



Hitotsubashi University
Institute of Innovation Research

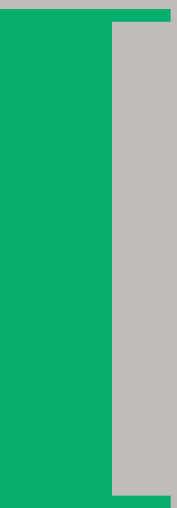
Hitotsubashi University
Institute of Innovation Research



ANNUAL REPORT 2004-2005



Hitotsubashi University
Institute of Innovation Research



ANNUAL REPORT FY2004 – FY2005

(Apr. 2004-Mar. 2006)

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

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

Missions

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

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

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

Research Areas

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

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

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

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

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

I. Research Activities



1. Innovation Research Forum — Apr. 2004 ~ Mar. 2006

The following is the list of lectures given as part of the Innovation Research Forum during 2004-2005 academic year:

- Feb. 13, 2006 Hideaki Kohzu
Former Visiting Professor, IIR
“Development and Mass Production of Field-Effect Transistor in NEC Corporation”
(COE Research Project on Okochi Prize Cases)
- Dec. 19, 2005 Yunshi Mao
Professor and Director, Research Center for Enterprise and Martet, Zhongshan University/Visiting Professor, IIR
“Strategy Selection and Performance of Multinationals in China: Analysis Based on Resources-based Theory and Contingency Approach”
- Nov. 29, 2005 Narihiko Yoshida
Digital Analyst/Visiting Professor, The Graduate School of Digital Content
“The Future of Subculture—The World of COC (Content-oriented Community)”
(Subculture Workshop)
- Nov. 14, 2005 Takanori Yorita
Associate Professor, Graduate School of Economics, Kyoto University
“Discrete Choice Model Analysis of Mobile Telephone Service Demand in Japan”
- Nov. 08, 2005 Kouichi Motohashi and Shigeo Endo
President; Managing Director, Nippon Animation Co., Ltd.
“What is Animation?”
(Subculture Workshop)
- Oct. 04, 2005 Nobuyoshi Takeuchi
Hiratsuka Factory Manager and Managing Director, Nemoto & Co., Ltd.
“Development of a Radioactive-free Luminous Paint”
(COE Research Project on Okochi Prize Cases)
- Sep. 28, 2005 Taohua Ouyang
Associate Professor, Business School, Renmin University of China/
Visiting Associate Professor, IIR
“Modular of Product Development in Chinese Manufacturing —A Case Study of Haier”
- Sep. 28, 2005 Helmut Dietl
Professor, Institute of Strategy and Business Economics, University of Zurich
“The Organization of Professional Suports Leagues”
- Sep. 01, 2005 Keiji Itsukushima and Yoshio Ozawa
Executive Officer, and Deputy General Manager, Business Strategic Planning Office;
General Officer, Overall Technical Development Division, Engineering Office,
Kyocera Mita Corporation
“Development of Long-Life Electrophotographic Process and Application for
Environmentally-Friendly Printer”
(COE Research Project on Okochi Prize Cases)

- Sep. 01, 2005 Ikuya Sato
Professor, Graduate School of Commerce and Management, Hitotsubashi University
“The Publishing Industry: Publishers and Editors as Gatekeepers”
(Subculture Workshop)
- Aug. 05, 2005 Toru Tatsumi
Senior Researcher, Silicon System Research Laboratories, NEC Corporation
“Development of Hemispherical-Grained (HSG) Silicon Storage Electrodes”
(COE Research Project on Okochi Prize Cases)
- Jul. 26, 2005 Masaru Yamashita
Associate Professor, School of Business Administration, Aoyama Gakuin University
“R&D and Organizational Strategy in the Movie Making Industry”
(Subculture Workshop)
- Jul. 11, 2005 John Walsh
Professor, Research Center for Advanced Science and Technology, University of Tokyo/
Associate Professor in Sociology, University of Illinois at Chicago
“The View from the Bench: Patents, Material Transfers and Biomedical Research”
- Jun. 15, 2005 Junji Miyahara
Professor, Tokyo University of Science
“Development of Computed Radiography System: Utilizing Scanning Laser Stimulated
Luminescence”
(COE Research Project on Okochi Prize Cases)
- May 31, 2005 Takayuki Mizuno
Researcher, The National Policy Research Institute
“On RMT (Research Money Trading) Association”
(Subculture Workshop)
- May 20, 2005 Yoshio Suzuki
Nisshin Pharma Inc.
“Industrial Production of Coenzyme Q10 and Improvement of its Bioavailability”
(COE Research Project on Okochi Prize Cases)
- May 06, 2005 Michael A. Cusumano
Professor, Sloan School of Management, MIT
“Products or Services: Which is the Better Business Model, in Software and Other
Industries?”
- Apr. 22, 2005 Hajimu Morioka
Ajinomoto Co., Inc.
“R&D and the Strategy of Intellectual Property Right of Ajinomoto, Inc.”
- Apr. 07, 2005 Kiyonori Sakakibara
Professor, Faculty of Policy Management, Graduate School of Media and Governance, Keio
University
“The Integrator's Dilemma: The Success and Failure of Japan's Watch Industry”

- Mar. 24, 2005 Bronwyn H. Hall and James Pooley
Professor of Economics at the University of California at Berkeley; Partner with the Palo Alto, California, law firm Milbank Tweed)
“A Patent System for the 21st Century”
- Mar. 23, 2005 Xielin Liu
Research Fellow and Professor, National Center for Science and Technology for Development, Ministry of Science and Technology, China/Visiting Professor, IIR
“Chinese Model of Catching-up in a New Development Paradigm”
- Feb. 15, 2005 Xielin Liu
Research Fellow and Professor, National Center for Science and Technology for Development, Ministry of Science and Technology, China/Visiting Professor, IIR
“Small Workshop on Chinese Automobile Industry”
- Jan. 13, 2005 Hiroshi Nagano
Director General, National Institute of Science and Technology Policy, Ministry of Education, Culture, Sports, Science and Technology
“Toward the Development of the Next Basic National Plan for Science and Technology Development”
- Dec. 21, 2004 Nozomu Takahashi
Studio Ghibli, Tokuma Shoten Publishing Co., Ltd./Nippon Television Network Corporation
“Penetration and Proliferation of the Subculture”
(Subculture Workshop)
- Dec. 17, 2004 Atsuyoshi Koike
Chief Executive, Trecenti Technologies Inc.
“Development of New 300mm Semiconductor Manufacturing Systems”
(COE Research Project on Okochi Prize Cases)
- Dec. 16, 2004 Denis Fandel
SEMATECH (USA)
“Economic Model by ISMI (International SEMATECH Manufacturing Initiative)”
- Dec. 08, 2004 Keiji Matsuda
Executive Director, East Japan Division Manager and Blast Furnance Project Leader, JFE Mechanical Co., Ltd.
“Short Term Revamping Technique of Large Scale Blast Furnance: Development of Large Block Ring Construction Method”
(COE Research Project on Okochi Prize Cases)
- Dec. 01, 2004 Hiroshi Murakami
Director, Research and Development Center, Dai Nippon Printing Co., Ltd./Former Senior Researcher, Science and Technical Research Laboratories, Japan Broadcasting Corporation
“Development and Commercialization of HDTV Plasma Displays”
(COE Research Project on Okochi Prize Cases)

- Nov. 30, 2004 Keishi Degawa and Kenko Yamamoto
 Managing Executive Officer/Deputy General Manager, Corporate Strategic Planning Office; Human Resources Group, Corporate Strategic Planning Office, Namco Limited
 “Formation of Game Industry in Japan and the Future Prospects”
 (Subculture Workshop)
- Nov. 17, 2004 Kunizo Ogoshi
 Department Manager, Organic EL Department, Tohoku Pioneer Corporation
 “Development and Mass Production for Thin-Layer Emitting Organic EL Display”
 (COE Research Project on Okochi Prize Cases)
- Nov. 11, 2004 Daisuke Ueda
 General Manager, Semiconductor Device Center, Semiconductor Company, Matsushita Electric Industrial Co., Ltd.
 “Development and Commercialization of Low-Current-Consumption Miniaturized GaAs Power Modules for Mobile Communication Systems”
 (COE Research Project on Okochi Prize Cases)
- Oct. 28, 2004 Bea, Jun-Ho
 Associate Professor, School of International Studies, Hanshin University (Korea)
 “Privatization of Taiwan Railroad: Lessons from Japan, UK, and Korea Cases”
- Oct. 27, 2004 Shoichi Nagao
 W Design & Engineering Group, W Products Development Department, Watch Operations Division, Seiko Epson Corporation
 “Development of a Quartz Watch Having an Automatic Generating System”
 (COE Research Project on Okochi Prize Cases)
- Jul. 23, 2004 Robert H. Pitkethly
 University Lecturer, Said Business School, Oxford University
 “Business Method Patents and Venture Capital Investment Decisions”
- May 18, 2004 Sachi Hatakana
 Research Fellow, Industrial Performance Center, MIT
 “Electronics in Kyoto”
- May 07, 2004 Shigeo Inoue
 Japan Bioindustry Association Research Institute/Former Technical Adviser, Research & Development Division, Kao Corporation
 “Development of Super Concentrated Laundry Detergent Containing Alkaline Cellulase ‘ATTACK’”
 (COE Research Project on Okochi Prize Cases)
- Apr. 21, 2004 Matthias Kipping
 Academic Director and Associate Professor, Department of Economics & Business, Universitat Pompeu Fabra (Barcelona, Spain)
 “Beyond Chandler”
- Apr. 20, 2004 Patricia A. Nelson
 Research Associate, Management School and Economics, University of Edinburgh
 “The Effect of Innovation and Technological Change on Information Flows, Authority and Industry Associations in Japan”

2. Joint Research Projects — Apr. 2004 ~ Mar. 2006

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 2004-2005 academic year.

(* = Project Leader, or Coordinator)

■ Project on Networks and Japanese Management

1. Outline of Research

Emphasizing network topology with reference 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 (Texas A&M University)

4. Research Activities and Outputs during FY2004-FY2005

Building on the results of our years of collaboration, our most recent contribution was presented at the 2005 Academy of Management (AOM) Annual Meeting:

- (1) Nishiguchi, Toshihiro, and Jonathan Brookfield, "It's a Small World After All: Network Theory, Japanese Business, and Industrial Networks," presented at the 65th AOM Annual Meeting, "A New Vision of Management in the 21st Century," Visual Presentation in the Organization and Management Theory Division, Honolulu, Hawaii, U.S.A., August 9, 2005

■ Project on Mobility of R&D Workers

1. Outline of Research

If a part of knowledge required for innovation is embedded in individuals, the mobility of such individuals across socially predetermined boundaries should be related to the emergence of innovation patterns. Based on this assumption, this project is to explore the relationship between the mobility of engineers and innovation performance.

2. Time Period

FY1998-FY2005

3. Members

Yaichi Aoshima*, Akira Takeishi, Ken Kusunoki (Graduate School of International Corporate Strategy), Daiki Hayashi (Graduate School of Social Studies)

4. Research Activities and Outputs during FY2004-FY2005

Based on our questionnaire survey data in 1999, we analyzed the relationships between transfer experiences of engineers and innovation performance. The findings were presented and published:

- (1) Aoshima, Yaichi, “Mobility System: Transfer of Semiconductor Engineers and their Performance,” presented at the Annual Meeting of the Academic Association of Organizational Science (Japan), June 19, 2004, University of Tokyo, Japan
- (2) Aoshima, Yaichi “Transfer of R&D Workers and their Technological Performance,” *Nihon Rodo Kenkyu Zasshi*, The Japan Institute of Labor, No. 541, December 2005, pp. 142-161 (in Japanese)

■Project on IT Innovation

1. Outline of Research

IT innovations look to have contributed much less to the industrial growth in Japan than in the United States, even though IT-related industry accounts for a similar share of industry in Japan as in the U.S. The project aims at analyzing the causes and potential policy response. The empirical analysis covered (1) R&D performance of the IT industry, (2) Innovation in the IT-using industry, and (3) the policy for IT market development, including intellectual property rights protection and competition policy.

2. Time Period

FY 2001–FY2004

3. Members

Sadao Nagaoka*, Kazuyuki Motohashi, Hiroyuki Chuma, Shuzo Fujimura, Tomohiro Ijichi, Hiroyuki Odagiri (Graduate School of Economics), Yosuke Okada (Graduate School of Economics), Shigeru Asaba (Faculty of Economics, Gakushuin University), Tatsuo Tanaka (Faculty of Economics, Keio University), Toshiaki Takigawa (Faculty of law, Kansai University)

4. Research Activities and Outputs during FY2004

1. We held a seminar every two months, inviting industry and government experts.
2. We held an international workshop on December 13-14, 2004, where 12 papers were presented. The foreign participating scholars included Dale Jorgenson (Harvard University), Timothy Bresnahan (Stanford University), Suzanne Scotchmer (University of California, Berkeley), and Kenneth Flam (Texas University). (See the following section for more details.)
3. Research outputs
 - (1) Motohashi, Kazuyuki, *Empirical Analysis of IT Innovation: Has IT Changed Long-term Japanese Economic Performance?*, Tokyo: Toyo Keizai, March 2005 (in Japanese)
 - (2) Nagaoka, Sadao, “Patent Quality, Cumulative Innovation and Market Value: Evidence From Japanese Firm Level Panel Data,” IIR Working Paper WP#05-06, February 2005
 - (3) Nagaoka, Sadao, “How Do the Speed, Science Linkage, Focus and New Entry Matter in IT Inventions?,” in Peeters, Carine and Bruno van Pottelsberghe de la Potterie, eds., *Economic and Management Perspectives on Intellectual Property Rights*, Palgrave, February 2006, pp. 171-198

■ Mobile Innovation Research Program (MIRP)

1. Outline of Research

This research program has two objectives. One is to provide knowledge and perspectives useful for practitioners and policymakers by conducting empirical research on the mobile communication market, industry, and business. The other is to build an infrastructure to support researchers and graduate students for their mobile innovation research in Japan.

With financial support from Japanese corporations, participating researchers inside and outside Hitotsubashi University individually carry out empirical studies of the mobile communication market, industry, and business. Also, the program provides opportunities to facilitate communications and collaborations among researchers by organizing a series of international research meetings, Mobility Roundtables, around the world. More details can be found at http://www.iir.hit-u.ac.jp/research/mobile_e.html.

2. Time Period

FY 2001-present

3. Members

Akira Takeishi*, Seiichiro Yonekura, Jeffery Funk, Taro Kamioka (Graduate School of Commerce and Management)

4. Research Activities and Outputs during FY2004-FY2005

1. Research Outputs

- (1) Takeishi, Akira and Kyoung-Joo Lee "Mobile Music Business in Japan and Korea: Copyright Management Institutions as a Reverse Salient," *Journal of Strategic Information Systems*, Vol. 14, No. 3, September 2005, pp. 291-306
- (2) Takeishi, Akira and Kyoung-Joo Lee "Mobile Innovation and the Music Business in Japan: The Case of Ringing Tone Melody ("Chaku-Mero") ," in Barnes, Stuart and Eusebio Scornavacca, eds., *Unwired Business: Cases in Mobile Business*, Hershey: IRM Press, 2006, pp. 1-13
- (3) Takeishi, Akira and Kyoung-Joo Lee "Mobile Music Business in Japan and Korea," *Hitotsubashi Business Review*, Vol. 53, No. 3, December 2005, pp. 70-87 (in Japanese)
- (4) Funk, Jeffrey L., "Collisions between Industries and the Evolution of the Mobile Internet in Japan," presented at the Hong Kong Mobility Roundtable, June 2-3, 2005
- (5) Takeishi, Akira, "Digitalization and the Evolution of Music Business: Interactions of Technology, Business, and Music," *Hitotsubashi Business Review*, Vol. 52, No. 1, June 2004, pp. 78-94 (in Japanese)
- (6) Funk, Jeffrey L., "Capitalizing on Japan's Lead in the Mobile Internet," *Hitotsubashi Business Review*, Vol. 52, No. 1, June 2004, pp. 64-77 (in Japanese)
- (7) Funk, Jeffrey L., "The Product Life Cycle Theory and Product Line Management: the Case of Mobile Phones," *IEEE Transactions on Engineering Management*, Vol. 51, No. 2, 2004, pp. 1-11

2. Jeffrey Funk won the NTT DoCoMo Mobile Science Award (Social Science) for the research on “Firm Strategy and Government Policy in the Mobile Phone and Mobile Internet,” October 2004.
3. With Sirkka Jarvenpaa and Bertil Thorngren, Akira Takeishi edited a special issue entitled “The Future is UNWIRED: Organizational and Strategic Perspectives” for the *Journal of Strategic Information Systems* (Vol. 14, 2005), based on the Austin Mobility Roundtable.

