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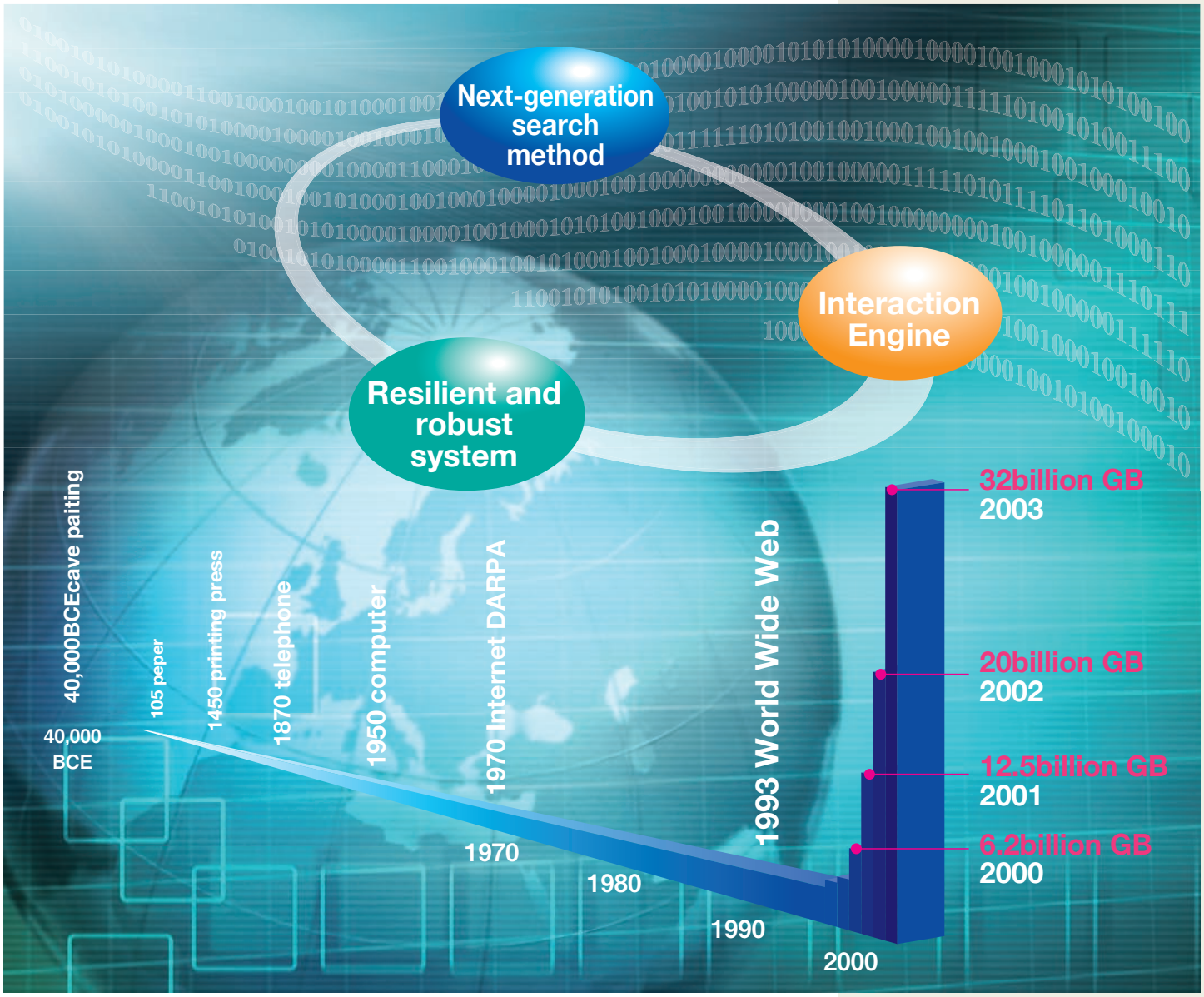


A research project to tackle the information explosion has been initiated.

Research into Web communications and interaction using metadata

Joint research No.11

Ikki Ohmukai (NII)

Special Article

Research into Web communications and interaction using metadata

Joint Research No. 11

1. The changing face of Web communications

Since its birth in 1989, the Web has continuously expanded in size. Although the Web has developed as an information-sharing tool, to the point where it boasts such a volume of information that it can rightly be referred to as a colossal dictionary, as the number of users accessing the Web has expanded the medium has come to function as a communication infrastructure as well. People use the Web as a venue for meetings, discussions, and collaboration to supplement real-world communication with friends and acquaintances.

With blogs and social networking services (SNS), which have attracted attention in recent years, individuals can have their own Web sites and exchange information with each other via links between sites. Exchanging information smoothly in such environment requires the standardization of information formats and clear demarcation of the owners of such information. These requirements are achieved by using added information known as metadata.

