IGAS 2003

REPORT ——— Review

September 22nd (Mon) — 28th (Fri)

Tokyo Big Sight (Tokyo International Exhibition Center)

Japan Graphic Arts Suppliers Committee (JGASC)

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Greetings

Yoshiharu Komori
President
Japan Graphic Arts
Suppliers Committee

IGAS 2003, one of the four major international exhibitions, gained new standing as it ran for seven days from September 22 to the 28th of 2003. Taking up the entire Tokyo Big Sight Exhibition Center, close to 450 companies and organizations occupied more than 40,000 m².

Thanks to the cooperation of the graphic arts industry, IGAS was the only exhibition for graphic arts equipment and materials to be held in Japan this year. In addition, the 1st World Printing Technicians Conference, organized by the Japan Federation of Printing Industries, was also held along with IGAS at Tokyo Big Sight from September 24th to 26th. There were over 120,000 visitors, including more than12,500 visitors from abroad representing a record-breaking 60 countries from Asia and around the world. Exhibitors expressed great satisfaction with the success of the event, which I attribute wholly to the outstanding support and cooperation of all involved. A sincere and heartfelt thank you to all.

Under the theme "Towards the Future of the Print Media," IGAS 2003 featured a new program consisting of a keynote address by Professor Kaitaro Tsuno of Wako University entitled "Digital Publishing and Building a New Book Road in East Asia." Also invited, as a special guest was Prof. Wu Wenxiang, Board Chairman of the Printing Technology Association of China, who gave a presentation called "Present and Future of the Chinese Printing Industry."

In addition to providing information on the latest developments in the graphic arts industry, the organizers of IGAS 2003 also recognized the need to make available information from Japan concerning advanced technologies upon which the future of the graphic arts will depend. It included the Tech Trend Zone, set up for this purpose with booths covering such themes as new technologies, standardization, and the environment, as well as to the organization of related seminars, and it enjoyed outstanding participation in testament to its success.

The next IGAS is scheduled to be held in 2007 from September 21 to September 27, again at the Tokyo Big Sight Exhibition Hall. With the IGAS 2003 experience as our basis, I hope I can count on even greater support and cooperation as we redouble our efforts to solidify IGAS's position as an information beacon broadcasting from Japan about progressive technologies that will have an impact on the future of the graphics arts industry.

I look forward to four years from now when I'll be able to meet and talk with all of you again. Thanks again, and see you then.

Exhibition Outline

Title of event	IGAS 2003 International Graphic Arts Show 2003
Purpose	For the contribution to the development and invigoration of the Graphic Arts Industries. To provide people with opportunities to survey future technologies and to identify trends in printing and paper-converting technology. The show also facilitates international contacts for personnel in the graphic arts industries.
Theme	Towards the Future of The Print Media
Date	September 22 (Mon) to September 28 (Sun), 2003 (7days)
Opening Hours	10 : 00～17 : 00
Venue	Tokyo Big Sight (Tokyo International Exhibition Center)
Number of Visitors	120,595 (including 12,544 from 60 overseas countries)
Number of Exhibitors	Total : 435 companies/bodies (including 37 Co-exhibitors) Overseas Exhibitors: 38 - 1,503 m^2 (including Co-exhibitors) Overseas Product Suppliers: 93 - 10,728 m^2 (including Co-exhibitors)
Net Exhibition Area	40,086 m^2
Total Exhibition Area	80,660 m^2
Site Area	243,420 m^2
Admission Fee	Yen1,000 per day ／ Yen 2,000 for 7-day ticket (Pre-order) Yen800 per day ／ Yen1,500 for 7-day ticket
Organizer	Japan Graphic Arts Suppliers Committee (JGASC) c/o Japan Printing Machinery Manufacturers Association Kikai Shinko Kaikan 401-2 3-5-8 Shibakoen, Minato-ku, Tokyo, 105-0011, Japan
Supporting Organizations	METI (Ministry of Economy, Trade and Industry) Tokyo Metropolitan Government JETRO (Japan External Trade Organization) The Japan Federation of Printing Industries (JFPI)
Countries/Areas Represented	21 countries/areas Austria, Belgium, Canada, China, Czech Republic, Denmark, Finland, France, Germany, India, Israel, Italy, Korea, Netherlands, Singapore, Spain, Switzerland, Taiwan, UK, USA, Japan

Board of Directors

President	**Yoshiharu Komori**	Japan Printing Machinery Association*	President
Vice-president	**Kohei Yamamoto**	Importers' Association for Graphic Arts Machinery	President
Vice-president	**Mutsuo Nagashima**	Japan Printing Ink Makers' Association	President
Vice-president	**Shigetaka Komori**	Japan Association of Graphic Arts Suppliers and Manufacturers	President
Vice-president	**Hiroshi Shirai**	Japan Printing Machinery Association*	Executive Director

Secretarial Committee

Secretary-General	**Tokio Takeuchi**	Japan Printing Machinery Association*	Director/Secretary General
Secretary	**Hitoshi Sekimoto**	Importers' Association for Graphic Arts Machinery	Secretary General
Secretary	**Yoshio Ohno**	Japan Printing Ink Makers' Association	Executive Director
Secretary	**Takakazu Yamahira**	Japan Association of Graphic Arts Suppliers and Manufacturers	Director/Secretary General
Exhibition Manager	**Chotaro Sato**	Printing & Publishing Institute	Executive Director

*As of 5th September 2003, the name of "Japan Printing Machinery Manufactures Association" was changed to "Japan Printing Machinery Association."

IPC 2003 Committee

Takashi Yamazaki*	Fujifilm Graphic Systems	Senior Manager
Hitomi Ohta	Heidelberg Japan K.K.	Executive Officer
Yoshihiro Usui	Dainippon Screen MFG. Co., LTD.	General Manager
Hideaki Yamaguchi	Komori Corporation	Manager
Holger Wittich	Japan Graphic Arts Suppliers Committee	Advisor
Yoshinori Numao	Printing & Publishing Institute	Director/ Editor-in-Chief
***Chair**		

TAG-Technical Advisory Group

Yasusuke Takahashi*	Tokai University	Professor Emeritus
Kazuto Izumi	Graphic Arts Writer	
Toshio Takagi	Imaging System Consultant	
Teruhiko Hama	Japan Printing Academy	Headmaster
Keiichi Yumiki	The Japanese Society of Printing Science and Technology, Technical Committee	Chair
Shinichi Sugiyama	Gain	CEO
***Chair**		

IGAS 2003 on a New Way

The inauguration ceremony of IGAS 2003 was held on the first day - September 22nd at Tokyo Big Sight, with the exhibition commencing at 10:00 a.m. Invited guests included Mr. Yoshifumi Fujita, Director of the Industrial Machinery Division of the Ministry of Economy, Trade and Industry, and Mr. Hiromichi Fujita, Chairman of the Japan Federation of Printing Industries. In the opening address, Mr. Yoshiharu Komori, President of the Japan Graphic Arts Suppliers Committee, declared on behalf of the sponsors: "This, the 17th IGAS exhibition, is an international event in every sense of the word. It will be held every four years from now on and takes its place as one of the four major international exhibitions."

