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THE NEW INDUSTRY RESEARCH ORGANIZATION
NIRO News Letter
vol.2

Contents

New Industry Creation - NIRO Activities

Chairman:
Dr. Hiroshi Ohba

Though some government analysts and economists had thought that the ongoing recession in Japan's economy that began in the early 1990s might have finally hit bottom, it is already 1999 and a path to recovery has yet to be revealed. The residential and urban infrastructures of the Hanshin-Awaji region which were damaged in the enormous 7.2 magnitude earthquake that struck directly beneath the area on January 17, 1995, right in the middle of the recession, have largely been restored. Industrial recovery, however, remains a serious challenge.

To revive local industries that were dealt the double blow of a recession coupled with an earthquake, a new role is being developed for industry, academia, and government and cooperative linkages between them are being formed. Since its inception in March 1997, NIRO, now in its third year, has been developing activities aimed at revitalizing local industry by creating new industries and upgrading existing technologies.

In recent years, the world has been rapidly moving into an age of borderlessness and globalization due to developments in industry as well as in information technology (IT). The increasingly rapid pace of this transformation is causing industrial structure reforms and the reorganization of industries on a global scale. Given all these changes and the pace at which they are occurring, the environment is ripe for new industries to develop out of promising new technologies, and for new start ups firms to make it big.

Today's diversified economy is going to rapidly diversify even further. To resolve the new dilemmas that have resulted from rapid industrial developments, such as global-scale environmental problems, it is important not only to establish new systems and review existing regulations, but to look at how these relate to the social system. The seeds of new industry creation and the seedbed for venture firm growth can be found within this diversified economy and in the need to find solutions to these new problems.

Driving the current economy is the US, whose economy was tossed about by a storm of recession in the 1980s, but which has made a strong comeback in the 1990s. The widespread appearance of venture firms and the success they have enjoyed have played an enormous role in this transformation. Many things can be learned from the so-called "venture infrastructure" - the government policies (at both the national and local level) and social structure - that facilitated the appearance of these firms.

As can be seen in the success of TQC (Total Quality Control), the highly educated and hard-working labor force in Japan has allowed the evolution of a distinctly Japanese industrialized society that works on the principles of "knowledge sharing" and "cooperation over competition". However, getting through the transformation period that has accompanied globalization requires creativity and competitiveness. New industries can be created if we embrace these traits and can keep up with the rapid pace of change.

For example, during the recession in the 1980s, the US began preparing for knowledge-intensive industries that looked away from the industries of the past and toward the impending information-based society. The rapid development of information technology, together with the development of easy-to-use personal computers and the Internet, made way for the vigorous development of the information technology industry in the 1990s, typified by the Silicon Valley. The US had opened up the brand new industrial field of information technology, and as the world leader in next-generation industries, was able to achieve a virtual monopoly over the gains of that movement.

At the same time, Japan, which had been buoyed up by its bubble economy, had not moved as quickly into that field. The leading Japanese industry in the world market was then, as now, the manufacturing industry. With its exported manufactured products facing price competition on the world market due to the appreciation of the yen, Japanese businesses aimed to develop a global system by turning to the production of high-value-added products and establishing production bases overseas. They had the overwhelming advantage in fields such as production technology and machine tools. At that time, the world expected that new Japanese-style industries would be created.

Industries in the transformation period are facing fierce competition in their respective industries. While it is difficult to predict how they will develop in the future, the core of industrial development in any age is science and technology. It is the accumulation and fusion of science and technology that will create new industries.

Supported by the Science and Technology Agency, NIRO is actively developing projects for the purpose of creating a distinctive bedrock of science and technology in this region. These projects will stimulate the creation of new industries and the cultivation of venture firms, thus bringing to fruition NIRO's efforts to contribute to the industrial reconstruction of this region.

Looking Forward to NIRO's 3rd Year

Takashi Honjo
Director, Commerce and Industry Department and
Director General, Industrial Reconstruction Bureau
Great Hanshin-Awaji Earthquake Reconstruction Headquarters
Hyogo Prefectural Government

With the ongoing recession in the Japanese economy, even the fairly bright economic outlook of Hyogo Prefecture, which has been on the road to recovery since the Great Hanshin-Awaji Earthquake, is clouded by the prolonged stagnation and economic slowdown of the national economy. The world is now in a period of historical transition characterized by increasing competition, the emergence of an information-based economy, and the worsening of environmental problems.

