

ITU TELECOM WORLD 2003 and NEC's Exhibition

By Junji NAMIKI,* Jun OYAMADA,† Kozo HAYAKAWA† and Kazuo IWAMA‡

ABSTRACT Under the turning point of Telecom Industry with the rapid penetration of broadband Internet and advanced mobile services, ITU TELECOM WORLD 2003 was held in Geneva, Switzerland without participating of some major players in Europe and North America. NEC introduced its most recent advanced and vital network business solutions created by the convergence of computing and networking technologies under the theme of “Dynamic Collaboration — making your business grow” for network service providers. Through the presentation in theme stage and each exhibition, NEC's proactive business message would be reached and understood by participants.

KEYWORDS TELECOM, Collaboration, Ubiquitous, Convergence, W-CDMA, RFID, Biometrics

1. GENERAL DESCRIPTION OF ITU TELECOM WORLD 2003

1.1 General Description of Event

The global level exhibition and forum, which goes by the name of “TELECOM”, is organized by ITU (International Telecommunication Union) and held once every four years in Geneva, Switzerland (**Photo 1**). The first TELECOM was held in 1971 and this is the ninth. In the mid-1980s, ASIA TELECOM, AFRICA TELECOM, and AMERICA TELECOM were inaugurated and roughly around the year 2000, ASIA TELECOM began being referred to as ITU TELECOM ASIA. Based on this, this year's TELECOM held in Geneva was officially named ITU TELECOM WORLD 2003. It started with the opening ceremony and VIP tour on Saturday, October 11, 2003. The venue for ITU TELECOM WORLD 2003 (The official abbreviated name is WORLD 2003, but hereinafter the conventional name TELECOM 2003 will be used.) was the “GENEVA PALEXPO” adjacent

to the Geneva Airport. It ran for 7 days from Sunday, October 12 to Saturday, October 18, 2003. A total of 911 exhibitors representing 51 countries participated, however that was less than the previous time and there were quite a few open spaces. The estimated number of visitors was around 127,000, which was approximately 28% less compared to that for TELECOM 99. It is presumed that factors contributing to this were the fact that it was one day shorter than before, the recent downturn in the telecom-related industry, and the absence of some major players in Europe and North America.

1.2 Characteristics of ITU TELECOM WORLD 2003

Based on the opinion given at the board meeting of TELECOM that participation expenses were too high, a request had been made to ITU to improve the cost system for TELECOM. For example, the maximum size guideline, which was 500 square meters, put in place for stands. Also, a “TELECOM Village” was set up for use as rental offices and office suite



Photo 1 Exhibition hall.

*Vice President

†Advertising Division

‡Market Relations Promotion Division

areas. Various companies utilized this space to offer seminars and demonstrations for people who had registered, and actively conducted business negotiations.

Previously, this event had been referred to as the “Telecommunications Olympics” and was recognized as a place where enterprises and organizations from around the world would compete with one another to show their technological development achievements. This time, its prime aim was shifted to focus on the solicitation of business by introducing the products and solutions for today and the future. There were not any showy stage performances at the stands. Because of the absence of some big players in Europe and North America, the Asian companies from Japan, China, and Korea showed strong presence. Meanwhile, the scale of the forum was drastically downsized to 36 frames and 58 hours from 50 frames and 168 hours for TELECOM 99.

2. GENERAL DESCRIPTION OF NEC'S PRESENTATION

2.1 Presentation Content Examination Process

In the past, NEC would form a team about one and a-half years prior to the event, to do framing of the presentation based on the research done on business and technology trends. However, this time, after looking into the transition of business structures in accordance with the recent rapid penetration of the Internet and cellular phones, in December 2002, a consensus for participation was finally reached. Amid the sweeping tide of structural reform including abolition of the internal company system, in April 2003, a task force team was organized within the Planning and Exhibition Subcommittee and simultaneously modeling designing of the stand was done. At last, in June 2003, the plan for the project and presentation was finalized.

2.2 Basic Plan for the Project and Presentation

Since ITU is the organizer of TELECOM 2003, its visitors include government ministers and regulators as well as industry-leading CEOs and top managers, who are key decision-makers. Taking this opportunity, for the appeal of NEC's new business style in response to the drastic changes in the market, we selected the theme “Dynamic Collaboration — making your business grow,” which is the business message our company currently promotes. Dynamic Collaboration is a new business style designed to make an enterprise capable of dynamically responding to changes through flexibly cooperating with partners, while at the same time sharpening the enterprise's

own core competence, for the purpose of realizing continuous enterprise evolution and expansion. As shown in **Fig. 1**, the theme stage was set up to stimulate the interest of visitors, the exhibition space was used to help expand their understanding, and the guest space on the second floor was used to understand what customers are looking for so that we can win customers through marketing in the future. Thus, it was set up to facilitate communication with visitors.