IGAS 2003 was held jointly with the 1st World Printing Technicians Conference organized by the Japan Federation of Printing Industries. The goal of the organizers is to enable IGAS - through its various events, including the keynote address, the special address, and the special exhibitions - to become the place to spread the word worldwide on new technologies that are set to dominate the printing industry in the future. After the addresses, Mr. Fujita, Director of the Industrial Machinery Division of the Ministry of Economy, Trade and Industry, Mr. Yoshiro Hayashi, a member of the House of Representative, Mr.Kazuhide Izumoto, Director of Commerce and Industry Division of the Tokyo Metropolitan Government, Mr. Itatani, Director of Industry Cooperation Division of the Japan External Trade Organization, Mr. Fujita, Chairman of the Japan Federation of Printing Industries, Mr. Moritoshi Nakamura, Chairman of the All Japan Federation of Printing Industry Association, Mr. Gerald A. Nathe, the former Chairman of the Association for Suppliers of Printing and Publishing Technologies (NPES, USA), Prof. Wu Wenxiang, Board Chief Director of the Printing Technology of China and Mr. Yoshiharu Komori cut the ribbon to declare the exhibition open.

Following the opening ceremony, Mr. Shigetaka Komori, Vice Chairman of the Japan Graphic Arts Suppliers Committee, gave an opening address, saying: "This IGAS is largely different from the exhibitions previously held. It will play a key role in disseminating information and indicating new directions. I believe this exhibition can be the foundation on which we build the future development of the graphic arts industry both overseas and in Japan." After Mr. Bernhard Schreier, Chairman of Heidelberger Druckmaschinen AG, spoke on behalf of the overseas exhibitors, Mr. Nakamura proposed a toast to the success of IGAS 2003.

Event / Seminar Program

1. Keynote Address

Speaker: ***Mr. Tsuno Kaitaro***

Prof. Dept. Expressive Culture, Faculty of Representational Studies, Wako University
(Editorial Director, The Book & The Computer)

❑ *Digital Publishing and "Building a New Book Road in East Asia."*

Digitized publishing illuminates not only the things that can be accomplished through digitization. Digitalization guides us toward a reappreciation of traditional printing.

Date and Time: *September 22 (Monday) 13 : 00 - 14 : 00*

The keynote address and the special address were presented on September 22, the first day of IGAS 2003, The keynote address was made by Prof. Tsuno Kaitaro, Department of Expressive Culture, Wako University, on the theme, "Towards the Future of the Print Media - A Comparative Study of Media," the concurrent theme of IGAS 2003. Professor Tsuno spoke of the advantages of print media, presenting a study comparing and measuring the information-communication capabilities of various media in the fields of news, advertising, education, and entertainment.

2. Special Address

Speaker: ***Prof. Wu Wenxiang***

Board Chairman, The Printing Technology Association of China

❑ *Present and Future of the Chinese Printing Industry*

China is the not only the factory for the word but also a market for the world. How will the Chinese printing industry change given the background of the 2008 Beijing Olympics and the 2010 Shanghai EXPO?

Date and Time: *September 22 (Monday) 14 : 15 - 15 : 15*

In the special address, Prof. Wu Wenxiang, Board Chief Director of the Printing Technology Association of China, made a presentation entitled "The Current Situation and Future of the Graphic Arts Industry in China." Prof. Wu discussed technical exchanges and the current movement to establish joint-venture companies based on mutual collaboration between graphic arts industries in China and Japan. He also outlined the graphic arts industry in China and expressed a firm resolution to develop further the mutual cooperative relationship between China and Japan.

3. Special Program

Hoping to share on a global scale information on new technologies from Japan that are expected to be at the core of printing in the future, IGAS 2003 set up a special exhibition section, covering 600 square meters in West 3 Hall. Exhibitors from universities, bodies related to the graphic arts industry and private companies introduced their most advanced new technologies. Both the exhibition and the seminars attracted many visitors.

1) Tech Trend Zone (TTZ)

Universities featured in the new technologies section, major printing companies and manufacturers of peripheral equipment of printing were in the paper-like display section, groups promoting various kinds of standardization were in the standardization section, user/supplier groups were found in the environmental affairs section, and various industry groups were in the software technologies section. The various exhibition booths, therefore, were places where exhibitors and visitors were stimulated by considering the evolution of the high technologies on show. From the first day on, visitors came and talked with the exhibitors' attendants in the respective booths.

(1) New Technology

In the new technology corner, one could find information about the advanced contents of developments by universities and research institutes, which so far used to be difficult to see. In this corner, professors and scholars explained in detail.

No.	Exhibitor	Contents
1	Information and graphic Engineering, Faculty of Engineering, Chiba University	Nano-imaging and intellectual color image processing using electronic paper and ultra-micro technology
2	Mechanical System Engineering, Faculty of Engineering, Tokyo University of Agriculture and Technology	Two - dimensional multi-refraction dispersion measurement for liquid crystal displays and some other development
3	Chemical Resources Laboratory, Tokyo Institute of Technology	Highly efficient holograms and actuators using polymer liquid crystal films
4	Engineering Research Post graduate course, Osaka Prefecture University	Transfer molding nano-structure technology by nano-imprinting methods
5	Mechanical Systems Engineering, Muroran Institute of Technology	Suggestions for introduction of sensitive and knowledgeable processing in the field of image forming to the printing industry
6	Information and Image Science, Faculty of Engineering, Chiba University	Laser patterning of ultra-micro metal particles
7	Advanced Materials Chemistry, Yokohama National University	Reaction development patterning (RDP) method: New technology to change hi-performance engineering plastics on the market into photo sensitive polymer
8	Environmental and Natural Resource Science, Faculty of Agriculture, Tokyo University of Agriculture and Technology	Book conservation process "Mass" deacidification of acidic paper documents
9	Biomaterial Sciences Grad, School of Agricultural and Life Sciences, The University of Tokyo	Automatic Seasoning Absorptometer to determine liquid absorption of paper for printing presses and inkjet printers
10	Graduate School of Science and Technology, Niigata University	Laser direct imaging equipment to printed-circuit boards and digital microscopes
11	Independent Administrative Agency, National Printing Bureau	New technology for banknote printing
12	Tsukuba Center, National Institute of Advanced Industrial Science and Technology	Introduction of the institute (contents of the research and development) and technology transfer

(2) Paper-like Display

The most advanced thin samples displayed, inviting suggestions of their application in the printing industry.

No.	Exhibitor	Contents
1	Dainippon Ink and Chemicals, Inc.	Displays using polymer network liquid crystal
2	Dai Nippon Printing Co., Ltd.	Flexible organic EL (Electro-Luminescence)
3	Fuji Xerox Co., Ltd	Photo-Addressable Electronic Paper
4	Sharp Corporation	Reflective type system liquid crystal displays and electronic books with double screens
5	Toppan Printing Co., Ltd.	E Ink electronic papers and polymer EL using coating technology

(3) Standardization

Printing-related groups gave explanations about the recent status of their standardization efforts.

