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TOYO INK

Ink Business Briefing

TOYO INK CO., LTD.

Event Date : February 20th ,2026

Materials Released on : February 19th, 2026

Key Takeaways

1	Driving the Ink Business into a new growth phase through environmental innovation.
2	Being proactive in making strategic investment in growth markets in Japan and other countries.
3	Technologies developed through manufacturing printing inks will create new value.

Agenda

- Packaging materials inks experiencing growth globally
- Growth strategy for liquid inks
- Environmentally friendly UV curable inks
- Initiatives that contribute to a sustainable society
- New expansion into new applications

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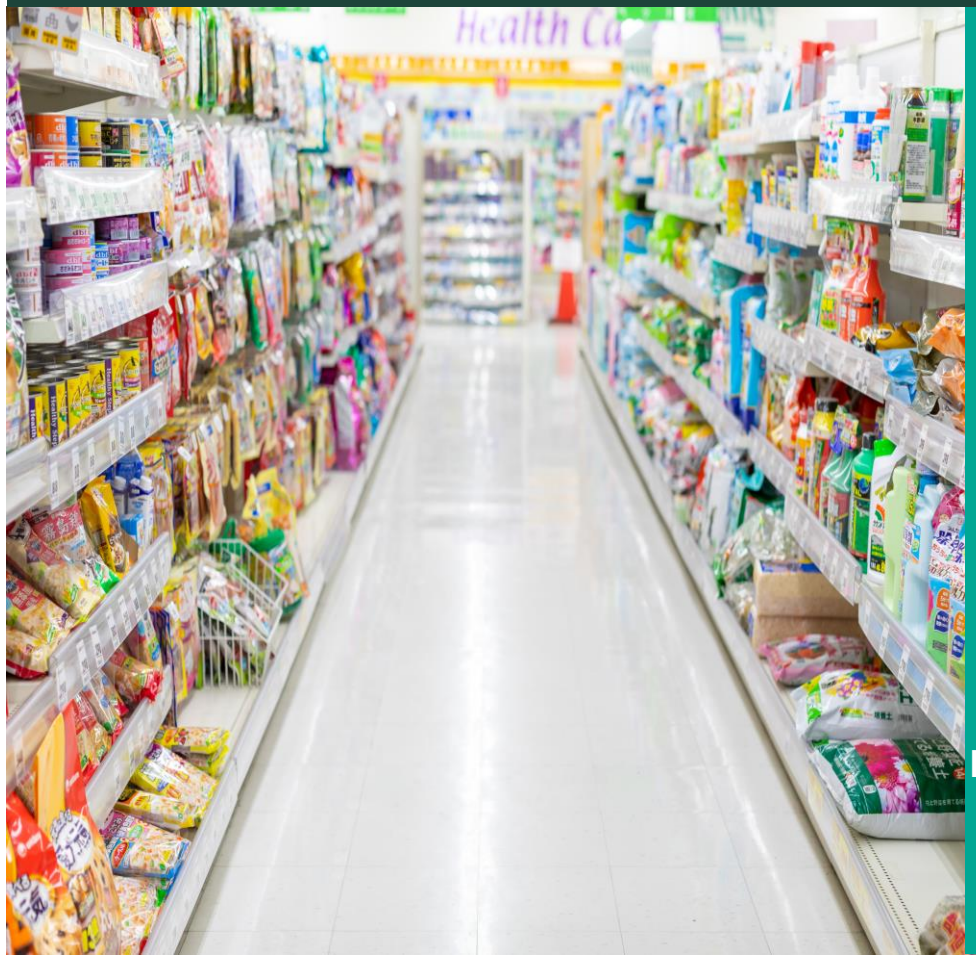
Segments

	Subsegments	Major Products	Major Applications
Packaging Materials	Liquid inks	Gravure inks	Flexible packaging (Food packaging, Refill pouches)
		Flexographic inks	Buildings
			Diapers, Cartons, Paper bag
	Gravure printing systems and prepress	Gravure printing systems, Gravure and flexographic plate making	
Printing & Information	Offset inks (General inks)	Offset inks, Newspaper inks	Books, Newspaper, Flyers, Paper containers
	Functional inks	UV curable inks	Paper containers, Labels, Cards, Books
		Metal decorating ink	Beverage cans, Food can
		Screen inks	Electronics, Stickers
	Printing materials and machinery	Offset printing materials, printing machinery	

