Reinmoeller/Seiichiro Yonekura (Associate Professor, Rotterdam School of Management, Erasmus University; Professor, IIR)
		“Design as Corporate Resource: Design Management within the Automotive Industry”	Shiro Nakamura (Executive Director, Nissan Motor Co., Ltd.)
		“Design Strategies at Samsung Electronics”	Michio Yoshida (Director, Design Center, Samsung Japan Corp.)
		“Design as Identity Strategy: A Practical Study of the Brand Identity Strategy for NTT DoCoMo”	Takashi Odajima (Representative Director, Shift, Inc.)
		“Design Thinking and Management of Creative Innovation”	Naohito Okude (Professor, Faculty of Environment and Information Studies, Keio University)
		“Strategy Using Intellectual Property to Support Competitiveness of Design”	Tomoko Watanabe (Patent Attorney)

## Featured Papers (continued)

Issue	Vol. / No.	Title	Author(s)
Jun. 2007	Vol.55 No.1	“Gemba-power as Fundamental Organizational Capability: Pursuing Capability-based Management”	Isao Endo (Professor, Graduate School of Commerce, Waseda University)
		“Design-based Comparative Advantage: A ‘Monodukuri’ Perspective”	Takahiro Fujimoto (Professor, Graduate School of Economics, University of Tokyo)
		“Good Small Companies can Encourage Persons to Be Skillful”	Takao Nakazawa (Professor, School of Human Science and Environment, University of Hyogo)
		“Future of Manufacturing and Japanese Small Firms”	Mitsuhiro Seki (Professor, C&M, Hitosubashi University)
		“SMEs Forging the Future”	Shinichi Ukai (Professor, Faculty of Commerce, Waseda University)
Mar. 2007	Vol.54 No.4	“Science-driven Invention and Innovation in the Field of Semiconductor R&D”	Masataka Hirose (Director, Advanced Semiconductor Research Center, National Institute of Advanced Industrial Science and Technology)
		“Moore’s Law, Increasing Complexities, and Limits of Organization: Modern Implication of Japanese DRAM Era”	Hiroyuki Chuma/Norikazu Hashimoto (Professor, IIR; Visiting Researcher, National Institute of Science and Technology Policy)
		“Microelectronics for Better Society: Emerging Role of the Leaky Knowledge Cluster in the Flat World”	Takahide Inoue (Advisor, CITRIS, University of California)
		“Toward a Symbiosis of Open and Closed Sciences: Implication of the National Innovation Survey Results”	Hiroyuki Odagiri (Professor, Eco., Hitotsubashi University)
		“Harmonization of Science with Sensuousness: 21st Monodukuri Manufacturing Concept”	Koji Kuroda (Senior Researcher, Technology Development Center, Dai Nippon Printing Co., Ltd.)
		“Partnership Accounting and Partnership Taxation: Key Facilitators for Innovation”	Jun Saito/Masato Hisatake (Senior Researcher, Nikon Core Technology Center; Consulting Fellow, Research Institute of Economy, Trade and Industry)

## Featured Papers (continued)

Issue	Vol. / No.	Title	Author(s)
Dec. 2006	Vol.54 No.3	“Brand Risk Management and Corporate Value”	Kunio Ito/Tetsuyuki Kagaya (Professor; Associate Professor, C&M, Hitotsubashi University)
		“Learning from Failures: Can You Find the Similar Failure Knowledge in the Database?”	Masayuki Nakao (Professor, School of Engineering, University of Tokyo)
		“How Risk Management and Internal Control would Support Corporate Governance?: From Recent Legislations on Internal Control”	Hyo Kambayashi (President, Protiviti Japan Co., Ltd.)
		“Information Security Governance”	Shuji Kawaguchi (Senior Researcher, Mitsubishi Research Institute)
		“Business Continuity Management for Overcoming Disasters and Accidents”	Hiroaki Maruya (Professor, Institute of Economic Research, Kyoto University)
		“How the Rating on the Environment Management of the Industries Contribute to the Risk Management?”	Nobuyuki Kimata (Professor, Tottori University of Environmental Studies)
Sep. 2006	Vol.54 No.2	“Entrepreneurial Approach to Service Innovations: Addressing Changing Lifestyles in Japan”	Yoshinori Fujikawa/Carl Kay (Assistant Professor; Ph.D. Student, ICS, Hitotsubashi University)
		“Managing Services Marketing by Customer Based Approach: Can the Firm Expand the Share of Wallet of their Customer?”	Joji Ono (Associate Professor, Faculty of Economics, Meiji Gakuin University)
		“Two Different Approaches to Service Management: Advice for Manufacturers”	Masahiro Imaeda (Management Consultant)
		“How to Accelerate Servicification on Manufacturing Products”	Tamio Arai/Yoshiki Shimomura (Professor, Graduate School of Engineering, University of Tokyo; Professor, Graduate School of System Design, Tokyo Metropolitan University)
		“Service Science: Multidisciplinary Approach for Creating Service”	Kunihiko Niwa (Senior Fellow, Center for Research and Development Strategy, Japan Science and Technology Agency)
		“Aiming at the Reformation of the Service Policy”	Masakazu Toyoda (Director, Trade Policy Bureau, Ministry of Economy, Trade and Industry)
		“Five Issues on Service Management: From the Relationship between Service and Production to Post-needs Based Business”	Kenichiro Senoh (Professor, Research Center for Advanced Science and Technology, University of Tokyo)