2.3 Stand Layout and Design

NEC's stand was a 2-story structure of 504 square meters with the first floor having a theater for the theme presentation and exhibition space (**Photo 2, Fig. 2**).

On the second floor, the guest space including a lounge and meeting room was set up. Its bright and open atmosphere encouraged people to come in. For the coloring of the stand, warm colors like red, yellow, and pink were used with the base color being blue—NEC's brand color. Our stand design won great popularity among visitors (**Photos 3 and 4**).

In the exhibition space, through demonstrations and presentations using the latest 40-inch liquid crystal display, the concept and technologies introduced on the theme stage were further detailed. In addition, a plasma display was used for business promotion by video image. Attaching importance to interaction with visitors, the basic design of the exhibition tables was made for face-to-face communication. Further, along the aisle side of the theater, our cellular phones were displayed to show off our advanced cellular phone technology.

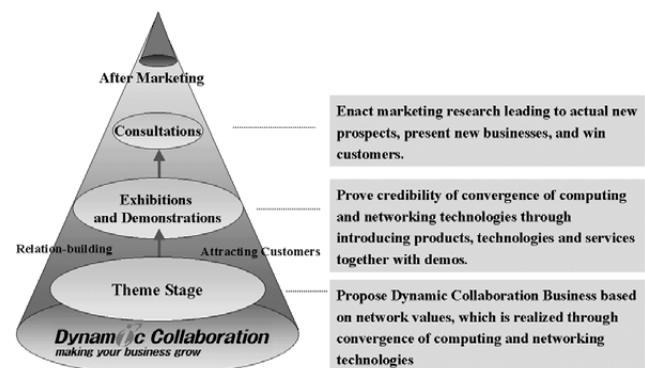


Fig. 1 Communication process for exhibition.



Photo 2 NEC's exhibition stand.

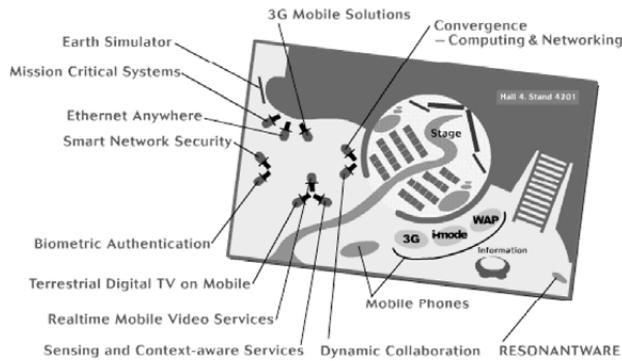


Fig. 2 Floor layout of NEC's stand.

3. THEME STAGE

3.1 Stage Setup

As shown in **Photo 5**, a dome-shaped theater with 35 seats was placed in the center of the booth. It was designed so that following the path indicated on the floor would lead people to the entrance of the theater. As shown in **Photo 6**, inside the theater, there was a four-screen panel display which was given a unique shape to enhance depth perception.

As for the method of presentation, instead of having an MC (Master of Ceremony) unilaterally giving the presentation, an audience-friendly style was adopted, in which the MC acting as a member of the



Photo 4 Meeting room.



Photo 3 2F lounge.



Photo 5 Theater and exhibition floor.

audience would ask questions to the experts from NEC. Live performances given during the presentation by two musicians created a collaborative atmosphere to the entire theme stage involving the MC, musicians, and audience (**Photo 7**). As a result, a highly entertaining presentation was realized.

3.2 Scenario for Solicitation of Business

Under the theme of “Dynamic Collaboration — making your business grow,” in addition to making the case for the creation of new network values through the convergence of computing and networking technologies, the collaboration type of business was introduced, which will involve new service providers, content businesses, and even users. As shown in **Fig. 3**, a thirteen-minute presentation was offered in 5 parts to carry the audience through it from beginning to end.

The parts of the presentation are: 1) showing of a



Photo 6 Theme stage.