The Growth Potential of the Packaging Materials Inks Market

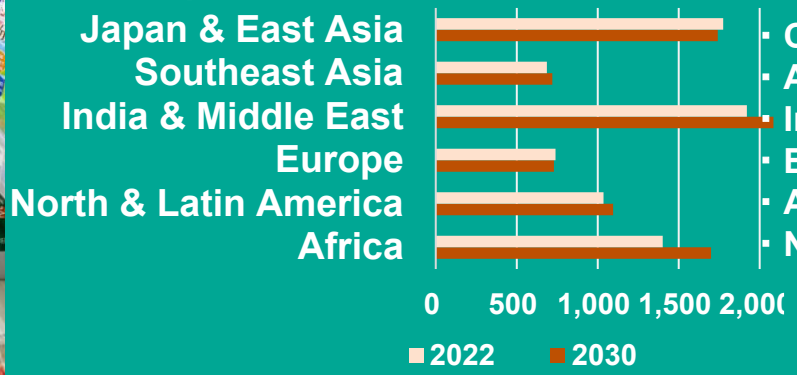
Packaging Materials Inks



■ **Expansion of the packaging materials inks market**

- The market is so stable that demand barely falls even amid an economic slowdown.
- The market expands mainly in emerging countries in proportion to population and economic growth.
- Environmental needs are expected to rise in the future. Japan's innovative technologies will now reach global markets!

Global Population Trends (Millions)



Projected Average GDP Growth Rates

- China :4.5%
- ASEAN :4.3%
- India :6.8%
- Europe :2.5%
- Africa :4.0%
- North America :2.0%
- Japan :1.2%
- Middle East :3.8%
- Europe :2.5%
- Latin America :2.4%