No.	Exhibitor	Contents
1	Japan National Committee for ISO/TC 130	1) Report of activities 2) Introduction of various types of Japan Color (for sheet-fed presses, newspaper and commercial web offset presses) 3) The primary standard and the secondary standard of Japan Color
2	Japan Printing Machinery Manufacturers Association	Actual application plan of Japan Color for newspapers
3	Japan Magazine Publishers Association	Report of actual application of Japan Color
4	The Japan Newspaper Publishers & Editors Association	Actual application plan of Japan Color for newspapers
5	Next Generation Printing System Consortium	Actual implementation of the knowledge database AMPAC (demonstration)

(4) Environment

Explanations were given how manufacturers and users are coping with environmental issues.

No.	Exhibitor	Contents
1	Japan Printing Ink Makers' Association	Measures for environmental issues in the printing ink industry
2	Japan Association of Graphic Arts Suppliers and Manufacturers	Measures for environmental issues in the prepress machinery manufacturing industry
3	Japan Printing Machinery Manufacturers Association	Measures for environmental issues in the printing and prepress machine manufacturing industry
4	The Japan Federation of Printing Industries	Statements of printing industry associations on environmental issues

(5) Software Technology

This corner reported the activities of the printing-related industries.

No.	Exhibitor	Contents
1	Japan Printing Academy	Open workflow available without dedicated RIP and related software
2	Society for the Study of OEM	Research reports by a group of printing companies regarding standardization
3	Tokyo Screen Printing Cooperative Association	Exhibition of works printed by screen printing
4	The Tokyo Graphic Services Industry Association	Introduction of the industry association
5	Shinjuku Digital Media Mix Cooperative Association	Services using non-contact IC media and some other exhibitions

2) Seminars

Special seminars were held to enhance visitor understanding of the concepts behind the latest technologies exhibited in the section.

Seminar – A

"Research and Development of New technologies and Venture Technologies from Universities"

13:00-17:00, 26 September 2003 (Fri) at Conference room 609 : 94 attendees

Nano-imaging and intellectual color image processing using electronic paper and ultra-micro technology	*Dr. Takashi Kitamura, Professor* *Dr. Hiroaki Kotera, Professor* *Dept. Information and Graphic Engineering, Faculty of Engineering, Chiba University*
Two-dimensional multi-refraction dispersion measurement for liquid crystal displays	*Dr. Yukitoshi Ohtani, Associate Professor* *Dept. Mechanical System Engineering, Faculty of Engineering, Tokyo University of Agriculture and Technology*
Highly efficient holograms and actuators using polymer liquid crystal films	*Dr. Tomiki Ikeda, Professor* *Chemical Resources Laboratory, Tokyo Institute of Technology*
Transfer molding nano-structure technology by nano-imprinting methods	*Dr. Yoshihiko Hirai, Associate Professor* *Dept. Engineering Research, Post graduate course, Osaka Prefecture University*
Introduction of sensitivity and knowledgeable processing in the field of the image forming industry into the printing industry	*Dr. Hiromichi Mishina, Professor* *Dept. Mechanical Systems Engineering, Muroran Institute of Technology*
Laser patterning of ultra-micro metal particles	*Dr. Shigeru Takahara, Associate Professor* *Dept. Information and Image Science, Faculty of Engineering, Chiba University*
Reaction development patterning (RDP) method: New technology to change hi-performance engineering plastics on the market into photo sensitive polymer	*Dr. Masao Tomoi, Professor* *Dept. of Advanced Materials Chemistry, Post graduate course, Yokohama National University*
Book conservation process "Mass" deacidification of acidic paper documents	*Dr. Takayuki Okayama, Associate Professor* *Dept. of Environmental and Natural Resource Science, Faculty of Agriculture Tokyo University of Agriculture and Technology*
Automatic Seasoning Absorptometer to determine liquid absorption of paper for printing presses and inkjet printers	*Dr. Toshiharu Enomae, Associate Professor* *Laboratory of Paper Science Dept. of Biomaterial Sciences Grad. School of Agricultural and Life Sciences, The University of Tokyo*
Multi-Polygon laser scanner using a shrink fitter for laser direct imaging equipment to printed-circuit boards	*Dr. Isamu Nitta, Associate Professor* *Graduate School of Science and Technology, Niigata University*

Seminar – B

"Environmental measures of printing, initiated by printing-related manufacturers and printing companies"

13:00-17:00, 26 September 2003 (Fri) at Conference room 609 : 94 attendees

Measures for environmental problems by the printing ink industry	*Mr. Haruhiko Katsuta* *Mr. Shinya Sugiura* *Japan Printing Ink Makers' Association*
Measures for the environmental problems by the paper manufacturing industry	*Mr. Masakazu Hatae* *Japan Paper Association*
Measures for environmental problems by the prepress machinery manufacturing industry	*Mr. Motonori Kase* *Japan Association of Graphic Arts Suppliers and Manufacturers*

Measures for environmental problems by the printing machinery manufacturing industry	*Mr. Genji Tao* *Japan Printing Machinery Manufacturers Association*
Statements of printing companies to the environmental issue	*Mr. Kazuyuki Miyashita* *The Japan Federation of Printing Industries*

Seminar – C

"Actual implementation of ISO / Japan Color and development of liquid crystal monitors"

13:00-17:00, 26 September 2003 (Fri) at Conference room 610 : 108 attendees

Future development of Japan Color Standard	*Dr. Yasusuke Takahashi* *Japan National Committee for ISO/TC130*
Actual implementation of Japan Color for sheet-fed offset printing	*Mr. Akio Moriwaki* *Adobe Systems Incorporated*
Actual implementation of Japan Color for newspaper printing	*Mr.Kenzo Nagata* *JCN*
Actual implementation of JMPA Color (standard color for magazine advertisement)	*Mr. Kazuhito Kurita* *Japan Magazine Publishers Association*
Development of LCD color monitor correspondent to Japan Color	*Mr. Syoichi Yamaguchi* *Eizo Nanao Corporation*

Seminar – D

"Thinking about the next generation printing systems"
– Quality control and standardization in the total printing system –

13:00-17:00, 27 September 2003 (Sat) at Conference room 609 : 108 attendees

Actions of Komori Corporation concerning standardization	*Mr. Takeshi Yoshikawa* *Komori Corporation*
Actions of Mitsubishi Heavy Industries concerning standardization	*Mr. Yoshiyuki Yamanoue* *Mitsubishi Heavy Industries, Ltd.*
Actions of Heidelberg concerning standardization	*Mr. Taku Matsune* *Heidelberg Japan K. K.*
Application of the knowledge data base AMPAC in the printing industry	*Dr. Hiromichi Mishina* *Printing System Consortium for Coming Generation*

Seminar – E

"Thinking about paper-like display technique and its application"

13:00-17:00, 27 September 2003 (Sat) at Conference room 610 : 86 attendees

Displays using polymer network liquid crystals	*Mr. Toru Fujisawa* *Dainippon Ink and Chemicals, Incorporated*
Flexible organic EL (Electro-Luminescence)	*Mr. Masaru Kadowaki* *Dai Nippon Printing Co., Ltd*
Photo-Addressable Electronic Paper	*Mr. Tsunemasa Mita* *Fuji Xerox Co., Ltd.*
E ink electronic papers and polymer EL using coating technology	*Mr. Yusuke Tsukahara* *Toppan Printing Co., Ltd.*
Possible applications of paper-like displays	*Dr. Makoto Omodani* *Tokai University*

4. The 1st World Printing Technicians Conference (Organized by JFPI)

The 1st World Printing Technicians Conference (WPTC), the first time to gather engineers from the graphic arts industries and printing-plant managers from all over the world, took place on September 24 and 25 at the Conference Building at Tokyo Big Sight. Japan Graphic Arts Suppliers Committee and the Japan Federation of Printing Industries jointly sponsored the conference, commenced with a keynote address entitled, "How will Printing Informatics affect the Graphic Arts Industry in the 21st century?" After the keynote address, a panel discussion on the theme of "Graphic arts industries in the global digital era - Technologies supporting the information value generation" was divided into four subcommittees.