Mobility Roundtable

A series of Mobility Roundtables has 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 in June 2006; in Los Angeles in 2007 (plan). 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
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/>

Mobile Roundtable Organizing Committee

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

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

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

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

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

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

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

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

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

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

■ End of Japan? Project

1. Outline of Research

This is a joint research project aimed at illuminating problems of Japanese technology-intensive industries and making suggestions for their future direction.

“Why, over the 1990s, did so many Japanese industries wane?” This is an oft-posed question, and by answering this concrete question, we intend to clarify the nature of Japanese corporate management and the mechanisms behind Japanese economics. With the Institute of Innovation Research and Researchers from the Massachusetts Institute of Technology (Professors M. Cusumano and E. Westney among others) taking central roles, this project places emphasis on interdisciplinary, international, and multifaceted approach. Although the problems Japan is facing are deeply rooted and broad, the project puts particular focus on technology-intensive industries and businesses, which will support the growth of Japan in the future, and the problems and issues entailed, and aims to provide concrete proposals. Project members have been periodically holding internal workshops both in Japan and overseas to report research results and hold mutual discussions.

2. Time Period

FY2002-present

3. Members

Akira Takeishi*, Yaichi Aoshima*, IIR faculty members, Kazuyuki Motohashi (University of Tokyo,) Michael A. Cusumano (Sloan School of Management, MIT), Eleanor Westney (Sloan School of Management, MIT) Sachi Hatakenaka (Industrial Performance Center, MIT)

4. Research Activities and Outputs during FY2004-FY2005

We are working on gathering together the fruits of our activities in preparation for the publication of one volume presenting the findings of the project. The final result will be published as a Japanese book in 2006.

■ 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 as listed below. Video cases were created in collaboration with a professional video producer.

2. Time Period

FY2002-present

3. Members

Yaichi Aoshima*, Shuzo Fujimura, Akira Takeishi, Seichiro Yonekura, Masaru Karube

4. Outputs during FY2004-FY2005

List of Cases (in Japanese)

- (11) Terumo (I): Innovation process of organization
- (12) Terumo (II): Catheter
- (13) Yamaha (I): Electric sound source
- (14) Yamaha (II): Mobile ringing tone melody ('chaku-mero')
- (15) Kyocera (revised version): Temperature compensating quartz oscillator
- (16) Rechargeable battery industry (revised version)

List of Video Cases

- (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)

■ 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-present

3. Members

Hiroyuki Chuma*, Yaichi Aoshima, Shuzo Fujimura, Tetsuo Shindo (COE Visiting Researcher)

4. Research Activities and Outputs during FY2004-FY2005

- (1) Chuma, Hiroyuki, "Increasing Complexity and Limits of Organization in the Microlithography Industry: Implications for Science-based Industries," *Research Policy* (Elsevier, Hollands), Vol. 35, No. 3, April 2006, pp. 394-411
- (2) Chuma, Hiroyuki, "Increasing Complexity and Limits of Organization in the Japanese Microlithography Industry," *Kogaku* (Japanese Journal of Optics), The Optical Society of Japan, Vol. 34, No. 8, August 2005, pp. 388-395 (in Japanese); Presented at 2005 Spring JSAP Annual Meeting, The Japan Society of Applied Physics, March 30, 2005, Saitama University
- (3) Chuma, Hiroyuki, "Increasing Complexity and Limits of Organization in the Japanese Science-based Industries: Case of the Microlithography Industry," *Hitotsubashi Business Review*, No. 52, Vol. 3, December 2004, pp. 64-85 (in Japanese)
- (4) Chuma, Hiroyuki, "Semiconductor Production System a la TOYOTA: Pioneering Experiments in UMCJ," in Mao, Yunshi and Min Li, eds., *Multinational in China: Competition and Cooperation*, The University Press Limited, 2004, pp. 30-52
- (5) Fujimura, Shuzo, "Technological Structure and R&D in the Semiconductor Industry," IIR Working Paper, WP#04-12, July 2004

Presentations

- (1) Chuma, Hiroyuki, "The Importance of Visualization Technology for Manufacturing," presented at JISSO/PROTEC Forum Japan 2005, Japan Electronics and Information Technology Industries Association et al., October 4, 2005, Chiba, Japan
- (2) Chuma, Hiroyuki, "Semiconductor Production System a la Toyota: Pioneering Experiments in Two Japanese Fabs," presented at the 6th European AEC/APC (=Advanced Equipment Control/Advanced Process Control) Conference, April 6-8, 2005, Dublin

■ 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 news 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–present

3. Members

Akira Takeishi*, Yaichi Aoshima, Masaru Karube, Fumihiko Ikuine, Toshihiko Kato (Graduate School of Commerce and Management), Takeshi Matsui (Graduate School of Commerce and Management)

4. Research Activities and Outputs during FY2004-FY2005

For the first three years, we have picked up nineteen cases, of which eleven have already been completed as listed below. The finished cases are made available on our website at [http://www.iir.hit-u.ac.jp/research/COEokochiprize\(A\).html](http://www.iir.hit-u.ac.jp/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.

List of Cases (in Japanese)

- (1) Hirano, Sou and Masaru Karube, “JFE Mechanical: Short Term Revamping Technique of Large Scale Blast Furnance—Development of Large Block Ring Construction Method,” IIR Case Study CASE#06-2, August 2006
- (2) Takeishi, Akira, Youngjae Koh, Kenichi Furukawa and Hideaki Kohzu, “Matsushita: Development and Commercialization of Low-Current-Consumption Miniaturized GaAs Power Modules for Mobile Communication Systems,” IIR Case Study CASE#06-1, March 2006
- (3) Kitazawa, Ken, Masashi Inoue and Yaichi Aoshima, “Trecenti Technologies: Development of New 300mm Semiconductor Manufacturing Systems,” IIR Case Study CASE#05-13, October 2005
- (4) Takeishi, Akira, Masafumi Kanayama and Tatsuya Mizuno, “Seiko Epson: Development of a Quartz Watch Having an Automatic Generating System,” IIR Case Study CASE#05-12, July 2005
- (5) Nato, Hiroki, “Development and Commercialization of HDTV Plasma Displays,” IIR Case Study CASE#05-11, July 2005
- (6) Sakamoto, Masaaki, “Tohoku Pioneer: Development and Mass Production for Thin-Layer Emitting Organic EL Display, IIR Case Study CASE#05-10, March 2005
- (7) Karube, Masaru and Atsushi Kobayashi, “Business Case Mitsubishi Electric Corporation: Development of Manufacturing Method for High-performance Motor with New Core Structure and High Speed/Density Coil Winding,” IIR Case Study CASE#04-15, November 2004; *Hitotsubashi Business Review*, Vol. 53, No. 2, September 2005, pp. 124-144
- (8) Karube, Masaru and Miho Imori, “Olympus' Development of Ultrasound Endoscopes,” IIR Case Study CASE#04-14, October 2004; *Hitotsubashi Business Review*, Vol. 52, No. 4, March 2005, pp. 146-165
- (9) Fujiwara, Masatoshi and Akira Takeishi, “Kao Corporation: Development of Concentrated Power Detergent ‘ATTACK’,” IIR Case Study CASE#04-13, October 2004; *Hitotsubashi Business Review*, Vol. 53, No. 1, June 2005, pp. 102-121
- (10) Yun, Yang-Joong and Akira Takeishi, “Toyo Seikan: Development of TULC (Toyo Ultimate Can)” IIR Case Study CASE#04-12, September 2004
- (11) Sakamoto, Masaaki, “Toshiba: Development of Nickel-Metal Hydride Batteries” IIR Case Study CASE#04-01, February 2004; *Hitotsubashi Business Review*, Vol. 52, No. 2, September 2004, pp. 132-151

■ MOTV: Development of Video Materials for MOT Programs

1. Outline

To enrich and support Japan's Management of Technology (MOT) education, we developed two series of video materials, Management of Technology Video (MOTV), using quality programs on technologies and innovations made by overseas TV productions.

With financial support from Ministry of Economy, Trade and Industry (METI) and fruitful collaboration with Kenji Communications, Inc., we selected quality video programs on technologies and innovations made by overseas TV productions, got permission from the copyright owners, and added Japanese subtitles to make them available for educational purposes at Japanese universities and firms. Teaching notes on how to use these materials for classes were also prepared. We conducted this project for two years to develop two series, MOTV1 and MOTV2. Technologies and innovations covered in the two series include telephone, electric lighting and power, radio, camera, transistor, PC, Internet, electronic finance, birth control pills, and genetically modified food.

2. Time Period

FY 2003-FY2004

3. Members

Akira Takeishi*, Seiichiro Yonekura, Yaichi Aoshima

4. Outputs during FY2004

The thirteen programs were collected for MOTV1 "The Century of Innovation: American History" (from 1 to 9) in 2003, and MOTV2 "The Century of Innovation: Technology and Society" (from 10 to 13) in 2004 as listed below. Probably no similar video series for MOT programs has been available in the world. Five hundred copies of each series were distributed free to universities, firms, and other related institutions in Japan, from which we have received favorable reviews. We at IIR have also started the lending service of MOTV for educational institutions. Copyrights for the Japanese edition are owned by Hitotsubashi University.

MOTV2: 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)

■ Project on the Emergence and Structural Characteristics of Essential Patents of Technical Standards

1. Outline of Research

The patentees of the essential patents of the technical standards have become reluctant to license them for free, so that there is a concern over “the tragedy of anti-commons” as a consequence of uncoordinated assertions of patent rights. We have also seen cases of holding up behaviors by the outsiders of the standard. Increasing diversity of the patentees of essential patents of technical standards, including the firms specializing in R&D, have called for the development of new rules and regulations for efficient innovation of technical standards.

We undertook case studies of four recent important technical standards, covering MPEG2, DVD3G (W-CDMA and CDMA2000) and SDRAM, focusing on the emergence and structural characteristics of essential patents, and the patent pools supporting the standards, and analyzed the constraints and possibilities for standard development organizations to clarify the RAND conditions, the coalition formations for the establishment and diffusion of new technical standards, the use of continuation and divisions in patent applications and the disclosure of the inventions essential to the standards. The research project was selected by the Japan Patent Office as one of the “University Research Projects on Intellectual Property Rights” in 2004.

2. Time Period

FY2004

3. Members

Sadao Nagaoka*, Tomohiro Ijichi, Reiko Aoki (Institute of Economic Research), Masayoshi Omachi (Graduate School of International Corporate Strategy), Taro Kamioka (Graduate School of Commerce and Management), Hideo Yamamoto (Graduate School of Commerce and Management), Hisashi Kato (Mitsubishi Electric), Yoshitaro Shimanuki (NTT Docomo) and graduate students.

4. Research Outputs

- (1) Research Report “Emergence and Structural Characteristics of Essential Patents of Technical Standards,” Japan Patent Office, March 2005 (in Japanese). The research report consists of the following three parts: Part I: Case studies, Part II: Invited seminars and lectures, and Part III: Policy issues.
- (2) Nagaoka, Sadao, and Reiko Aoki, “Coalition Formation for a Consortium Standard through a Standard Body and a Patent Pool: Theory and Evidence from MPEG2, DVD and 3G,” IIR Working Paper WP#05-01, February 2005

■ Project on the R&D and Patent Protection of Upstream Technology, Including Research Tools

1. Outline of Research

The patent protection in Japan is focused mainly on the downstream research such as products and manufacturing processes, while upstream research such as that for the development of research tools have become important in science-based industries such as biotechnology. The research project analyzes the impacts of the patent protection of upstream technology on R&D and on industrial organization, as well as a desirable system of patent protection. This project was selected by the Japan Patent Office as one of the “University Research Projects on Intellectual Property Rights” in 2005.

2. Time Period

FY2004-FY2006

3. Members

Sadao Nagaoka*, Tomohiro Ijichi, Reiko Aoki (Auckland University), Masayoshi Omachi (Graduate School of International Corporate Strategy), Hajimu Morioka (Ajinomoto), Masabumi Susuki (Graduate School of Law, Nagoya University), graduate students and post-doctoral students

4. Research Activities and Outputs during FY2004-FY2005

Workshops

- (1) Workshop on Protection of Upstream Inventions, December 12, 2005, where 8 papers were presented.
- (2) Workshop on Research Tools and Academic Research, organized together with Professor Masayuki Kondo of Yokohama National University, on March 7, 2005. It had three sessions: I. Patenting and licensing of research tools, II. University response to research tool patenting, and III. Policy issues in research tool patenting.

Publication

- (1) Research Project Report “Patent Protection of Upstream Inventions,” Japan Patent Office, March 2006 (in Japanese). This report is based on the papers presented at the Workshop held on December 12, 2005.

Presentation

- (1) 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 (http://www.oecd.org/document/56/0,2340,en_2649_34797_36060462_1_1_1_1,00.html)

■ 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 and presented our early results at the Strategic Management Society (SMS) Annual International Conference in October 2005.

2. Time Period

FY2004-present

3. Members

Jefferey Funk*, Toshihiro Nishiguchi

4. Research Activities and Outputs during FY2004-FY2005

Funk, Jeffrey, and Toshihiro Nishiguchi, “Technological Change and Rewiring Firm Networks: The Case of the Mobile Internet in Japan,” presented at the 2005 SMS Annual International Conference, October 25, 2005, Orlando, Florida, U.S.A.

■ 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. Earlier findings have already been published in the *Hitotsubashi Business Review*. 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 (Shizuoka Sangyo University), Tomofumi Amano (Hosei University), Dan Xu (Junior Fellow, Hitotsubashi University), Changxiang Zhao (Ph.D. Candidate, Hitotsubashi University)

4. Research Activities and Outputs during FY2004-FY2005

From 2004 to 2005 we conducted field research in Japan, coastal regions of China and parts of Italy. Based on some earlier results, we published two articles in the Issue of the *Frontiers of Business in China*, *Hitotsubashi Business Review* in March 2005. One is on the prosperous entrepreneurial networks in Wenzhou (analyzed within the framework of small-world network theory) and the other on the competitiveness of rapidly growing electronics firms in China.

Publications

- (1) Nishiguchi, Toshihiro and Motoko Tsujita, “Comparisons of Small-firm Networks in Japan, China, and the United Kingdom: From the Standpoint of ‘Small-world’ Organizations,” in Kikkawa, Takeo and Research Institute for Advancement of Living Standards, eds., *Community Based Economic Renaissance*, Tokyo: Yuhikaku, 2005, pp 159-189 (in Japanese)
- (2) Tsujita, Motoko, “The Creation of New Industry in Industrial Districts,” in Kikkawa, Takeo and Research Institute for Advancement of Living Standards, eds., *Community Based Economic Renaissance*, Tokyo: Yuhikaku, 2005, pp 63-93 (in Japanese)
- (3) Tsujita, Motoko, “The Community Development through Industry-Academia-Government Collaboration,” *Co-operative Finance for Commerce and Industry*, The Shokochukin Bank, Vol. 55, No. 4, 2005, pp. 67-68 (in Japanese)
- (4) Nishiguchi, Toshihiro, Motoko Tsujita, and Dan Xu, “The Prosperity of Wenzhou and ‘Small-world’ Networks,” *Hitotsubashi Business Review*, Vol. 52, No. 4, 2005, pp. 22-38 (in Japanese)
- (5) Nishiguchi, Toshihiro, Tomofumi Amano, and Changxiang Zhao, “The Rapid Growth and Globalization of Chinese Electronics Companies: A Study of the Haier Group,” *Hitotsubashi Business Review*, Vol. 52, No. 4, 2005, pp. 54-71 (in Japanese)

■ Subculture Research Project

1. Outline of Research

Animation, video games and music; these entertainment industries are drawing attention as the new up-and-coming industries of Japan. For example, Japanese animation, Japanese Manga (comics), Japanese video games, Japanese pop music, young Japanese fashion (Shibuya-kei, and so on), are known as “Japan Cool” worldwide.