Source: UN WPP 2024

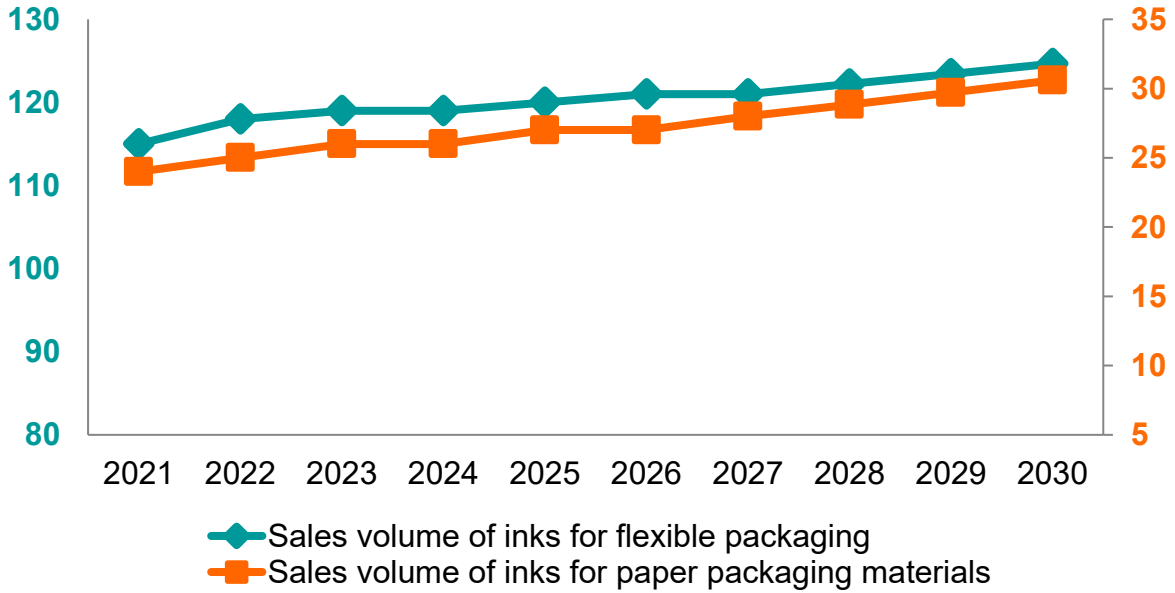
Packaging Materials Inks Market Size

Packaging Materials Inks

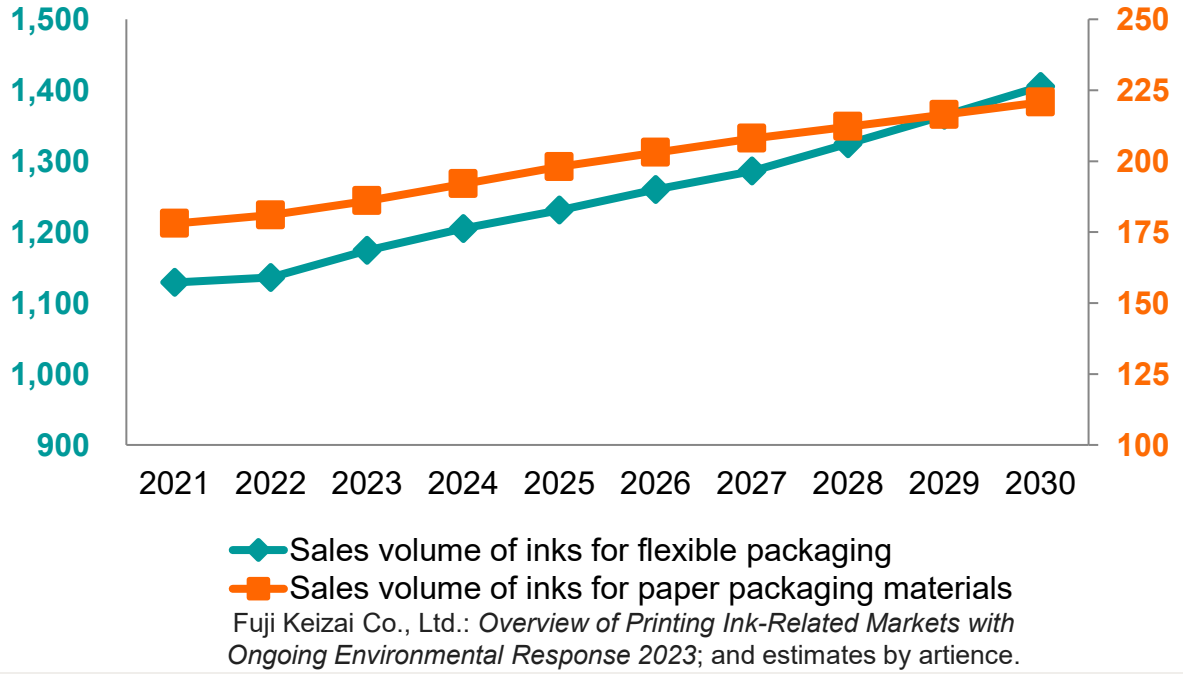
【Paper Packaging Applications】
UV Inks + Offset Inks

【Flexible Packaging Applications】
Liquid Inks

Domestic Market (Thousand Tons)



Global Market (Thousand Tons)



Fuji Keizai Co., Ltd.: *Overview of Printing Ink-Related Markets with Ongoing Environmental Response 2023*; and estimates by artience.

artience's Technological Capabilities

artience

Core technologies for inks

TOYO INK CO., LTD.	TOYOCHEM CO., LTD.	TOYO COLOR CO., LTD.
		
Dispersion technologies and addition of functions	Polymer resin synthesis technologies	Pigment(color) synthesis technologies

Materials and technologies related to printing

TOYO INK CO., LTD.	TOYO FPP CO., LTD.	Toyo-Morton, Ltd.
Packaging materials inks	Gravure and flexographic plate making	Laminating adhesives

Agenda

- Packaging materials inks experiencing growth globally
- **Growth strategy for liquid inks**
- Environmentally friendly UV curable inks
- Initiatives that contribute to a sustainable society
- New expansion into new applications

artience's Strength in Packaging Materials Inks Market

Market share in the Japanese gravure ink market

- **Active promotion of environmentally friendly products**

  Rolling out biomass inks and water-based inks to the market ahead of the competition as an industry-leading company.

バイオマスマーク

▲水性印刷商品認証マーク

- **Sophisticated technological capabilities to respond to needs**

  Designing products that respond to market needs and that provide user-friendliness.

artience holds the largest market share in the Japanese gravure ink market.
(Also in the markets of lamination inks and adhesives for packaging materials.)

The market shares reflect data based on artience's independent research in 2025.

Differences between Packaging Materials Inks Used Overseas

Europe and US

· A broad range of packages exist, including gravure-, flexo-, surface- and back-printed packages.

*NC inks

Design philosophy: Optimizing operation efficiency

Customers customize colors and physical properties.

- They produce the necessary quantity of inks when they need them.