Given this situation, Hyogo industries must have a clear will and vision for reforms that will help them keep up with the trends of a new age, and that are based on a cooperative partnership between the industrial sector and local government. They must pour their energies into getting a running start toward a new process of take-off and development into the 21st century.

Hyogo Prefecture is planning to develop bold policies to revitalize the Hyogo economy and to create a local industry-oriented society for the 21st century.

The New Industry Research Organization (NIRO) has conducted research and support projects aimed not only at industrial recovery, but at the creation of new industries for the 21st century. One of these projects is the creation of a testing and development support center to radically strengthen the technological and developmental capabilities upon which small and medium-sized manufacturing businesses are built. Another project is its annual International Advanced Technologies Fair focused on NIRO and designed to promote the sharing of leading-edge technologies. This fair is aimed at helping to develop leading-edge industrial sciences and technologies useful for rapidly accelerating the creation of new industries. NIRO is also undertaking a technology transfer project to help get new technologies to the places where they are needed most. NIRO plans to use the technologies held by universities in the prefecture and to establish a technology licensing office (TLO) to help match promising new technologies to the needs of local industries that are trying to undertake new projects.

NIRO will continue its efforts to cultivate a strong corps of unique and competitive leading industries in the Hyogo area by promoting cooperation among industries, universities, and government in strategic planning and action.

Isao Uzaki
Director General
Industry and Agriculture Promotion Bureau
City of Kobe

Kobe's economy suffered a double shock, first the Hanshin-Awaji Earthquake and then the national recession. To overcome the current economic problems and to fully recover from the earthquake, the city must (1) promote the new growth industries that will be the driving force behind Kobe's future economy, and (2) devise ways to upgrade related existing industries.

Doing these things requires that we attract foreign businesses with high-level technological capabilities and know-how. For NIRO this means providing support that will not only help stimulate local industries but will serve as an incentive to industries considering a move into Japan. Such projects would include creating a technology transfer center for providing support with new product development and technological improvements, and holding an international leading-edge technology fair aimed at the creation of next-generation industries through technology sharing.

Kobe is planning to locate incoming businesses at the International Business Support Center (IBSC, to open in spring of 2001) next to the KIMEC Center Building on Port Island (Stage 2). The IBSC will be a central location for foreign businesses moving into Kobe, and will provide support for new businesses in the form of inexpensive office space and WAM (Warehouse Assembly Manufacturing) space that can be used for research, storage, simple assembly operations, or as a showroom.

We hope that cooperative efforts by industry, academia, and government, as embodied by NIRO, on projects that will bring about the economic revitalization of Kobe, like Regional Science Promoter (RSP) projects and technology transfer projects, will result in the evolution of new industries that will sustain Kobe in the 21st century.

1998 Research Report

Omni-Directional Power Wheelchair

NIRO has introduced the technology used in the omni-directional movement design using casters that was developed at the Massachusetts Institute of Technology, and has developed a motorized wheelchair that can move in all directions. This wheelchair is a four-wheel drive vehicle, with each of its four wheels driven by its own motor.

By adjusting the direction and speed of each motor, the user can move freely in any direction (omni-directional movement), forward, reverse, left, right, or diagonal, and can make a 180 degree turn in place. The user can easily maneuver in tight spaces not only because they can move freely in any direction, but because changing positions is unnecessary. This feature makes the product practical for handicapped people who work or for use by the elderly or handicapped at home.

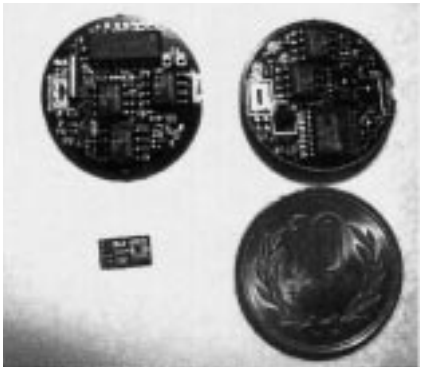
The chair can also be equipped with a steering device that the handicapped can use to steer the chair rather than using their hands. Field tests are now being conducted among handicapped users, the results of which will be used to improve and then market the product.