The subcommittees conducted useful lectures and panel discussions among themselves, all experts involved in the industry. Discussions covered not only commercial printing and publication printing, but also package printing among others, to touch upon every aspect of the printing business. Participants visited two plants on September 26.

Program — September 24th

13:00-	**Opening Ceremony**
13:30 to 14:30	**Keynote speech** *Theme of the speech: How Printing Informatics will affect the printing industry in the 21st Century?* *Speaker: Dr. R. H. Davis (GATF / PIA)*
15:00-17:00	**Panel discussion** *Theme of the discussion: How can new printing technology globally contribute to the digital information society?* *- Technology to support the creation of the information value -*
September 25th (450 attendees)	**Track1 (IT/ Standardization)** *- CMS and application of standard color* *- Sharing information source = XML technology* *- Protection of intellectual property and management of private information* **Track 2 (Environment)** *- Current status of Green Standard and its compliance in each country* *- Environmental loading and chemical substances* *- Environmental management* **Track 3 (Plant management)** *- Reducing manufacturing costs with application of JDF / CIP4* *- Establishment of a new (or distinctive) printing & production system in relation to business expansions through various business models and plant operation management issues* *Track 4 (Demonstration of eight case studies)* *- Presentation of successful cases of vigorous Japanese printing companies*
September 26: Facility visit tour	*Morning: Printing Museum / Toppan Printing Co., Ltd.* *Afternoon: Goka (Printing) Plant / Kyodo Printing Co., Ltd.*
Countries and areas presented: 15	*Australia, Canada, China, Germany, Hong Kong, India, Indonesia, Korea, Singapore, South Africa, Sweden, Switzerland, Taiwan, UK, USA*

Exhibition Overview

This year's IGAS, under the theme of "Towards the Future of the Print Media", provided not only a place for the congregation of state-of-the-art equipment and materials but also a platform for graphic arts personnel to look for new approaches towards a bright future for the graphic arts. Featured speeches were keynote addresses about the possible future of the printing industry and a special program dealing with current issues including the special exhibition zone called TTZ (Tech Trend Zone) and related seminars.

Many international exhibitors took the chance to present their products for the first time at this year's IGAS. Regular exhibitors showed their renewed commitment to the markets of Asia and Oceania, before drupa 2004. Thanks to the 1st World Printing Technicians Conference, the corporative event, organized by the Japan Federation of Printing Industries, IGAS attracted many venders and visitors, succeeding in gaining a firm foothold in the global graphic arts industry and broadcasting valuable information from Tokyo to the world around.

1 Visitors

Total number of visitors counted was 120,539, including 12,544 overseas visitors. At this IGAS, multi-entries were counted as one. Therefore, the number of visitors seemed to have decreased but the actual number of visitors increased compared with the previous two exhibitions.

Date	Visitors
22 Sep. (Mon.)	**12,623**
23 Sep. (Tue.)	**20,560**
24 Sep. (Wed.)	**11,234**
25 Sep. (Thu.)	**15,006**
26 Sep. (Fri.)	**20,444**
27 Sep. (Sat.)	**28,107**
28 Sep. (Sun.)	**12,565**
Total	**120,539**

Overseas visitors

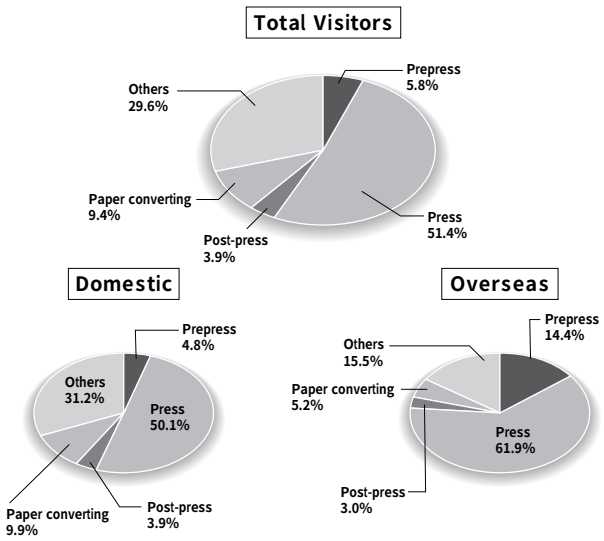
The number of overseas visitors showed a record-breaking 12,544 persons. Specific increases in attendance came from East Asia such as China, Taiwan, Hong Kong and Korea, 3 fold, even though the SARS epidemic had seriously spread in this area from March to July. The number of visitors from those countries will increase even more in the future.

Area	No of Countries	Visitors
Europe	**22**	**611**
Africa	**5**	**27**
Middle East	**12**	**392**
Asia	**11**	**11,119**
North America	**2**	**137**
Latin America	**6**	**55**
Oceania	**2**	**193**
unknown		**10**
Total	**60**	**12,544**

2 Analysis of visitors

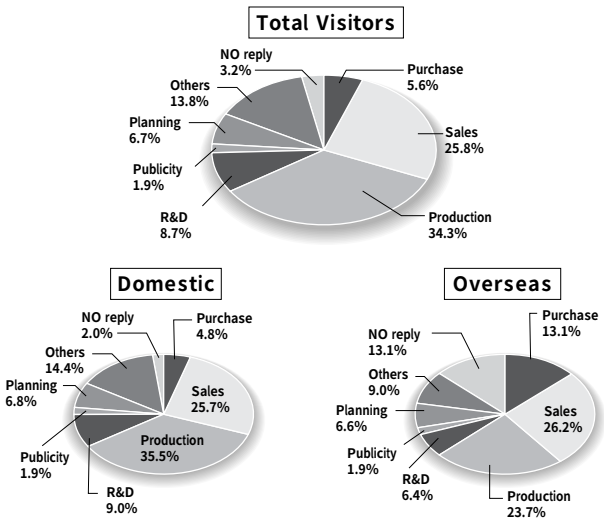
1) Category – Type of business

More than half of visitors were related to "Press - Printing machinery", whose ratio slightly increased compared with IGAS '99 (49.0%). Visitors related to "Prepress", on the contrary, decreased from 8.86% (IGAS '99) to 5.8%. Those related to "Postpress" slightly decreased. As for overseas, more than 75 % of the visitors were related to "Press", showing a different tendency.