—> Paving the way for reducing inks in stock and shortening delivery lead times

NC base ink (for color) | Technical varnish (for physical properties) | Final ink

*NC: Nitrocellulose

NC inks enable flexible on-demand production.

Asia

· Gravure- and back-printed packages are the mainstream.

Urethane inks

Design philosophy: Optimizing high physical properties and high resistance

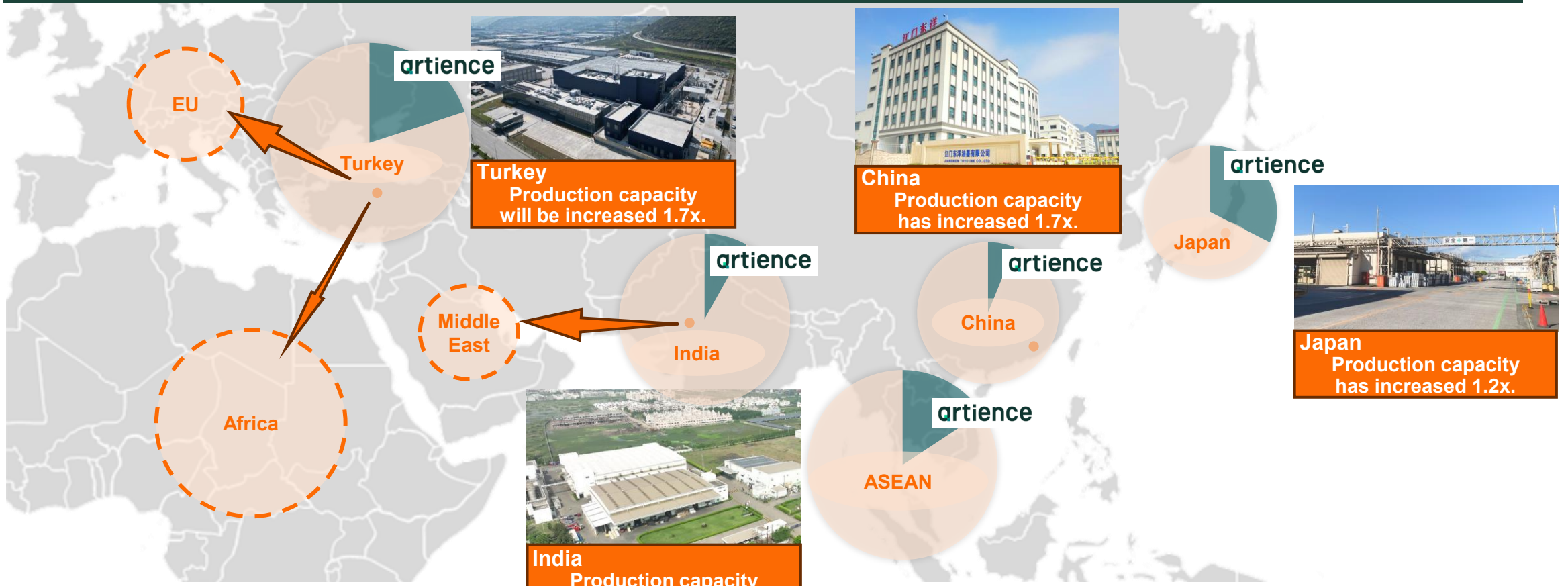
High physical properties

- A single type holding heat resistance and resistance to retorting

Urethane inks: Suited for various applications

Capital Investment in Growing Markets and artience's Market Shares

Active investment in priority areas



The market shares reflect data based on artience's independent research in 2025.

■ Overseas: Invest in the growing India market and in key Turkey and China markets to expand overseas businesses!
■ Japan: Introduce smart factories to accelerate workstyle reform, even though it is a mature market!
=> The Packaging Segment targets a 30% increase in global operating profit by 2030.