Photo 7 Musician.

video image on the four-screen panel display to suggest things we humans can learn from nature, 2) making a case for new network values, using NEC’s achievement in the solution business at an airport as an example, which will benefit networking service providers, 3) hearing about the network values from prominent figures representing potential users in various industries and verifying the needs for collaboration type of business, and 4) publicizing solution offerings to realize a collaboration type of business by President Kanasugi of NEC and top executives from our overseas affiliated companies. 5) finally, the presentation concluded with an air of active collaboration involving the audience.

3.3 Responses and Messages from the Audience

The presentation was given every 30 minutes and the theater was packed every time with some presentations having people standing. During TELECOM 2003, about 6,000 people joined to our presentation, which was approximately 5% of the total number of visitors to the event (**Photo 8**). As shown in **Fig. 4**, the result of a questionnaire completed by the

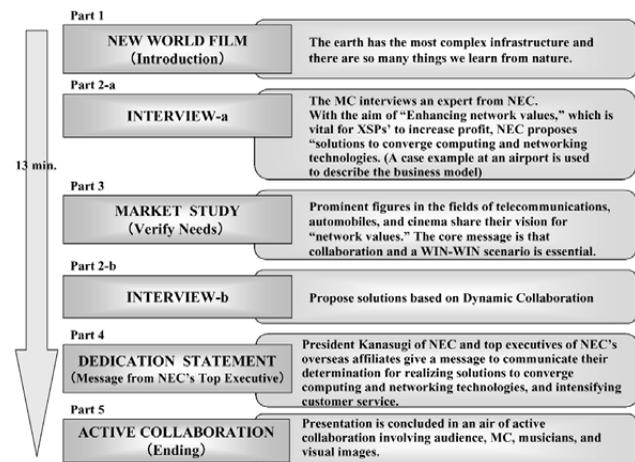


Fig. 3 Scenario of theme stage.



Photo 8 Audience in theme stage.

audience shows that more than 90% evaluated our presentation as either "Excellent" or "Good." Further, 90% responded "Dynamic Collaboration was impressive," and 77% "NEC's image has become more positive." Thus, we can see that our presentation helped spread the message of Dynamic Collaboration to many people and at the same time contributed to improving the image of our company.

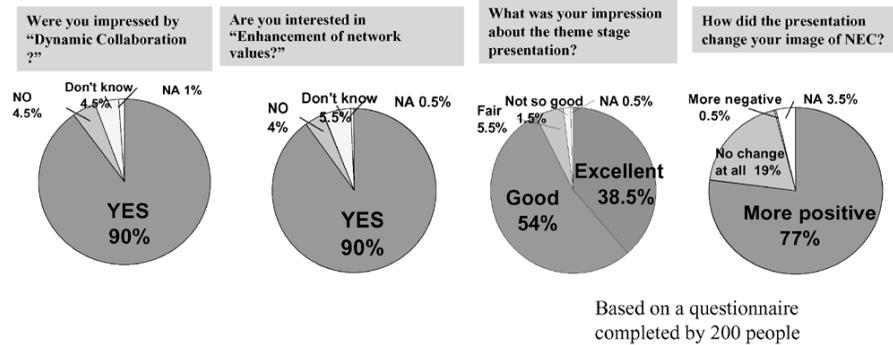


Fig. 4 Assessment of theme stage.

4. EXHIBITION

4.1 Grouping and Method of Presentation

To further promote better understanding by people about the message introduced on the theme stage, we exhibited practical solutions, which were grouped into three categories: vision, system integration, and ubiquitous applications (Photo 9). The solutions to be exhibited were carefully selected, and for each a small presentation was given. Especially for ubiquitous applications, demonstration and simulation were given in a way which directly involved visitors. However, as for the infrastructure systems in which these applications would be used, exhibition of hardware such as cabinets was not done this time. Furthermore, the latest 2.5G and 3G cellular phones and as a special exhibition the design models of information gear to be used in the ubiquitous age were displayed. In addition, application to this environment by the world's fastest supercomputer was exhibited.



Photo 9 Exhibition area for solution.

4.2 Exhibition of the Solutions

(1) Vision

1) Dynamic Collaboration

We had the presentation of how the collaboration type of business introduced on the theme stage could lead to more drastic business innovations and how it would bring big business opportunities to service providers. Also, through proposing the Hub & Net model as the system topology to realize this type of business, we publicized NEC's determination to help realize it through the convergence of computing and networking technologies (Fig. 5).

