NURTURE CREATIVITY; REWARD JAPAN'S RISK-TAKERS

Intellectual property must be managed like valuable asset

The question of intellectual property rights has become the focus of government, industry and academia in Japan.

The Japan Times, with the backing of the Ogasawara Foundation for the Promotion of Science and Engineering, created by Toshiaki Ogasawara, the newspaper's publisher, recently brought together three prominent figures from these fields to discuss the issue. Hisamitsu Arai, secretary general of the Intellectual Property Strategy Headquarters of the Cabinet Secretariat, who spearheads the government's national strategy for the creation, protection and utilization of intellectual property; Dr. Nobuyoshi Tanaka, a managing director and group executive of the Corporate Intellectual Property and Legal Headquarters of Canon Inc., who serves as a vice president of the Japan Intellectual Property Association; and professor Masahiro Kawahata of the University of Southern California who heads various advanced technology-related companies exchanged opinions on the intellectual property strategies of Japan and the United States, as well as private sector and university moves, and current issues. Excerpts are as follows:

The three speakers exchange views on the importance of intellectual property at The Japan Times-sponsored forum at a Tokyo hotel Dec. 15. They are (from left) Hisamitsu Arai, secretary general of the Intellectual Property Strategy Headquarters of the Cabinet Secretariat, Dr. Nobuyoshi Tanaka, a managing director of Canon Inc., Michiru Yoshino, a journalist and moderator of the discussion, and Dr. Masahiro Kawahata, a professor at the University of Southern California. YOSHIAKI MIURA PHOTO

Japan Times: What progress is Japan's intellectual property strategy making?

Arai: As the nation is metamorphosing itself into an intelligent society, we implemented a 10-year plan in 2002 to consolidate the groundwork so that people could exhibit their abilities and capabilities in the hope that their inventions would contribute to world culture and civilization.

We are looking at the whole picture by speeding up the patent registration procedure and facilitating the cross-border movement of the patent offices, while protecting acquired intellectual property rights at the Intellectual Property High Court so that the infringement of a patent will not profit the perpetrators.

We are taking a consolidated approach toward preparing a good environment for creativity, because we believe that the flow of creativity, protection and utilization leads to the next dynamic movement of research and development.

Japan Times: Canon is attracting worldwide attention and respect as a role model company with outstanding intellectual property measures.

Tanaka: Our company was established in 1937, vying with Leica as our competitor. Since then, we have always stressed the need to respect the individuality of our employees and originality of our technology. Since I first started working for the company, all staff members have been encouraged to develop new technologies, do something original, and never intrude on someone else's acquired rights.

Looking at the technology development and its commercialization at Canon, we've introduced digitalization in the camera and our other main business areas. For instance, our IXY models of digital still camera are selling well today. Our copiers also grew with the times while our inkjet printers expanded in the 1990s and our SED flat panel displays, which were first invented in 1986, will be commercialized finally in 2006.

What these all prove is that products incorporating original technologies take time to develop but are very strong once they come into being because they are protected by patents. But the process does not end there, however. Our products only become complete when the original ideas and inventions incorporated in them are registered as our rights. Such a stance serves as the basis of all our business activities.

Observing the situation of Japan today, we must realize that it can no longer survive just by eyeing and trying to compete against the pro-patent-based United States. As society is undergoing great changes, we have to be aware that besides the U.S., but other Asian countries are entering the play yard. We are literally being chased by them.

Under such circumstances, we, as a company, must start a new challenge of

Hisamitsu Arai

managing our proprietary information properly.

In the meantime, I feel that the mere provision of stand-alone hardware is no longer good enough to maintain and prove our uniqueness. We must provide such added value as solutions to our customers so that they can use the hardware properly and well while retaining connectivity and achieving international standards.

Furthermore, the scope of intelligence that we should be managing is expanding from the level of intellectual "property" to "assets," and the consolidation of a new system by the government is necessary.

Japan Times: Professor Kawahata, you are a university academic and a renowned, successful entrepreneur in Japan and the U.S. Tell us about your background and how the intellectual property-related movements in the U.S. and Japan differ.

Kawahata: I first became aware of the gap in the way Japanese and U.S. corporations treat their employees when I worked for Fujitsu. I experienced a situation where Japanese and American engineers worked for a major international semiconductor development program in the 1980s. But upon completion, the American staff members got very rich when their U.S. employer acknowledged their accomplishment and granted stock options and other incentives, while the Japanese project staff members, working for the Japanese counterpart, received a marginal salary raise.

