

CONVEX

- International -

Special Feature
The World of Packaging Evolving from
a Wide Variety of Viewpoints



Notice from the Public Relations Division

CONVEX *International* is an internal magazine for the TOPPAN Group. The title, CONVEX, is based on the meaning of the Chinese character “凸”, which is pronounced *totsu* in Japanese and is the first character in the word *toppan*. In the same way that a convex lens focuses light at a single point, the name of the magazine expresses the TOPPAN Group bringing together its “vibrant knowledge and technology.”

Cover Photo (from left)

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Emma Oh

TOPPAN Ecquaria Pte. Ltd.

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Haruhiko Noguchi

Senior Managing Executive Officer
Living & Industry Division
TOPPAN Inc.

Changing the World with Our Packaging Technology

Developing a global business that supports fulfilling lives and a future with value by perceiving changes in society ahead of others and advancing TOPPAN's sustainable brand, SMARTS™

Global-scale environmental and climate change have a significant influence on our life and corporate activities; however, these are not issues that individual countries can solve by themselves. To help address these issues, TOPPAN's packaging business strives to contribute to the establishment of a sustainable society through the provision of world-wide solutions in line with its Purpose, "Breathing life into culture, with technology and heart." With TOPPAN's sustainable brand, SMARTS™*, a brand centered on the packaging business, we continue to promote activities designed for growth in the global market.

TOPPAN has already established a consistent global supply system, from film production such as GL BARRIER, which has the world's highest level barrier performance, to packaging processes, through its supply chain. Based on our production network in Asia, Europe,

and the Americas, we offer SX packaging production that meets the needs of individual regions based on the concept of local production for local consumption. In regard to recycled packaging, a trend that is moving toward legislation in Europe, we are developing mono-material packaging, which is easier to recycle, to supply Europe and the United States. In this way TOPPAN strives to establish a global standard technology that will pave the way to the future.

In line with our Purpose, "Breathing life into culture," let us work together to create a future where TOPPAN supports a wide variety of cultures and lifestyles around the world through its packaging business.



* TOPPAN's sustainable brand centered on the packaging business, launched in 2023. Combining know-how accumulated through the development and sales of packaging with marketing, DX, and BPO resources,

TOPPAN aims to contribute to the development of a sustainable society through the provision of the most suitable choices for individual customers' entire value chains.



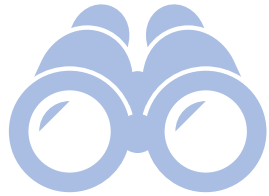
Special
Feature

The World of Packaging Evolving from a Wide Variety of Viewpoints

**Providing new value to society
and expanding globally**

Packaging is an important item that can convey the attractiveness of individual products directly to customers. It also plays an important role as infrastructure for living that stores, transports, and delivers products. Recently, in addition to its traditional characteristics, new functions that promote sustainability and enrich consumer lifestyles are becoming a primary focus. In this special feature, we introduce the exciting potential of TOPPAN's packaging business from a broader, multifaceted viewpoint through the voices of the people mostly closely involved.

Looking from a wide variety of viewpoints! TOPPAN's Packaging Business



Current packaging business seen from a global viewpoint

The TOPPAN Group's packaging business has been expanding worldwide. Did you know that different countries have different needs? Here we take a look at the growing global packaging market through TOPPAN Group company businesses and TOPPAN solutions that have received awards for sustainability and design.



A wider
variety of
viewpoints!

Designing distinctive packaging
that has great impact...
requires the ability to imagine
the future to broaden horizons globally.



From a sustainable viewpoint

To address environmental issues, we need to broaden our viewpoint to the next-generation and people living overseas. Oceanic plastic pollution and plastic recycling have become issues for global companies to address.

From the viewpoint of understanding diversity

Diversified lifestyles, consideration for the elderly and children, globalization, and multicultural coexistence are examples of changes in society and the market, and these have also influenced our packaging business. Differentiation from others is possible with functions corresponding to the needs of markets and society.



Breathing life into culture,
with **technology and heart**



Let's check world trends!

Global Expansion of TOPPAN's Packaging Business

The TOPPAN Group's packaging business has been expanding worldwide. Let's look at product trends in global markets through comments from TOPPAN employees in charge of package design in different countries.