Agenda

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- **Environmentally friendly UV curable inks**
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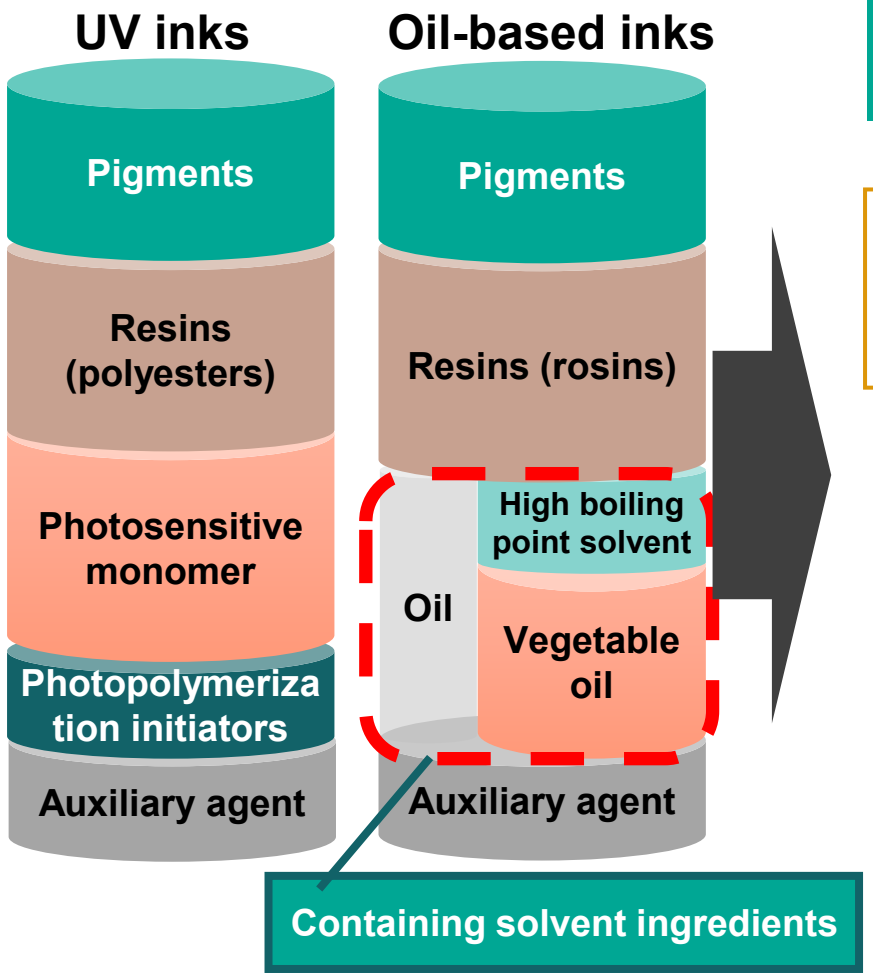
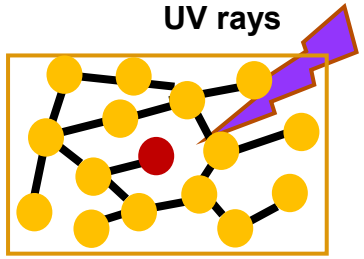
Characteristics and Applications of UV curable Inks

Difference between UV curable inks and oil-based inks



Advantages of UV curable inks

Instant curing



High productivity

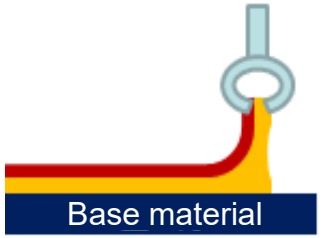
Solvent-free materials

non VOC®

Improving work environment

Reducing environmental impact

Durability



Printable both on paper and on plastics

Rise of UV printing

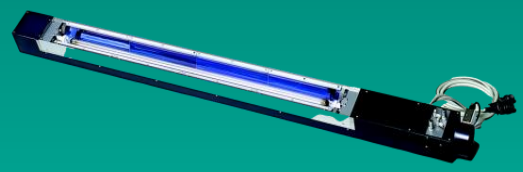


Image courtesy of IWASAKI ELECTRIC CO., LTD.

Characteristics and Applications of UV Curable Inks

UV curable inks are used in many different applications to capitalize on their advantages.

[Paper packaging materials]

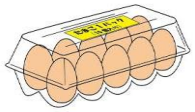
[Cards]

[Commercial printing, information and publication]

[Business forms]

[Clear files and cases]

[Stickers and labels]



[Plastic cups]

[Bottle caps]

Demand is stable and on the increase. They are artience's focus areas.

[Commercial printing, information and publication]

- These applications represent the largest share of ink consumption.
- Ongoing substitution from solvent-based inks supports further growth.