This incident had a deep impact and left an exceptionally strong impression on me. Then in 1993, my joint research with colleagues at the University of Washington on retinal scanning display technology caught the attention of an investor who had apparently read our research papers. He insisted that I should commercialize the idea since it had massive potential. His insight was

Dr. Nobuyoshi Tanaka

true as our technology of directly outputting the image into the retina could eliminate the need for LCDs or CRTs. Hence, talks progressed and the investor agreed to provide the capital while the university granted the licensing rights to the new venture for a fee of roughly $5 million. Eventually, the new company handling this technology called Microvision was listed on Nasdaq in 1996.

This incident proved the ability of American investors to not only count money but judge up-and-coming technologies as an area of investment, as well as the close relationship between American universities and industry.

In the U.S., it is quite common for universities to have technology licensing office (TLO) functions. This enables academia to become stakeholders and play a lead role in equity financing. The universities therefore are keen to develop new technologies, and they evaluate professors highly who have a challenging spirit. As you can see, the mechanism is there and functioning.

Japan Times: How does the situation in Japan differ from that in the U.S.?

Arai: For one thing, there is the tendency among Japanese university professors to sit back in their ivory towers, believing that they would be more respected if they didn't contribute to society.

This is not true, however, because industry ultimately serves as the fertile ground for nurturing academia, and innovative ideas contribute to raising the level of industry, thereby serving society as a whole.

As for industry, most Japanese companies prefer to purchase basic patents from overseas to make their products. Because of this, most companies lack the sensitivity or a critical feeling toward the issue of intellectual property protection.

In that context, Canon is an exception, and I hope more Japanese corporations follow suit.

Dr. Masahiro Kawahata

Another issue is the attitude of Japan's financial institutions. They tend not to be interested in funding ventures and request some kind of security upon

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At the end of the discussion, Tanaka, Kawahata and Arai join hands in a show of collaboration among government, academia and industry to promote the cycle of creation, protection and utilization of intellectual property. YOSHIAKI MIURA PHOTO

Profiles of the speakers

● **Hisamitsu Arai, secretary general of the Intellectual Property Strategy Headquarters, the Cabinet Secretariat**

Born in January 1944, Arai graduated from the Law Department of Tokyo University in March 1966 and joined the Ministry of International Trade and Industry (MITI), the predecessor of the Ministry of Economy, Trade and Industry (METI) in April 1966. While at MIII, he studied at Harvard University and obtained a master's degree.

At MITI, he served in such important positions as head of the International Economic Affairs Department of the International Trade Policy Bureau, chief of the Public Utilities Department of the Agency of Natural Resources and Energy, deputy director general of the Machinery and Information Industries Bureau, and director general of the Patent Office. He was promoted to deputy vice minister of international trade and industry in July 1998.

In January 2001, Arai was appointed chairman of Nippon Export and Investment Insurance, an independent administrative corporation, before taking up his current position in April 2003.

● **Dr. Nobuyoshi Tanaka, a managing director and group executive of the Corporate Intellectual Property and Legal Headquarters, Canon Inc.**

Born in Nagano Prefecture in 1945, Tanaka graduated from the Tokyo Institute of Technology' School of Science and Engineering in March 1968 and completed the university' graduate course for his master's degree. In April 1970, he entered Canon Inc. He obtained a doctoral degree in engineering from Tohoku University in 1990.

On campus, he conducted research on microwave engineering. At Canon, he engaged in research and development of holography, optical measurement and later worked on the development of camcorders using solid image pickup devices.

At Canon, he has served as chief of the Semiconductor Development Center and head of the Optical Products Operations, among others.

He was appointed a director of the board in March 1993 and a managing director in March 2001.

Currently, he is a vice chairman of the Japan Intellectual Property Association (JIPA), which is a nonprofit, nongovernmental and the largest intellectual property rights users' organization in the world.

● **Dr. Masahiro Kawahata, professor at the University of Southern California**

Kawahata completed the doctoral course of engineering at Tokyo University in March 1966. His academic career has involved Stanford University, the University of Washington, Tokai University.

He also has worked at IBM (U.S.) and Fujitsu. In the 1980s, he advocated a nationwide Cyber Japan plan based on optical fiber. He developed the technology for the cable networks, which has been adopted by cable TV operators.

In 1993, he helped develop cutting-edge retinal scanning display technology with his colleagues at the University of Washington and established Microvision Inc. He is currently soliciting Japanese partners for Microvision while helping several other U.S. ventures expand into Japan.

Intellectual property must be managed

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offering capital. During the bubble era, many bankers believed real estate was almighty, and invested heavily in golf courses and resorts. But as the bubble deflated, they suffered severe losses, which led to the consolidation of the 20-plus major banks down to the three or four we see today.