### Featured Papers (continued)

Issue	Vol. / No.	Title	Author(s)
Jun. 2006	Vol.54 No.1	“Learning from Experience: How Salespeople Gain Expertise”	Makoto Matsuo (Associate Professor, Business School, Otaru University of Commerce)
		“Assessing the Profit-Chain Hypothesis: Which Is the Driver and Customer Behavior that Makes the Customer Relationship More Profitable?”	Joji Ono (Associate Professor, Faculty of Economics, Meiji Gakuin University)
		“Fundamental Challenges in Sales Process Redesign”	Katsuyoshi Takashima (Professor, Graduate School of Business Administration, Kobe University)
		“An Attempt to Capture the Behavior Change of a Sales Organization”	Manabu Ueda (Senior Researcher, Fuji Xerox Co., Ltd.)
		“Exploring the New Role of Brand in Business-to-business Selling”	Takuro Yoda (Associate Professor, Keio Business School)
		“A Reassessment of the Theory of Assortment: The Case of MUJI”	Hidehiko Nishikawa (Associate Professor, College of Business Administration, Ritsumeikan University)

### Columns

Issue	Vol./No.	Title	Author
Jun. 2007- Mar. 2008	Vol.55 No.1- Vol.55 No.4	Historical Learning for the 21st Century: The Last Words of Professor Alfred .D. Chandler, Jr. (1)-(4)	Alfred D. Chandler, Jr. Tr, Seiichiro Yonekura/Rieko Ota (Professor, IIR; Ph.D. Student, C&M Hitotsubashi University)
Jun. 2006- Mar. 2007	Vol.54 No.1- Vol.54 No.4	Nexus between Knowledge, Entrepreneur, and Market (1)-(4)	Kenichi Imai (Senior Fellow, Emeritus, Stanford University)

### Serials

Issue	Vol./No.	Title	Author(s)
Mar. 2008	Vol.55 No.4	Porter Prize 2007	Emi Osono (Associate Professor, ICS, Hitotsubashi University)
Mar. 2007	Vol.54 No.4	Porter Prize 2006	Emi Osono
Jun. 2006- Mar. 2008	Vol.54 No.1- Vol.55 No.4	An Invitation to Network Thinking (1)-(8)	Toshihiro Nishiguchi (Professor, IIR)