They have become a part of the main culture and established industries nowadays, but these industries were recognized as subculture in the start-up stage. In other words, they grew into industries, nevertheless estranged from the main culture. In addition, new technologies—represented by computer technology these days— assist this estranged culture of outsiders into the mainstream and transform them into pop culture. This research project focuses on the subculture as the source of a new (cultural) industry, and considers the possibility of innovation.

We investigate subculture or subculture-based industries, and obtain deep knowledge about the relationship between subculture and innovation. For this aim, we hold periodic meetings, and invite industry professionals to give lectures. In addition, we are continuing field research in Japan and overseas.

2. Time Period

FY2004-present

3. Members

Seiichiro Yonekura*, Akira Takeishi, Fumihiko Ikuine

4. Research Activities and Outputs during FY2004-FY2005

- (1) We edited a special issue entitled “Content Business of Japan” for the *Hitotsubashi Business Review*, Vol. 53, No. 3, December 2005 (in Japanese).
- (2) Yonekura, Seiichiro and Fumihiko Ikuine, “The Home Video-game Industry in Japan—The Trap of Series Product Strategy,” *Hitotsubashi Business Review*, Vol. 53, No. 3, December 2005, pp. 52-69 (in Japanese)
- (3) Takeishi, Akira and Kyoung-Joo Lee, “Mobile Music Business in Japan and Korea,” *Hitotsubashi Business Review*, Vol. 53, No. 3, December 2005, pp. 70-87 (in Japanese)

■ 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-present

3. Members

Seiichiro Yonekura*, Akira Takeishi, Yaichi Aoshima, Minoru Shimamoto (Graduate School of Commerce and Management), 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 and Outputs during FY2004-FY2005

We are planning to hold International Symposium on Japan’s Competitive Advantage and Bio Innovation, jointly with Nihon Keizai Shimbun, sponsored by MHLW, METI, MEXT, on September 28, 2006.

■ 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-March 2006

3. Members

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

4. Research Activities and Outputs during FY2004-FY2005

Publications

- (1) Nagaoka, Sadao, "Assessing the R&D Management of Firms by Patent Citation: Evidence from the US Patents," *Journal of Economics and Management Strategy*, forthcoming
- (2) Nakano, Makoto, "Intangible Assets' Effect on Shareholders' Value," in Ichijo, Kazuo and Ikujiro Nonaka, eds., *Knowledge Creation and Management*, NY: Oxford University Press, November 2006, forthcoming
- (3) 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
- (4) Karube, Masaru, "Competitive Performance of Japanese Firms and Management Agenda," *Hitotsubashi Business Review*, Vol. 52, No. 3, December 2004, pp. 24-35 (in Japanese)

Presentations

- (1) Nakano, Makoto, "R&D Investments' Effect on Shareholders' Value," European Accounting Association 28th Annual Congress, May 2005, Gothenburg, Sweden.
- (2) Nagaoka, Sadao, "Assessing the R&D Management of Firms by Patent Citation: Evidence from the US Patents," Association, Innovation and Intellectual Property: Economic & Managerial Perspectives, INSEAD, Singapore, July 16, 2004; Japanese Economic Association, the 2004 Fall Meeting, September 26, 2004, Okayama University, Japan

■ 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)

4. Research Activities and Outputs

In progress.

3. International Conferences — Apr. 2004 ~ Mar. 2006

■ International Symposium on the 21st Century Innovation Systems for Japan and the United States: Lessons from a Decade of Change

Organized by

The National Institute of Science and Technology Policy (NISTP),
Ministry of Education, Culture, Sports, Science and Technology, Japan
and

The Board of Science, Technology, and Economic Policy,
U.S. National Academies

In collaboration with

Institute of Innovation Research, Hitotsubashi University, Japan

January 10-11, 2006

Tokyo, Japan

Innovation is a key driving force for economic growth in the 21st century in Japan and the United States. Aiming at strengthening innovative capabilities, both countries have introduced and implemented various reforms and new policies for the last ten years, through encouraging university-industry collaboration, protection of intellectual property rights, and innovation by start-up companies. The purpose of this international Symposium is to share experiences and lessons in this field between Japan and the United States and to discuss future directions for innovations systems in the 21st century. The Symposium brought together leading experts from academia as well as senior managers from business and the policy sector in both countries.

Day 1: January 10, 2006

Welcome

Introduction: Takashi Inutsuka, Director, Planning Division, NISTEP
Motohide Konaka, Director General, NISTEP

Opening Addresses

Chair: Terutaka Kuwahara, Deputy Director General, NISTEP

“Challenges in the U.S. Innovation System”

Donald Manzullo, United States House of Representatives

“Evolution and Challenges to the Innovation System in Japan”

Taizo Yakushiji, Member, Council for Science and Technology Policy/Visiting Professor, Keio University

Panel I: Government’s Evolving Role in Supporting Corporate R&D—U.S. and Japanese Models

Moderator: Alice Amsden, Professor, Massachusetts Institute of Technology

“Government’s Support to Corporate R&D in Japan”

Akira Goto, Professor, Research Center for Advanced Science and Technology (RCAST), University of Tokyo/Faculty Fellow, Research Institute of Economy, Trade and Industry (RIETI)

Kazuyuki Motohashi, Associate Professor, RCAST, University of Tokyo/Faculty Fellow, RIETI

“Government’s Evolving Role in Supporting Corporate R&D—Theory and Practice”

Stephanie Shipp, Director, Economic Assessment Office, National Institute of Standards and Technology

Marc Stanley, Director, ATP, National Institute of Standards and Technology

Discussant

Ichiro Nakajima, Director & Professor, New Industry Creation Hatchery Center, Tohoku University

Panel II: Government-Industry R&D Partnerships—U.S. and Japanese Experiments

Moderator: Lonnie Edelheit, GE, ret.

“Semiconductor Consortia in Japan: Experiences and Lessons”

Shuzo Fujimura, Professor, Tokyo Institute of Technology/Visiting Professor, IIR

Hiroyuki Chuma, Professor, IIR/Affiliated Senior Fellow, NISTEP

“Internationalization of American Industrial R&D: International SEMATECH and the International Roadmap”

Kenneth Flamm, Professor and Dean, Rusk Chair in International Affairs, Lyndon B. Johnson

School of Public Affairs, University of Texas at Austin

Discussant

Kaoru Honjo, Executive Director, New Energy and Industrial Technology Development Organization (NEDO)

Panel III: Government Programs to Encourage Innovation by Startups and SMEs

Moderator: Bradley Knox, Committee on Small Business, US House of Representatives

“The U.S. Small Business Innovation Research Program”

Charles Wessner, STEP, U.S. National Academies

“Programs to Stimulate Startups and Entrepreneurship in Japan: Experiences and Lessons”

Takehiko Yasuda, Professor, Department of Economics, Toyo University

Discussant

Tetsuya Iizuka, President and CEO, THine Electronics, Inc.

Day 2: January 11, 2006

Panel IV: Interaction between Intellectual Property and Innovation Systems

Moderator: Shozo Uemura, Former Deputy Director General, World Intellectual Property Organization (WIPO)/Visiting Professor, RCAST, University of Tokyo

“Issues and Possible Reforms in the U.S. Patent System”

Bronwyn Hall, Professor, University of California at Berkeley

“Reform and Challenges of IPR protection in Japan”

Sadao Nagaoka, Director and Professor, IIR

Discussant

Mark Myers, Xerox, ret./Visiting Professor, The Wharton Business School, The University of Pennsylvania

Panel V: Industry and University Collaboration

Moderator: Toshiya Watanabe, Professor, RCAST, University of Tokyo

“Industry-University Partnerships in the United States”

Irwin Feller, American Association for the Advancement of Science

“Industry-University Partnerships in Japan”

Masayuki Kondo, Affiliated Senior Fellow, NISTEP/Professor, Yokohama National University;

Research Staff, NISTEP

Discussant

Gail Cassell, Eli Lilly and Company

Panel VI: Government Support for University Research

Moderator: Hiroshi Nagano, Principal Fellow, Japan Science and Technology Agency (JST)

“DARPA and the US Connected Science Model for Innovation — Where Is It Now?”

William Bonvillian, Office of Senator Lieberman, US Senate

“Government Support to University Research — Trend and Issues in Japan”

Ryuji Shimoda, Professor, Frontier Collaborative Research Center, Tokyo Institute of Technology

Discussant

William Spencer, STEP/SEMATECH, ret.

Panel VII: Industry-University-Government Cooperation: The Biotechnology Challenge

Moderator: Bill Bonvillian, Office of Senator Lieberman, US Senate

“Perspective on Current Trends in Drug Development in the United States”

Gail Cassell, Eli Lilly and Company

“Is There a Significant Contribution of Public Sector in Biomedical Research in Japan?—A Detailed Analysis of Government University Patenting 1991-2001”

Yosuke Okada, Associate Professor, Graduate School of Economics, Hitotsubashi University

Discussant

Shozo Nagai, Japan Pharmaceutical Manufacturers Association

Closing Summary and Remarks

Chair: Masayuki Kondo, Affiliated Senior Fellow, NISTEP/Professor, Yokohama National University

William Spencer, STEP/SEMATECH, ret.

Sadao Nagaoka, Director and Professor, IIR

■ International Workshop on the Exhaustion of Intellectual Property Rights

June 26, 2005 at the Conference Room, IIR

Morning Session

Chair: Yoshiyuki Tamura, Professor, Hokkaido University

“Economic Analysis of IP Exhaustion”

Peter Ganea, Max-Planck Institute/Visiting Professor, IIR

Discussant: Eiichi Tomiura, Professor, Yokohama National University

“Efficient Appropriation of R&D Investments and the Exhaustion Principle”

Sadao Nagaoka, Professor and Director, IIR

Discussant: Yoshio Ohara, Emeritus Professor at Kobe University/Minerva Patent-Law Office

“Exhaustion and Trade between Developed and Developing Countries: China as an Example”

Xiang Yu, Professor, Huazhong University of Science and Technology

Discussant: Hiroko Yamane, Professor, National Graduate Institute for Policy Studies

Afternoon Session

Chair: Hiroshi Saito, Professor of Law, Senshu University

“Exhaustion Theory in Japanese Case Law”

Yoshiyuki Tamura, Professor, Hokkaido University

Discussant: Ryoichi Mimura, Judge, Intellectual Property High Court

“Exhaustion as Subject to Freedom of Contract? Some Thoughts on the “Implied License” Doctrine (Provisional)”

Hisao Shiomi, Professor, Tsukuba University

Discussant: Yoshiyuki Tamura, Professor, Hokkaido University

“Effects of New Technologies on Copyright Exhaustion — On the Feasibility of the So-called “Online Exhaustion””

Peter Ganea, Max-Planck Institute/Visiting Professor, IR

Discussant 1: Hiroshi Saito, Professor of Law, Senshu University

Discussant 2: Fumihiko Moriya, General Manager, Intellectual Property Department, Sony Corporation

■ International Conference on IT innovation

December 13-14, 2004 at the Hitotsubashi Sanoshoin Hall, Kunicachi, Tokyo
Supported by the Japan Patent Office (JPO)

Day 1: December 13, 2004

IPR, Standards and Competition Policy for Cumulative Innovation

Welcoming Remark

Sadao Nagaoka, IIR

An Address

Kunihiko Shimano, Director of Academic I.P. Advancement Office, General Affairs Dept., JPO

Session 1: IPR and standards

Chair: Hideshi Itoh, Hitotsubashi University

Lead paper “Digital Rights Management and the Pricing of Digital Products”

Suzanne Scotchmer, University of California, Berkeley

Discussant: Kazuharu Kiyono, Waseda University

“Coalition Formation for a Consortium Standard through a Standard Body and a Patent Pool: Theory and Some Evidence from MPEG, DVD and 3G Standard”

Reiko Aoki, Hitotsubashi University

Sadao Nagaoka, IIR

Discussant: Suzanne Scotchmer, University of California, Berkeley

“Emergence of Essential Patents in Technical Standards: Implications of the Continuation and Divisional Application Systems and the Written Description Requirement”

Masayoshi Omachi, Hitotsubashi University

Discussant: John Walsh, University of Illinois at Chicago

Session 2: IPR and Competition

Chair: Sadao Nagaoka, IIR

Lead Paper “Creative Destruction in the PC Industry”

Timothy Bresnahan, Stanford University

Discussant: Hiroyuki Odagiri, Hitotsubashi University

“Does File Sharing Reduce the Music CD Sales? —A case of Japan”—

Tatsuo Tanaka, Keio University

Discussant: Yosuke Okada, Hitotsubashi University

“Antitrust Analysis of US, EU, and Japanese Microsoft Cases: How to Regulate Abusive Conduct by a Holder of Dominant Platform Software”

Toshiaki Takigawa, Kansai University

Discussant: Jiro Tamura, Keio University

Day 2: December 14, 2004

Creation and Diffusion of IT Innovation

Keynote Speech “Information Technology and the World Economy”

Dale W. Jorgenson, Harvard University

Session 1: Technology drivers for IT innovation

Chair: Kazuyuki Motohashi, University of Tokyo

Lead paper “Moore's Law and the Economics of Semiconductor Price Trends”

Kenneth Flamm, University of Texas at Austin

Discussant: Hiroshi Ohashi, University of Tokyo

“Patent Quality, Cumulative Innovation and Market Value + Do speed, Science Linkage, Focus and New Entry Matter in IT Inventions?”

Sadao Nagaoka, IIR

Discussant: Shigeru Asaba, Gakushuin University

“Complexity and Limit of Organization Faced by Science-based Industries in Japan: Cases of Microlithography Industry”

Hiroyuki Chuma, Hitotsubashi University

Discussant: Jun Saito, Nikon Corporation

Session 2: Innovations in IT using industry

Chair: Hiroyuki Odagiri, Hitotsubashi University

“Firm Level Analysis of Information Network Use and Performance: U.S. vs. Japan”

B K. Atrostic, U.S. Census Bureau

Kazuyuki Motohashi, University of Tokyo

Sang Nguyen, U.S. Census Bureau

Discussant: Kenneth Flamm, University of Texas at Austin

“The Economic Impacts of ICT—An European Perspective”

Dirk Pilat, OECD

Discussant: Dale W. Jorgenson, Harvard University

“IT, Enterprise Reform and Productivity in Chinese Manufacturing Firms”

Kazuyuki Motohashi, University of Tokyo

Ximing Yue, Chinese Academy of Social Science

Discussant: Sanghoon Ahn, Hitotsubashi University

4. Innovation Research Consortium— Apr. 2004 ~ Mar. 2006

Innovation Research Consortium is set up to develop managerial strategies of technology through a massive collaboration between IIR researchers and the consortium participants. The key concept of this consortium is a "mutual learning of fundamental business strategies for technological innovation between academics and business people." Under this concept, the program is designed to facilitate mutual understanding by coupling lectures from IIR researchers and business case reports from the participants.

Each module is composed of academic lectures and several business case reports based on their real experiences. The theme of each module is selected to effectively learn fundamental theories of innovation management. When business case reports presented by the participants are recognized as insightful and educational, they will be periodically published on IIR's quarterly journal, *Hitotsubashi Business Review*.