In this study, we consider methodologies for supporting Web communications and interaction through the aggressive utilization of such metadata, and we verify the effectiveness of such methodologies through system construction and operation.

2. Metadata for communications

Although communications has various aspects, this study focuses on supporting communications intended for knowledge-sharing purposes. First of all, in order to organize and clarify the knowledge held by individuals, we proposed a three-layer model comprising information concerning individual users, information held by individual users, and the actual subjects of such information, and we defined a metadata format for recording such information. Although inputting such metadata generally requires considerable effort, the availability of an appropriate interface for the purpose at hand can reduce these costs. As an example, we constructed an intranet blogging system in order to control access to information — an issue involved in the sharing of information within the organization. This system has made it possible for users to resolve the issue in easy and flexible ways. In addition, we developed a system in which users can enter their own interests using a simple interface that involves underlining Web content in which they are interested. This is intended to support information referral using cooperative filtering.

3. Metadata for interaction

In communications between individuals, it is desirable that not only the meanings of information but also attendant emotional information be conveyable. However, since emotional information is not expressed in words, it is difficult to handle in the same way as the meanings of information. For this reason, we consider extracting metadata for expressing emotional information from the expressions and movements of avatars. In this study, we adopted and tested the use of avatars in communications systems using discussion boards and in online meeting systems. We also studied the types of roles actually played by avatars for emotional expression, by analyzing the avatars designed and their relationships with the circumstances under which the avatars were used.

4. Future directions

Together with its use as a communications infrastructure, the volume of information on the Web is likely to increase even further. Annotating metadata to such information is essential for processing the information appropriately. In this study, we proposed methodologies comprising metadata designs suited to the purposes of information and interfaces for input of such metadata as well as methods of utilizing data thus obtained, and we verified the effectiveness of these methodologies through numerous tests. In the future, we would like to obtain new perspectives through building and operating larger-scale systems as well as continuing to expand the number of subjects in the study.

*(**Ikki Ohmukai**, Assistant Professor,*
Research Center for Testbeds and Prototyping)

Research & Education

Researches on Multi-Scale Traffic Analysis and Control for Quality of Service Provisioning

A couple of days ago, I had the chance to take care of a very interesting and brave trial executed by guitarists in Japan and Uruguay, performing their guitar duo via the internet. When I saw the two guitarists successfully co-operated across the distance of two places which are almost in the opposite sides of the earth, I have been impressed again by the amazing ability of communication provided by today's internet.

On the other hand, when we use network as means for our communication, we may experience scenes when picture loses smoothness, moments when very delicate parts of sound are interrupted, or even frustrations when the response from the web becomes too slow. In order to solve this kind of problems raised by the degradation of communication quality, we must accurately understand the features of network traffic, and search for the feasible way to predict the performance of network, as well as to find the efficient method to control the quality of communication service.

Due to the facts that information being delivered across the internet is rich both in its formats and in its kinds of applications, traffic in the internet has different features with those of traffic in telephone networks. One of the differences is the so-called self-similar property. Network traffic has fluctuations upon time, and self-similarity is a statistical concept for capturing the scale invariance feature of the fluctuation of traffic. Intuitively, similar ways of fluctuation can be observed when we look at self-similar traffic in different time scales. Because of its simplicity for describing the scale invariance property by a single self-similar exponent (or the Hurst parameter), self-similar models are very convenient for analyzing the performance of network traffic.

However, when we look at the traffic in real networks, most of them show more complicated features than the simple self-similar model has. By extracting these features in different time scales, and using features in time scales which are relevant to conditions of our networks, it is possible to predict the performance as we need. Furthermore, based on the features of network traffic in different time scales, control methods which are suitable for those features can be used to realize the communication service with various kinds of quality requirements from different users and applications.

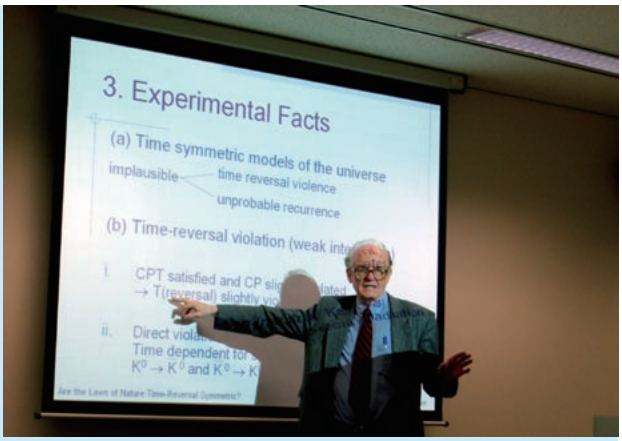
Reference:
Yusheng Ji, "A practical approach for multi-scale performance analysis of internet traffic," Proc. 19th International Teletraffic Congress, pp.2307-2316 (2005).