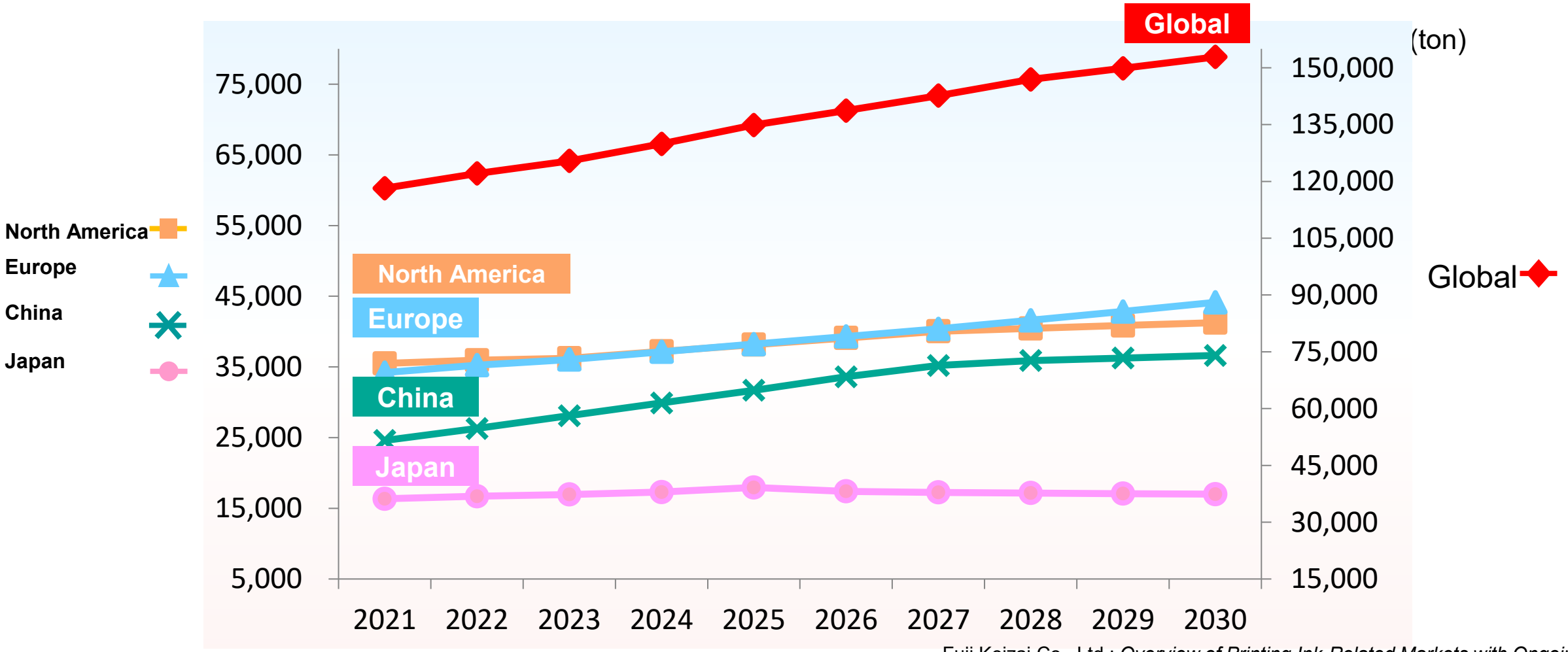
=> This enables us to maintain our No.1 market share.

[Paper packaging materials]
[Cards]
[Stickers and labels]
[Plastic cup]

Major applications are food, pharmaceuticals and cards. Demand is stable.

=> Continuously increase market shares in these focus areas.

Global UV curable Inks Market Size



Fuji Keizai Co., Ltd.: *Overview of Printing Ink-Related Markets with Ongoing Environmental Response 2023*; and estimates by artience

[Japan] From 2026 onward, the overall market is expected to decline marginally, as the shift to UV curable inks in commercial printing reaches maturity. However, demand for packaging and label applications is expected to remain firm.

[Overseas]
The global market is expected to expand steadily through 2030 (CAGR: approx. 3%).

Initiatives for UV Printing Market

Initiatives of printing companies

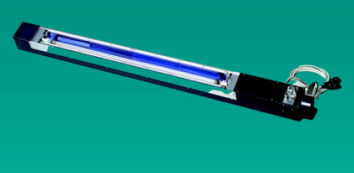
Business continuity, competitiveness in winning orders and response to risks

Visualization of environmental consideration, added value and differentiation

Introduction of energy-efficient printing equipment

Active capital investment is made in LED lamps, smaller-sized printing machines and other equipment with lower energy consumption.