United Kingdom

InterFlex Group

Sustainable packaging for sweets made by a global company

We worked on a project involving a shift from the cellophane and aluminum foil twist wrapping for Nestlé's sweets to recyclable paper-based wrapping. With the goal of making the new product as similar as possible to the wrapping the market was used to, we chose a coated thin paper-

based material to replace the double cellophane and aluminum foil wrapping, and this qualified for FSC certification as recyclable paper packaging. This project made it possible for Nestlé to shift to more eco-friendly wrapping for 2.5 billion chocolates around the world.



Alex O'Connor
Commercial Director

Leveraging our creative advantages and the robust potential of our team, we were successful in creating a solution that was highly regarded by the client.

United States

InterFlex Group

Providing high-quality, high-barrier film packaging over the years

InterFlex Group has supplied high-quality, high-barrier packaging to Jack Links, one of the largest meat snack providers in North America, for more than 25 years. Seeing the importance of quality and technological improvement in providing superior service to customers, Jack Links has made us its go-to supplier for packaging. We received the Jack Links 2021 Supplier of the Year Award.



Kevin Kennedy
Product Development Manager

We gain a thorough understanding of customer requirements for products and devices through close cooperation, and select optimal materials utilizing our partnerships with suppliers.

Thailand

Majend Makcs

Addressing an ever-expanding pet food packaging market

Majend Makcs works hard to provide high-quality and sustainable pet food packaging. Through the provision of innovative solutions, we satisfy both customer and market needs. The pet food packaging market is predicted to expand from 11.1 billion USD in 2023 to 14.9 billion USD in 2028.



Cholticha
Senior Sales Executive

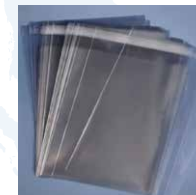
Our goal is to bridge the gap between innovative product concepts and actual product design, aiming to ensure that packaging meets global standards and sustainability goals.

India

TOPPAN Speciality Films

Replacing cigarette packaging with biodegradable film

In response to the introduction of the single-use plastic regulations in India in July 2022, we accepted the challenge of developing biodegradable film capable of addressing the issues that come with mono-material recyclable packaging and microplastics. To meet this challenge, we developed biodegradable film that was adopted for cigarette packs.



Isha Kamrupi
Development

I am in charge of research and development of biodegradable BOPP* and other packaging film. Let's work together to reduce plastic disposal and solve pollution.

*BOPP stands for biaxially oriented polypropylene film. It's a resin film produced by stretching polypropylene both horizontally and vertically.

DATA Global Packaging Business—History of Business Expansion

Max Speciality Films in India changed its name in 2023, and Plasindo Lestari in Indonesia changed its name in 2024.



Indonesia

TOPPAN Plasindo Lestari

Selected by Unilever Indonesia as a partner for sustainability

Unilever is a major TOPPAN customer that we provide flexible packaging to for use in Indonesia. This packaging is outstanding for the long-term storage of products that contain aromatic components. TOPPAN was selected by Unilever Indonesia as a partner for sustainability.



Stefie
Technical Support Specialist / Sales and Marketing

Each and every employee is rightfully proud of the broad range of packaging we provide for food, toiletries, medical, and pharmaceutical products.

Solving issues with continual innovation

The global trend for sustainable packaging has moved increasingly upward, and many companies have been considering the shift to mono-material and other environmentally friendly packaging solutions. We are ready to respond to demand with packaging solutions utilizing cutting-edge materials and technologies. Working on innovative approaches makes it possible to offer customers the most effective and sustainable packaging options. We are developing mono-material packaging solutions for Brother Industries, Ltd., Nestlé, and other well-known customers in the industry. Through a commitment to continual innovation and superior solutions, we provide the support our customers need to achieve their sustainability goals.



Faizal
Sales and Marketing

Prioritizing sustainability and innovation, we are responding to ever-progressing demand from global markets as we contribute to the growth and success of our customers.

China

TOPPAN Leefung Medical Packaging (Shanghai) Co., Ltd. TOPPAN Leefung Medical Material (Shanghai) Co., Ltd.