*(**Yusheng Ji**, Associate Professor, Software Research Division)*

Are the Laws of Nature Time-Reversal Symmetric? Invited Talk <Nov. 30, 2005>

Professor, University of Salzburg, Austria
Chairman of the Private Research Institute for Philosophy of Science at the International Research-Center Salzburg

Paul Weingartner



Paul Weingartner is Chairman of the Institute for Philosophy of Science at the International Research-Center Salzburg since 1972, and has been Full Professor of Philosophy with special consideration of Logic and Philosophy of Science at the University of Salzburg from 1971-1999. His research interests span a wide range of disciplines, including philosophy, mathematics, physics, and psychology. He holds an Honorary Doctorate (Dr.h.c.) from the Marie Curie Sklodowska University, Lublin (Poland), received in 1995, and is a member of the New York Academy of Sciences since 1997.

Dr. Weingartner earned his Ph.D. degree in Philosophy (minor: Physics) from the University of Innsbruck, Austria, in 1961. Thereafter, he has been a Research Fellow of the British Council, studying with Sir Karl Popper at the University of London, and a Research Fellow of the Alexander von Humboldt-Stiftung with Wolfgang

Stegmueller at the University of Munich, among others.

Dr. Weingartner contributed seminal work to logic, philosophy of science, ontology, epistemology, and the history of philosophy. His recent research interests focused on the laws of nature and alternative logics such as quantum logic and quantum theory. Dr. Weingartner published 7 monographs, 35 edited books, and 140 scientific articles. Two scientific volumes were dedicated to his academic achievements. He has been Visiting Professor at the University of California, Irvine, the National University of Canberra, and the University of Pittsburgh. In addition, Dr. Weingartner was an invited lecturer at 96 foreign universities besides Austria.

This talk is based on my book on "Laws of Nature" (jointly written with the German physicist Peter Mittelstaedt) that was published as a Springer book in 2005. I will discuss time reversibility (the "arrow of time") and show that (i) time reversibility (as permitted by dynamical laws) is not satisfied at the microlevel, (ii) the so-called time-irreversibility of the law of entropy (and other statistical laws) should be more realistically replaced by very improbable recurrence, and (iii) the arrow is in process not in time.

*(**Helmut Prendinger**, Associate Professor, Multimedia Information Research Division)*

NII Message from NII Researcher

Research staff,
Research Information Research Division.

Yoko Mizuta

1995. M.A., Graduate School of Language and Culture, Osaka University.
2002. Ph.D., Department of Linguistics, University of Chicago.
Sep. 2003 to date. Research staff (post-doc) at NII.

I specialized in linguistics, after having majored in mathematics at Waseda University and worked for a company laboratory investigating into the database system and its retrieval language: Through my job I took a growing interest in language in a wider sense. While my area of specialization is semantics/ pragmatics, I am also concerned with integrating my linguistic insights into science and engineering. Here at NII, I have a chance to do so as a member of projects related to bioinformatics.

The BioPortal project (coordinated by Prof. Asao Fujiyama), of which I am an official member, aims to offer a web environment which enables a wide variety of users to effectively get and use biomedical information. It is practically motivated and has features including; 1) a top menu considering the diverse levels and interest of the users, 2) a Japanese language-based user interface, and 3) an organized presentation of the contents with sensible links. The project members have been working on technical and more general issues from biological and informatics-related perspectives as well as from the user's perspective.

I have also been engaged in the ZAISA project (Zone Analysis In Scientific Articles) led by Prof. Nigel Collier. This concerns a natural language processing technique useful for an automatic extraction and analysis of certain information in full texts. The text will be divided into rhetorical 'zones' based on the status of its constituents in terms of argumentative roles and experimental steps. We specifically aim to pinpoint the information pertaining to the author's own experiments and insights (vs. previous work etc) and proposed a scheme suitable for biomedical texts. We are now working toward automatic zoning, which involves the creation of a dataset, linguistic analyses, statistical analyses, machine learning experiments, etc. I empirically consider that a high quality research in linguistic information science would require the perspectives of both computer science and linguistics. I now acknowledge the precious opportunity to contribute to informatics as a linguist.

It is sometimes challenging for me to make a progress also in my independent work in linguistics within my spare time and energy. However, given the exceptional environment offered at NII, I can find some room left for my long-term goals as well. I appreciate the peaceful and stimulating environment here and hope to make the remaining time until March 2006 as fruitful as possible.

Message from Foreign Researcher

Cyrille Artho

2001	ETH Zurich, Switzerland M.Sc., Computer Science
2005	ETH Zurich, Switzerland Ph.D., Computer Science

I studied computer science at the Swiss Federal Institute of Technology (ETH Zurich) from 1996 to 2001, and spent one year at University of Strathclyde in Glasgow, Scotland, during my studies.