Omni-directional power wheelchair.

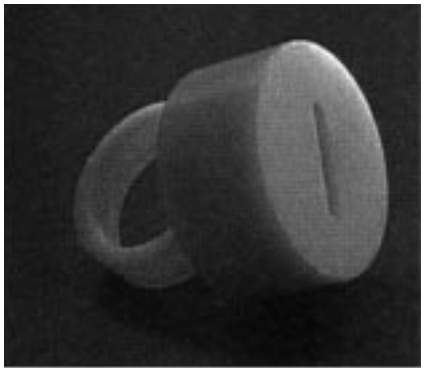
Steering device visible on the right side.

Wearable Sensor

A wearable sensor is a sensor that users attach to their bodies to monitor their bioelectric signals. It can be used for health management and disease detection. NIRO has developed one type of wearable sensor, a ring sensor for monitoring pulse waves, out of basic research conducted by the Massachusetts Institute of Technology. Using microcircuit production technology to produce a hybrid IC, the ring sensor monitors pulse waves using circuit boards the size of a dime coins and transmits that information via wireless communication. Because the sensor can be worn comfortably 24 hours a day due to its non-invasive size, it can monitor the user's daily health and facilitate health management. Measured pulse wave data will be transmitted to a computer installed in the user's home for analysis. If an abnormality requiring immediate attention is detected, the computer will automatically contact a hospital via telephone. If no abnormalities are detected, the sensor will collect daily data that can be provided to the user's physician for diagnosis. Related data analysis software is expected to be developed through upcoming research association projects or workshops.



Ring sensor (internal circuit boards)



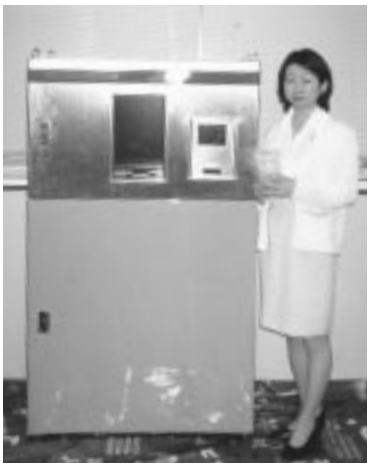
Ring sensor (external appearance)

Recycling Discarded Cooking Oil

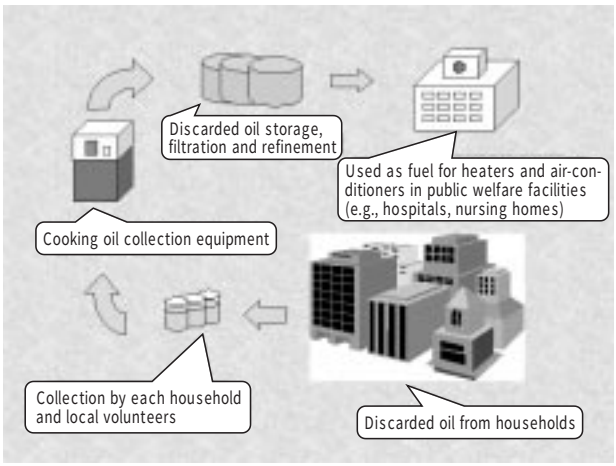
Due to the difficulties involved in household waste collection and the huge burden this waste has placed on the environment, NIRO has been promoting studies on the construction of a social system under which discarded cooking oils are collected from households and effectively used as an energy source for air-conditioning public facilities. In 1998, as a part of its RSP projects, NIRO organized a Cooking Oil Recycling System Research Association made up of representatives from the private sector, academia, and government. Needing to provide incentives for individual households to participate, the workshop researched a recycling system which would facilitate clean, nonodorous, and safe oil collection, and which would also keep clear records of who had participated in the collection. In feasibility tests, researchers tested collection containers and collecting devices that record the amount collected from each household on a special card.

We also conducted burner flammability tests on discarded cooking oil, and confirmed that it is suitable as a fuel for air-conditioning units, and that it is a clean fuel that does not produce hazardus gases. For example, 20 tons of discarded oil yields enough fuel to run air-conditioners in a 200-occupant nursing home for one year. Further studies to implement collection are currently underway.