Unfortunately, the old mind-set of clinging onto real estate like an investment life belt persists among people who are 40 years of age or older, however, and we must wait for the growth of the younger generation in their 20s and 30s to revamp the system. I think that people should be provided with investment opportunities, the thrill of high-risk/high-return and futures dealings. The film industry has recently been fairly successful in raising funds to produce new movies, and new movements like NGO savings are emerging recently.

Kawahata: Compared to the U.S., Japan does not have the sponge that absorbs good new ideas. I think more opportunities should be provided to local and private universities so as to suck up various proposals from numerous sources. We must let more people become heroes when they achieve something. Japan tends to play everything safe, whereas the revolutionary spirit is very much alive in the U.S.

Tanaka: One significant difference between Japan and the U.S. is that Japan operates under an indirect funding system, whereas the U.S. operates under the direct funding system. As a result, the money in Japan tends to belong to the organization and banks are not enthusiastic in making investments. On the other hand, the direct investment approach of the U.S. is a very simple system that allows each individual to make direct investments, which in turn stimulates the market.

Japan Times: What future directions should Japan take then, in terms of managing its intellectual property?

Arai: When university professors are funded, they tend to invest in their next R&D project, and if they become rich, they will most likely invest in R&D again, and the market will become affluent. We should promote such win-win situations. But Japan's tax system is antiquated and does not support ventures. That's another serious issue that we must tackle.

Tanaka: The tax system in Japan takes away a significant portion of the money a professor earns from an invention. I think the golden egg should be given to the challenger, the professor, so that he or she will lay another golden egg in the future.

Turning to the management of intellectual property, it is necessary to train people to have managerial sense, in addition to having a discerning eye for advanced technologies.

The chances are there, but it takes a huge amount of investment and time to earn money from your original hardware inventions. On the other hand, practical use and application of software inventions can be done on the spot in today's Internet environment. Hence, full use of connectivity to provide added-value solutions is an area that we should explore more.

Kawahata: I have found the American TLO system at universities very practical, and it could be introduced in Japan. Another important point is that technology transfer can be quite practically achieved by means of human resources transfer itself. It is essential to nurture human resources, especially young people to become entrepreneurs. That is another promising area, but personnel training and education is a long-term effort, short-term solutions won't work. We should be patient and tenacious in this respect.

Tanaka: Financing and support in that context are insufficient in Japan. To create a healthy business environment, you must link good researchers with various people, including patent attorneys, and generate outstanding results such as an increase in stock prices in the market.

Kawahata: But the vision creator should be the country itself, and the government should take the lead in creating the concept. I believe in Japan's great wisdom. We will be able to lead the world again.

Arai: We are adopting a project team method to scrutinize the issue of intellectual property. We've organized a headquarters comprised of Cabinet ministers and leaders in the private sector, which is supported by government officials and the private sector. We hope such an approach will contribute to the development of more capable people and eventually lead to the establishment of a new Japanese model in policy planning.

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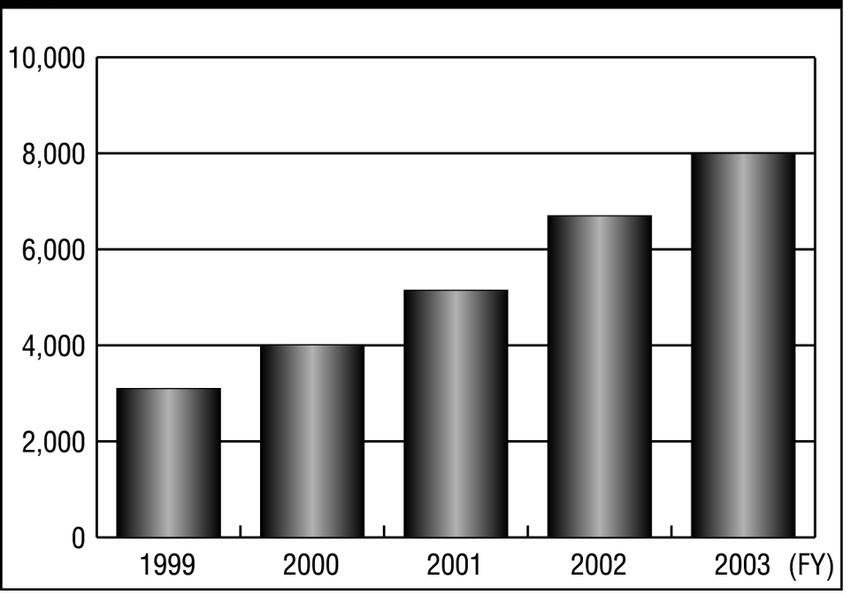
Prime Minister Junichiro Koizumi addresses a meeting of the Government Headquarters on Intellectual Property Rights at the Prime Minister's Official Residence on June 10. KYODO PHOTO