Sterile bags for medical and pharmaceutical products

The sterile bags seen in the photos are used for medical and pharmaceutical products that require highly clean or sterile environments. With superior barrier properties that protect against microorganisms, high tearing strength, and puncture resistance, these bags satisfy the strict requirements for long-term storage and bacteria barrier performance; and they are customizable to meet individual customer needs.



Wang Gui
Sales Director / Sales Division

As Chinese manufacturing technology has improved, the demand from Chinese companies for medical and pharmaceutical products has been increasing. Along with this, the demand for sterile bags has also been expanding.

China

TOPPAN Leefung Packaging (Shanghai) Co., Ltd.

Supplying mono-material stand-up pouches

We were the first company to develop mono-material stand-up pouches in China. The durability of these pouches against the impact of falling or dropping is the same or greater than that of regular packaging. We are supplying PE mono-material stand-up pouches to a pet food company in Australia.



Yu Sheng
Deputy Director / Sales Division 2

Multinational enterprises advance their approaches to achieving the SDGs, and are shifting more than ever before to recyclable or biodegradable products.

Identifying **Culture** and **Trends** from Packaging



We interviewed two designers from SIAM TOPPAN PACKAGING CO., LTD. in Thailand about their award-winning package designs as well as needs and trends in Thailand.



SIAM TOPPAN PACKAGING CO., LTD.
Location: 543 Moo 4, Sukhumvit Road, Phraek Sa, Mueang, Samut Prakan 10280 Thailand

COMMENT

Taking up the challenge to design packaging focusing on a fun experience and consideration for the environment

I am in charge of package development for a wide variety of products launched in Thailand. What I prioritize when planning and creating packaging is, first, reducing environmental impact, and second, creativity. People in Thailand love to have fun. For this reason, I focus on providing an enjoyable experience with packaging. Ideas often occur to me unconsciously in my daily life, such as when my head is clear, or when I'm engaged in a fun activity. As ideas accumulate, they often blend together and hint at concepts that lead to new package designs.



My hope is to incorporate new technologies such as generative AI into package design so that I can create fun experiences that thrill customers.



New Year Gift Set: The Art of Scent Gallery (left) & Your Bag, Your Style (right)

- Received the Thai Print Award 2023
- Received the AsiaStar Packaging Award 2023

When designing a package, my first thought is for lightening the environmental impact. We need to think about the impact that package disposal will have on the earth. As I think about reducing environmental impact, I strive for creativity, fun, and sustainability in design. And because people in Thailand like to create content by themselves, I focus on providing a fun experience through product design.



Yuttapichai Pimtumma

Product Designer

SIAM TOPPAN PACKAGING CO., LTD.

COMMENT

Developing attractive packaging with universal design inspired by Japanese Origami

As a product designer, I handle the design of packaging for gift sets sold at major festivals in Thailand as well as graphics and the production of a wide variety of posters for in-house events. I use a variety of techniques to create attractive packaging that is easy to understand not only for people in Thailand, but also for overseas customers. Ideas for packaging often occur to me when I observe and study consumer behavior and marketing trends that stimulate my imagination. One of my special interests is origami, and my ideas for packaging are often inspired by this beautiful artform.

New package designs that satisfy customer needs start with a concept. That concept is then visualized with sketches before proceeding to design development. Several considerations go into package design. It's important to ensure the strength of the package itself to prevent damage while maintaining its attractiveness, and we also



have to meet printing requirements and ensure compliance with laws regarding packaging.

My goal is always to design unique, fun and attractive packaging with an emphasis on the environment and universal design.



Songkan New Normal Gift Set 2022

- Received the AsiaStar Packaging Award 2022
- Received the ThaiStar Packaging Award 2022

These are gift sets for the New Year festival (Songkan). They include alcohol gel and a mask strap. The design features a modern Thai style, and the package pops up to provide a fun moment.



Dragon Year Bag Gift Set

- Received the Thai Print Award 2024

These "Year of the Dragon" gift sets are filled with craft chocolates. The design was inspired by the transition from the Year of the Rabbit to the Dragon. When you open the bag, first a rabbit design appears, and then a dragon design appears. The material is all paper and can be reused as a paper bag.



Nuttaporn Supabenjakul

Product Designer

SIAM TOPPAN PACKAGING CO., LTD.