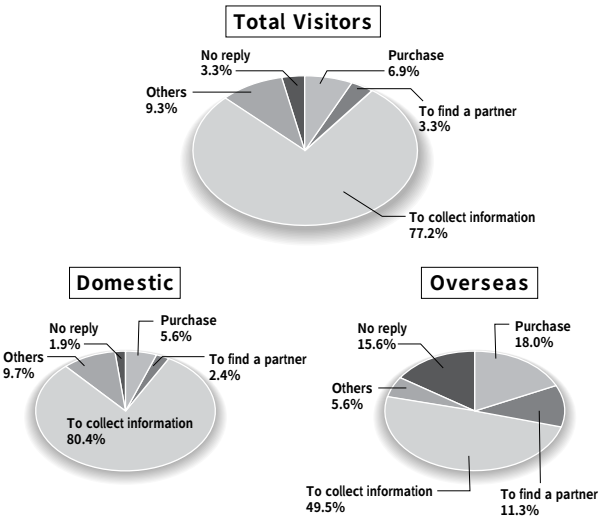
2) Occupation

The number of visitors related to sales and purchases noticeably increased, to 5.6% from 1.0% and 25.8% from 17.3% respectively, compared with IGAS '99. Visitors related to production and R&D also doubled, to 34.3% from 17.3% and to 8.7% from 4.1% respectively. More visitors expected business opportunities provided by IGAS 2003.



3) Purpose

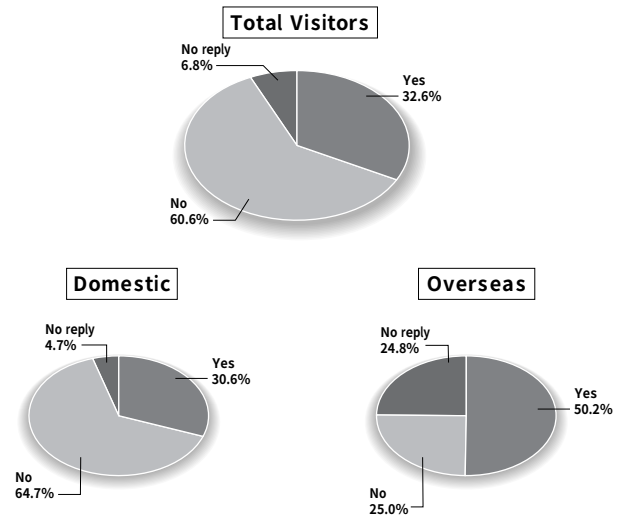
The purpose of overseas visitors was quite clear. Whereas, more than 80 % of domestic visitors aimed "To collect information", less than 50 % of overseas visitors did so. Only 18.0 % of overseas visitors implied "To collect information", and 11.3 % "To find a partner". One-third of domestic visitors aimed to do so.



4) Senior personnel

(Are you in a position to decide purchasing?)

This question was asked so as to clarify how many senior personnel (owners/directors) visited IGAS. A third of domestic visitors were senior personnel and half of overseas visitors. It appears that the exhibition provided more business opportunities than expected.

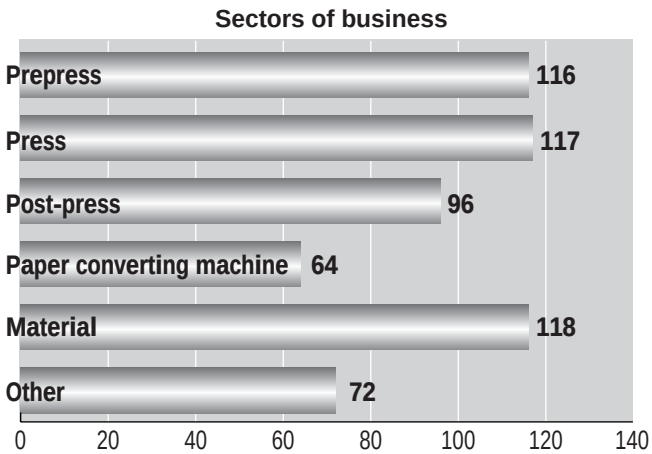


3 *Exhibitors*

397 were domestic companies/bodies, which occupied 38,583 m2; among them were 93 (52 local subsidiaries of overseas companies and 41 trading companies) representing and selling overseas products, occupying 10,728 m2. 38 overseas exhibitors joined directly and occupied 1,503 m2. Registered co-exhibitors numbered 37.

	No. of Exhibitors	Exhibition Area
Domestic Exhibitors	**397**	**38,583 m²**
Overseas exhibitors	**38**	**1,503 m²**
Total	**435**	**40,086 m²**
Co-exhibitors	**37**	—

The graph shows the sectors of business of the exhibitors. One exhibitor may represent two or more sectors. It appears that most of the major manufacturers were dealing with a wide range of products from prepress to postpress including software based on the 'workflow' concept.



List of Exhibitors

A

ABEKAWA MASTER CO., LTD.
ACCEL GRAPHICS JAPAN, INC.
ACP
AGFA-GEVAERT N. V.
AKIYAMA INTERNATIONAL CO., LTD.
ALPHA-CURE LTD.
ALPHA ENGINEERING INC.
ALTECH CO., LTD.
AM JAPAN CO., LTD.
AMADAM INC.
ASAHI KASEI CORPORATION
ASAHI MACHINERY, LTD.
ASYS CO., LTD.
ATLANTIC ZEISER GmbH
AUTO MECHANICAL INDUSTRY CO., LTD.

B

BALDWIN-JAPAN LTD.
BANDEX CO., LTD.
BECKER AIRTECHNO CO., LTD.
BELPAC CORPORATION
BIELO JAPAN CO., LTD.
BOSCH REXROTH AUTOMATION CORP.
BROTHER INDUSTRIES, LTD.
BST JAPAN LTD.
BUHRS JAPAN K. K.

C

CANON SALES CO., INC.
CANON SYSTEM SOLUTIONS INC.
CARDINAL CO., LTD.
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4 Technical Trends

New products and the burgeoning new technologies : 7 trends in integration, standardization, and added value

IGAS 2003, one of the four major international graphic arts exhibitions, was held during the week September 22-28, occupying the entire Tokyo Big Sight exhibition complex in Tokyo, Japan. IGAS 2003 featured a large number of products that until now could only be seen at trade shows held outside of Japan. In addition, in anticipation of next year's drupa 2004, the new products and future concept products on display gave visitors a glimpse of the technical trends expected to become mainstream technologies in the graphic arts industry.
The following seven major trends were identified as the latest in technologies, indicating directions to be taken in the graphic arts.