Course VI (Apr. 2005 ~ Mar. 2006)

■ Activities

On R&D Management

| | |
|--|---|
| Feb. 03, 2006 Case Report & Discussion | Innovation Management Seminar (6): R&D Management Matsui, S., <i>Seiko Precision</i> Ohashi, H., <i>Nihon Kaiheiki Industries</i> |
| Jan. 27, 2006 Case Report & Discussion | Innovation Management Seminar (6): R&D Management Tetsuka, S., <i>Hitachi</i> Nomura, K., <i>NEC Learning</i> |
| Jan. 20, 2006 Lecture | Innovation Management Seminar (6): R&D Management Fujimura, S. Ijichi, T. |
| Dec. 16, 2005 Case Report | Innovation Management Seminar (5): Innovation and Development System Takashima, M., <i>Fuji Photo Film</i> |
| Dec. 02, 2005 Lecture | Innovation Management Seminar (5): Innovation and Development System Chuma, H. |
| Nov. 18, 2005 Research Report | Innovation Management Seminar (4): Innovation and Intellectual Property Right Matsushima, S. et al., <i>Konica Minolta Technology Center</i> |
| Nov. 04, 2005 Lecture | Innovation Management Seminar (4): Innovation and Intellectual Property Right Nagaoka, S. |
| Oct. 21, 2005 Lecture Case Report | Innovation Management Seminar (3): Innovation and Social Process Takeishi, A. Tamizane, K., <i>Konica Minolta Technology Center</i> |
| Oct. 07, 2005 Case Discussion | Innovation Management Seminar (3): Social Process of Innovation Takeishi, A., <i>FM Radio</i> |

On Strategic Management

| | |
|---------------|--|
| Sep. 29, 2005 | Guest Speech Song, Wen Zhon, CEO, Softbrain Co., Ltd. |
|---------------|--|

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|---|--|
| Jul. 29, 2005 Lecture & Case Discussion | Innovation Management Seminar (2): Innovation and Corporate Strategy Karube, M. and F. Ikuine, <i>Mitsubishi Electric</i> |
| Jul. 22, 2005 Case Discussion | Innovation Management Seminar (1) History of Innovation. Aoshima, Y., <i>Toray</i> |
| Jun. 14, 2005 Case Discussion | Innovation Management Seminar (1): History of Innovation Aoshima, Y., <i>Terumo</i> |
| May 31, 2005 Lecture | Innovation Management Seminar (1) : History of Innovation Yonekura, S. Aoshima, Y. |

■ Member Companies

Fuji Photo Film Co., Ltd.; Hitachi, Ltd.; Konica Minolta Technology Center, Inc.; NEC Learnig, Ltd.; Nihon Kaiheiki Industries Co., Ltd.; Seiko Precision, Inc.

Course V (Apr. 2004 ~ Mar. 2005)

■ Activities

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|---|---|
| Feb. 04, 2005 | Closing Summary and Discussion Aoshima, Y. Fujimura, S. |
| Jan. 28, 2005 Case Report Case Discussion | Closing Summary and Discussion Takeda, M., <i>Mitsubshi Corporation</i> Aoshima, Y., <i>Kyocera</i> |

On R&D Management

| | |
|--|--|
| Jan. 21, 2005 Case Report & Discussion | Innovation Management Seminar (6): Innovation and Production System Sakurai, Y., <i>NEC University</i> Nakano, T., <i>Hitachi</i> |
| Dec. 14, 2004 | Guest Speech Kumagai, Msatoshi, CEO, GMO Internet, Inc. |
| Nov. 19, 2004 Lecture | Innovation Management Seminar (6): Innovation and Production System Chuma, H. |
| Nov. 05, 2004 Case Report & Discussion | Innovation Management Seminar (5): Inter-firm System and Innovation Nishino, Y., <i>Nissan Chemical Industries</i> Miyoshi, O., <i>Oregadare</i> |
| Oct. 15, 2004 Lecture | Innovation Management Seminar (5): Inter-firm System and Innovation Takeishi, A. |
| Oct. 08, 2004 Case Report & Discussion | Innovation Management Seminar (4): R&D Management Ashida, Y., <i>Mitsui Chemicals</i> Minami, K., <i>Fuji Photo Film</i> |

| | |
|---|---|
| Sep. 24, 2004 Lecture Case Report & Discussion | Innovation Management Seminar (4): R&D Management Ijichi, T. Ezaki, A., <i>Konica Minolta Technology Center</i> |
| Sep. 10, 2004 Lecture | Innovation Management Seminar (4): R&D Management Fujimura, S. |

On Strategic Management

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| Aug. 24, 2004 Case Report & Discussion | Innovation Management Seminar (3): Innovation and Intellectual Property Right Nishikawa, A., <i>Seiko Precision</i> |
| Jul. 30, 2004 Lecture | Innovation Management Seminar (3): Innovation and Intellectual Property Right Nagaoka, S. |
| Jul. 16, 2004 Case Report & Discussion | Innovation Management Seminar (2): Innovation and Corporate Strategy Kato, M., <i>Dow Corning Toray Silicone</i> Hara, T., <i>Fuji Photo Film</i> |
| Jul. 02, 2004 Case Discussion Case Report & Discussion | Innovation Management Seminar (2): Innovation and Corporate Strategy Aoshima, Y., <i>Fuji Electric Retail Systems</i> Miyata, Y., <i>House Foods</i> |
| Jun. 18, 2004 Lecture | Innovation Management Seminar (2): Innovation and Corporate Strategy Karube, M. |
| Jun. 08, 2004 Case Report & Discussion | Innovation Management Seminar (1): History of Innovation Fukamachi, M., <i>Asahi Kohsan</i> Nakano, T., <i>Fuji Electric Retail Systems</i> |
| May 25, 2004 Lecture | Innovation Management Seminar (1): History of Innovation Yonekura, S. |

■ Member Companies

Asahi Kohsan Co., Ltd.; Dow Corning Toray Silicone Co., Ltd.; Fuji Electric Retail Systems Co., Ltd.; Fuji Photo Film Co., Ltd.; Hitachi, Ltd.; House Foods Corp.; Konica Minolta Technology Center, Inc.; Mitsubishi Corporation; Mitsui Chemicals, Inc.; NEC University, Ltd.; Nissan Chemical Industries, Ltd.; Oregadare, Inc.; Seiko Precision, Inc.

5. The Hiroshi Fujiwara Endowed Chair in Venture Finance

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.

II. Researchers



1. Full-time Researchers

Profiles & List of Research Achievements — Apr. 2004 ~ Mar. 2006



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. Articles and Chapters in Books

(In English)

“Diffusion of 3D-CAD and its Impact on Product Development Processes: A Comparison between Japanese and Chinese Companies,” *Yokohama Journal of Technology Management Studies*, Vol. 5, February 2006, pp. 25-41 (with Yoko Takeda, Kentaro Nobeoka and Shiguo Li)

“Case Study Shimano: Market Creation through Component Integration,” in Herstatt, Cornelius, Christoph Stockstrom, Hugo Tschirky and Akio Nagahira, eds., *Management of Technology and Innovation in Japan*, Berlin: Springer, 2006, pp. 29-48 (with Akira Takeishi)

“The Impact of 3D-CAD on New Product Development,” *Journal of Korean Economic Development*, Vol. 10, No. 2, 2004 (with Kentaro Nobeoka and Yoko Takeda)

(In Japanese)

“Thinking through the Architecture,” in Itami, Hiroyuki, Takahiro Fujimoto, Tetsuji Okazaki, Hideshi Itoh and Tsuyoshi Numagami, eds., *Readings: The Japanese Corporate System Vol. 3 Strategy and Innovation*, Tokyo: Yuhikaku, January 2006, pp. 206-240 (with Akira Takeishi, in Japanese)

“Business Case Terumo: Catheter,” *Hitotsubashi Business Review*, Vol. 53, No. 3, December 2005, pp. 142-161 (in Japanese)

“Transfer of R&D Workers and Their Technological Performance,” *Nihon Rodo Kenkyu Zasshi*, The Japan Institute of Labor, No. 541, August 2005, pp. 34-48 (in Japanese)

“Business Case Toray: Carbon Fibers,” *Hitotsubashi Business Review*, Vol. 52, No. 4, March 2005, pp. 120-145 (with Takeo Kasai, in Japanese)

“The Impact of 3D-CAD on New Product Development,” *Yokohama Journal of Technology Management Studies*, Yokohama National University, No. 4, December 12, 2004, pp. 1-12 (with Yoko Takeda and Kentaro Nobeoka, in Japanese)

“Technological Change and Competitive Advantage: Existing Research and its Application to Japanese Companies,” *The Journal of Science Policy and Research Management*, The Japan Society for Science Policy and Research Management, Vol. 18, No. 3/4, August 25, 2004, pp. 107-126 (in Japanese)

“Business Case House Foods Corp.: Lachrymatory Factor Synthase (LFS, an onion enzyme),” *Hitotsubashi Business Review*, Vol. 52, No. 1, June 2004, pp. 162-173 (with Sachiko Ito, in Japanese)

2. Unpublished Work

2.1. Working Papers

“Trecenti Technologies: Development of New 300mm Semiconductor Manufacturing Systems,” IIR Case Study CASE#05-13, October 2005 (with Ken Kitazawa and Masashi Inoue, in Japanese)

3. Conference Papers, Presentations

“The Impact of 3D-CAD on New Product Development,” the Korean Development Economics Association (KDEA) Annual Conference, October 20, 2004, Incheon

“Mobility Systems: Transfer of Semiconductor Engineers,” presented at the Annual Meeting of the Academic Association for Organizational Science, Japan, June 19, 2004, University of Tokyo



Hiroyuki Chuma

■ Education

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

■ Professional Positions

- 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 and Chapters in Books

(In English)

“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

“Semiconductor Production System a la TOYOTA: Pioneering Experiments in UMCJ,” in Mao, Yunshi and Min Li, eds., *Multinational in China: Competition and Cooperation*, The University Press Limited, 2004, pp. 30-52

(In Japanese)

“The Factors of Weakening Competitiveness in Semiconductor Manufacturing Systems: The Power of Meta-integration as a Bottleneck,” *Nikkei Micro Device*, May 2006, pp. 43-49 (in Japanese)

“Increasing Complexity and Limits of Organization in the Science-based Industries: Case of the Microlithography Industry,” in Goto, Akira and Toshihiro Kodama, eds., *Japan's National Innovation System: Rebuilding the Engine of Growth*, Tokyo: University of Tokyo Press, March 2006, Chapter 8, pp. 229-262 (in Japanese)

“Increasing Complexity and Limits of Organization in the Japanese Microlithography Industry,” *Kogaku* (Japanese Journal of Optics), The Optical Society of Japan, Vol. 34, No. 8, August 2005, pp. 388-395 (in Japanese)

“Increasing Complexity and Limit of Organization in the Japanese Science-based Industry: Based on the Case of the Microlithography Industry,” *Hitotsubashi Business Review*, Vol. 52, No. 3, December 2004, pp. 64-85 (in Japanese)

1.2. Others

“Labor Economy,” in *Imidas*, Tokyo: Shuei-sha, included in the 1997 to 2005 edition (in Japanese)

2. Unpublished Work

2.1. Working Papers

“What Japanese Workers Want: Evidence from the Japanese Worker Representation and Participation Survey,” RIETI Discussion Paper Series 04-E-019, Research Institute of Economy, Trade and Industry, April 2004 (with Takao Kato and Isao Ohashi)

3. Conference Papers, Presentations

“Semiconductor Consortia in Japan: Experiences and Lessons,” presented at the International Symposium on 21st Century Innovation Systems for Japan and the United States: Lessons from a Decade of Change, organized by the National Institute of Science and Technology Policy, Ministry of Education, Culture, Sports, Science and Technology, Japan and the Board of Science, Technology, and Economic Policy, U.S. National Academies, in collaboration with IIR, January 10-11, 2006, Tokyo (with Shuzo Fujimura)

“The Importance of Visualization Technology for Manufacturing,” presented at JISSO/PROTEC Forum Japan 2005, Japan Electronics and Information Technology Industries Association et al., October 4, 2005, Chiba, Japan

“Semiconductor Production System a la Toyota: Pioneering Experiments in Two Japanese Fabs,” presented at the 6th European AEC/APC (=Advanced Equipment Control/Advanced Process Control) Conference, April 6-8, 2005, Dublin

“Increasing Complexity and Limits of Organization in the Japanese Microlithography Industry,” presented at 2005 Spring JSAP Annual Meeting, The Japan Society of Applied Physics, March 30, 2005, Saitama University, Japan



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

- 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 and Chapters in Books

- “The Future of Mobile Phone-Based Intranet Applications: A View from Japan,” *Technovation*, forthcoming
- “Solving the Startup Problem in Western Mobile Internet Markets,” *Telecommunications Policy*, forthcoming
- “The Future of Mobile Shopping: The Interaction between Lead Users and Technological Trajectories in Japanese Market,” *Technological Forecasting and Social Change*, forthcoming
- “Technological Change within Hierarchies: The Case of the Music Industry,” *Economics of Innovation and New Technology*, forthcoming
- “Mobile Phone Industry: A Microcosm of Deregulation, Globalization, and Technological Change in the Japanese Economy,” in Taplin, Ruth., ed., *Japanese Telecommunications Market and Policy in Transition*, London: Routledge, 2006, pp. 65-86
- “The Future of the Mobile Phone Internet: An Analysis of Technological Trajectories and “Lead Users” *Japanese Market*,” *Technology in Society*, Vol. 27, No. 1, pp 69-83, 2005
- “Capitalizing on Japan's Lead in the Mobile Internet,” *Hitotsubashi Business Review*, Vol. 52, No. 1, June 2004, pp. 64-77 (in Japanese)
- “The Product Life Cycle Theory and Product Line Management: the Case of Mobile Phones,” *IEEE Transactions on Engineering Management*, Vol. 51. No. 2, 2004, pp. 1-11
- “Key Technological Trajectories and the Expansion of Mobile Internet Applications,” *Info-The journal of policy, regulation and strategy for telecommunications*, Vol. 6, No. 3, 2004

2. Conference Papers, Presentations

- “Technological Change and Methods of Standard Setting in the Mobile Phone Industry,” to be presented at the Strategic Management Society Meeting, October 29 - November 1, 2006, Vienna, Austria
- “The Sources and Timing of Technological Discontinuities: The Case of the Semiconductor Industry,” to be presented at the Strategic Management Society Meeting, October 29 - November 1, 2006, Vienna, Austria
- “New Industry Formation, Inverse Demand Curves and the Rewiring of Networks,” presented at the Academy of Management, August 14-16, 2006, Atlanta GA
- “Technological Change within Nested Hierarchies: The Case of the Information Technology Sector,” presented at the Academy of Management, August 14-16, 2006, Atlanta GA
- “The Sources and Timing of Technological Discontinuities and Dominant Designs,” presented at the Academy of Management, August 14-16, 2006, Atlanta GA
- “The Sources and Timing of Technological Discontinuities: The Case of the Computer Industry,” presented at the International J.A. Schumpeter Society 11th ISS Conference on Innovation, Competition and Growth: Schumpeterian Perspectives, June 22-24, 2006, Nice, France
- “Technological Change and Rewiring Firm Networks: The Case of the Mobile Internet in Japan,” presented at the 2005 Strategic Management Society (SMS) Annual International Conference, October 25, 2005, Orlando, Florida, U.S.A. (with Toshihiro Nishiguchi)
- “Technological Change within Product Design and Customer Hierarchies: The Computer Industry,” presented at the Academy of Management, August 8-10, 2005, Hawaii
- “Technological Change within Product Design and Customer Hierarchies: The Music Industry,” presented at the Academy of Management, August 8-10, 2005, Hawaii
- “Collisions between Industries and the Evolution of the Mobile Internet in Japan,” presented at the Hong Kong Mobility Roundtable, June 2-3, 2005, Hong Kong
- “The Emergence of Regional Capabilities in New Technologies: the Case of the Mobile Internet,” presented at the 2004 International Conference on Mobile Communication, October 18-19, 2004, Seoul, Korea



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

- 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 and Chapters in Books

“Recent Innovation Activity of Private Enterprises in Japan,” *Hitotsubashi Business Review*, Vol. 52, No. 3, December 2004, pp. 36-51 (in Japanese)

2. Unpublished Work

2.1. Research Reports

“The Role of Tertiary Education in Research and Innovation,” *Country Background Report of Japan* (OECD Thematic Review of Tertiary Education) 2006, Chapter 5