## Business Cases

Issue	Vol./No.	Title	Author(s)
Mar. 2008	Vol.55 No.4	Sony: Contactless IC Card Technology ‘FeliCa’	Yaichi Aoshima/Osamu Suzuki (Associate Professor, IIR; Ph.D. Student, C&M, Hitotsubashi University)
		Realfleet: Design Innovation ‘amadana’	Yoshinori Fujikawa/Peilun Yang/Ayano Hirose (Associate Professor; Ph.D. Student; Ph.D. Student, ICS, Hitotsubashi University)
Dec. 2007	Vol.55 No.3	Toshiba: Development of Micro Computer System for Automobile Engine Control	Akira Takeishi/Seigo Ito (Professor, IIR; Ph.D. Student, C&M, Hitotsubashi University)
		Yamato Transport: Human Resource Management	Ikutaro Enatsu (Ph.D. Student, C&M, Hitotsubashi University)
Sep. 2007	Vol.55 No.2	Matsushita: Development of Low-current-consumption Miniaturized GaAs Power Modules for Mobile Communication Systems	Akira Takeishi/Youngjae Koh/Kenichi Furukawa/Hideaki Kohzu (Professor, IIR; Ph.D. Student, C&M; MBA, Hitotsubashi University; Former COE Visiting Professor, IIR)
		JFE Steel: Innovation of Revamping Technique of Large Scale Blast Furnace	Sow Hirano/Karube Masaru (Ph.D. Student, C&M, Hitotsubashi University; Associate Professor, IIR)
Jun. 2007	Vol.55 No.1	Triumph International (Japan) /Wacoal: Competitive Strategy	Ken Kusunoki/Miyuki Igarashi (Associate Professor, ICS; MBA, Hitotsubashi University)
		IRI-Ubitech: Technological Venture Management	Osamu Suzuki (Ph.D. Student, C&M, Hitotsubashi University)
Mar. 2007	Vol.54 No.4	Bookoff: Service Innovation	Yoshinori Fujikawa/Emiko Yoshikawa (Assistant Professor; Ph.D. Student, ICS, Hitotsubashi University)
		Nichirei: Business Strategy and Human Resource Management	Tomoyuki Shimanuki (Ph.D. Student, C&M, Hitotsubashi University)
Dec. 2006	Vol.54 No.3	Kyocera: Technological Development and Commercialization of Long-Life Electrophotographic Process	Toshihiko Kato/Hiroyuki Yamaguchi (Associate Professor; Ph.D. Student, C&M, Hitotsubashi University)
		Nisshin Pharma: Commercialization of Coenzyme Q10	Jaewoo Park/Takeshi Matsui (Assistant Professor, Faculty of Economics, Kobe International University; Associate Professor, C&M, Hitotsubashi University)
Sep. 2006	Vol.54 No.2	Seiko Epson: Development of a Quartz Watch Having an Automatic Generating System	Akira Takeishi/Masafumi Kanayama/Tatsuya Mizuno (Professor, IIR; MBA; MBA, Hitotsubashi University)
		Yamaha: Technological Development and Business Model of Mobile Ringing Tone Melody	Koichiro Kodama (Program Officer, Center for Japanese Business Studies, Hitotsubashi University)

### Business Cases (continued)

Issue	Vol./No.	Title	Author(s)
Sep. 2006	Vol.54 No.1	World: HusHusH	Hyun-Chul Kim (Associate Professor, Seoul University)
		AnGes MG: Academic Entrepreneurship	Haruomi Shindo/Emiko Tsuyuki/Masaharu Tsujimoto (Associate Professor; Associate Professor, Faculty of Economics, Meisei University; Assistant Professor, Graduate School of Engineering Management, Shibaura Institute of Technology)

### Commentaries on Key Words

Issue	Vol./No.	Title	Author
Mar. 2008	Vol.55 No.4	Business Philosophy	Ayano Hirose (Ph.D. Student, ICS, Hitotsubashi University)
Dec. 2007	Vol.55 No.3	Convergence of Accounting Standards	Shoichi Tumuraya (Assistant Professor, Faculty of Economics, Saitama University)
Sep. 2007	Vol.55 No.2	Customer Experience	Hideaki Shirane (Executive Director, Daishinsha, Inc.)
Jun. 2007	Vol.55 No.1	Behavioral Finance	Seki Obata (Associate Professor, Keio Business School)
Mar. 2007	Vol.54 No.4	Virtual Economy	Dimitry Rtischev (Associate Professor, ICS, Hitotsubashi University)
Dec. 2006	Vol.54 No.3	Power of Design	Tsutomu Kamegai (President, Gravityone, Inc.)
Sep. 2006	Vol.54 No.2	Web 2.0	Susumu Kanemune (Associate Professor, Computer Center, Hitotsubashi University)
Jun. 2006	Vol.54 No.1	Corporation Act	Taro Sakai (Associate Professor, Law, Hitotsubashi University)