Workers place a new name board at the entrance of the government office that houses the newly created Intellectual Property High Court on April. KYODO PHOTO

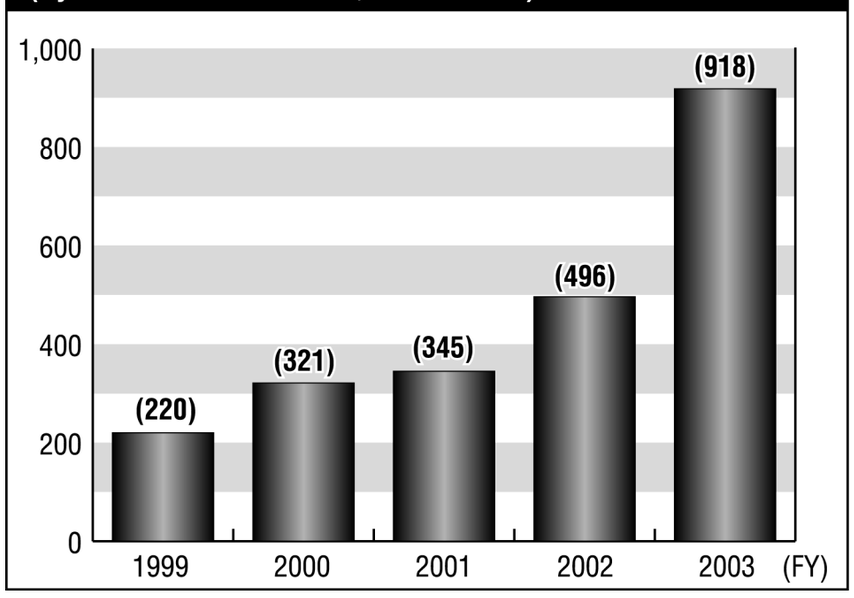
Number of joint research projects (by national universities, institutions)



Breakdown of partners for joint research projects (for FY2003, in terms of number)

	Private enterprises	Public-interest corporations, others	Local public organizations	Others	Total
National universities, others	7,248	1,523	327	157	9,255
Private universities, others	6,411	1,274	281	57	8,023
Prefectural/ municipal universities	538	199	36	77	850
Total	299	50	10	23	382

Number of domestic patent applications (by national universities, institutions)



Breakdown of areas for joint research projects (by national universities, institutions, in terms of number)

	Life science	Information & telecommunications	Environment	Nano-technology	Energy	Manufacturing technology	Social infrastructure	Frontier field	Others	Total
FY2001	1,117	763	704	754	513	775	355	97	186	5,264
FY2002	1,644	995	908	894	601	1,013	425	102	185	6,767
FY2003	2,138	999	1,114	1,194	674	1,130	496	78	200	8,023
Composition ratio for FY2003	(27%)	(12%)	(14%)	(15%)	(14%)	(14%)	(6%)	(1%)	(2%)	

Top 30 Japanese universities, research laboratories

(in terms of patent applicatios for fiscal 2003)

1. Nihon University, private, 236
2. Keio University, private, 171
3. Kyoto University, public, 131
4. Nara Institute of Science and Technology, public, 113
5. Waseda University, private, 101
6. The University of Tokyo, public, 86
7. Nagoya University, public, 75
8. Hiroshima University, public, 72
9. Osaka Univeristy, public, 70
10. Hokkaido University, public, 68
11. Gifu University, public, 58 12. Tokai University, private, 57
13. Tohoku University, public, 50
13. Doshisha University, private, 50
15. Tokyo Institute of Technology, public, 46
16. Shizuoka University, public, 38
16. Kyushu University, public, 38
18. Nagoya Institute of Technology, public, 37
19. Tokyo University of Science, private, 35 20. Ritsumeikan University, private, 32
21. Kinki University, private, 31 22. Kanazawa Institute of Technology, private, 29
23. Meiji University, private, 28
24. Chiba University, public, 27
25. Tokyo Denki University, private, 26
26. Kagawa University, public, 25
27. Shinshu University, public, 23
27. High Energy Accelerator Research Organization, public, 23
27. Research Organization of Information and Systems, public, 23
30. University of Fukui, public, 22