This project has been based upon studies that NIRO has seen conducting since its foundation, and is distinctive in that it combines NIRO-derived technological developments with the construction of social systems. With global environmental problems on the rise, promoting a project like this that covers the full recycle from input to output requires an approach that focuses not only technological issues, but on the social aspects of attaining the understanding and cooperation of each household.



Cooking oil collection equipment.



Cooking oil reuse system diagram.

Research on the Industrial Applications of Synchrotron Radiation

This research project is for developing new technologies for using synchrotron radiation (SR) that will contribute to the development of new materials (and the manufacturing process of those materials) which are seriously needed by local industries in the metal products industry and the metal products processing industry.

NIRO will relay the research results to local companies in its efforts to contribute to the creation of new industries in Hyogo Prefecture.

Major achievements in fiscal 1998:

① Developed a method for the in-situ observation, evaluation, and testing of materials using synchrotron radiation.

② Participated the Overseas SR Technology Mission (sponsored by the SR Science Research Center, JASRI, and the Kansai Economic Federation)

③ Held the Conference on SR Applications of Surface and Interface Analysis

④ Acquired SR application and analysis technology (results to be announced publicly)

--XFAS (X-ray Absorption Fine Structure) experiments

* "XFAS of SrTiO3 thin film using the Conversion Electron Yield Method"

(First XFAS Discussion Conference, held in October 1998)

* "XFAS of SrTiO3 thin film"

(12th Annual Synchrotron Radiation Conference, held in January 1999

--X-ray imaging, microbeam experiments

* "Refraction Contrast Reflection Method using vertically or and horizontally parallel SR X-rays"

(52nd Technical Meeting of the Japan Society of Applied Physics, held in 1998)

--Total reflection X-ray diffraction experiments

* Small Angle Glancing X-ray Scattering for Surface Characterization of Ion-Implanted Industrial Materials"

(12th Conference Ion-Implanting Technology, No. 1.P2-1531998, in 1998)

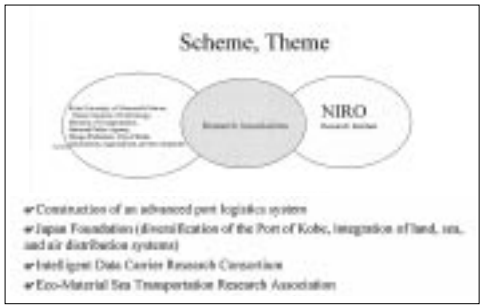
Development of an Advanced Port Logistics System

Japanese port distribution centers, including the Port of Kobe, are losing their international competitiveness due to their high cost perfomance. It is hoped that they will become low-cost, high-efficiency port distribution centers.

To this end, the aim of this research project is to introduce an optimal system for port distribution. NIRO will relay the research results to local companies in its efforts to contribute to the creation of new industries in Hyogo Prefecture.

1. Development of an Advanced Port Logistics System
   * Diversify port functions, such as the introduction of a recycling base, and shift distribution centers from inland areas to port areas.
   * Conduct basic research on shifting to advanced modes of transportation by introducing new port systems, cargo handling methods, and high-speed vessels, and construct new concepts.
     Public announcement of results: Information on shifting distribution centers from inland areas to port areas will be presented in the October 1998 newsletter of the Japan Institute of Navigation (JIN).
   * Study the feasibility of an integrated sea/land/air distribution system centered around the Port of Kobe, and construct concepts that introduce information technology.

2. Development of a Next-Generation Transportation System
   Constructed a basic outline of a high-speed distribution system to transport containers using an automated flatcar. This received much attention after being introduced at a colloquium sponsored by the Institute for Transport Policy Studies.



Regional Science Promoter Program

Hyogo Prefecture was designated as a target region for this program in 1998 (with NIRO as the coordinating institution). With NIRO Research Institute's then Vice President Toshio Atsuta as JST's (Japan Science & Technology Foundation) New Technology Coordinator (NIRO President Shigetomo Matsui take over this position starting this year), NIRO is undertaking activities aimed at constructing a foundation of science and technology specifically designed to tie in with the creation of new industries in the region, through such activities as searching for personnel, collecting information, and constructing information and personnel networks.