1) *PDF workflow and CIP4/JDF support, RGB workflow, MIS of Japanese version*
2) *Diversification of CTP to suit specific uses, high-speed thermal imaging, large format support and violet laser platesetter models*
3) *Halftone and continuous tone DDCP (direct digital color proofing) systems*
4) *Advance of digital printing, especially variable data printing with electrophotographic systems, and increased use of inkjet printers for sign displays and other industrial materials.*
5) *Multi-color perfecting printing and digital networking for sheet-fed offset presses*
6) *Shaftless offset rotary presses and short-run support*
7) *Use of advanced flexographic printing systems*

CIP, the digital integration of all graphic arts processes, has added a new "P" to CIP3 creating CIP4 (Cooperation for the Integration of Processes in Prepress, Press and Postpress). The data format has also changed from PPF (Print Production Format) to JDF (Job Definition Format). However, because of the slow progress of CIP4/JDF implementation, both it and CIP3/JDF are in current use. The major prepress, press, and postpress manufacturers have revealed their intention to support CIP4/JDF by drupa 2004.
In the CTP field, thermal CTP has adopted GLV technology, achieving higher productivity through increased speed and large format support. High quality CTP printing has been made possible by application of screening technologies. Completely process-less on-press plates using switchable polymers were also introduced. Several manufacturers have entered the violet laser CTP market with platesetter products suited to various needs.
In the digital printing field, electrophotographic technology is being applied to color printing and variable data, with movement towards a "one to one" strategy. Ink jet systems are being put to use for industrial materials such as labels, packaging, and security cards using solvent and ultra-violet inks. Many systems previously shown abroad were displayed for the first time in a Japanese exhibition.
The sheet-fed offset press field is seeing an increase in multi-color perfecting printing. 6 to 8-color A2 single-side/perfecting presses formed the main group, with 10-color A1 and A2 presses also being introduced. All press manufacturers were showing digital networking as well.
In the rotary offset field, shaftless presses, in which each unit is driven independently of other units by its own servo motor, are expanding from newspaper and packaging applications where they first appeared, to rotary presses for commercial applications. The make-ready time for short run jobs is approaching that of sheet-fed presses.
Notable outside of the offset field was the expansion shown in flexography printing. On display were CTP systems and CTP plates, sleeve CTSS, and narrow flexographic presses and flexo coaters. Paper processing equipment with wider applicability and greater safety, and associated inspection equipment were notable.
Japan Color, a printing color standard for the color workflow, had a strong presence at IGAS 2003 where it was widely adopted in the printing, color proof, color monitor, and color management software fields. The next

generation printing system database "AMPAC" has also finally taken its first step towards practical implementation. AMPAC is regarded as being closest to an integrated management information system (such as MIS) that can control printing process management and printing administrative tasks. It will be of interest to see what kind of role the Japanese-born Japan Color and AMPAC will play in the future of the graphic arts industries.

Workflow

A meeting of workflows: PDF and JDF
RGB workflow is also introduced

First of all, even though PDF has not made the smooth transition to becoming an intermediate file, a trend towards PDF workflows was nevertheless evident at IGAS 2003. Due to the rapid progress of CTP in prepress, focus is on rasterized 1bit TIFF with regard to quality assurance in the final output stage. On the other hand, difficulties exist with problematic dot gain adjustment to obtain values for output and with insufficient applicability of the device-dependent data resolution.

Therefore, with file format selection determined by operational (production, press plant, outsourcing etc.) and font environments, the outline PDF workflow has been the workflow of choice, 1bit TIFF files being generated when necessary.

However, environments incorporating PDF are changing. The upgrade from version 1.3 to 1.4 added support for an important function, transparency, which is not supported by previous Postscript versions. In order to save files created with Photoshop and Illustrator in transparent format as material for layouts, it is therefore necessary to convert and save them as PDF files using PDF 1.4. Recent versions of InDesign and other applications support PDF formats. These developments are an indication of the movement towards a PDF workflow.

Major manufacturers advocating PDF workflows also put forward CIP4/JDF support at IGAS 2003. Even though demonstrations were mostly performed with CIP3/PDF, there was a clearly marked trend towards configuring workflows whose actual files are in PDF format and metafiles in JDF format. Form has also been given to the integration of productivity management and MIS (Management Information Systems). PDF/X workflows standardized at the ISO level were also introduced.

Another trend making an appearance is the development of the RGB workflow. RGB multi-color separation for 6-color hexachrome and 7-color Hi-Fi color and increased use of images taken with six million pixel professional digital cameras are leading to a situation in which support for RGB workflows will be inescapable.

DTP

Increased support for Mac OS
OpenType gets a start

In the DTP field, Mac OS support and the trend for automatic layout using XML were notable. Another major topic was how new operational environments based on Mac OS X have come about since the discontinuation of sales of Mac OS 9 machines. The ongoing succession of digital assets—the migration from QuarkXPress, heretofore the major DTP layout tool, and the implementation of OpenType fonts—is necessitating a virtual search in the dark for a new workflow. A problem over the midterm is that since PDF can be generated by the drawing system at the OS level of Mac OS X, it will be necessary to put together environments that support PDF.

In Japan, InDesign is used more and more in ordinary layout work as a means to polish up the finish, while XML automated layout is used for standard forms and catalogues.

Due to the inability to generate high quality PDF files without going through PostScript, it is uncommon in the graphic arts field to directly generate and use PDF files. PDF optimization software has been introduced that addresses such problems.

CTP

Faster thermal plate imaging, large format support, and "phase change" plate
Violet laser platesetters, revised screening

A focus of attention for thermal CTP technology was a completely process-less type of plate based on phase change technology—also called switchable polymer—in which a plate coated with a hydrophilic layer is imaged by laser, with only the illuminated image areas converted to a lipophilic layer. Other developments were the increased imaging speed and large format support of new thermal CTP systems enabled by GLV technology. The major manufacturers have also

announced the addition of visible violet laser platesetters to their lineup, making for a wider product selection.

Screening technology has been subjected to revision since the inception of CTP. Highlights in this area included high definition printing using FM screening or FM/AM hybrid screening, and the retention of printing ease by applying FM screening to only the highlight and shadow areas, and also the production of high definition printing at similar levels of productivity without increasing the resolution.

Other points of interest were concept exhibitions of thermal CTP systems for newspaper production. Many manufacturers are entering the violet laser CTP field with new products in their lineups.

DDCP

Halftone proofing aims to match printing results
Ink jet printers adopt pseudo-halftone, remote proofing is introduced

The DDCP field, comprised of halftone proofers and continuous tone inkjet proofers, has made progress in CTP workflow support, tie-ins with color management systems (CMS) for color standardization, and support for the spot color needs of multi-color printing—such as Hi-Fi printing and package printing. Remote proofing is also moving forward.

(Halftone proofing)

Advances were noted in the software development and spot color support required to obtain press print matching with halftone proofers. Except for types that print to dedicated media or photographic printing paper, laser thermal halftone proofers have met the prerequisite conditions for achieving a match to press results: halftone reproduction, pigment toners, and printing stock support. Progress has been made in spot colors, halftone density changes, black overlay, and reproducing paper white.

The link up to CMS has led to support for the standards such as Japan's Japan Color and JMPA Color (for magazine advertisement), the USA's SWOP, and Europe's Euro Standard Color.

(Continuous tone proofing)

Continuous tone inkjet proofers are using color management implemented with 1bit TIFF files. Halftone simulation systems have been released that enable checking of moire patterns and other features characteristic of actual halftones.

Digital Printing Systems

Inkjet printers used for packaging, industrial materials
Simple monochrome/color printers

Digital printing systems are divided into two main categories, electrophotographic systems and inkjet printers. Electrophotography is experiencing an influx of new manufacturers on the market. An electrophotographic system that uses liquid-based processing, developed in Japan, was also announced and will be watched for future developments.