UV printing



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LED-UV printing

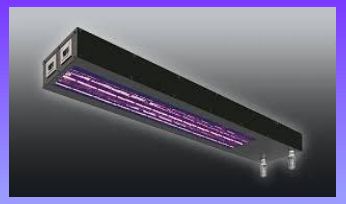
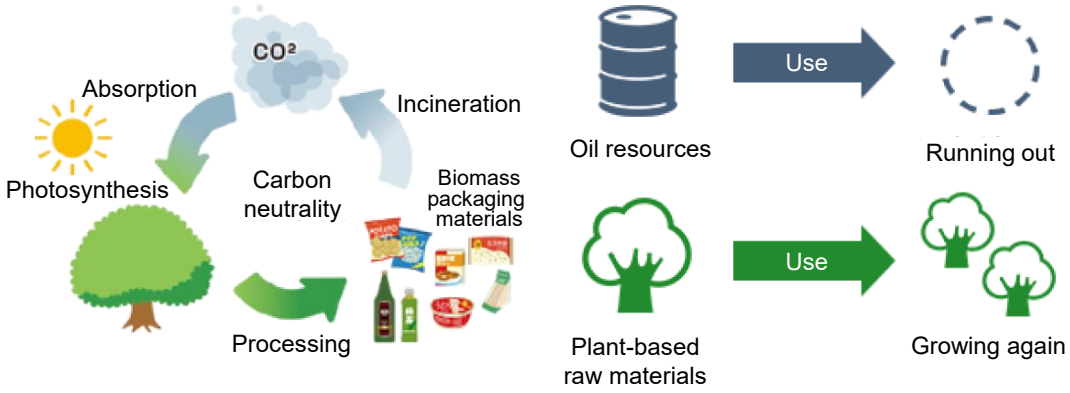


Image courtesy of IWASAKI ELECTRIC CO., LTD.

Adoption of environmentally friendly materials

Active adoption is made of FSC-certified paper produced through sustainable forest management and biomass inks made from biomass materials.



Strengths of artience's UV curable inks Business

Next-generation UV curable inks that match the needs of printing companies
~ Biomass inks compatible with LED lamps ~

High affinity with LED lamps

Instantly cure even with low irradiance LED lamps.

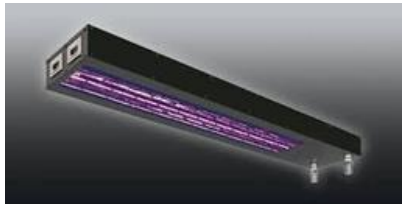


Image courtesy of IWASAKI ELECTRIC CO., LTD.

Made with bio-derived raw materials

Contain 10% or more renewable bio-derived raw materials.