UK

Cross Media Holds HYPER JAPAN FESTIVAL 2024 in London



Cross Media, a London-based subsidiary of TOPPAN Holdings, held HYPER JAPAN FESTIVAL 2024, the UK's biggest J-culture event, from July 19 to 21 at Olympia London.

Taking the concept of "Bringing Japan's Wonders to the World," HYPER JAPAN FESTIVAL 2024

showcased an array of Japanese content and culture for UK-based fans. With participation from a diverse range of companies, the event went beyond simply manga and anime to present traditional Japanese crafts, food, and alcoholic beverages, as well as promoting tourism to Japan itself.

This was the 20th HYPER JAPAN event and featured more than 50 booths from companies active in the Japanese anime, video game, content, food, alcoholic beverage, and traditional craft sectors, as well as booths run by public-sector organizations. Food stalls and more than 300 exhibits by individual participants came together under the same roof to drive promotion and sales directly to UK consumers. Japanese artists and performers active in the UK performed on the main stage.

Multiple channels for engaging with UK-based fans of Japan have been established through newsletters and social media accounts. The TOPPAN Group intends to expand HYPER JAPAN events to amplify exposure of Japanese content and opportunities for sales in the UK as well as establishing a platform for distributing Japanese content in Europe.

MONACO

TOPPAN Digital at LUXE PACK Monaco



TOPPAN Digital took part in LUXE PACK Monaco 2024, the premier trade show for luxury packaging, from September 30 to October 2.

TOPPAN Digital has taken part in LUXE PACK Monaco every year since 2019,

showcasing its high-security NFC tags and solutions based on its ID authentication platform. This time the focus was on digital solutions addressing the challenges faced by the luxury cosmetics industry, which is seeing intense competition, prompting needs for unique brand stories, value, and differentiation.

Packaging that accentuates a product's appeal and solutions that generate customer touchpoints for the brand story are in demand. Brands also need to create new touchpoints and enhance customer service while reducing the number of staff for store operations.

TOPPAN Digital is addressing these challenges by harnessing NFC-tag-enabled solutions to facilitate enhanced customer service through brand differentiation and labor-saving. TOPPAN Digital solutions on show at LUXE PACK Monaco included in-store solutions using video that plays automatically when a consumer picks up a product, NFC tags with LED lights that produce a high-quality look and a new experience, smart packages with integrated NFC functions to enhance security and generate new customer touchpoints, and a cloud-based product ID authentication platform that facilitates a range of services across supply chains.

GERMANY

TOPPAN Holdings Joins Hydrogen Technology Expo Europe 2024



TOPPAN Holdings participated in Hydrogen Technology Expo Europe 2024 at the Hamburg Messe in Germany on October 23 and 24.

Many countries are advancing measures for carbon neutrality by 2050, including renewable energy use and initiatives to create a hydrogen

society. There are high expectations for hydrogen as an energy source because it is generated from an abundant resource in the form of water and no CO₂ is emitted.

Catalyst coated membranes (CCMs) and membrane electrode assemblies (MEAs) are important components for the practical use of hydrogen in society. Since 2004, TOPPAN Holdings has researched and developed CCMs and MEAs to address needs for high energy conversion efficiency, durability, and stable supply.

Hydrogen Technology Expo Europe is one of Europe's largest hydrogen-related events and showcases a range of products for the hydrogen supply chain. For the first time outside Japan, TOPPAN Holdings presented CCMs and MEAs that can be applied in various processes for producing, storing, transporting, and utilization hydrogen. These included high-performance, high-quality CCMs for water electrolysis and MEAs for fuel cells, both fabricated using a proprietary coating technique. The TOPPAN booth displayed an MEA sample with a catalyst layer that spells out the word "TOPPAN" as well as MEAs with 5-layer and 7-layer laminated structures.

COLUMN



Universal Communication Service at Counters Using Transparent Displays

VoiceBiz[®]UCDisplay[®] is a universal communication service equipped with a speech translation function that supports multilingual communication with foreign visitors and foreign workers in Japan.