“Statistics on Innovation in Japan – Report on the Japanese National Innovation Survey 2003 (J-NIS 2003),” Research Material No. 110, National Institute of Science and Technology Policy, Ministry of Education, Culture, Sports, Science and Technology, December 2004, (Co-authored with Tomoko Iwasa, Hiroyuki Odagiri, Hidemi Keira, Tadahisa Koga, Akira Goto, Yuji Tawara, Akiya Nagata and Yukihiko Hirano, in Japanese)

2.2. Conference Papers, Presentations

“Planning and Implementation of a Statistical Survey on the Innovation Activity: Methodology for the Japanese National Innovation Survey 2003,” Proceedings of the 20th Annual Meeting of the Japan Society for Science Policy and Research Management, pp. 1–4, October 22-23, 2005, Tokyo, National Graduate Institute for Policy Studies (GRIPS), (with Tomoko Iwasa, Hiroyuki Odagiri, Tadahisa Koga, Akira Goto and Akiya Nagata, in Japanese)

- “A Current State of the Japanese Innovation System: An Analysis on the Innovation Activity by the Private Firms Revealed in the Results of the Japanese National Innovation Survey 2003,” Proceedings of the 20th Annual Meeting of the Japan Society for Science Policy and Research Management, pp. 5–8, October 22-23, 2005, Tokyo, GRIPS (with Tomoko Iwasa, Hiroyuki Odagiri, Tadahisa Koga, Akira Goto and Akiya Nagata, in Japanese)
- “Shifting Governance Practices and Interactions with Industry: Recent Developments at Research-intensive Universities in Japan,” presented at the 65th Academy of Management (AOM) Annual Meeting, August 5-10, 2005, Honolulu, Hawaii, U.S.A.
- “Japanese Science and Technology Policy System and Evaluation,” presented at the R&D Evaluation Workshop in Japan: Evaluation of Science and Technology Policy System in Japan – Country Case Study, June 2–3, 2005, Tokyo
- “Recent Innovation Activity of Private Enterprises in Japan,” IIR “End of Japan?” Project Workshop 2005, January 6–7, 2005, Hawaii
- “Outline of Innovation Activity of the Whole of Private Firms in Japan,” IIR “End of Japan?” Project Workshop, September 21–22, 2004, Hakone, Kanagawa, Japan



Fumihiko Ikuine

■ Education

- 1998 Master of Economics, The University of Tokyo
- 1995 B.A. in Economics, The University of Tokyo

■ Professional Positions

- 2006.4~ Lecturer, Bunkyo Gakuin University
- 2004 Lecturer, Institute of Innovation Research, Hitotsubashi University
- 2003 Researcher, Global Business Research Center

■ Research Achievements

1. Publications

1.1. Articles and Chapters in Books

(In Japanese)

- “Organizational Deadweight and its Characteristics: Measurement of Organizational Deterioration,” *Organizational Science*, The Academic Association for Organizational Science, forthcoming 2006 (with Tsuyoshi Numagami, Masaru Karube, Kazuhiro Tanaka, Minoru Shimamoto and Toshihiko Kato, in Japanese)
- “Operationalizing Organizational Weight,” *Hitotsubashi Review of Commerce and Management*, Vol. 1, No. 1, May 2006, pp. 4-22 (with Tsuyoshi Numagami, Masaru Karube, Kazuhiro Tanaka, Minoru Shimamoto and Toshihiko Kato, in Japanese)
- “Organizational Design and “Organizational Deadweight: Overview and its Major Findings,” in Center for Japanese Business Studies, Hitotsubashi University, ed., *Frontier of Japanese Business Studies*, Tokyo: Yuhikaku, March 2006, pp. 3-30 (with Tsuyoshi Numagami, Masaru Karube, Kazuhiro Tanaka, Minoru Shimamoto and Toshihiko Kato, in Japanese)
- “The Home Video-game Industry in Japan—The Trap of Series Product Strategy,” *Hitotsubashi Business Review*, Vol. 53, No. 3, December 2005, pp. 52-69 (with Seiichiro Yonekura, in Japanese)
- “Developing the Artificial on Network style,” *Akamon Management Review*, Vol. 4, No. 2, February 2005, pp. 51-70 (with Hideki Fujita, in Japanese)

1.2. Others

(In Japanese)

- “Software Development of the Network Era” *Technology Management Journal*, December 2005, pp. 12-19 (with Hideki Fujita)
- “The Development of Video Game Software—The Continuous Synchronization with Users’ Feelings and Sensibility,” *Technology Management Journal*, April 2005, pp. 12-19
- “Keyword Commentary: Online Community,” *Hitotsubashi Business Review*, Vol. 52, No. 4, March 2005, pp. 192-193

2. Unpublished Work

2.1. Working Papers

(In Japanese)

“Key Determinants of Software Development Style in the Network Era: Is Open Source Enough to Succeed?” IIR Working Paper WP#05-15, June 17, 2005 (with Hideki Fujita, in Japanese)

“Developing the Artificial in Network Style: a Comparison of Packaged Software and Online Software,” Discussion Paper MMRC-J-21, COE Manufacturing Management Research Center (MMRC), The University of Tokyo, December 2004 (with Hideki Fujita, in Japanese)

3. Conference Papers, Presentations

“What is the Need for Developing Foreign Markets? —The Situation of the Foreign Markets,” The Future of the Contents Business: Organizations, Human Resources and Business Models, special symposium sponsored by the Japan Society for the Promotion of Science, March 4, 2005 (moderator of the panel discussion).

“The Change of Technologies and the Adoption of the Contents Provider – The Case of Japanese Game Software Companies,” presented at Sookmyung Women’s University (South Korea), invited lecture for the Research Institute of Economics and Business Administration, March 2005

“The Development Style of Online-Software” presented at the Annual Meeting, The Academic Association for Organizational Science, Japan, June 20, 2004, University of Tokyo, Japan (with Hideki Fujita)



Masaru Karube

■ Education

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

■ Professional Positions

- 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

Strategy and Logic of Invisible Assets, Tokyo: Nihon Keizai Shimbun, November 2004
(edited with Hiroyuki Itami, in Japanese)

1.2. Articles and Chapters in Books

(In Japanese)

“Organizational Deadweight and its Characteristics: Measurement of Organizational Deterioration,” *Organizational Science*, The Academic Association for Organizational Science, forthcoming 2006 (with Tsuyoshi Numagami, Kazuhiro Tanaka, Minoru Shimamoto, Toshihiko Kato and Fumihiko Ikuine, in Japanese)

“Operationalizing Organizational Weight,” *Hitotsubashi Review of Commerce and Management*, Vol. 1, No. 1, May 2006, pp. 4-22 (with Tsuyoshi Numagami, Kazuhiro Tanaka, Minoru Shimamoto, Toshihiko Kato and Fumihiko Ikuine, in Japanese)

“Organizational Design and “Organizational Deadweight: Overview and its Major Findings,” in Center for Japanese Business Studies, Hitotsubashi University, ed., *Frontier of Japanese Business Studies*, Tokyo: Yuhikaku, March 2006, pp. 3-30 (with Tsuyoshi Numagami, Kazuhiro Tanaka, Minoru Shimamoto, Toshihiko Kato and Fumihiko Ikuine, in Japanese)

“Technological Evolution in the Japanese and US High Performance Computer Industries: Dynamic Interdependency between Resource Accumulation and Inter-firm Rivalries,” in Itami, Hiroyuki, Takahiro Fujimoto, Tetsuji Okazaki, Hideshi Itoh and Tsuyoshi Numagami, eds., *Readings: The Japanese Corporate System Vol. 3 Strategy and Innovation*, Tokyo: Yuhikaku, January 2006, pp. 176-203 (in Japanese)

“Business Case Mitsubishi Electric Corp.: Development of Manufacturing Method for High-performance Motor with New Core Structure and High Speed/Density Coil Winding,” *Hitotsubashi Business Review*, Vol. 53, No. 2, September 2005, pp. 124-144 (with Atsushi Kobayashi, in Japanese)

“Business Case Olympus: Ultrasound Endoscopes,” *Hitotsubashi Business Review*, Vol. 52, No. 4, March 2005, pp. 146-165 (in Japanese)

“Competitive Performance of Japanese Firms and Management Agenda,” *Hitotsubashi Business Review*, Vol. 52, No. 3, December 2004, pp. 24-35 (in Japanese)

“Resource and Competition: Two Dynamics,” in Itami, Hiroyuki and Masaru Karube, eds., *Strategy and Logic of Invisible Assets*, Tokyo: Nihon Keizai Shimbun, November 2004, Chapter 3, pp. 73-103 (in Japanese)

“Inducement and Driving Forces of Resource Accumulation and Utilization,” in Itami, Hiroyuki and Masaru Karube, eds., *Strategy and Logic of Invisible Assets*, Tokyo: Nihon Keizai Shimbun, November 2004, Chapter 4, pp. 104-138 (in Japanese)

“Four Economies of Corporate Growth: Scale, Depth, Scope, and Organization,” in Itami, Hiroyuki and Masaru Karube, eds., *Strategy and Logic of Invisible Assets*, Tokyo: Nihon Keizai Shimbun, November 2004, Chapter 9, pp. 276-314 (with Hiroyuki Itami, in Japanese)

2. Unpublished Work

2.1. Research Reports

“Changes of Diversification Behaviors and Performance of Japanese Firms in the 1990s,” a Report to the Economic and Industry Policy Bureau, Ministry of Economy, Trade and Industry, April 2005, pp. 55-74 (in Japanese)

3. Conference Papers, Presentations

“Business Unit Strategy and the Organizational Structure of Japanese Firms,” presented at the International Conference of the Hitotsubashi COE Program on Knowledge, Innovation and the Japanese Corporate System, March 14-15, 2005, Tokyo, Japan (with Tsuyoshi Numagami)



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
- 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. Books

Spontaneous Evolution and Rational Design of Economic Institutions, Tokyo: University of Tokyo Press, March 2006 (co-edited with Kotaro Suzumura and Masaharu Hanazaki, in Japanese)

1.2. Articles and Chapters in Books

(In English)

- “The Incidence of Cross-licensing: A Theory and New Evidence on the Firm and Contract Level Determinants,” *Research Policy*, forthcoming (with Hyeog Ug Kwon)
- “Assessing the R&D Management of Firms by Patent Citation: Evidence from the US Patents,” *Journal of Economics and Management Strategy*, forthcoming
- “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
- “How Do the Speed, Science Linkage, Focus and New Entry Matter in IT Inventions?,” in Peeters, Carine, and Bruno Van Pottelsberghe de la Potterie, eds., *Economic and Management Perspectives on Intellectual Property Rights*, Palgrave, February 2006, pp. 171-198
- “Determinants of the Introduction of Stock Options by Japanese Firms: Analysis from Incentive and Selection Perspectives,” *Journal of Business*, Vol. 78, No. 6, November 2005, pp. 2289-2315
- “Determinants of High-royalty Contracts and the Impact of Stronger Protection of Intellectual Property Rights in Japan,” *Journal of the Japanese and International Economies*, Vol. 19, No. 2, June 2005, pp. 233-254
- “Policy Issues in Efficient Collaboration through a Patent Pool,” in Hwang, Tzong-Leh and Chiyuan Chen, eds., *The Future Development of Competition Framework*, NY: Kluwer Law International, October 2004, pp. 147-154

“The Consortium Standard and Patent Pools,” *The Economic Review*, Institute of Economic Research, Hitotsubashi University, Vol. 55, No. 4, October 2004, pp. 345-357 (with Reiko Aoki)

(In Japanese)

“Cumulative Innovation,” in Suzumura, Kotaro, Sadao Nagaoka and Masaharu Hanazaki, eds., *Spontaneous Evolution and Rational Design of Economic Institutions*, Tokyo: University of Tokyo Press, March 2006, pp. 1-13 (in Japanese)

“An Economic Analysis of Employee Invention System,” in Suzumura, Kotaro, Sadao Nagaoka and Masaharu Hanazaki, eds., *Spontaneous Evolution and Rational Design of Economic Institutions*, Tokyo: University of Tokyo Press, March 2006, Chapter 10, pp. 311-335 (in Japanese)

“Do Mergers and Acquisitions Promote Corporate Growth? Transfer vs. Sharing of Control Right in Japan,” *Hitotsubashi Business Review*, Vol. 53, No. 2, September 2005, pp. 32-44 (in Japanese)

“R&D Risk and Employee Invention System,” *Intellectual Property Management*, Japan Intellectual Property Association, Vol. 56, No. 6, May 28, 2004, pp. 885-896 (in Japanese)

1.3. Others

“Globalization of Market and International Cooperation of Competition Policy,” *ESP*, Economic Planning Association, No. 464, May 2004, pp. 19-23 (in Japanese)

2. Unpublished Work

2.1. Working Papers

(In English)

“Acquisitions and Use of Patents: A Theory and New Evidence from the Japanese Firm Level Data,” IIR Working Paper WP#05-14, May 2005 (with Yoichiro Nishimura)

“Patent Quality, Cumulative Innovation and Market Value: Evidence from Japanese Firm Level Panel Data,” IIR Working Paper WP#05-06, February 2005

“Coalition Formation for a Consortium Standard through a Standard Body and a Patent Pool: Theory and Evidence from MPEG2, DVD and 3G,” IIR Working Paper WP#05-01, February 2005 (with Reiko Aoki)

2.2. Research Reports

“Patent Protection of Upstream Inventions,” Japan Patent Office, March 2006 (Research Project Leader: Sadao Nagaoka, in Japanese)

“Technical Standards and Competition Policy,” Fair Trade Commission (FTC) Competition Policy Research Center, October 2005 (Research Project Leader: Sadao Nagaoka, in Japanese)

“Emergence and Structural Characteristics of Essential Patents of Technical Standards,” Japan Patent Office, March 2005 (Research Project Leader: Sadao Nagaoka, in Japanese)

3. Conference Papers, Presentations

- “The Structure and the Evolution of Essential Patents for Standards: Lessons from three IT Standards,” presented at the International J.A. Schumpeter Society 11th ISS Conference on Innovation, Competition and Growth: Schumpeterian Perspectives, June 21-24, 2006, Nice-Sophia-Antipolis (with Tomoyuki Shimbo and Naotoshi Tsukada)
- “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
- “Reform and Challenges of IPR Protection in Japan,” presented at the International Symposium on 21st Century Innovation Systems for Japan and the United States: Lessons from a Decade of Change, organized by the National Institute of Science and Technology Policy, Ministry of Education, Culture, Sports, Science and Technology, Japan and the Board of Science, Technology, and Economic Policy, U.S. National Academies, in collaboration with IIR, January 10-11, 2006, Tokyo
- “Efficient Appropriation of R&D Investments and the Exhaustion Principle,” presented at the International Workshop on the Exhaustion of Intellectual Property Rights, June 26, 2005, IIR, Tokyo
- “Patent Quality, Cumulative Innovation and Market Value: Evidence from Japanese Firm Level Panel Data,” presented at the International Workshop on IT Innovation, December 13-14, 2004, Hitotsubashi University, Tokyo
- “Assessing the R&D Management of Firms by Patent Citation: Evidence from the US Patents,” presented at the Conference on Innovation and Intellectual Property: Economic & Managerial Perspectives (Applied Econometrics Association), July 16, 2004, INSEAD, Singapore; presented at the Annual Meeting of Japanese Economic Association, September 26, 2004, Okayama University, Japan
- “Unilateral vs. Cross Licensing: How Do Firm Characteristics Affect Licensing Decisions?,” presented at the Far Eastern Econometric Society, June 2004, Korea (with Hyeog Ug Kwon)
- “R&D and Market Value: Appropriability vs. Preemption,” presented at the 2004 International Schumpeter Society Conference on Innovation, Industrial Dynamics and Structural Transformation: Schumpeterian Legacies, June 2004, Università Bocconi, Italy
- “Determinants of High-royalty Contracts and the Impact of Stronger Protection of Intellectual Property Rights in Japan,” presented at the Conference on International Economic Relations and Structural Change: Issues and Policy Options for Japan and the United States, organized by the University of Michigan and Hitotsubashi University, May 2004, Michigan