## Management Forum

Issue	Vol./No.	Interviewee	Interviewer(s)
Mar. 2008	Vol.55 No.4	Toru Shimada (President, Rakuten Baseball, Inc.)	Seiichiro Yonekura
Dec.. 2007	Vol.55 No.3	Shuji Abe (President, Yoshinoya Co., Ltd.)	Seiichiro Yonekura
Sep. 2007	Vol.55 No.2	Naoto Fukasawa (Product Designer)	Seiichiro Yonekura/ Patric Reinmoeller
Jun. 2007	Vol.55 No.1	Kunio Egashira (Chairman, Ajinomoto Co., Inc.)	Seiichiro Yonekura
Mar. 2007	Vol.54 No.4	Keiji Tachikawa (Chief Director, Japan Aerospace Exploration Agency)	Seiichiro Yonekura
Dec. 2006	Vol.54 No.3	Katsuhiko Yasuo (Director, Division of Information Security, Yahoo Japan Corp.)	Seiichiro Yonekura
Sep. 2006	Vol.54 No.2	Shoichiro Iwata (President/CEO, Askul Corp.)	Seiichiro Yonekura
Jun. 2006	Vol.54 No.1	Bunshu Sou (Chairman, Softbrain Co., Ltd.)	Seiichiro Yonekura

## Reviewed Articles

Issue	Vol./No.	Title	Author(s)
Dec. 2007	Vol.55 No.3	“Social and Environmental Disclosure, Corporate Social Performance, and their Effects on Corporate Reputation”	Yuko Kitora (Assistant Professor, Faculty of Social Studies, Doshisha University)
Sep. 2007	Vo.55 No.2	“Organizational Management on Demanded Forecasting: A Case Study of Kao Corporation”	Mikihisa Nakano/Nobunori Oji (Associate Professor, Faculty of Business Administration, Kyoto Sangyo University; Deputy Manager, MK Development Center, Kao Corp.)
Jun. 2007	Vol.55 No.1	“The Advancement of Relational Skills and the Enhancement of Advanced Research and Development Cooperation between Assembler and Suppliers in the Japanese Automobile Industry”	Yoshinori Konno (Associate Professor, Faculty of Business Administration, Hosei University)

## 2. Working Papers — Apr. 2006 ~ Mar. 2008

		Title	Author(s)
WP#08-03	Mar. 2008	“The Current Situation and Issues of Banking in Hangzhou and Wenzhou” (in Japanese)	Xiaomei Zhang
WP#08-02	Mar. 2008	“Technology Imports and Firm Performance” (in Japanese)	Tomoyuki Shimbo
WP#08-01	Feb. 2008	“Evaluating the Impact of Technology Development Funds in Emerging Economies: Evidence from Latin-America”	Bronwyn H. Hall/ Alessandro Maffioli
WP#07-11	Dec. 2007	“Innovation in Service Sector: Theoretical Framework and Case Studies of Japanese Services Firms: Preliminary Discussion”	Suphawan Srisuphalarn
WP#07-10	Nov. 2007	“Reasons for Innovation: Legitimizing Resource Mobilization for Innovation in the Case of Okochi Memorial Prize Winners”	Akira Takeishi/Ya- ichi Aoshima/Ma- saru Karube
WP#07-09	Sep. 2007	“On the Impact of Digital Music Distribution”	Kiho Yoon
WP#07-08	Apr. 2007	“Top Management among Japanese Firms: Recent Trend in Functional Characteristics and CEO Turnover ” (in Japanese)	Masaru Karube
WP#07-07	Apr. 2007	“Intangible Assets and Evaluation in Japanese Firms” (in Japanese)	Tetsuyuki Kagaya
WP#07-06	Mar. 2007	“Global Corporate Strategy” (in Japanese)	Ng Shuk Yee Sally
WP#07-05	Mar. 2007	“Legitimizing Resource Mobilization for Innovation: Preliminary Findings” (in Japanese)	Masaru Karube/Aki- ra Takeishi/Yaichi Aoshima
WP#06-08	Sep. 2006	“The Structure and the Evolution of Essential Patents for Standards: Lessons from Three IT Standards”	Sadao Nagaoka/To- moyuki Shimbo
WP#06-07	Jun. 2006	“An Interdisciplinary Approach of Culture and Business Competitiveness to the Analysis of Western and East Asian Models”	Hwy-Chang Moon
WP#06-05	May 2006	“The Timing of Technological Innovation: The Case of Automotive Emission Control in the 1970s”	Ying Zhu/Akira Takeishi/Seiichiro Yonekura
WP#06-04	Apr. 2006	“Economics of Research Exemption”	Sadao Nagaoka/Rei- ko Aoki



### 3. Case Studies — Apr. 2006 ~ Mar. 2008

(In Japanese)