Development Background

Currently, the number of foreign visitors to Japan is returning close to the pre-pandemic level. However, it is not practical to hire staff who can speak various languages, and multilingual support is an issue. In the case of conventional translation apps, the line of sight tends to go to the device, making it easy to miss the other person's facial expressions, and communication errors such as not being able to convey differences in fine nuances have been an issue.

VoiceBiz[®]UCDisplay[®] is a service that realizes smooth face-to-face multilingual communication by translating speech into the other person's language and displaying the translation on a transparent display. It

has been received well for the ability to have a conversation with others while looking at their facial expressions in a natural way, and for its usefulness not only for dealing with foreigners, but also for communicating with people with hearing loss and speech impairments.

Features of VoiceBiz[®]UCDisplay[®]

- Utilizing the speech translation service VoiceBiz[®] to provide high translation accuracy and support for reception desks in various industries.
- Subtitles are displayed in response to speech and keyboard input supports universal communication at reception desks.
- Translation support for a wide range of languages (13 languages).

The voice translation of VoiceBiz[®]UCDisplay[®] supports the following 13 languages: Japanese, English, Korean, Chinese (Simplified), Chinese (Traditional), Indonesian, Thai, Vietnamese, French, Spanish, Portuguese, Burmese, Filipino



From October 2024, a color version has been added to the lineup. The advantages of the color version include portability, improved visibility, and the ability to clearly project photos and videos.

* As of November 2024, this solution is only available in Japan.

TOPPAN World SEEDS

In this section, we introduce you to employees working at TOPPAN Group companies around the world.

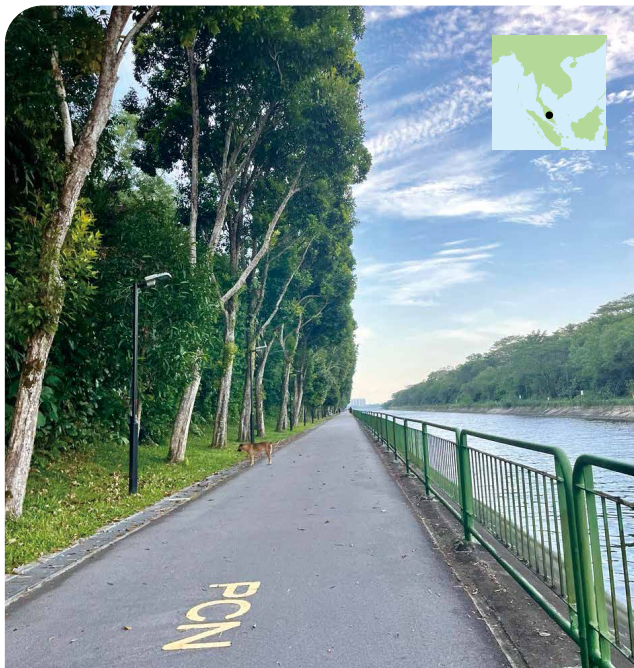


File11 Singapore



About Singapore:

- Area: 720 km²
- Population: 6.04 million (2024)
- Major languages: English, Chinese, Malay, Tamil



As a sales manager in Singapore's IT sector, I stand at the forefront of offering digital government solutions to stakeholders worldwide. I liaise with project teams to manage tenders and deliver tailored solutions to local and overseas clients, and drive business growth through strategic networking and partner collaborations.

REPORT

After a long week, I love unwinding with a run along Singapore's park connectors. These well-paved paths are lined with greenery, offering breeze and tranquillity—a perfect escape within our bustling city.



Team bonding over a fun game of archery.



Every now and then, we enjoy coming together as a team to savour great food and drinks.

Emma Oh

Sales Manager
Sales, TOPPAN Ecquaria Pte. Ltd.

Toppan Ecquaria Solutions

When you think of TOPPAN Ecquaria, think of digital government. We leverage cutting-edge technologies to help governments deliver digital solutions, enabling them to unlock their digital assets and foster connections with citizens and businesses.

We develop digital government solutions for the following sectors:

1. Judiciary and Law: Integrated Case Management System
2. Business and Trade: Online Business Licensing System
3. Citizen Engagement: Public Service Infrastructure



Agile Digital Government Platform



Digital Identity Solution

- **Location:** Singapore
- **Business:** Providing information management solutions and comprehensive technology-based services