In addition to the 1998 project costs, feasibility test budgets were approved under the second additional national budget. Before planning for future development, feasibility studies were conducted on those of the projects related to NIRO's major research topics or the research topics of joint studies with other organizations whose technological realization/ application feasibility required confirmation.

The project budgets for facilities and equipment for experimentation were approved under the third revised national budget. Facilities and equipment related to the major research topics that were deemed highly necessary for the project or that were expected to have a wide-ranging influence on local industries were introduced.

Major achievements:

(1) Held the 1st Hyogo New Technology Forum (on December 17, 1998)

(2) Started various research workshops
Started research associations on soil remediation problems, discarded cooking oil recycling, industrial applications of synchrotron radiation, improvement of transportation of logistics, etc. There are currently about 20 active research associations.

(3) Conducted feasibility tests
NIRO conducted the following tests, yielding hopeful results linked to upcoming developments in lithium ion batteries and other areas.
- *** Preliminary tests to confirm the effectiveness of new technologies for cleaning up soil pollution, such as cleaning technologies using plants and vegetation.**
- *** Preliminary flammability tests to check the flammability of collected discarded cooking oil and to improve land-on containers.**
- *** Preliminary tests for experimenting with, checking the functions of, and improving the design and shape of 3-dimensional shoe stretchers.**
- *** Feasibility tests on health care robots for the elderly and handicapped.**
- *** Feasibility tests on a system for collecting discarded cooking oil.**
- *** Feasibility tests on technologies for conducting mass analysis on microscopic amounts of matter in gas that can be isomerically divided.**
- *** Feasibility tests on safe and low-cost lithium ion secondary batteries.**

(4) Studies of promising technologies in the region
- *** Conducted wide-ranging surveys of researchers and research topics among universities and public research institutions in Hyogo Prefecture.**

(5) Install facilities and equipment for experimentation
We expanded the following testing equipment:
- *** Powerd wheelchairs that help the handicapped users work and lead independent lifestyles for the disabled.**
- *** Wearable sensors and related systems.**
- *** In-situ analysis equipment for metal surface processes using synchrotron radiation.**
- *** Systematic modifications for guaranteeing improved handling and operations.**
- *** Rheometer for measuring viscosity of heat medium to develop an innovative cooling system.**

Education and Training Department Report

Events & Seminars

The Education & Training Department is holding the following events and seminars shown below to improve the technological capabilities of small and medium-sized businesses and to provide business opportunities. It is developing events such as Technology Transfer Seminars to promote practical technology transfers to small and medium sized businesses, International Advanced Technology Seminars which invite leading-edge technology from domestic and overseas companies, High Tech Evening Salons where ambitious businesspeople in the fields of technological or new product development can informally interact with academics, researchers, and others, and Discussion Meetings for Embassy Technology Attaches where ambitious businesspeople in the fields of technological or new product development can informally discuss trends in overseas industry and technology with embassy personnel. Events held in 1998 are shown below.