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

- 2004 Visiting Scholar, Massachusetts Institute of Technology, Center for International
Fall Studies
- 2003 Visiting Senior Research Scholar, University of Maryland, School of Public
Sum Affairs, Center for Public Policy and Private Enterprise
- 2002 Visiting Senior Research Scholar, University of Maryland, School of Public
Sum Affairs, Center for Public Policy and Private Enterprise
- 2001 Academic Visitor, University of Cambridge, The Judge Institute of Management
Sum
- 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. Articles and Chapters in Books

(In Japanese)

- “Comparisons of Small-firm Networks in Japan, China, and the United Kingdom: From the Standpoint of ‘Small-world’ Organizations,” in Kikkawa, Takeo and the JTUC (Japanese Trade Union Confederation) Research Institute for Advanced Living Standards (JTUC-RIALS), eds., *Economic Recovery from the Regions: Industrial Concentration, Innovation, and Job Creation*, Tokyo: Yuhikaku, 2005, Chapter 6, pp. 159-189 (lead author, with Motoko Tsujita, in Japanese)
- “The Frontiers of Business in China,” *Hitotsubashi Business Review*, Vol. 52, No. 4, March 2005, pp. 4-5 (in Japanese)
- “The Prosperity of Wenzhou and ‘Small-world’ Networks,” *Hitotsubashi Business Review*, Vol. 52, No. 4, March 2005, pp. 22-38 (lead author, with Motoko Tsujita, and Dan Xiu, in Japanese)
- “The Rapid Growth and Globalization of Chinese Electronics Companies: A Study of Haier,” *Hitotsubashi Business Review*, Vol. 52, No. 4, March 2005, pp. 54-71 (lead author, with Tomohumi Amano and Changxiang Zhao, in Japanese)
- “Netcentric Strategies,” *Hitotsubashi Business Review*, Vol. 52, No. 1, June 2004, pp. 48-63 (in Japanese)

1.2. Others

(In Japanese)

“A New Organizational Theory of Small Worlds (1)-(8),” Yasashii Keizaigaku, *Nihon Keizai Shimbun*, July 26-30 and August 2-4, 2004, p. 21, p. 27, p. 29, p.27, p. 31, p. 20, p. 25, p. 29

“A View Point: The Ideas of Smart-practice Government,” *Jurist*, No. 1268, June 1, 2004, pp. 2-4

“Keys to the Rapid Development of Wenzhou, China: Networks Beyond the Daily Routine,” Keizai Kyoshitu, *Nihon Keizai Shimbun*, April 21, 2004, p.29

2. Conference Papers, Presentations

“Technological Change and Rewiring Firm Networks: The Case of the Mobile Internet in Japan,” presented at the 2005 Strategic Management Society (SMS) Annual International Conference, October 25, 2005, Orlando, Florida, U.S.A. (with Jeffrey Funk)

“It’s a Small World After All: Network Theory, Japanese Business, and Industrial Networks,” presented at the 65th Academy of Management (AOM) Annual Meeting, “A New Vision of Management in the 21st Century,” Visual Presentation in the Organization and Management Theory (OMT) Division, August 9, 2005, Honolulu, Hawaii, U.S.A. (lead author, with Jonathan Brookfield)

“Integrated Project Teams as Small-world Hubs in Defense Acquisition: Can Japan Catch Up?,” presented at Social Science Research Council (New York), Abe Fellowship Program, January 15, 2005, Fellows’ Retreat, Amelia Island, Florida, U.S.A.

“From Equipment to Capabilities: The Rise of Integrated Project Teams in Defense Acquisition—An Update,” presented at the Third MIT-IIR ‘End of Japan?’ Project Conference, January 6, 2005, Hawaii



Akira Takeishi

■ Education

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

■ Professional Positions

- 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 English)

“Mobile Innovation and the Music Business in Japan: The Case of Ringing Tone Melody (“Chaku-Mero”),” in Barnes, Stuart and Eusebio Scornavacca, eds., *Unwired Business: Cases in Mobile Business*, Hershey: IRM Press, 2006, pp. 1-13 (with Kyoung-Joo Lee)

“Case Study Shimano: Market Creation Through Component Integration,” in Herstatt, Cornelius, Christoph Stockstrom, Hugo Tschirky and Akio Nagahira, eds., *Management of Technology and Innovation in Japan*, Berlin: Springer, 2006, pp. 29-48 (with Yaichi Aoshima)

“(Editorial) The Future is UNWIRED: Organizational and Strategic Perspectives,” *Journal of Strategic Information Systems*,” Vol. 14, No. 3, September 2005, pp. 243-244 (with Sirkka Jarvenpaa and Bertil Thorngren)

“Mobile Music Business in Japan and Korea: Copyright Management Institutions as a Reverse Salient,” *Journal of Strategic Information Systems*, Vol. 14, No. 3, September 2005, pp. 291-306 (with Kyoung-Joo Lee)

(In Japanese)

“The Timing of Technological Innovation: The Case of Automotive Emission Control in the 1970s” *Organizational Science*, forthcoming (with Ying Zhu and Seiichiro Yonekura, in Japanese)

“Seiko Epson: Development of a Quartz Watch Having an Automatic Generating System,” *Hitotsubashi Business Review*, forthcoming (with Masafumi Kanayama and Tatsuya Mizuno, in Japanese)

“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 (in Japanese)

- “Thinking through the Architecture,” in Itami, Hiroyuki, Takahiro Fujimoto, Tetsuji Okazaki, Hideshi Itoh and Tsuyoshi Numagami, eds., *Readings: The Japanese Corporate System Vol. 3 Strategy and Innovation*, Tokyo: Yuhikaku, January 2006, pp. 206-240 (with Yaichi Aoshima, in Japanese)
- “Mobile Music Business in Japan and Korea,” *Hitotsubashi Business Review*, Vol. 53, No. 3, December 2005, pp. 70-87 (with Kyoung-Joo Lee, in Japanese)
- “Music Business and Technological Innovation: The Evolution as a Large Technological System,” *Akamon Management Review*, Vol. 4, No. 7, July 2005, pp. 324-329 (in Japanese)
- “Kao Corporation: Development of Concentrated Power Detergent ‘ATTACK’,” *Hitotsubashi Business Review*, Vol. 53, No. 1, June 2005, pp. 102-121 (with Masatoshi Fujiwara, in Japanese)
- “Digitalization and the Evolution of Music Business: Interactions of Technology, Business, and Music,” *Hitotsubashi Business Review*, Vol. 52, No. 1, June 2004, pp. 78-94 (in Japanese)

2. Unpublished Work

2.1. Working Papers

(In English)

- “The Timing of Technological Innovation: The Case of Automotive Emission Control in the 1970s” IIR Working Paper WP#06-05, May 2006 (with Ying Zhu and Seiichiro Yonekura; Japanese version, WP#05-17, July 2005)
- “Business Ecosystem and Reverse Salient: The Development of the Mobile Music Business in Japan and Korea,” IIR Working Paper WP#06-03, February 2006 (with Kyoung-Joo Lee)
- “Divergent Paths of Mobile Innovation: Development of Mobile Music Businesses in Japan and Korea,” IIR Working Paper WP#05-10, April 2005 (with Kyoung-Joo Lee)
- (In Japanese)
- “Matsushita: Development and Commercialization of Low-Current-Consumption Miniaturized GaAs Power Modules for Mobile Communication Systems,” IIR Case Study CASE#06-1, March 2006 (with Youngjae Koh, Kenichi Furukawa and Hideaki Kohzu, in Japanese)
- “Seiko Epson: Development of a Quartz Watch Having an Automatic Generating System,” IIR Case Study CASE#05-12, July 2005 (with Masafumi Kanayama and Tatsuya Mizuno, in Japanese)
- “Teaching Note on MOTV1: The Century of Innovation: American History, and MOTV2: The Century of Innovation: Technology and Society,” February 2005 (in Japanese)
- “Toyo Seikan Group: Development of TULC Can,” IIR Case Study, CASE#04-12, September 2004 (with Yang-Joong Yun, in Japanese)
- “The Music Business and Digitalization: Interactions of Technology, Business, and Music,” IIR Working Paper WP#04-09, May 2004 (in Japanese)

3. Conference Papers, Presentations

- “The Timing of Technological Innovation: The Case of Automotive Emission Control in the 1970s,” presented at the International J.A. Schumpeter Society 11th ISS Conference on Innovation, Competition and Growth: Schumpeterian Perspectives, June 21-24, 2006, Nice-Sophia-Antipolis, France (with Ying Zhu and Seiichiro Yonekura)
- “Reasons for Innovation: Legitimization under Uncertainty in the Cases of Okochi-Award Winners” presented at National Conference of the Academic Association for Organizational Science, June 10-11, 2006, Tokyo, Japan (with Masaru Karube and Yaichi Aoshima, in Japanese)
- “Business Ecosystem and Reverse Salient,” presented at Helsinki Mobility Roundtable, May 31-June 2, 2006, Helsinki, Finland (with Kyoung-Joo Lee)
- “Structural Changes in the Japanese Supplier System,” presented at IMVP-IPS Asia Pacific Forum, October 2005, Seoul, Korea
- “Structural Changes in the Japanese Supplier System,” presented at IMVP-MMRC Asia Pacific Forum, October 2005, Tokyo, Japan
- “Structural Changes in the Japanese Supplier System,” MIT International Motor Vehicle Annual Meeting, June 2005, Pennsylvania University, USA
- “Have Japanese Firms Really Revived? Preliminary Findings from ‘The End of Japan?’ Project,” presented at the International Conference of the Hitotsubashi COE Program on “Knowledge, Innovation, and the Japanese Corporate System,” March 2005, Tokyo, Japan



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

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

■ Research Achievements

1. Publications

1.1 Books

(In Japanese)

How to Run a Business: This Is the Kigyoi.com., Tokyo: NTT Publishing, February 2006
(with Susumu Fujita, in Japanese)

Leadership in the Post-charismatic Leadership, Tokyo: NTT Publishing, June 2005 (in Japanese)

A Case Book: The Japanese Start-ups, edited, Tokyo: Yuhikaku, May 2005 (in Japanese)

The Rule for Success Has Changed, Tokyo: Kigyoka Network, May 2005 (with Akira Nakamura, in Japanese)

Strategy and Structure Follow You, Tokyo: Chuokoron-shinsha, 2004 (in Japanese)

1.2 Articles and Chapters in Books

(In English)

“Innovative Multinational Forms: Japan as a Case Study,” in Chandler, Alfred D., and Bruce Mazlish, eds., *Leviathans: Multinational Corporations and the New Global History*, Cambridge University Press, 2005, pp. 105-131 (with Sara McKinney)

“Beat IBM,’ Entrepreneurial Bureaucracy: A Contradiction in Terms?,” Richard Coopey, ed., *Information Technology Policy*, NY: Oxford University Press, 2004, pp. 121-143

(In Japanese)

“The Timing of Technological Innovation: The Case of Automotive Emission Control in the 1970s” *Organizational Science*, forthcoming (with Ying Zhu and Akira Takeishi, in Japanese)

“Institutional Setting and Innovation,” *Keizai-Shirin* (The Hosei University Economic Review), Vol. 73, No. 4, March 2006, pp. 381-406 (with Osamu Suzuki, in Japanese)

“The Home Video-game Industry in Japan—The Trap of Series Product Strategy,” *Hitotsubashi Business Review*, Vol. 53, No. 3, December 2005, pp. 52-69 (with Fumihiko Ikuine, in Japanese)

“To Learn the Japanese Start-ups,” in Yonekura, Seiichiro, ed., *A Case Book: The Japanese Start-ups*, Tokyo: Yuhikaku, May 2005, Introduction, pp. 2-10 (in Japanese)

2. Unpublished Work

2.1 Working Papers

“The Timing of Technological Innovation: The Case of Automotive Emission Control in the 1970s” IIR Working Paper WP#06-05, May 2006 (with Ying Zhu and Akira Takeishi; Japanese version, WP#05-17, July 2005)

3. Conference Papers, Presentations

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

“Japan Cool: The Emergence of the Japanese Game Software Industry,” presented at EBHA-2004 Conference, European Business History Association, September 16-18, 2004, Barcelona, Spain

2. Visiting Researcher — Apr. 2004 ~ Mar. 2006



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
- 1998~ ANNEAL Corporation
- 1978 Fujitsu, Ltd.

3. Foreign Visiting Researchers — Apr. 2004 ~ Mar. 2006

Yunshi Mao

Professor and Director, Research Center for Enterprise and Market,
Shongshan University (China)
3 October 2005 - 28 December 2005

Taohua Ouyang

Associate Professor, Business School, Renmin University of China
1 July 2005 - 30 September 2005

Peter Ganea

Max Planck Institute for Intellectual Property, Competition and Tax Law (Germany)
1 April 2005 - 30 June 2005

Xielin Liu

Research Fellow and Professor,
National Center for Science and Technology for Development, China
1 January 2005 - 31 March 2005

Patrick Reinmüller

Associate Professor, Rotterdam School of Management, Erasmus University
1 October 2004 - 31 December 2004

Jun-Ho Bae

Associate Professor, School of International Studies, Hanshin University (Korea)
1 April 2004 - 30 September 2004

III. Education



1. Courses Given by the IIR Faculty Members — Apr. 2004 ~ Mar. 2006

| | Fiscal Year | |
|---|---------------------------------|-------------------------------------|
| | 2004 | 2005 |
| Graduate School of Commerce and Management | | |
| Master's and Doctoral Program | | |
| <i>Courses provided by the Innovation kozas</i> | | |
| Innovation Management | Karube | Takeishi |
| Innovation and Corporate Strategy | Aoshima | Karube |
| Interorganizational Relations | Nishiguchi | Nishiguchi |
| Information Networks | Funk | Funk |
| History of Technology and Entrepreneurs | Yonekura | Yonekura |
| Innovation, the Firm and Institution | Ijichi | Ijichi |
| Innovation, Industrial and Economic Growth | Nagaoka | Nagaoka |
| Innovation and Skill Accumulation System | Chuma | Chuma |
| Special Lecture: Development of the Contents | Ikuine | Ikuine |
| Special Lectures (including those by the IIR Visiting Professors) | Bae / Reinmöller | Nagaoka / Ganea / Chuma / Mao |
| MBA Program | | |
| Economics of the Firm and Industry | Nagaoka | Nagaoka |
| Managerial Leadership and Philosophy | Yonekura | Yonekura |
| Organization Theory | Aoshima | |
| Technology Strategy | Takeishi | Takeishi |
| Venture Finance | Fujimura | Fujimura |
| Japanese Economy and Industry | Karube* | Karube* |
| Internet Strategy | Funk | Funk |
| Workshop: Technology and Innovation | Fujimura | |
| Workshop: Strategy | | Ikuine* |
| Workshop: Industry | Nagaoka / Ijichi | Nagaoka / Ijichi |
| Workshop: Innovation | | Fujimura |
| Senior Executive Program | | |
| Diplomacy: Negotiation Game | Karube | Karube |
| Strategy: Case Study | Aoshima | |
| Undergraduate Program in the Faculty of Commerce and Management | | |
| Special Lecture: Innovation Management | IIR Faculty Members | IIR Faculty Members |
| Graduate School of Economics | | |
| Master's and Doctoral Program | | |
| Workshop: Industry and Labor | Chuma / Nagaoka / Ijichi* | Chuma / Nagaoka / Ijichi* |

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 90,495 books (Japanese, 72,858; Foreign, 17,637) and 846 magazines (Japanese, 598; Foreign, 248) as of April 2006.

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 8,298 books (Japanese, 6,796; Foreign, 1,502), and biographies and profiles of top executives, 6,693 books (Japanese, 6,042; Foreign, 651) as of April 2006. Upon the reorganization from the IBR to the IIR, the library has made some changes in the types of books and magazines it has been available. More specifically, it has increased the number of books on innovation research, almanacs and resources on the hi-tech industry, and magazines of technology management.