After graduating at ETHZ, I decided to pursue research there and obtained my Ph.D. in May 2005, having spent two summers at the Computational Sciences Division of the NASA Ames Research Center.

My main interests are software engineering, operating systems and cryptography. In my master's thesis, I compared different approaches for finding faults in multi-threaded programs. In my Ph.D. thesis, I have continued my search for such errors, which our tool JNuke can detect effienctly.

Japan produces many embedded systems, where hardware and software are combined in a consumer product such as a cell phone. It is desirable that the software meets certain quality standards, as a recall of a product is very expensive. At the same time, fast innovation cycles demand easily applicable fault detection technologies. My research focuses on that goal, utilizing both static and dynamic analysis techniques. My vision is to the quality of future software with next-generation fault-finding tools.

Traditionally, software testing was used for detecting failures. However, testing is limited to concrete scenarios and observable data. Several improvements exist to detect failure potentials in software. They can be categorized into static analysis and dynamic analysis. Static analysis investigates the structure of software and tries to conclude what faults it may contain. Its independence of concrete test cases is its major strength. On the other hand, it is usually imprecise. Current challenges involve improving precision while not sacrificing scalability.

Dynamic analysis actually executes the program to be tested, with various enhancements for failure detection. Two major directions exist: software model checking and run-time verification. Model checking explores all possible outcomes of operations, which is very precise but only works for small programs. Application to realistic programs is still a major challenge. On the other hand, run-time verification is less precise but can find more faults than testing alone. My research involves both static and dynamic analysis techniques.

Graduate Education

Message from Graduate Students

Masashi Kiyomi

3rd year, Department of Infomatics, School of Multidisciplinary Sciences, Graduate University for Advanced Studies

I am now studying about enumeration algorithms under the supervision of Professor Uno. I studied about combinatorial optimization, especially linear programming related topics, when I entered NII. At that time, I knew almost nothing about enumeration. I think most of you can not see what field enumeration is. Here, enumeration is, giving some properties, to output all instances which satisfy the properties with no duplication. For example, enumeration of strings which use charcters 'a' and 'b' and whose length are two is "aa", "ab", "ba", "bb". I am studying how we can do these enumeration in short time. I like thinking about fast algorithms and I always enumerated :-) at exams of combinatorics in the elementary school, so, the field is very comfortable for me, and I am enjoying my study. This field is young and still has many open problems which are simple and interesting. It is wonderful that many people know and enjoy enumeration.

Graduate Education

Explanation Meeting for the Entrance Examination of the Department of Informatics, the Graduate University for Advanced Studies

On Monday, November 29, 2005, in the Department of Informatics, the Graduate University for Advanced Studies (Sokendai), the explanation meeting for the entrance examination was held at the National Institute of Informatics (NII) for applicants to be enrolled in April 2006.

In connection with the shift to the five-year Ph.D course beginning with the 2006 academic year, this meeting was focused on applicants for the five-year Ph.D course as well as those for the established senior-level (three-year) Ph.D course.

Ten prospective students attended at this time, after the orientation by Prof. Hayami (current Head of the Department) and Prof. Ken Sato, current students Daisuke Kimura and Eric Platon gave the prospective students an introduction to student life in the course. After a tour of the graduate students' laboratories, lecture rooms, the NII Library, and other facilities, prospective students were provided with individual consultation on the program. In this consultation, Prof. Ken Sato, Prof. Keizo Oyama, Assoc. Prof. Hironobu Gotoda, and Assoc. Prof. Hitoshi Okada answered the attendees' enthusiastic questions.

(Research Cooperation Division)

Consultation on the entrance examination of Sokendai.

Development & Operations

Seminar for University Librarians, NACSIS-CAT Advanced Training Course, and Academic Information Literacy Training Course held

In cooperation with Kyoto University, the University of Tokyo, and the Ministry of Education, Culture, Sports, Science and Technology, the National Institute of Informatics held a Seminar for University Librarians October 11 - 14 (at Kyoto University) and November 15 - 19, 2005 (at the University of Tokyo). A total of 96 attendees took part in this seminar. Intended to enable young employees at university libraries to acquire the latest disciplinary knowledge and associated information, this seminar intensively covered information centered on subjects such as reports on current conditions of and future prospects for operations including library user services and cataloguing as well as information distribution and other related topics, renewing attendees' interest in library operations.

In addition, NACSIS-CAT Advanced Training Course was held over the two-week period from October 17 to 28, serving as the foundation for future information-service operations

Prof. Miyazawa's lecture in the NACSIS-CAT Advanced Training Course

Academic Information Literacy Training Course attendees announce the results of group exercises at Osaka University

Development & Operations

involving NII's catalog information service. The 16 attendees deepened their understanding of library catalog information services through a wide range of lectures and exercises and prepared and announced proposed improvements to cataloging operations in individual group exercises.