Event	Description	Speaker	Date	Place
1st Technology Transfer Seminar	Effectively decreasing costs and training VE (Value Engineering) leaders (VE introductory training) Lectures and training on high-tech experimentation	Masanori Onishi (international value engineering specialist)	July 16-17, 1998	NIRO
2nd Technology Transfer Seminar	using a 3-tier system that integrates development, design, and testing.	Masanori Onishi (international value engineering specialist)	July 16-17, 1998	NIRO
International Advanced Technology Orientation Session	Analysis and processing technologies of hazardous substances by EA Technology (UK).	Researcher from EA Technology	Sept. 10, 1998	NIRO
3rd International Advanced Technology Seminar	TWI's(The welding Institute, England) latest surface processing/coating technologies	Researcher from TWI	Oct. 8, 1998	Kobe KIMEC Center Bldg., 10th Fl.
2nd High Tech Evening Salon	Development ideas for the world's leading measurement technologies - Producing unique products in the field of analysis and measurement instrumentation -	Tokihiro Tsukamoto (Engine Measurement System Control Department, Horiba Ltd.)	Oct .19, 1998	Amagasaki Small and Medium-Sized Business Center
3rd High Tech Evening Salon	Creation in the 21st century	Keitaro Matsuzaka, (Representative Director and President, Hirobo Ltd.)	Jan. 25, 1999	Kobe Industrial Promotion Center Bldg.
4th High Tech Evening Salon	21st Century - Age of super-conductivity	Akira Iwata (Vice Director, Kawasaki Heavy Industries Kanto Technology Research Institute)	Mar. 25, 1999	Kobe Industrial Promotion Center Bldg.
1st Discussion Meetings for Embassy Technology Attaches	Sweden's shift to knowledge-intensive companies	Lennart Stenberg (Science and Technology Counselor, Swedish Embassy)	June 19, 1998	Kobe Industrial Promotion Center Bldg.
2nd Discussion Meetings for Embassy Technology Attaches	Latest trends in the US, an information-based society	Edward Yagi(Commercial Attache, American Embassy) Takuya Ogawa(Commercial Specialist, American Embassy)	Nov. 30, 1998	Amagasaki Small and Medium-Sized Business Center
3rd Discussion Meetings for Embassy Technology Attaches	The state of high-tech in Finland	Toshihiko Tanaka, Technology Advisor, Technology Department, Finnish Embassy	Feb. 25, 1999	Kobe Industrial Promotion Center Bldg.

The International Fair of Advanced Technologies

Intending to match the creative basic technologies developed by both domestic and overseas firms with the technologies possessed by local firms, NIRO held the International Fair of Advanced Technologies '98 to promote the upgrading of technologies and the creation of new industries. Leading-edge firms displayed new technologies and new products and seminars were held by researchers from leading research institutions both within and outside of Japan.

Focused on the theme "Creating next generation industries through the fusion of technologies," the fair was a complete success. It consisted of an Opening Forum that included a keynote address and panel discussion, an Advanced Technology Exhibition in which 155 domestic and international companies/groups - 17 of which represented 6 different countries - presented exhibits, and an Advanced Technology Seminar (conducted by 16 companies/groups regarding advanced technologies and products from the various exhibiting companies).

There were 500 people in attendance at the Opening Forum, and over the course of the 3-day event 24,538 people visited the Advanced Technology Exhibition. Attendees and exhibitors actively engaged in business discussions.

The fair is scheduled to be held this year according to the schedule shown below. We are looking forward to seeing you.

International Fair of Advanced Technologies '99

* Theme: Creating next generation industries through the fusion of technologies
* Dates : October 27-29, 1999 (Wed-Fri)
* Place : Kobe International Exhibition Hall, Hall No. 2
* Event Description:
* Opening Forum (keynote address) Oct. 27 /10:15am-12:15pm
  * Advanced Technology Seminar
  * Information Session where exhibiting companies/groups will have a chance to talk about their advanced technologies and products
  * Exhibition of new technologies and products by leading-edge companies
    No. of exhibitors (expected): 200 companies/groups
    Exhibiting industries (expected): The exhibition will be divided into seven distinct zones:
    Mechatronics, Biozone,
    Information, Communications and Multimedia Venture Square,
    Health and Medicine, Overseas Exchange Zone,
    Earthquake Preparedness / Disaster Prevention,
* Sponsor : International Fair of Advanced Technologies '99 Organization Committee
  Comprised of : Hyogo Prefecture, City of Kobe, New Industry Research Organization (NIRO), Hanshin-Awaji Economic Revitalization Organization (HERO), Hyogo Federation of Small Business Association, Hyogo Science and Technology Association

Technology Transfer Information

NIRO TTC Technology Transfer Process

Kenichi Sonoda
NIRO Technology Transfer Center Director

In the year since the NIRO Technology Transfer Center (TTC) opened last April, nearly 40 technology transfer advisors have joined and have begun their work. Presently each TTC employee and advisor is working on their own technology transfer cases. A variety of questions about TTC activities have been asked by firms. The most frequently asked questions involving how to proceed with technology transfers are "What do we do after consulting with TTC?", "What fees are involved?", and "Will our company secrets be safeguarded?" I would like to take this opportunity to answer some of these specific questions regarding technology transfers.