IV. Research Results / Publications



1. Hitotsubashi Business Review — Apr. 2004 ~ Mar. 2006

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.

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| Vol.53 No.3 | “Content Businesses of Japan” |
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| Vol.53 No.1 | “The Start-ups of Japan “ |
| Vol.52 No.4 | “The Frontiers of Business in China” |
| Vol.52 No.3 | “Re-examining Our Competitiveness: Have Japanese Firms Really Revived?” |
| Vol.52 No.2 | “Top Management in Japanese Corporations” |
| Vol.52 No.1 | “Digital Competition” |

Featured Papers

| Issue | Vol. / No. | Title | Author(s) |
|--------------|----------------|--|---|
| Mar. 2006 | Vol.53 No.4 | “Invisible Dimensions of Competitive Differentiation: Strategies for De-commoditization” | Ken Kusunoki (Associate Professor, Graduate School of International Corporate Strategy, Hitotsubashi University) |
| | | “De-Commoditization and New Industry Creation” | Jeffrey L. Funk (Professor, IIR) |
| | | “Solving the Growth Equation” | Scott Anthony (Partner, Innosight, LLC) |
| | | “Dual Nature of Modular Products” | Masaki Ueno (Lecturer, Research Institute of Economics & Business Administration, Kobe University) |
| | | “Marketing toward Decommoditization” | Yoshinori Fujikawa (Lecturer, Graduate School of International Corporate Strategy, Hitotsubashi University) |

Featured Papers (continued)

| Issue | Vol. / No. | Title | Author(s) |
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| Dec. 2005 | Vol.53 No.3 | “Perspectives of the Japanese Content Industry and the Government’s Policy” | Shuhei Kishimoto (Visiting Professor, Japanese Institute of Global Communications, International University of Japan) |
| | | ““The Dark Side”” in Japanese Film Industry” | Masaru Yamashita (Associate Professor, Faculty of Business, Aoyama Gakuin University) |
| | | “Publishers and Editors as Gatekeepers” | Ikuya Sato (Professor, Graduate School of Commerce and Management, Hitotsubashi University) |
| | | “The Home Video-Game Industry in Japan: The Trap of Series Product Strategy” | Seiichiro Yonekura/Fumihiko Ikuine (Professor, IIR; Lecturer, IIR) |
| | | “Mobile Music Business in Japan and Korea” | Akira Takeishi/Kyoung-Joo Lee (Professor, IIR; Researcher, IIR) |
| | | “Strategy-as-Phronesis” | Ikujiro Nonaka/Ryoko Toyama (Professor, Graduate School of International Corporate Strategy, Hitotsubashi University; Associate Professor, Japan Advanced Science and Technology, Hokuriku) |
| Sep. 2005 | Vol.53 No.2 | “The Value of M&A Activity to Enhance Organizational Learning” | Daniel Arturo Heller/Takahiro Fujimoto/ Glenn Mercer (Professor, International Graduate School of Social Sciences, Yokohama National University; Professor, Graduate School of Economics, University of Tokyo; Senior Practice Expert, McKinsey Company) |
| | | “M&A as Tools for Corporate Turnaround Management” | Ryuji Yasuda (Professor, Graduate School of International Corporate Strategy, Hitotsubashi University) |
| | | “Do Mergers and Acquisitions Promote Corporate Growth?: Transfer vs. Sharing of Control Right in Japan” | Sadao Nagaoka (Professor, IIR) |
| | | “Do Foreign Shareholders Change Japanese Firms?” | Shigeru Asaba (Professor, Faculty of Economics, Gakushuin University) |
| | | “Desirable System for M&A in Japan” | Noriyuki Yanagawa (Associate Professor, Graduate School of Economics, University of Tokyo) |
| | | “Recent Trends in Japanese Merger Enforcement” | Nobru Kawahama (Professor, Graduate School of Law, Kyoto University) |

Featured Papers (continued)

| Issue | Vol. / No. | Title | Author(s) |
|--------------|----------------|--|--|
| Jun. 2005 | Vol.53 No.1 | “The Contemporary Venture Business” | Tadao Kiyonari (Academic Advisor, Hosei University) |
| | | “Trend of Start-ups in Japan” | Shingo Igarashi (Associate Professor, Venture Business Laboratory, Kyushu University) |
| | | “The Industrial Policy on Promotion and Facilitation for New Business” | Norihiko Ishiguro (Director, Minister’s Secretariat, Ministry of Economy, Trade and Industry) |
| | | “Creating Business Organization to Stimulate New Industries: Japanese LLPs & LLCs Offer Incentives to Human Capital Providers” | Zenichi Shishido/Yoshiaki Ishii (Professor, Seikei Law School; Deputy Director, Economic and Industrial Policy Bureau, Ministry of Economy, Trade and Industry) |
| | | “What Is Required to Be an Effective Venture Capitalist” | Yoshito Hori (President, Globis Corporation) |
| Mar. 2005 | Vol.52 No.4 | “What Should Japan Learn from the Entry of Taiwanese IT Firms into China?” | Mitsuhiro Seki (Professor, Graduate School of Commerce and Management, Hitotsubashi University) |
| | | “The Prosperity of Wenzhou and “Small-world” Network” | Toshihiro Nishiguchi/Motoko Tsujita/Dan Xiu (Professor, IIR; Lecturer, Faculty of Business Administration, Shizuoka Sangyo University; Doctoral Course at Graduate School of Economics, Hitotsubashi University) |
| | | “Labor Management within China’s Socio-Economic Conditions” | Kenichi Yasumuro (Professor, Faculty of Business Administration, University of Hyogo) |
| | | “The Rapid Growth and Globalization of Chinese Electronics Companies: A Study of Haier” | Toshihiro Nishiguchi/Tomofumi Amano/Changxiang Zhao (Professor, IIR; Associate Professor, Faculty of Business Administration, Hosei University; Doctoral Course at Graduate School of Economics, Hitotsubashi University) |
| | | “The Role of FDI and Technological Transfer in the Chinese Economy” | Jianting Fan (Associate Professor, School of International Business Administration, Shanghai University of Finance & Economics) |

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| Issue | Vol. / No. | Title | Author(s) |
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| Dec. 2004 | Vol.52 No.3 | “Japan’s Long-term Recession in 1990’s: Fall of Industrial Competitiveness?” | Kazuyuki Motohashi (Associate Professor, Research Center for Advanced Science and Technology, The University of Tokyo) |
| | | “Competitive Performance of Japanese Firms and Management Agenda” | Masaru Karube (Associate Professor, IIR) |
| | | “Recent Innovation Activity of Private Enterprises in Japan” | Tomohiro Ijichi (Associate Professor, IIR/Affiliated Fellow, National Institute of Science and Technology Policy) |
| | | “The Rise and Fall of Japanese Quality Management” | Yutaka Kato (Professor, Graduate School of Business Administration, Kobe University) |
| | | “Increasing Complexity and Limit of Organization in Japanese Science-based Industry: Based on the Case of Microlithography Industry” | Hiroyuki Chuma (Professor, IIR/Affiliated Senior Fellow, National Institute of Science and Technology Policy/Faculty Fellow, Research Institute of Economy, Trade and Industry) |
| | | “Building Competitive Advantage through Global Strategies—Leveraging Location Advantage in East Asia in Hard Disk Drive Industry” | Tomofumi Amano/Hiroyuki Kato (Associate Professor, Faculty of Business Administration, Hosei University; Doctoral Course at Graduate School of Economics, The University of Tokyo) |
| Sep. 2004 | Vol.52 No.2 | “Excellent Top Managers” | Hiroyuki Itami (Professor, Graduate School of Commerce and Management, Hitotsubashi University) |
| | | “Roles and Missions of Top Management” | Uichiro Niwa (President, ITOCHU Corporation) |
| | | “Profiles of Top Executives in Postwar Japanese Companies” | Kazuhiro Tanaka/Motohiro Morishima (Associate Professor; Professor, Graduate School of Commerce and Management, Hitotsubashi University) |
| | | “Diffusion of Professional Managers in Prewar Japanese Cotton Spinning Industry: Determinants and Implications” | Tetsuji Okazaki (Professor, Graduate School of Economics, The University of Tokyo) |
| | | “Designing Executive Tracks” | Kazuhiro Mishina (Associate Professor, Graduate School of Business Administration, Kobe University) |
| | | “The Knowledge-based Theory of the Firm: Toward the Dynamic Evolution of the Strategic Management” | Ikujiro Nonaka/Ryoko Toyama/Noboru Konno (Professor, Graduate School of International Corporate Strategy, Hitotsubashi University; Associate Professor, Japan Advanced Institute of Science and Technology, Hokuriku; President, Column, Inc.) |

Featured Papers (continued)

| Issue | Vol. / No. | Title | Author(s) |
|--------------|----------------|---|--|
| Jun. 2004 | Vol.52 No.1 | “What Does It Take to Be a Platform Leader: Some Recent Lessons from Palm and NTT Do-CoMo” | Annabelle Gawer/Michael A. Cusumano (Associate Professor, INSEAD; Professor, Sloan School of Management, Massachusetts Institute of Technology) |
| | | “Causes and Lessons from the Internet Bubble” | Stanely J. Liebowitz (Professor, School of Management, University of Texas at Dallas) |
| | | “RFID: Connecting the Real World to the Net” | Jiro Kokuryo (Professor, Faculty of Environmental Information, Keio University) |
| | | “Netcentric Strategies” | Toshihiro Nishiguchi (Professor, IIR) |
| | | “Capitalizing on Japan’s Lead in the Mobile Internet” | Jeffrey L. Funk (Professor, IIR) |
| | | “Digitalization and the Evolution of Music Business: Interactions of Technology, Business, and Music” | Akira Takeishi (Professor, IIR) |

Columns

| Issue | Vol./No. | Title | Author |
|--------------|----------------|---|--|
| Mar. 2006 | Vol.53 No.4 | MONODUKURI and Philosophy (4): For the 21st Century | Takahiro Fujimoto (Professor, Graduate School of Economics, The University of Tokyo) |
| Dec. 2005 | Vol.53 No.3 | MONODUKURI and Philosophy (3): Four Factors | Takahiro Fujimoto |
| Sep. 2005 | Vol.53 No.2 | MONODUKURI and Philosophy (2): The Origin of Matters | Takahiro Fujimoto |
| Jun. 2005 | Vol.53 No.1 | MONODUKURI and Philosophy (1): An Aristotle in Takaoka Factory | Takahiro Fujimoto |
| Mar. 2005 | Vol.52 No.4 | Techniques of Strategic Thinking (4): An Illusion about “Standoff Strategists” | Tsuyoshi Numagami (Professor, Graduate School of Commerce and Management, Hitotsubashi University) |
| Dec. 2004 | Vol.52 No.3 | Techniques of Strategic Thinking (3): Managing Both Good and Bad Cycles | Tsuyoshi Numagam |
| Sep. 2004 | Vol.52 No.2 | Techniques of Strategic Thinking (2): A Pitfall of Time-series Development | Tsuyoshi Numagami |
| Jun. 2004 | Vol.52 No.1 | Techniques of Strategic Thinking (1): Thinking Methods for Strategy | Tsuyoshi Numagami |

Serials

| Issue | Vol./No. | Title | Author(s) |
|-------------------------|-----------------------------|--|---|
| Mar. 2006 | Vol.53 No.4 | Porter Prize 2005 | Emi Osono (Associate Professor, Graduate School of International Corporate Strategy, Hitotsubashi University) |
| Mar. 2005 | Vol.52 No.4 | Porter Prize 2004 | Emi Osono |
| Dec. 2004- Mar. 2006 | Vol.52 No.3- Vol.53 No.4 | Management of Decision Making (1)-(6) | Katsuhiko Nagase (Professor, Faculty of Urban Liberal Arts/ Business School, Tokyo Metropolitan University) |
| Jun.. 2005 | Vol.53 No.1 | Branding in China: Part6 | Toshiyuki Yahagi (Professor, The Research Institute of Innovation Management, Hosei University) |
| Mar. 2005 | Vol.52 No.4 | Branding in China: Part5 | Yuko Yamashita (Associate Professor, Graduate School of Commerce and Management, Hitotsubashi University) |
| Dec. 2004 | Vol.52 No.3 | Branding in China: Part4 | Taotao Bi (Associate Professor, Faculty of Economics, Keiai University) |
| Sep. 2004 | Vol.52 No.2 | Branding in China: Part3 | Chunji Jin/Ichiro Furukawa (Doctoral Course at Graduate School of Commerce and Management, Hitotsubashi University; Professor, Graduate School of Commerce and Management, Hitotsubashi University) |
| Jun. 2004 | Vol.52 No.1 | Branding in China: Part2 | Takeshi Matsui (Associate Professor, Graduate School of Commerce and Management, Hitotsubashi University) |
| Jun. 2004 | Vol.52 No.1 | An Invitation to Strategic Finance (6) | Makoto Nakano/Toyohiko Hachiya (Associate Professor, Graduate School of International Corporate Strategy, Hitotsubashi University; Associate Professor, Graduate School of Decision Science and Technology, Tokyo Institute of Technology) |

Business Cases

| Issue | Vol./No. | Title | Author(s) |
|-----------|-------------|---------------------------|---|
| Mar. 2006 | Vol.53 No.4 | PHOENIX Electric Co., Ltd | Hiroyuki Kurihara/Yoshio Ono (Felissimo Corporation; Lecturer, Faculty of Economics, Shiga University) |
| | | Southwest Airlines Co. | Hiroshi Shimizu (Doctoral Course, London School of Economics) |

Business Cases (continued)

| Issue | Vol./No. | Title | Author(s) |
|--------------|----------------|----------------------------------|---|
| Dec. 2005 | Vol.53 No.3 | Ricoh Company, Ltd. | Yoko Ishikura (Professor, Graduate School of International Corporate Strategy, Hitotsubashi University) |
| | | Terumo Corporation | Yaichi Aoshima (Associate Professor, IIR) |
| Sep. 2005 | Vol.53 No.2 | JFE | Nobumichi Hattori (Associate Professor, Graduate School of International Corporate Strategy, Hitotsubashi University) |
| | | Mitsubishi Electric Corporation | Masaru Karube/Atsushi Kobayashi (Associate Professor, IIR; MBA Course at Graduate School of Commerce and Management, Hitotsubashi University) |
| | | Koito Manufacturing Co., Ltd. | Tomofumi Amano (Associate Professor, Faculty of Business Administration, Hosei University) |
| Jun. 2005 | Vol.53 No.1 | Kao Corporation | Masatoshi Fujiwara/Akira Takeishi (Lecturer, Faculty of Business Administration, Kyoto Sangyo University; Professor, IIR) |
| | | Kansai Super Market | Manabu Mizuno (Lecturer, Faculty of Management Information, Hannan University) |
| Mar. 2005 | Vol.52 No.4 | Toray Industries, Inc. | Yaichi Aoshima/Takeo Kasai (Associate Professor, IIR; Doctoral Course at Graduate School of Commerce and Management, Hitotsubashi University) |
| | | Olympus Corporation | Masaru Karube/Miho Imori (Associate Professor, IIR; Master's Course at Graduate School of Commerce and Management, Hitotsubashi University) |
| Dec. 2004 | Vol.52 No.3 | Gulliver International Co., Ltd. | Ken Kusunoki/Akira Yoshida (Associate Professor, Graduate School of International Corporate Strategy, Hitotsubashi University; Sompo Japan Insurance Inc.) |
| | | NihonAim Co., Ltd. | Takuya Ishizaki (Researcher, IIR) |
| Sep. 2004 | Vol.52 No.2 | Shiki Theatre Company | Yoko Ishikura (Professor, Graduate School of International Corporate Strategy, Hitotsubashi University) |
| | | Toshiba Corporation | Masaaki Sakamoto (Master's Course at Graduate School of Commerce and Management, Hitotsubashi University) |