Furthermore, Academic Information Literacy Training Course was held October 31 - November 2 (at NII) and November 16 - 18 (held jointly with Osaka University, at Osaka University). Intended to strengthen academic-information literacy training, which has become an important topic of concern at university libraries recently, this program has provided training to a total of 100 attendees. In addition to reports on case studies from institutions with advanced literacy-training activities, each attendee took part in lectures by Prof. Masamitsu Negishi and Contents Division Assistant Manager Modegi of NII, on topics such as descriptions of content and services provided. In individual group discussions, each group proposed various examples of literacy-training activities based on actual operations.

(Planning and Coordination Division)

NAREGI booths exhibited at international conferences

In autumn 2005, the National Research Grid Initiative (NAREGI) exhibited in booths at two international conferences.

The first of these conferences was SC|05, held November 12 - 18 in Seattle, U.S. The most advanced and most authoritative international conference in the fields of high-performance computing and networking, the SC conference is held annually in various locations across the United States. Welcoming under one roof researchers, educators, scientists, engineers, programmers, system administrators, and other professionals in computer- and networking-related fields from around the world, this year's conference again saw a total of more than 10,000 attendees.

The NAREGI Booth featured demonstrations and posters centered on key functions and component factors of grid middleware under development.

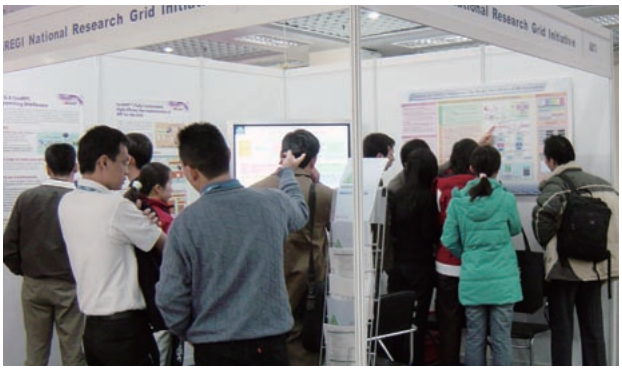
The second of these conferences was HPC Asia 2005, held November 30 - December 3 in Beijing. Gathering researchers and developers in fields related to high-performance computers from throughout the Asia-Pacific region, this conference provided opportunities for the announcement of research results and exchange of information via lectures, workshops, and exhibitions.

In addition to the NAREGI booth's grid-middleware demonstrations and posters, Project Researcher Masataka Kanamori described the state of NAREGI research and development in a workshop.

Both of these conferences provided meaningful opportunities for promoting NAREGI activities around the world, enabling the beneficial exchange of opinions with the large number of visitors to the NAREGI booths.

(Center for Grid Research and Development)

The NAREGI booth at SC|05


The NAREGI booth at HPC Asia 2005

First Meeting of the Organization for Scientific Resources Operations and Coordination for 2005

In preparation for the construction of the Cyber Science Infrastructure (CSI), being built with the cooperation of universities and other research institutions in Japan, the Organization for Scientific Resources Operations and Coordination was established in October 2005. The goal of this organization is to coodinate and operate the management of scientific resources and the provision of service forming the core of the Cyber Science Infrastructure (CSI).

The first meeting of the Organization for FY 2005 was held at NII December 14, 2005.

This meeting featured the exchange of opinions relating to matters such as construction of a leading-edge academic-information infrastructure, trends in institutional repositories, establishment of working committees, and

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future directions.

Improving and enhancing academic content is a vital topic in building a leading-edge academic-information infrastructure. Such structures are currently undergoing dramatic improvements in Europe and North America. It is hoped that Japan too will soon both establish a vision and begin structural improvements aimed at furthering international cooperation and competition in the academic and industrial fields.

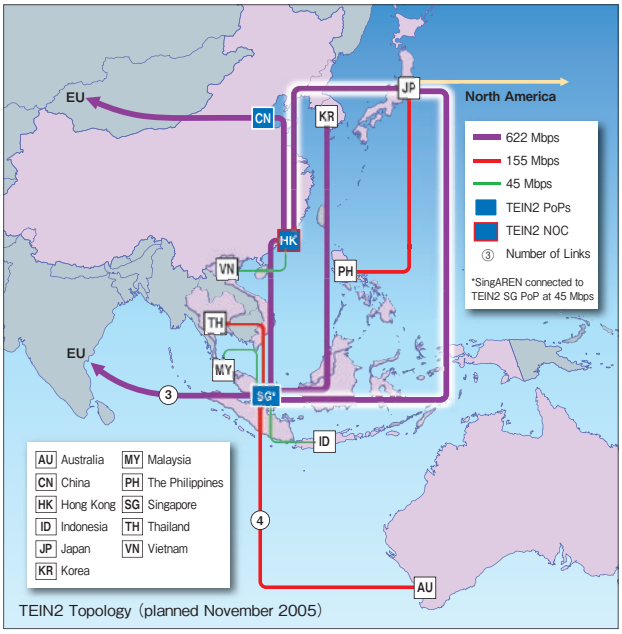
The Organization plans to meet approximately twice each year.