First, when a client consults with TTC, we listen to their questions and concerns and then conduct research on those issues using our in-house resources and determine whether we can help them. If we believe we can help them, an advisor is assigned who visits the client together with a TTC employee, and we discuss and research how to proceed from there. (If we are unable to help, we try to introduce the client to organization(s) that can help them.) An overall approach is decided, and after that the advisor becomes the firm's main contact. In some cases, a technician or other representative of the client firm may work together with the advisor to form a project team that will establish concrete plans for developing a new product or upgrading a certain technology.

At this time, the technological seeds for which NIRO holds the patent will be put to use if available. If there are no appropriate technological seeds available, we will use the NIRO network and negotiate for the acquisition and use of technological seeds of large firms, universities, research institutes and other organizations on behalf of the client company. If additional research and development is needed, the advisor will take the lead in supporting that R&D.

Once a specific technology transfer plan has been created, the client firm will be asked once again to make the final decision on whether they want to proceed with the technology transfer in the proposed manner. A technology transfer contract will be drawn up between the parties, and the transfer will commence.

Until the technology transfer contract is concluded, the costs of dispatching the advisor will be covered by the TTC (if additional fees are incurred due to special R&D, those will be borne by the client firm).

With regard to safeguarding secrets, client firms can rest assured knowing that the TTC is an authorized Hyogo Prefecture Intellectual Property Rights Center, and as such is responsible for strictly protecting company secrets. A non-disclosure agreement will be drafted between parties when demand necessary.

In fiscal 1998, the TTC handled 252 consultations. Of these, 25 projects are in process, 137 cases are in the stage of company visits and studies, and in 90 cases technology consultations have been concluded.

NIRO technology transfer advisors have collected technological seeds from 70 companies primarily through the International Fair of Advanced Technologies '98, and are now in the process of trying to match those to the firms that need them for their businesses.

TTC Technology Transfer Process

Product Development Assistance Center

NIRO opened Product Development Assistance Center in January 1999. This center will integrate processes that have been treated separately in the past, including product planning, conceptual design, detailed design, analysis, and experimentation. It will introduce a system for handling figures and data from the product planning stage to the experimental stage as one continuous process, and will provide technological support to small and medium-sized businesses. Its support activities include providing training and technological guidance aimed at improving the ability of small and medium-sized businesses to create goods, and will include joint research projects starting in fiscal 1999.

Training
Description: High-tech experimentation using a 3-tier system that integrates development, design, and testing.
Meetings : 3 meetings from February - April 1999
Trainees : Maximum 46 from small and medium-sized businesses

Technological Guidance
Description: How to use a 3-tier system that integrates development, design, and testing.
Meetings : 5 meetings from February - April 1999
Field trips and site visits will also be taken.

NIRO Column

Koichi Hiraoka
Vice President of the NIRO Research Institute

As NIRO embarks on its third year of research, I am pleased to be taking over for my esteemed colleague Dr. Toshio Atsuta (currently the President of the Kawasaki Heavy Industries Akashi Technical Institute) as the Vice President of the NIRO Research Institute.

The mission of the NIRO Research Institute is to discover technological seeds that match the needs of society, and to develop and cultivate these seeds using its contacts in industry, academia, and government to create new products and industries. The NIRO Research Institute has established several research workshops over the past two years focused not only on the topics it has been researching since its inception, but on new fields and topics as well.

There are currently about 20 active research workshops. This is quite an accomplishment given the amount of time that the organization has been at work, and is just about the most that can be handled by the institute's small staff of as much as researchers. Now it is important that that we move forward in creating products and businesses out of our most highly-developed topics and that we search out new topics. We need to get into a continuous cycle of developing new research topics, creating new products and starting up new businesses.