2) Convergence of Computing & Networking

While showing how the convergence of computing

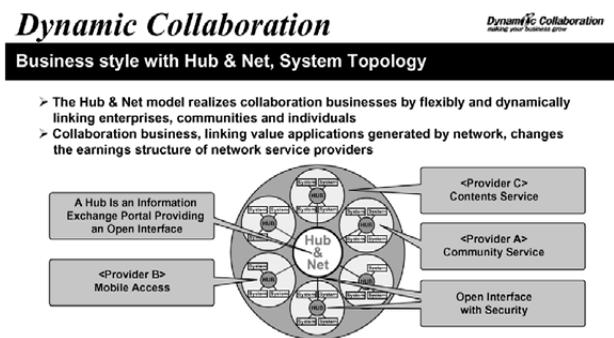


Fig. 5 Dynamic Collaboration.

and networking technologies is vital for future business expansion, we made an appeal that NEC would be the best partner to realize this. Through introducing iExpress5800 as a practical example, we presented new work styles such as location-free

communications and ubiquitous offices (Fig. 6).

(2) System Integration & Platform

1) Mission Critical Systems

OMCS (Open Mission Critical System) proposed by NEC was introduced. In the future, a nonstop business operation in an open environment will be essential. Here, we showed NEC's capability to promote such business operations through offering a total solution including system integration, platform (VALUMO), and support. As case examples, development of NTT DoCoMo's mobile gateway system (CiRCUS) and global alliance with Hewlett-Packard Company were introduced (Fig. 7).

2) 3G Mobile Solutions

NEC's actual achievement as the leading company offering 3G and W-CDMA systems was presented. Especially, we emphasized NEC's capability to offer end-to-end total solutions from cellular phones, radio access network, wireless entrance, core network, and even to mobile service platforms. In addition, NEC's vision in regard to the next generation IP based mobile network, which is one step ahead of the times, was also introduced (Fig. 8).

3) Ethernet Anywhere

We introduced the professional-use high-reliability Ethernet technology applicable to anything from access to backbone, which is valuable as technologies shift over from the hierarchy of telephones to the hierarchy of Internet. We introduced the technologies which are valid for professional users offering VPN (Virtual Private Network) services on WAN (Wide Area Network): layer 1-QoS technology, layer 1 path technology, and Global Open Ethernet technology capable of realizing 10 gigabit high-speed tag switching (Fig. 9).

(3) Ubiquitous Applications

1) Real-Time Mobile Video Services

A service to provide interactive and real-time image distribution between a handset and personal computer was exhibited. We demonstrated a monitoring service by doing real-time encoding of an image photographed inside the booth and distributing it to a PDA and notebook computer through GPRS (General Packet Radio Service). Also, seamless interactive videophones between a personal computer and 3G handset were demonstrated. Thus, we highlighted our company's high-quality image distribution

Convergence - Computing & Networking Dynam^{ic} Collaboration
making your business grow

Converged solutions enables profitability

- NEC provides the best in converged solutions based on our abundant experience and expertise in both computing & networking
- NEC provides converged products & services like the iExpress5800



- iExpress5800 : The next generation network server
- Reduces communication costs & TCO
 - Enables location-free access
 - An ubiquitous office is created with internal WLAN functions & applications

Fig. 6 Convergence - Computing & Networking.

Mission Critical Systems Dynam^{ic} Collaboration
making your business grow

Provides non-stop business operations in open environment

- Robust, flexible mission critical systems in open environment are vital to working with ever-changing network environments
- NEC provide total solutions from platform integration & application development to project management

Example

- NTT DoCoMo's cutting-edge mobile gateway system
- Approx. 400 high-performance NX7000 UNIX servers
 - 24hours 365days system operation



Fig. 7 Mission Critical Systems.

3G Mobile Solutions Dynam^{ic} Collaboration
making your business grow

Emerging businesses supported by our expertise in 3G technologies

- NEC is a leading company in the 3G mobile systems industry successfully migrating mobile networks to IP-based infrastructures
- Radio access network, core networks, service networks, service platforms and mobile terminals



Fig. 8 3G Mobile Solutions.