(Content Division)

National Institute of Informatics launches SINET's international circuits in Asia

On January 1st, 2006, the National Institute of Informatics (NII) launched new international circuits that establish the Science Information Network (SINET) international connectivity in Asia; one circuit connects Japan and Hong Kong, and the other Japan and Singapore. These circuits each hold the speed of 622 Mbps. Through cooperation between NII and the Trans-Eurasia Information Network 2 (TEIN2), the new circuits promote the exchange and circulation of scientific research information between Asia and Europe. The launch of these intra-Asia circuits extends SINET international connectivity in addition to the existing circuits between Japan and the U.S.A. With the launch of these new international circuits, preexisting circuit between Japan and Thailand has discontinued.

(Network Division)



〈TEIN2: Trans-Eurasia Information Network〈http://www.tein2.net/〉〉

The sixth SPARC/JAPAN seminar held: "The COUNTER Project: An International Standard in Online Usage Statistics", at the seventh Library Fair & Forum (2005).

On November 30, The International Scholarly Communication Initiative held the sixth in its series of SPARC/JAPAN seminars, entitled "The COUNTER Project: An International Standard in Online Usage Statistics,"in conjunction with the Library Fair & Forum 2005 (held November 30 - December 2, 2005) with support from the Japan Association of National University Libraries and the Japan Association of Private University Libraries.

This seminar welcomed Richard Gedye, Chair of the COUNTER (Counting Online Usage of Networked Electronic Resources), who introduced an overview and future directions of the counter project, which seeks to standardize usage statistics for online information resources such as digital journals and databases. It also featured enthusiastic questions from a number of the 120 attendees from university libraries, academic societies and scholaly publishers.

Details of and materials from this forum are available on the International Scholarly Communication Initiative's Web site (**http://www.nii.ac.jp/sparc/**).

(Content Division)

Topics

Karuizawa Saturday Salon 2005

On October 1, October 22 and November 19, 2005, the sixth, the seventh and the eighth lectures of the Karuizawa Saturday Salon were held at the International Seminar House for Advanced Studies in Karuizawa, Nagano.

Sixth Lecture: October 1, 2005

What is Japanese civilization? The possibility of "Pax Japonica"

Professor Emeritus,
International Research Center for Japanese Studies
Prof. Tetsuo Yamaori

Looking back at the history of our country, we find there were two prolonged peaceful periods. They were during the 350 years of the Heian period and during the 250 years of the Edo period. Such peaceful periods are absent in the histories of Europe, China, and India. Why did Japan have these periods in its history? Strangely, there have been few studies that address this subject. Of course, there could be various causes behind the occurrence of such peaceful periods; however, the most important factor, I think, is that a very harmonious balance between the nation and religion had been maintained. Is there a "Pax Japonica" identity similar to "Pax Romana" or "Pax Britannica?"

(Excerpt quoted in leaflets handed out at the seminar)

(Publicity and Dissemination Division)

Seventh Lecture: October 22, 2005

Longing for freedom and eternity ~The Masters of the Romantic Era and Robert Schumann

Violist **Ms. Junko Ohtsu**
Pianist **Ms. Tomoko Okada**

Romanticism in literature led by Byron, Goethe, Hugo, Byron and others became a great cultural movement in Europe from the late 18th century to the 19th century. Longing for freedom and eternity expressed in their literature and philosophy greatly influenced the music world as well. (The German term "Roman" actually means long story or novel.) In the works of Romantic composers such as Weber, Schubert, Schumann, Chopin, Brahms and Wagner, emotional and picturesque expression appeared to be more important than formal or structural considerations.

Robert Schumann (1810-56) lived very much like one of the heroes in novels. His life was short, but very energetic, and filled with a strong passion for artistic creation. He was continually looking for "new paths" which would guide him to fresh ideas and inspiration. These piano works exemplify how poetic and literary ideas affect music, and, he combined romantic expression and classical composition structure quite successfully. Schumann was extremely careful to compose songs so that the lyrics and music were always tightly united. His chamber music and symphonic works are vivid and filled with lyricism. After injuring his finger due to excessive practice and giving up his career as a pianist, he became very active as a critic providing stimulation and powerful influence to the German classical music world and discovered new talents such as Chopin and Brahms when they were still young.