Business Cases (continued)

| Issue | Vol./No. | Title | Author(s) |
|--------------|----------------|-----------------------|--|
| Jun. 2004 | Vol.52 No.1 | L'ORÉAL International | Yuko Yamashita/Makoto Kitamura (Associate Professor, Graduate School of Commerce and Management, Hitotsubashi University; Doctoral Course at Graduate School of Commerce and Management, Hitotsubashi University) |
| | | House Foods Corp. | Sachiko Ito/Yaichi Aoshima (Master's Course at Graduate School of Commerce and Management, Hitotsubashi University; Associate Professor, IIR) |

Commentaries on Key Words

| Issue | Vol./No. | Title | Author |
|--------------|----------------|----------------------------------|---|
| Mar. 2006 | Vol.53 No.4 | Information Security | Shuji Kawaguchi (Senior Researcher, Mitsubishi Research Institute) |
| Dec. 2005 | Vol.53 No.3 | Internal Control | Nobuyuki Maeyama (Associate Professor, Faculty of Business Administration, Yokohama National University) |
| Sep. 2005 | Vol.53 No.2 | Business Continuity | Tomohisa Sashida (Senior Researcher, Tokio Marine & Nichido Risk Consulting Co., Ltd.) |
| Jun. 2005 | Vol.53 No.1 | Accounting for Impairment Assets | Kenji Kawashima (Lecturer, Faculty of Commerce and Economics, Chiba University of Commerce) |
| Mar. 2005 | Vol.52 No.4 | Online Community | Fumihiko Ikuine (Lecturer, IIR) |
| Dec. 2004 | Vol.52 No.3 | Stock Option | Keisuke Takeguchi (Associate Professor, Department of Economics, Hosei University) |
| Sep. 2004 | Vol.52 No.2 | Risk Management | Noriyoshi Yanase (Lecturer, Faculty of Business Administration, Tokyo Keizai University) |
| Jun. 2004 | Vol.52 No.1 | Corporate Social Responsibility | Kanji Tanimoto (Professor, Graduate School of Commerce and Management, Hitotsubashi University) |

Management Forum

| Issue | Vol./No. | Interviewee | Interviewer(s) |
|-----------|-------------|--|---------------------------------------|
| Mar. 2006 | Vol.53 No.4 | Yukio Fujimaki (President, SEVEN & i Life Design Institute) | Seiichiro Yonekura |
| Dec. 2005 | Vol.53 No.3 | Shigeo Maruyama (President, 247 Music, Inc.) | Seiichiro Yonekura/ Akira Takeishi |
| Sep. 2005 | Vol.53 No.2 | Yoshiaki Murakami (President, M&A Consulting, Inc.) | Seiichiro Yonekura |
| Jun. 2005 | Vol.53 No.1 | Masahiro Origuchi (Chairman, The Goodwill Group, Inc.) | Seiichiro Yonekura |
| Mar. 2005 | Vol.52 No.4 | Shigenobu Nagamori (Representative Director and President, NIDEC Corporation) | Seiichiro Yonekura |
| Dec. 2004 | Vol.52 No.3 | Tadashi Yanai (Representative Director, Chairman and CEO, Fast Retailing Co., Ltd.) | Seiichiro Yonekura |
| Sep. 2004 | Vol.52 No.2 | Hiroshi Rinno (President, Credit Saison Co., Ltd.) | Seiichiro Yonekura |
| Jun. 2004 | Vol.52 No.1 | Hiroshi Mikitani (Representative Director, Chairman and President, Rakuten, Inc.) | Seiichiro Yonekura |

Reviewed Articles

| Issue | Vol./No. | Title | Author(s) |
|-----------|-------------|--|--|
| Dec. 2005 | Vol.53 No.3 | “Optional Structure of Social Network for the Growth of Regional Economy: Comparative Analysis of Four Regional Clusters Based on Small-World Networks Theory” | Ichiro Sakata/Naoki Shibata/Takuya Kojima/Yuya Kajikawa/Katsumori Matsushima (School of Engineering, University of Tokyo) |
| Mar. 2005 | Vol.52 No.4 | “Focus vs. Balance in Technology Development: An Empirical Analysis of Patent Data in the Ink-jet Printer Industry” | Neil Clymer/Shigeru Asaba (Doctoral Course at Graduate School of Management, Gakushuin University; Professor, Faculty of Economics, Gakushuin University) |
| Jun. 2004 | Vol.52 No.1 | “First-Mover Advantages versus Follower Advantages in Innovative Industries: An Empirical Study of the Japanese Appliances Market” | Hiromi Osa/Hiroyuki Odagiri (Yaesu Dori Branch, Mizuho Bank, Ltd.; Professor, Graduate School of Economics, Hitotsubashi University) |

2. Working Papers — Apr. 2004 ~ Mar. 2006

| | | Title | Author(s) |
|----------|-----------|---|--|
| WP#06-06 | Mar. 2006 | “Paradigm Shift and Stagnant Innovation in Semiconductor Industry: The Essence of Fuddling NEC in View of Strategic Thinking” (in Japanese) | Tetsuo Shindo |
| WP#06-03 | Feb. 2006 | “Business Ecosystem and Reverse Salient: The Development of the Mobile Music Business in Japan and Korea” | Akira Takeishi/Kyo-ung-Joo Lee |
| WP#06-02 | Feb. 2006 | “Exhaustion of IP Rights: Reflections from Economic Theory” | Peter Ganea |
| WP#06-01 | Jan. 2006 | “Modular of Product Development in Chinese Manufacturing — A Case Study of Haier” (in Japanese) | Taohua Ouyang |
| WP#05-24 | Oct. 2005 | “Advanced Technology and Competitive Strategy (2) — A Case of Rechargeable Battery” (in Japanese) | Masaaki Sakamoto |
| WP#05-23 | Oct. 2005 | “Diffusion of 3D-CAD and Its Impact on Product Development Processes: A comparison Between Japanese and Chinese Companies” | Yaichi Aoshima/ Yoko Takeda/Ken- taro Nobeoka/Shiguo Li |
| WP#05-19 | Jul. 2005 | “Transfer of R&D Workers and their Technological Performance” (in Japanese) | Yaichi Aoshima |
| WP#05-18 | Jul. 2005 | “Shifting Governance Practices and Interactions with Industry: Recent Developments at Research-intensive Universities in Japan” | Tomohiro Ijichi |
| WP#05-17 | Jul. 2005 | “The Timing of Technological Innovation: The Case of Automotive Emission Control in the 1970s” (in Japanese) | Ying Zhu/Akira Takeishi/Seiichiro Yonekura |
| WP#05-16 | Jul. 2005 | “Advanced Technology and Competitive Strategy (1) — A Case of Rechargeable Battery” (in Japanese) | Masaaki Sakamoto |
| WP#05-15 | Jun. 2005 | “Key Determinants of Software Development Style in Network Era: Is Open Source Enough to Succeed ?” | Fumihiko Ikuine/ Hideki Fujita |
| WP#05-14 | Jun. 2005 | “Acquisitions and Use of Patents: A Theory and New Evidence from the Japanese Firm Level Data” | Sadao Nagaoka/Yoi- chiro Nishimura |
| WP#05-10 | Apr. 2005 | “Divergent Paths of Mobile Innovation: Development of Mobile Music Businesses in Japan and Korea” | Akira Takeishi/Kyo- ung-Joo Lee |
| WP#05-09 | Mar. 2005 | “China’s Development Model: An Alternative Strategy for Technological Catch-Up” | Xielin Liu |
| WP#05-08 | Dec. 2004 | “Does File Sharing Reduce Music CD Sales?: A Case of Japan | Tatsuo Tanaka |
| WP#05-07 | Dec. 2004 | The Economic Impacts of ICT – A European Perspective” | Dirk Pilat |
| WP#05-06 | Feb. 2005 | “Patent Quality, Cumulative Innovation and Market Value: Evidence from Japanese Firm Level Panel Data” | Sadao Nagaoka |
| WP#05-05 | Dec. 2004 | “Moore’s Law and the Economics of Leading Edge Semiconductors” | Kenneth Flamm |
| WP#05-04 | Dec. 2004 | “Antitrust Analysis of US, EU, and Japanese Microsoft Cases: How to Regulate Abusive Conduct by a Holder of Dominant Platform Software” | Toshiaki Takigawa |
| WP#05-03 | Dec. 2004 | “Creative Destruction in the PC Industry” | Timothy Bresnahan |

(continued)

| | | Title | Author(s) |
|----------|-----------|--|--|
| WP#05-02 | Dec. 2004 | “Emergence of Essential Patents in Technical Standards: Implications of the Continuation and Divisional Application Systems and the Written Description Requirement” | Masayoshi Omachi |
| WP#05-01 | Feb. 2005 | “Coalition Formation for a Consortium Standard Through a Standard Body and a Patent Pool: Theory and Evidence from MPEG2, DVD and 3G” | Reiko Aoki/Sadao Nagaoka |
| WP#04-15 | Dec. 2004 | “Offshoring RDB: Opportunities for Design and Brand Management” | Patrick Reinmöller |
| WP#04-14 | Dec. 2004 | “The Influence of Foreign Ownership on the Performance of Japanese Firms (and vice versa)” | K.C. O’Shaughnessy/ Patrick Reinmöller/ Maarten Wensveen |
| WP#04-13 | Dec. 2004 | “Design and Corporate Performance in Japan” | Patrick Reinmöller |
| WP#04-12 | Jul. 2004 | “Technological Structure and R&D in Semiconductor Industry” (in Japanese) | Shuzo Fujimura |
| WP#04-10 | May 2004 | “Assessing the R&D Management of Firms by Patent Citation: Evidence from the US Patents” | Sadao Nagaoka |
| WP#04-09 | May 2004 | “Music Business and Digitalization: Interactions of Technology, Business, and Music” (in Japanese) | Akira Takeishi |
| WP#04-08 | Apr. 2004 | “Japan's Long-term Recession in 1990's: Fall of Industrial Competitiveness?” | Kazuyuki Motohashi |
| WP#04-07 | Apr. 2004 | “R&D Risk and Employee Invention System” (in Japanese) | Sadao Nagaoka |
| WP#04-06 | Apr. 2004 | “VLSI Revisited-Revival in Japan” | Jon Sigurdson |
| WP#04-05 | Apr. 2004 | “The Sony-Ericsson Endeavour” | Jon Sigurdson |

3. Case Studies — Apr. 2004 ~ Mar. 2006

(In Japanese)

| | | Title | Author(s) |
|------------|-----------|---|--|
| CASE#06-01 | Mar. 2006 | “Matsushita: Development and Commercialization of Low-Current-Consumption Miniaturized GaAs Power Modules for Mobile Communication Systems” | Akira Takeishi/ Youngjae Koh/ Kenichi Furukawa/ Hideaki Kohzu |
| CASE#05-13 | Oct. 2005 | “Trecenti Technologies: Development of New 300mm Semiconductor Manufacturing Systems” | Ken Kitazawa/Masashi Inoue/Yaichi Aoshima |
| CASE#05-12 | Jul. 2005 | “Seiko Epson: Development of a Quartz Watch Having an Automatic Generating System” | Akira Takeishi/Masafumi Kanayama/Tatsuya Mizuno |
| CASE#05-11 | Jul. 2005 | “Development and Commercialization of HDTV Plasma Displays” | Hiroki Nato |
| CASE#05-10 | Mar. 2005 | “Tohoku Pioneer: Development and Mass Production for Thin-Layer Emitting Organic EL Display” | Masaaki Sakamoto |
| CASE#05-08 | Feb. 2005 | “Kyocera: Temperature Compensating Quarts Oscillator” (revised) | Youngjae Koh |
| CASE#05-07 | Feb. 2005 | “Rechargeable Battery Industry” (revised) | Masaaki Sakamoto |
| CASE#05-06 | Feb. 2005 | “Yamaha (II): Mobile Ringing Tone Melody (‘chaku-mero’)” | Koichiro Kodama |
| CASE#05-05 | Feb. 2005 | “Yamaha (I): Electric Sound Source” | Koichiro Kodama |
| CASE#05-04 | Feb. 2005 | “Toray (II): Business Strategy of Carbon Fibers ‘Trayca’” | Yaichi Aoshima/ Takeo Kasai |
| CASE#05-03 | Feb. 2005 | “Toray (I): Technological Development of Carbon Fibers ‘Trayca’” | Yaichi Aoshima/ Takeo Kasai |
| CASE#05-02 | Feb. 2005 | “Terumo (II): Catheter” | Yaichi Aoshima/ Keisuke Miyamoto |
| CASE#05-01 | Feb. 2005 | “Terumo (I): Innovation Process of Organization” | Yaichi Aoshima/ Keisuke Miyamoto |
| CASE#04-15 | Nov. 2004 | “Mitsubishi Electric Corporation: Development of Manufacturing Method for High-performance Motor with New Core Structure and High Speed/Density Coil Winding” | Masaru Karube/Atsushi Kobayashi |
| CASE#04-14 | Oct. 2004 | “Olympus' Development of Ultrasound Endoscopes” | Masaru Karube/ Miho Imori |
| CASE#04-13 | Oct. 2004 | “Kao Corporation: Development of Concentrated Power Detergent ‘ATTACK’” | Masatoshi Fujiwara/ Akira Takeishi |
| CASE#04-12 | Sep. 2004 | “Toyo Seikan: Development of TULC (Toyo Ultimate Can)” | Yang-Joong Yun/ Akira Takeishi |

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)

V. Internal Review



Publication of Hitotsubashi University Institute of Innovation Research Internal Review Report (Self-Evaluation Report + External Review Reports) (in Japanese)

Institute of Innovation Research (IIR) conducted a review by inviting external reviewers as well as a self-evaluation, and published the report (in Japanese) on February 2006. This report is comprised of a “self-evaluation” report prepared by the IIR and “external review reports” conducted individually by external reviewers based on the results of the “self-evaluation” and the interviews with the IIR staff, including the site visits.

The purpose of this review was to examine all activities and systems involved in the research, education, social action conducted and offered by the IIR, and then to have valuable advices and suggestions for improvement and further development, as the IIR’s tenth anniversary of the establishment was approaching in FY2006.

The external reviewers and the Internal Review Administration Committee members are as listed below. The external reviewers were from both inside and outside the academic community so that the IIR can be evaluated from academic and social perspectives.

■ External Reviewers (alphabetical order, major positions)

| | |
|--------------------------|---|
| Shigeru Asaba | Professor, Faculty of Economics, Gakushuin University |
| Michael A. Cusumano | Professor, Sloan School of Management, Massachusetts Institute of Technology |
| Hiroshi Fukino | President and CEO, Fukino Consulting, Ltd. / Corporate Advisor, Dell, Inc. / Member of the Executive Board, Josui-Kai (alumni association of Hitotsubashi University) |
| Masahiro Hashimoto | Director, Service Industries Division, Commerce and Information Policy Bureau, Ministry of Economy, Trade and Industry / Visiting Professor, Waseda University |
| Kenichi Imai | Senior Fellow, Emeritus, Stanford University / Emeritus Professor of Hitotsubashi University |
| Takenori Inoki | Professor, International Research Center for Japanese Studies, National Institutes for the Humanities |
| Masayasu Ishida | Professor, Master of Intellectual Property, Management of Science and Technology, Tokyo University of Science / Executive Advisor, Toppan Printing Co., Ltd. |
| Motoshige Itoh | Professor, Graduate School of Economics, The University of Tokyo |
| Akiya Nagata | Associate Professor, Department of Business and Technology Management, Graduate School of Economics, Kyushu University |
| Kentaro Nobeoka | Professor, Research Institute for Economics and Business Administration, Kobe University |
| Buruno Van Pottelsberghe | Associate Professor, Solvay S.A. Chair of Innovation, Solvay Business School, Université Libre de Bruxelles / Chief Economist, the European Patent Office |

■ Members of the Internal Review Administration Committee

| | | |
|--------|--------------------|---|
| Chair | Seiichiro Yonekura | Professor, IIR |
| Member | Sadao Nagaoka | Director and Professor, IIR |
| | Hideshi Itoh | Professor, Graduate School of Commerce and Management |
| | Tomohiro Ijichi | Associate Professor, IIR |
| | Yaichi Aoshima | Associate Professor, IIR |
| | Masaru Karube | Associate Professor, IIR |

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

Joseph A. Schumpeter
The Theory of Economic Development

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