Ethernet Anywhere Dynam^{ic} Collaboration
making your business grow

Realizes next generation VPN service infrastructures with Ethernet

- Ethernet technology has evolved to new stage acquiring reach ability, extreme high-speed, and versatility
- NEC offers innovative platforms with 10Giga-bit Ethernet L1-path and original tag switching technologies

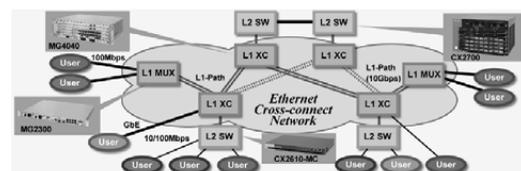


Fig. 9 Ethernet Anywhere.

technology and gateway technology (Fig. 10).

2) Sensing & Context — Aware Services

We exhibited an application capable of selecting and offering services according to the real-time “situation,” which senses the “situation” by a sensor and determines the context and matching application. Assuming being at an airport, we demonstrated a real-time information distribution service using positional information sensed by RFID tag and search system to show the whereabouts of passengers. Thus, solicitation was made for NEC's sensing solutions (Fig. 11).

3) Terrestrial Digital TV on Mobile

We presented a prototype of a 3G cellular phone capable of receiving terrestrial digital broadcasting and gave a demonstration of it by receiving a low-intensity radio wave broadcasting signal. In addition, we proposed possibilities for various services interfacing with broadcasting. Japanese technologies, which are ahead of the rest of the world, attracted a great deal of interest and became the focus of news gathering activities (Fig. 12).

4) Biometric Authentication

In the ubiquitous society where being connected anytime, anywhere, and with anybody will be realized, security threats such as spoofing and unauthorized access are expected to increase. As security measures which will become a key element when offering an application, we gave a demonstration of a biometric authentication solution, which can replace the conventional vulnerable systems such as authentication by password, by using a personal computer, camera, and fingerprint sensor (Fig. 13).

5) Smart Network Security

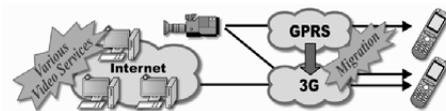
Today, network service providers are constantly playing a cat-and-mouse game with cyber attackers. We proposed our network intrusion detection engine using data mining technology, which has been developed to put an end to this game. We showed through simulation that data mining technology enables prevention of unknown cyber attacks and also it is possible to automatically detect anomalous behaviors of users in data stream. Thus, we highlighted our company's advanced security technology (Fig. 14).

4.3 Handsets

3G and GSM (WAP, i-mode applicable) handsets to be released in the European market were exhibited. We gave two kinds of demonstrations: passing out a series of picture seals like a flip through cartoon

Realtime Mobile Video Services Dynami³C Collaboration
making your business grow
Enables seamless video delivery over GPRS/3G networks

- NEC provides seamless, live video delivery services with real-time encoding over GPRS and/or video gateways for Broadband Internet over 3G mobile services



- Surveillance and monitoring services
- Live video distribution & storage services
- Multiple & cross-over video conferencing over 3G mobile phones & PCs

Fig. 10 Realtime Mobile Video Services.

Sensing & Context - aware Services Dynami³C Collaboration
making your business grow
Achieving Smart Personalized Services via RFID Tag System

- NEC provides several smart services with advanced sensing and context-aware technologies together with personalized engines
- NEC realizes unique value-added applications using RFID tag chips



RFID : Radio Frequency Identification

Fig. 11 Sensing & Context-aware Services.

Terrestrial Digital TV on Mobile Dynami³C Collaboration
making your business grow
Convergence of Terrestrial Digital TV & Mobile Internet Services

- Prototype mobile phones with terrestrial digital TV receiver
- Our expertise in 3G infrastructure, mobile terminals & digital TV broadcasting systems will lead to converged services
- ✓ Watch digital TV broadcast anywhere
- ✓ Enables interactive services via the Internet

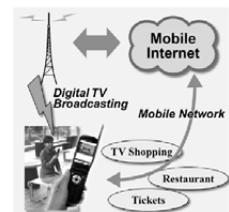


Fig. 12 Terrestrial Digital TV on Mobile.