♪Program♪

- Franz Schubert (1797 - 1828)
  Sonatine for Violin and Piano No.1 G major Op. 137 - 1, D.384
- Clara Schumann (1819 – 96)
  Three Romances Op. 21
- Johannes Brahms (1833 – 97)
  from Songs
- Robert Schumann (1810 – 56)
  Sonata for Violin and Piano No.1 a-minor Op. 105

and others

Through the experience of today's program incorporating

the works of great masters of the German romantic era such as Mendelssohn, Schubert, Brahms, Schumann and his wife, Clara, we will hopefully understand better the relationship between their works and lives, particularly how romances, friendships, agonies, aspirations, and inner conflicts were all reflected in their music, and also, how the society and surroundings of their time played roles in affecting their musical career. (Written by Junko Ohtsu)

(Excerpt quoted in leaflets handed out at the seminar)

(Publicity and Dissemination Division)

Eighth Lecture: November 19, 2005

Enjoyment of "reading" picture book illustrations

Translator

Mr. Shinichi Yoshida

When you read a picture book, you don't just look at the letters and words. Of course, there are some books whose illustrations describe exactly what the words say; however, in true picture books, illustrations interpret words: words are left out where the illustrations tell a story and illustrations are left out where words tell a story. As a story develops in such a way, the attraction of a picture book lies in the enjoyment of reading illustrations. Humor is often described by illustration. Shall we enjoy illustrations in a picture book together? *(Excerpt quoted in leaflets handed out at the seminar)*

(Publicity and Dissemination Division)

National Institute of Informatics Public Lectures 2005, "Eight words to discuss Informatics"

Fourth Lecture: Monday, October 31, 2005

Cluster Computing: Is it possible for personal computers to surpass super computers?

Associate Professor, Computer Architecture Research, Infrastructure Systems Research Division

Takashi Matsumoto

Doctor of Science from the University of Tokyo 2001
1987 – 1991 Researcher at Tokyo Research Laboratory, IBM Japan Corp.
1991 – 2002 Assistant -Professor at, Dept. of Information Science, Faculty of Science, Univ. of Tokyo
2001 – Team Leader of Pre-venture Project "High-Performance Embedded Processor", Japan Science and Technology Corporation (JST)
2002 – Associate -Professor at, National Institute of Informatics
Research fields:Computer architecture, Parallel processing

The supercomputer used to be synonymous with the vector-processing machines designed by Dr. Cray. Since the vector architecture was invented in the United States, Japan has also energetically promoted the development of this technology. Over the last decade, the vector-processing machines made in Japan were some of the fastest supercomputers in the world. Japan's Earth Simulator, which held its top position until recently, integrated a modest number of vector-processor computers. On the other hand, from the 1990s onwards, because of the limit on high-speed operation of semiconductors and the problems of development costs and heat generation, the supercomputer with a scalar architecture — which was aimed at achieving higher performance by using a large number of ordinary computers instead of upgrading a single supercomputer — has been produced. Blue Gene developed in the United

States, which recently toppled the Earth Simulator as the fastest, is just such a scalar supercomputer.

This scalar architecture is also called "cluster computing" — a term that comes from a "cluster" of grapes. A scalar supercomputer uses CPUs of personal computers as its own CPU. In other words, a cluster computer can be simply made by combining multiple personal computers. Accordingly, to improve its performance, all that is needed is to increase the number of computers that are connected.

In this lecture, I explained the concept of cluster computing, its advantages, limits, and future prospects.

(Publicity and Dissemination Division)

Fifth Lecture: Friday, November 18, 2005

Agent: How conveniently can people be helped by computers?

Professor, Knowledge Systems Research,
Intelligent Systems Research Division

Shinichi Honiden

1976-1978	Master Course, Graduate School of Electrical Engineering, Waseda University
1978.4-2000.1	Toshiba Corporation
2000.2-2000.3	Professor, National Center for Science Information Systems
2000.4-present	Professor, National Institute of Informatics
2001.4-present	Professor, The University of Tokyo
[Research fields]	Agent, Software Engineering, Object-Oriented

It has been a long time since the keyword "agent" appeared around the world. From its birth, various kinds of agents have appeared one after another. In this lecture, by introducing our research giving with some specific examples, I explained the current situations regarding how far agents are becoming familiar to us, how much they can support human life, and what the new information society they bring will be like. These examples are "active contents" (which, by being changed to agents, take actions based on the creator's requests and protect themselves from illegal use), "HuNavi Agent" (which acts as a guide for tourists who are unfamiliar with their destination), and "Mobeet" (which retrieves the appropriate information according to the user's needs through a cell-phone).

(Publicity and Dissemination Division)

NII exhibits at Library Fair & Forum 2005

Over the three-day period November 30 - December 2, 2005, NII exhibited at the Library Fair & Forum 2005 held at Pacifico Yokohama.