Inkjet printers, mainly involved in the packaging and industrial materials markets, are also printing increasingly on materials other than paper. Because inkjet printers with drop-on-demand piezoelectric printheads are able to use UV and other types of inks on any type of media, they can zoom in on the industrial materials market. The flatbed configuration is therefore being used to print on cardboard, heavy paper, and other materials besides paper. Also being brought to market are simple systems. While in the past only monochrome digital printing systems were available, a number of manufacturers have announced color systems.

Offset sheet-fed presses

6- and 8-color A2 straight/perfecting presses take the stage
Digital networks support upcoming CIP4

A greater variety of products resulting from multi-color/perfecting and combinations of size and number of colors, especially one-pass 6- and 8-color multi-color presses, are available in the offset sheet-fed press field. This is being accompanied by added value measures such as water-based/UV inks and coating. More robust digital networks that support CIP4/JDF as far as postpress are making gains. At IGAS 2003, the lineup of A2 multi-color straight/perfecting presses was impressive. In Japan, one-pass 8-color straight/perfecting presses have been brought to market, while 10- to 12-color presses are available overseas.

Demonstrations of added value through multi-color printing

and coating covered not only heavy paper packaging, but also lightweight paper commercial printing.

Regarding the workflow, collaborations between prepress and postpress manufacturers are yielding networks that extend from printing from CTP and imposition/layout stations to bookbinding. Each manufacture is also developing concepts pointing towards CIP4/JDF implementation that includes management information systems (MIS).

In the DI press field, emphasis was placed on greatly reduced plate costs. Among the exhibitors were manufacturers showing UV curing and also color bar measurement using spectrophotometers for the establishment or improvement of CMS. Keyless inking DI presses using the same impression cylinder system were shown as concept products in advance of drupa 2004, thus announcing the intention of manufacturers to enter the field and attracting great interest.

Quality control inspection systems in which colors important to the image on a press print can be specified and extracted for measurement with a digital camera, and the results fed back to ink controller keys, were on exhibition. Several press manufacturers were displaying concept products.

Continuous form/label printing

Shaftless drive presses become mainstream
Short-run support at sheet-fed levels

Offset rotary presses for commercial printing are implementing gapless technology and being used in the newspaper and packaging fields. Shaftless configurations are being used in which each printing unit, processing unit, or roller is driven independently by its own servomotor.

Production control is experiencing advances through the unification of stratified data collection and analysis and management information, indicating the beginnings of CIP4/JDF implementation in this field.

Printing quality inspection devices that support high-speed offset rotary presses have also made an appearance. A number of ink, fountain solution, roll paper, rollers and other such devices for achieving automation and enhancing quality were exhibited.

Offset rotary (web) press

Hybrid printing machines
Incorporated digital printing plus postpress process

In the continuous form field, the demand for systems integrating DM and label units has resulted in advances in the development of hybrid systems comprising printing units for various types of plates. Noteworthy in this field is the progress of high-speed digital full color printing systems for variable data.

Diversification is proceeding in seal and label printing, with intermittent letterpress web, offset web, and flexographic printing joining the flatbed letterpress printing in main use. Applications are no longer limited to forms, but are expanding to include small boxes and other products of narrow web printing.

The forms industry has also begun to utilize digital printing due to demand for variable data stemming from distribution process traceability needs. Die cutting, however, is the bottleneck in need of a solution in the quest for digital printing support.

Gravure printing systems

Speed and quality gains with laser platemaking and electro-engraving
Water-based inks, shallower gravure cylinders, finer linework

The development of semiconductor laser platemaking systems that support water-based inks has enabled shallower plates with a depth of 12 microns and 250-300lpi high definition resolutions. On display was a high-productivity platemaking system utilizing a 208-semiconductor laser that can complete imaging of a one-meter cylinder in 2.5 minutes, eight times faster than previous systems. Line engraving has been added to conventional cell engraving, with exhibited systems offering improved character and line quality. Another noteworthy booth featured an electro-engraving unit that has the world's fastest engraving speed of 10KHz.

Flexographic printing systems

Support for CTP, laser engraving, and sleeves
Domestic and foreign narrow UV rotary presses on exhibit

A number of companies announced various software and workflows for prepress. Flexographic CTP saw the introduction of CDI, while manufacturers with post-processing thermal pealing systems showed samples for diverse applications. There were also manufacturers offering lineups based on width (narrow/wide) and size.

Domestic user samples and foreign-made samples created with laser engraving systems were on exhibition.

Digital plates and water-development plates were also on display. Other manufacturers made video presentations of sites testing CTSS with sleeve support. Endless pattern samples were handed out.

Overseas manufacturers were exhibiting flexographic 6-color and screen 1-color hybrid rotary presses for the field of narrow label printing. Domestic manufacturers displayed 400mm CI-type perfecting 6-color presses that support water-based ink, 6-color press with inline post-processing (punching, drying) for clear boxes, and wide CI-type 6-color presses that support water-based ink. (Water-based ink clears important Japanese local environmental standards.) Demonstrations of interchangeable 8-color presses for labels were also shown.

Manufacturers known for gravure sheet-fed presses exhibited UV- and water-based flexi-coaters.

Bookbinding and postpress

Faster changeover, progressed mailing system
Shaftless implementation and CIP4 compatible products

With improved speed due to faster make-ready for each line, shaftless drive technology is starting to be implemented in the set and binder sections for saddle-stitching/adhesive binding. Setup simplification and smooth operational flow are also being realized. Attracting attention was the progress of mailing systems with random envelope stuffing technology, digital printing, and inline mailer systems. The sluggish adoption of CIP3/PDF for cutting, folding, binding is starting to speed up, but at IGAS 2003 CIP4/JDF workflows that include management information systems were the subject of future plans.

In the CIP4/JDF arena, JDF workflow demonstrations were presented in which printed matter was sent to postpress along with JDF job specifications, and productivity comparisons made between JDF workflow machines and standalone machines.

Reflecting plans for CIP4/JDF implementation, automatic setup of cutting machines, job simplification, reduction in setup time, and coupling with MIS achieved with CIP3/PDF data produced by imposition/layout stations using new software, were demonstrated. Also presented was development of a Japanese version PPF data converter and cutting machine delivery software.

Cutting machine manufacturers demonstrated a system in which data is downloaded from the intelligent database AMPAC (under consideration by ISO), a computer used to convert to in-house job format, and data sent to the cutting machine.

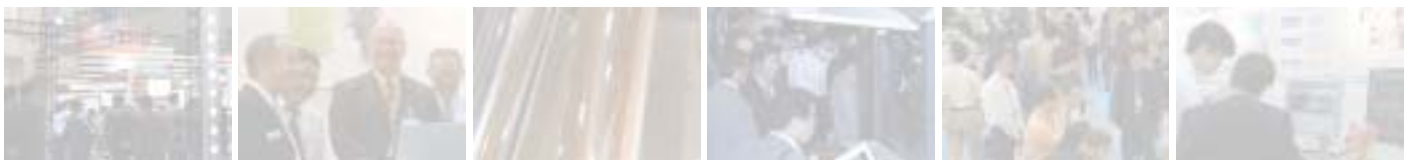
High-speed envelope stuffing machines for mailing systems were also demonstrated.