Biometric Authentication Dynami³C Collaboration
making your business grow
Makes Ubiquitous Networks Secure

- Convenient, reliable authentication is key to a secure, ubiquitous society
- Smart biometric authentication solutions
- Face recognition solutions:
 - Enables natural identification without any special user awareness needed
 - High accuracy & high speed No need for high performance platform (Works on PCs)
 - Customizable (NEC provides SDK)
- Fingerprint matching solutions:
 - Highly reliable (Accuracy: 50-60 times higher than competitors)
 - Hardware-independent
 - Customizable

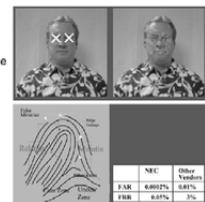


Fig. 13 Biometrics Authentication.

which was made from a moving image photographed by the built-in camera in a FOMA handset, and inlaying the face of a person photographed on the spot by the built-in camera in an i-mode handset into a character dancing with music on the standby screen. The handsets were displayed along the aisle to provide easy access, which as a result attracted many people every day. In addition, this exhibition was introduced in the "SHOW DAILY" distributed in the venue (Photos 10 and 11).

4.4 Special Exhibition

Besides the four exhibition zones using a presentation style to facilitate the understanding of visitors, a special exhibition corner was set up to show our leading-edge designs for information gear to be used in the ubiquitous age and introduce our achievements.

Smart Network Security

Dynamic Collaboration
Making your business smart

Protects your business from unprecedented cyber attacks

- NEC provide smart intrusion detection solution that can detect intrusions even unprecedented attacks by using data mining technologies.
- Intrusion detection with Data Mining technologies
 - ✓ Automatic, quick & accurate anomaly detection against attacks with unknown patterns
 - ✓ NEC has expertise and advanced technologies on data mining and their applications for intrusion detection.
 - ✓ NEC provides detection engines with high-speed & adaptive algorithms



Fig. 14 Smart Network Security.

(1) Design Models of Information Gear

For the purpose of describing the progress of the ubiquitous society from a design point of view, we exhibited the following five design mockups: WACCA (Visual Memory in a Bracelet), duo-PC (dual display mobile PC), duo-phone (dual display mobile phone), P-ISM (pen type personal network gadget), and nave (360-degree visual communication device). This exhibition was covered by various media including CNN and reported around the world (Photo 12).



Photo 11 Line-up of handset.



Photo 10 Demonstration corner for mobile handset.



Photo 12 Concept model.

(2) Earth Simulator

The Earth Simulator is the world's fastest supercomputer (As of December 2003) designed and produced by NEC on a consignment contract with ESRDC: Earth Simulator Research & Development Center. A screen image introducing this achievement was shown on a plasma display panel, in which we showed how the Earth Simulator had contributed to research in various fields including simulation of the environment of the Glove and what NEC's role was in this project (Fig. 15).

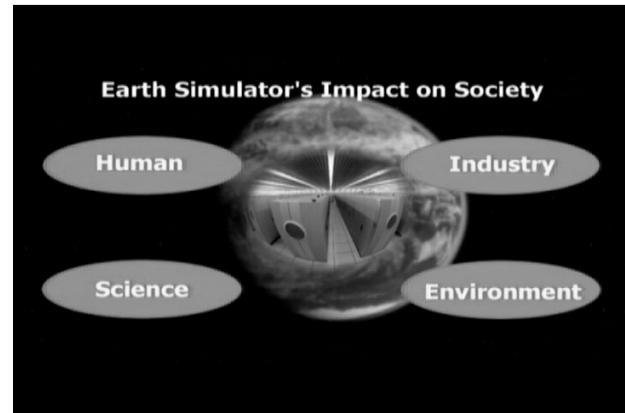


Fig. 15 Earth Simulator.

4.5 Zone Staff and Pilot Team

Zone staff and pilot team members for each exhibition were selected primarily from the members of NEC Europe Ltd. Their intimate knowledge of the content and the level of their hospitality including multilingual accommodation were highly regarded by customers.

(1) Zone Staff

Members of NEC's overseas affiliates in European countries were brought in to accommodate different languages and take advantage of their familiarity with business and technology information in Europe. Prior to the event, an exhibition content handbook was distributed to them via Internet. An overall orientation at a meeting room of GENEVA PALEXPO and specific orientation sessions pertaining to respective exhibition tables gave them a deeper understanding of the presentation content. Thus, they were prepared to provide explanations to visitors.



Fig. 16 Visual of advertising.

(2) Accommodating Different Languages by the Pilot Team

A pilot team was organized by members of NEC's overseas affiliates to guide visitors from various countries, which was capable of accommodating six languages: English, French, Spanish, Chinese, Russian, and Japanese.