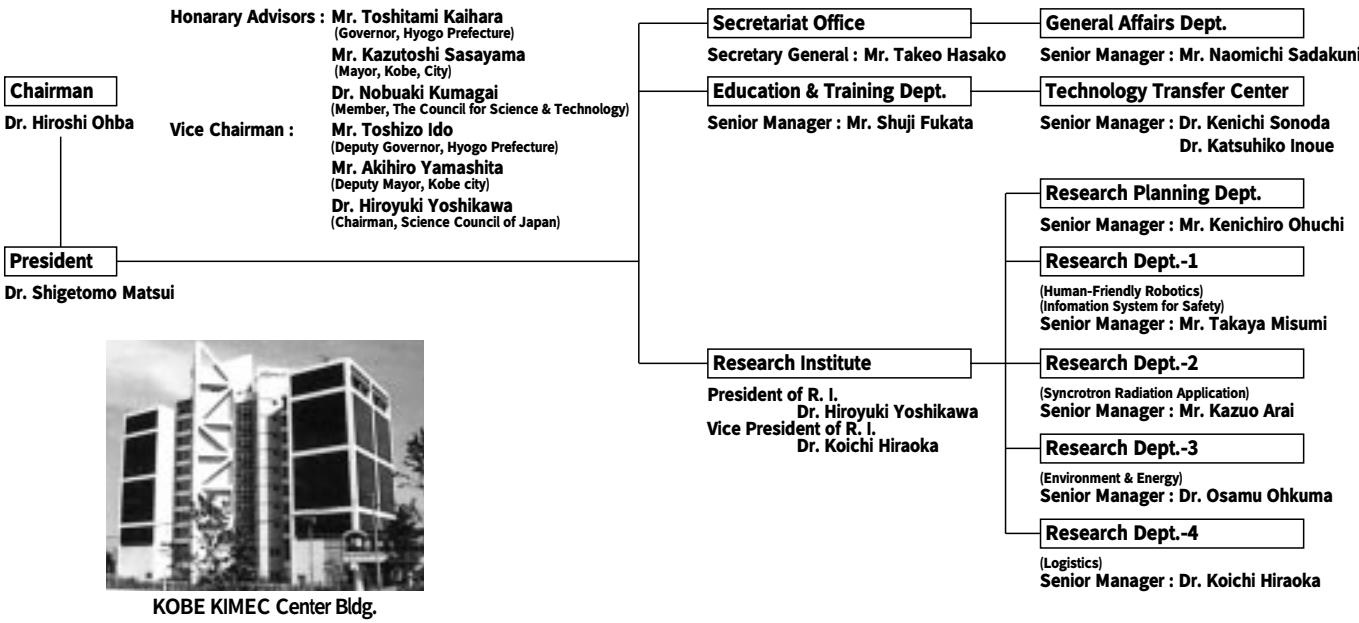
Since NIRO is a small institute, we need to make maximum use of every individual's capabilities and need to seek the opinions of many people when investigating each one of our research topics. I would like to provide an optimal environment where personnel from the research associations' member companies can visit, and where research institute members can have access to advanced technologies and expand their own technological skills by interacting with as many highly qualified technicians and researchers as possible.

If we create a place where each person enjoys their work, the counsel of many people is sought for further developing internal discussions, research topics are proposed out of fantastic concepts, and theoretical ideas evolve steadily into new developments, I believe that many roads will open up naturally before us. It is my sincere hope that my prior research and development experiences will contribute much toward achieving these goals.

NIRO Notes

The New Industry Research Organization

Organization Chart (as of August 1999)



KOBE KIMEC Center Bldg.

New visiting professor at MIT– President Matsui

NIRO President Shigetomo Matsui was recently selected to be a visiting professor at the Massachusetts Institute of Technology (MIT).

He received his appointment notice on February 1. His assignment will include lectures on welding and other manufacturing technologies to naval officers and MIT students. NIRO hopes to use this opportunity not only to build even closer ties with MIT, but to strengthen its network over other American universities.

(from left) MIT's Professor Chris, Professor Masubuchi, and NIRO's President Matsui.

Getting Down to Brass Tacks

To assist in detailing its operational and management plans for technology transfer, NIRO recently hired U.S. technology transfer consultant, John McEntire, through the assistance of the Japanese Patent Office and Japan TechnoMart. Mr. McEntire comes to NIRO from the University of Illinois at Urbana-Champaign (UIUC) where he is a Technology Transfer Specialist dealing in computer software and multimedia licensing. Prior to his employment with UIUC, Mr. McEntire lived in Japan for seven years during which he licensed intellectual property rights in and out of Japan. His initial consulting assignment will transpire during the months of September through December 1999.

It is desired that Mr. McEntire's involvement will not only provide NIRO a competitive advantage in technology transfer but also assist in building stronger ties with the United States.

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