Paper converting

Enhanced safety and inspection equipment
Adoption of digital platemaking and ink jet printers

Corrugated board production machines, die cutting machines, sack gluer machines, and anilox rolls were on exhibition. Notable were machines featuring a wider range of applicability and enhanced safety, as well as related inspection equipment. Box-making design systems linked up to 3D CAD paper package manufacturing systems have also made progress.

The wider variety of digital platemaking systems and faster ink jet printers are leading to greater adoption in box-making and package production lines that print directly to corrugated board and film.

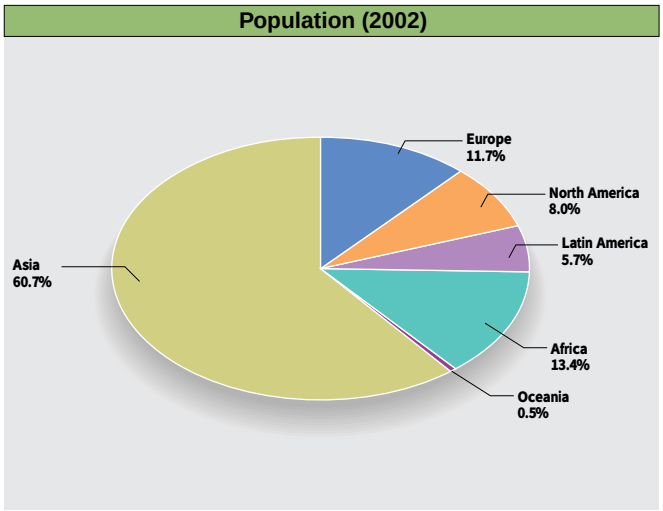


Size of Market - Asia and Japan

Several Asian countries achieved an economic upturn in the late 90's rapidly after the Asian economic crisis in 1997. The economies continued the 1990's trend of high-paced growth. Whereas, due to the slowing of export growth, the Japanese economy started slowly to recover only since early 2003. The persistence of the SARS epidemic also brought about negative effects. The future trend of exports is, therefore, still uncertain.

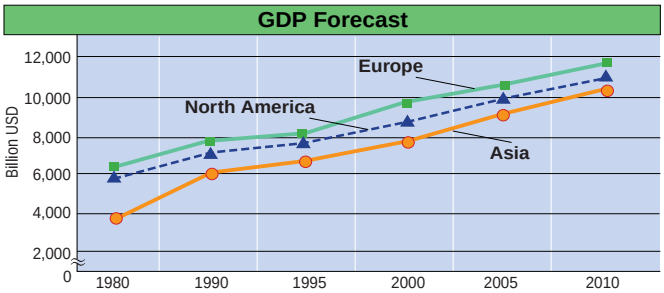
Under such circumstances, IGAS played an important role to enhance the position of Asia/Japan in the graphic arts industries. Attendees were able to see the real state of the Asian market, which is growing rapidly, as well as to grasp, what the Asian/Japanese market needs. In viewing the market as having a big potential, many unique vendors one cannot see elsewhere joined, and the world's leading manufacturers and suppliers showcased their most advance products and latest innovations as well.

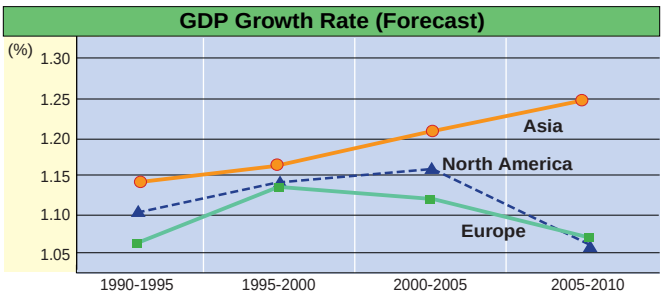
The Asian market will become more important, since population is one of the main factors related to GDP, and the larger population having an increased potential. In 2002 the population of Asia exceeded 60% of the world population.



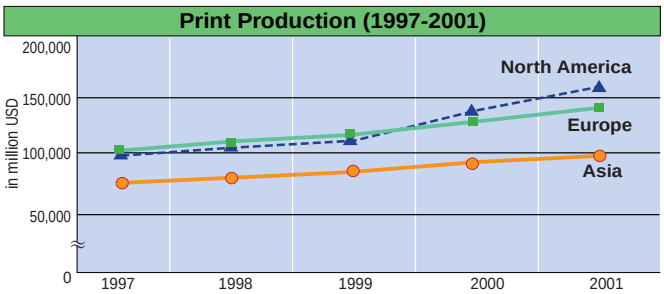
The following graphs show the GDP forecast up to 2010. The Asian market has steadily grown and its growth rate becomes higher and higher.

IGAS, as one of the major international graphic arts exhibitions, has gained a firm foothold and will continue to disperse valuable information from Tokyo to the global graphic arts industry.

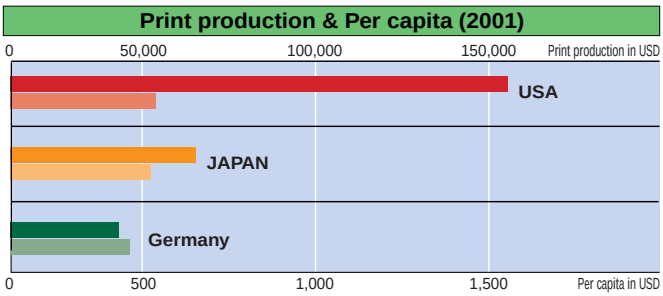




Print production in Asia, where Japan contributes about 70%, has also grown increasingly for years along with its rapid GDP growth.



In 2001 USA took the 1st place in Print production & Per capita, followed by Japan and Germany.



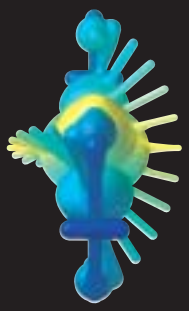
IGAS is held in Tokyo every four years, as one of four largest international graphic arts shows in the world.

During IGAS 2003, there were close to 450 exhibitors from 21 countries, occupying an exhibition area of more than 40,000 m2, attracting over 120,000 visitors including more than 12,500 from 60 countries. At IGAS 2003 not only new and powerful products and machinery were shown but also a special exhibition zone called "Tech Trend Zone" with a related seminar program. IGAS 2003 provided to the attendees a glimpse of the huge potential of the rapidly growing Asian market and gave an insight into the needs of the Asian/Japanese market.

IGAS is aiming at becoming the main beacon of information from Japan about progressive technologies that will have an impact on the future of the graphics arts industry worldwide.

For further information please contact:
JGASC (Japan Graphic Arts Suppliers Committee)
c/o Japan Printing Machinery Association
3-5-8 Shibakoen, Minato-ku, Tokyo, 105-0011, Japan
PHONE: +81-3-3434-2656
FAX: +81-3-3434-0301
E-mail: IGASmail@aol.com
URL: http://www.igas-tokyo.jp/

See you again at



IGAS 2007
International Graphic Arts Show

Date : September 21(Fri)-27(Thu), 2007
Venue : Tokyo Big Sight(Tokyo Internationa Exhibition Center)