		Title	Author(s)
CASE#08-02	Mar. 2008	“Tokyo Electric Power, NGK Insulators: Development and Commercial Viability of the Sodium-Sulfur Battery for Electric Energy Storage”	Eishi Fukushima
CASE#08-01	Jan. 2008	“TDK: Development of Highly Reliable Multilayer Ceramic Capacitors with Ni Electrode”	Genjiro Kosaka/ Akira Takeishi
CASE#07-07	Sep. 2007	“NEC: Development of Hemispherical-Grained (HSG) Silicon Storage Electrodes”	Masaaki Sakamoto
CASE#07-06	Sep. 2007	“Hitachi: Development of Direct On-chip Wiring Formation System for LSIs”	Yaichi Aoshima
CASE#07-05	Aug. 2007	“Wuxi Little Swan: Development and Pitfalls of China's Home Appliances Makers”	Yaichi Aoshima/Jin-wei Zhu/Ng Shuk Yee Sally
CASE#07-04	Aug. 2007	“Toshiba: Development of Microcomputer System for Automobile Engine Control”	Akira Takeishi/Seigo Ito
CASE#07-03	Jul. 2007	“Sony: FeliCa (B): Business Model Development”	Osamu Suzuki/Yaichi Aoshima
CASE#07-02	Jul. 2007	“Sony FeliCa (A): Issues in Business Incubation and Technological Development”	Yaichi Aoshima/ Osamu Suzuki
CASE#07-01	Jul. 2007	“Fujifilm: Development of Computed Radiography System”	Akira Takeishi/ Junji Miyahara/ Tomono Miki
CASE#06-02	Aug. 2008	“JFE Steel: Short Term Revamping Technique of Large Scale Blast Furnance; Development of Large Block Ring Construction Method”	Sow Hirano/Masaru Karube

## 4. IIR Innovation Video Library

IIR has been developing visual materials for education in management of technology and innovation. IIR Video Library has been opened to lend out these materials. The Library currently consists of two series: (1) MOTV “The Century of Innovation” and (2) MOT Video Case.

### ■ MOTV

#### 1. “The Century of Innovation: American History”

- (1) “The Telephone.” Simon & Goodman Picture Company/WGBH, Boston, 1997 (51minutes)
- (2) “Empire of the Air: The Men Who Made Radio.” Florentine Film/WETA, Washington, 1991 (55 minutes /58 minutes)
- (3) “Wizard of Photography.” Green Light Productions/WGBH, Boston, 2000 (52 minutes)
- (4) “Transistorized!” ScienCentral/KTCA, 1999 (57minutes)
- (5) “Silicon Valley: 2001.” Santa Clara Valley Historical Association/OPB, Oregon, 2000 (55 minutes)
- (6) “Triumph of the Nerds.” RM Associates/Channel 4 & OPB, Oregon, 1996 (51minutes /51minutes /51minutes)
- (7) “Nerds 2.0.1.: A Brief History of the Internet.” OPB, Oregon, 1998 (61minutes /61minutes /63 minutes)
- (8) “Electric Money.” RM Associates/OPB, Oregon, 2001 (57minutes /58 minutes)
- (9) “Merchants of Cool.” 10-20 Productions/WGBH, Boston, 2001 (54 minutes)

#### 2. “The Century of Innovation: Technology and Society”

- (10) “Edison’s Miracle of Light,” PBS/WGBH, 1995 (57 minutes)
- (11) “The Pill,” PBS/WGBH, 2002 (53 minutes)
- (12) “The Rise and Fall of GM,” Channel Four Television Corporation, 2000 (79 minutes)
- (13) “The Murdochs: Building an Empire,” Australia ABC, 2002 (57 minutes)

### ■ MOT Video Case

- (1) “Fuji Electric Retail Systems” (53 minutes)
- (2) “Nihon Kaiheiki Industries” (15 minutes)
- (3) “Toray Dow Corning Silicon” (25 minutes)
- (4) “Toray: Torayca” (34 minutes)
- (5) “Terumo: Catheter” (54 minutes)
- (6) “IRI-Ubitech: Value Creation through Technology Recombination ” (32 minutes)
- (7) “AnGes MG: Academic Spun-off” (34 minutes)
- (8) “Sony: Contactless IC Card Technology ‘FeliCa’ ” (60 minutes)

‘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>

---