5. TRANSMISSION OF INFORMATION

5.1 Concurrent Advertisement

During the event, Show Daily and Forum Program were issued and given out for free by the organizer, through which we solicited business by introducing Dynamic Collaboration focusing on Mobile Internet. Show Daily was available in the venue and highlighted interesting topics and must-see exhibitions. In addition to having sufficient number of issues, they were given out at the entrance every day, which helped us achieve high solicitation effect (Fig. 16).

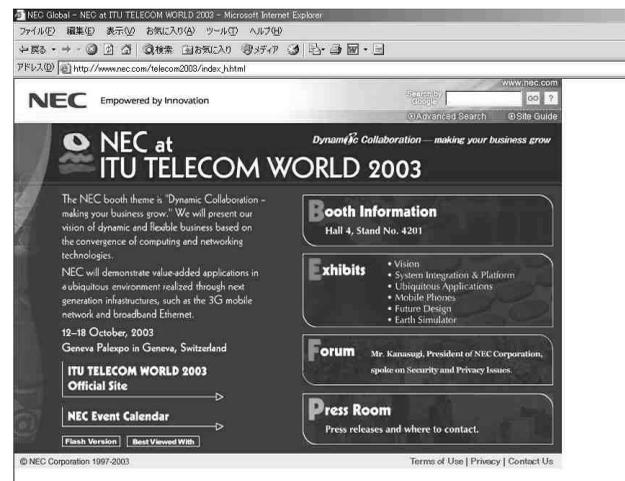


Fig. 17 Web top page.

5.2 Website

In August 2003, we built a website as a means of providing information to visitors and media. This website was used to offer basic information such as the location of our company's booth and information about the presentation content and forum, and to send out press releases. As for the presentation content and forum participation schedule, a URL for related material was set up so that it could be downloaded by interested people (Fig. 17).

In the report of Global Dynamics Inc. which conducted the event research, our presentation received the highest ratings among all participants for both content and setup.

5.3 Press Release

Prior to the event, we issued a press release on the presentation content for the purpose of drawing in many media reporters and visitors. TELECOM 2003 was a global scale exhibition, in which over 1,000 media reporters were involved in news gathering activities. Our company also was contacted by various Japanese media including NHK (Japan Broadcasting Corporation) and Nikkei Business Publications, Inc. as well as overseas media like CNN and BBC. Among others, the cellular phones (prototype) capable of receiving terrestrial digital TV broadcasting and the next generation design models of information gear to

be used in the ubiquitous age (RESONANTWARE) became the focus of media attention.

6. CONCLUSION

ITU TELECOM WORLD 2003 was held in the midst of a turning point for the Telecom Industry with the rapid penetration of broadband Internet and advanced mobile services. Even with only a half year of actual preparation, which was a lot shorter than previous event, after many twists and turns in our fight against time and struggles with presentation planning, we successfully communicated our message about NEC's new businesses to the visitors. We want to recognize the cooperation and support of those involved within and outside the company including the members of the Planning and Exhibition Subcommittee, Sales Subcommittee, Forum Subcommittee, and wish all involved to accept our sincere thanks.

*Names of companies and products presented in this paper are trademarks or registered trademarks of each company.

Received February 2, 2004

* * * * *



Junji NAMIKI received his B.E., M.E. and Ph.D. degree in communication engineering from Waseda University, Tokyo in 1970, 1972 and 1985 respectively. He joined NEC Corporation in 1972. Since then he has been doing research and management of satellite, mobile, high capacity digital microwave, VSAT, satellite LAN and optical communications systems. He is currently a Vice President there, supervising research and development division. He is also a director for conference and education of the Institute of Electronics and Communication Engineers (IEICE) of Japan.



Kozo HAYAKAWA received his B.A. degree from Nagoya University of Commerce in 1970. He joined NEC Corporation in 1971. He is working to enhance NEC brand worldwide through the activities such as International Corporate ad and participation to trade shows. He is now a Chief Manager, Advertising Division.



Jun OYAMADA received his B.A. degree from Keio University in 1969 and joined NEC Corporation in the same year. He has been in charge of various different assignment in the Overseas Operations including total 13 years of mainly market development at NEC America and NEC USA in New York. He is now a General Manager, Advertising Division.



Kazuo IWAMA received his B.E degree from Yamanashi University in 1969. He joined NEC Corporation in 1969. He is engaged in the integrated marketing communication of IT system. He is now a Chief Manager, Market Relations Promotion Division.

* * * * *