The Library Fair & Forum gathers together a wide range of companies and other parties involved in the library business, facilitating the exchange of information among participants while providing the latest disciplinary information.

The NII's booth was centered on introductions to the NACSIS-CAT/ILL cataloguing information service, the GeNii academic content portal, and the Digital Archive of Toyo Bunko Rare Books. Of the total of approximately 20,000 attendees at the Library Fair & Forum, more than 2,300 visited the NII booth.

In addition, on November 30 the NII held an exhibitor presentation entitled "Using GeNii to Query Academic Information: An Introduction to an Academic Content Portal" and a forum entitled "Thinking About the Distribution of Academic Information in the Age of the Electronic Journal." (This forum was held as the sixth in a series of SPARC/JAPAN seminars organized by the NII.)

(Publicity and Dissemination Division)

Intellectual Property Center News

Trends in revisions to utility patent systems

The Patent Law has been revised for purposes of international harmonization, and in particular massive systemic revisions have been underway for more than the past ten years. For this reason, there may be a large number of people whose understanding of patent law differs from the actual current circumstances of the system in place. Thus, in this report we will touch on some of the most major revisions made and future trends in patent law.

In 1994, Japan's patent system changed from a pre-grant publication system to a post-grant opposition system. Later, a 2003 amendment to the Patent Law abolished the opposition system, merging it into the previously existing invalidation trial system. Last year, rules on inventions in service were amended, leading to the amendment of the Institute's invention-in-service rules.

The utility-model patent system protects minor inventions such as improvements. In 1994, this system shifted to one in which only elementary condition would be examined, instead of conducting examinations like those for patents. (The term of validity under this system was six years.) The 2004 amendment included rules making it possible to apply to change the registration of utility models patent meeting certain conditions to patent applications, and extended the term of validity to ten years. Since they do not involve examinations like those for patents, while utility models patent do preserve rights the structure has been designed to prevent their excessive exercise by using a utility-model technical evaluation system.

A report recently released by the Patent System Subcommittee of the Intellectual Property Policy Committee of the Industrial Structure Council proposes to increase the effectiveness of the system. There are as follows: (1) as part of its proposed measures for countering counterfeit goods, recognizing exports not included in implementation of inventions as infringements of rights (2) pointing out issues in current law with regard to subdivision and adjustment of applications, and so on. Outside the area of patents and utility models, the term of validity of registered design rights as well as certain other matters are currently under review. As such, it seems likely that laws related to intellectual property rights will undergo further changes in the future.

(Intellectual Property Center)

Description of the cover

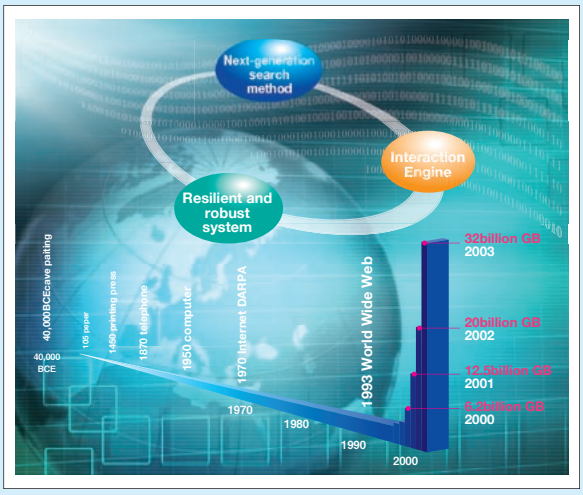
A research project to tackle the information explosion has been initiated.

The amount of information created by humans has been rapidly increasing since the beginning of the 21st century. The illustration on the cover page schematically illustrates this phenomenon (Data Source: Horison Information Strategies). This upheaval potentially threatens various aspects of society, which heavily depends on information systems.

Firstly, it makes it more difficult to quickly find necessary and trustworthy information from such a large amount of information, because information processing by humans is limited. With the emergence of various novel systems and institutions, not only older people but anybody is in jeopardy of falling into the digital divide situation. Therefore, we need some appropriate interfaces for information systems to avoid these inconveniences.

Lastly, we need systems and software that can stably operate under the heavy stress imposed by increasing workloads, for reliably storing and utilizing a large amount of information.

In 2005, the research proposal entitled "Cyber Infrastructure for the Information-explosion Era" was awarded a 6-year research fund as a Grant-in-Aid for Scientific Research on Priority-area, provided by the Ministry of Education, Culture, Sports, Science and Technology. After gathering some excellent research groups from different universities, we will collaboratively challenge ourselves to solve those issues produced by the information explosion. Detailed information is available at http://i-explosion.ex.nii.ac.jp/i-explosion/.



Detailed information on the research and projects of NII is available at our Website.

http://www.nii.ac.jp/

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