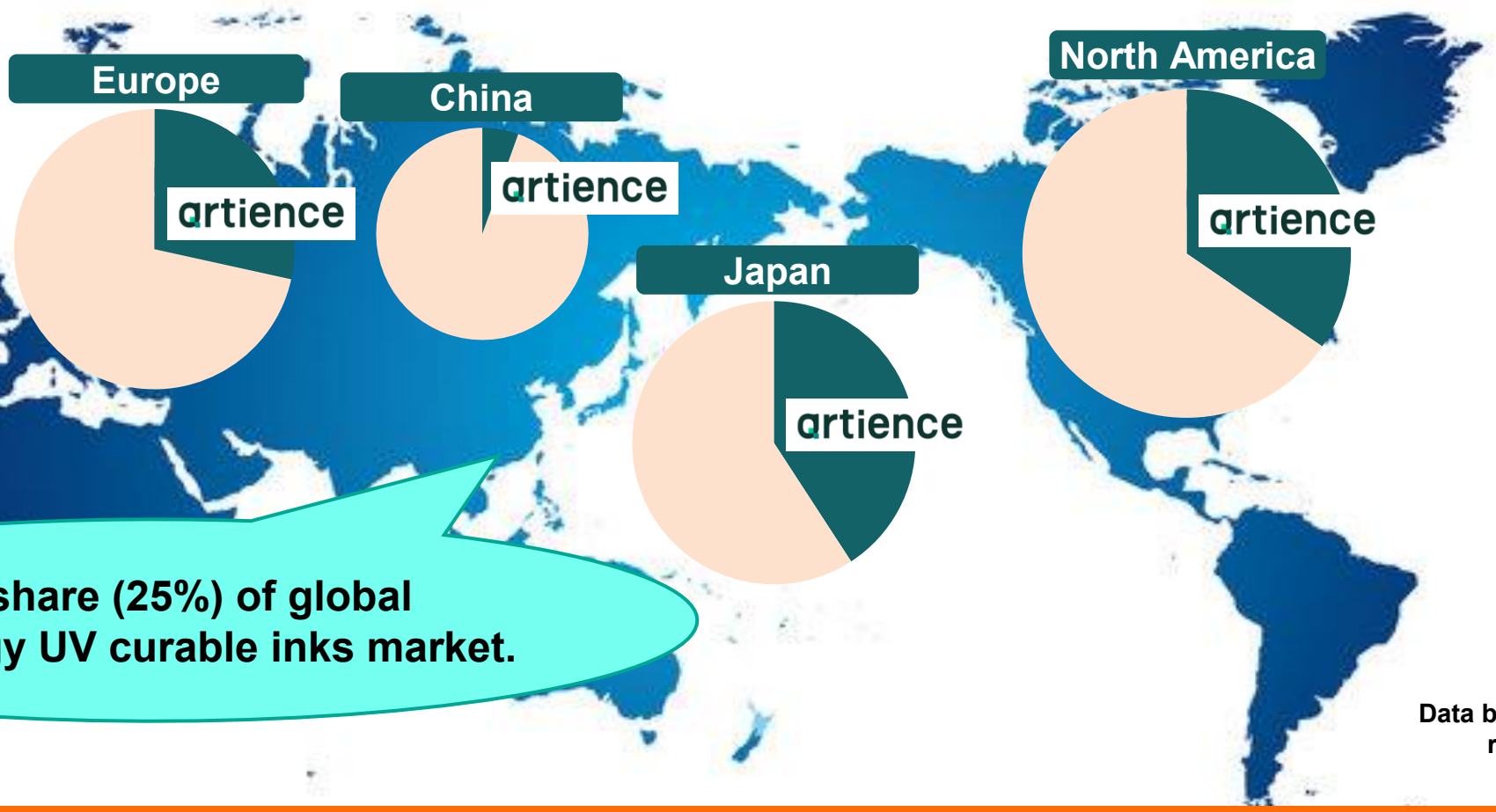
Biomass materials used in printing inks

Our strengths

- **Technology development capabilities as a pioneer in the LED ink market**
- **Competitiveness achieved through the in-house production of unique key materials and quality differentiation (curability, printability).**

artience's Share of the LED UV curable Inks Market

LED UV printing markets in key areas overseas



No1 share (25%) of global LED energy UV curable inks market.

Data based on artience's own research results in 2025

artience targets a 60% increase in global operating profit from its UV curable inks products by FY2030.

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Future Packaging Materials Trends

✓The Future of Packaging : Packaging as a Resource

Previous configuration (example)

Surface film (OPP,PET,NY)

Ink

Lamination adhesive (normal)

Sealant film (CPP,PE)

Under the previous configuration, the recycling of clear plastic was difficult.

Peeling and deinking configuration

Surface film (OPP,PET,NY)

Deinking coating agent — Added on

Ink

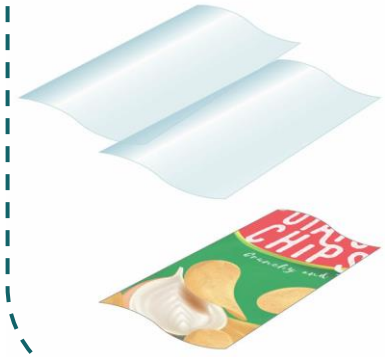
Lamination adhesive (for peeling off) — Replaced

Sealant film (CPP,PE)

Before deinking

Peeling・deinking

collection



Surface film (OPP)

Sealant film (CPP,PE)

Ink — Washed off

After deinking

Development of processes and production machines for washing, deinking, separating and recycling different materials, etc., for the realization of higher quality plastic recycling

- **Conclusion of joint development agreements with AIKAWA Iron Works Co., Ltd. and HAGIHARA INDUSTRIES INC.**

Example of Specific Initiative Applying Peel and Deinking Recycling Technologies

First commercialized refill packages with improved recyclability

artience
TOYO INK
Deinking coating agent
Easy peel laminate adhesive

Production and use of packaging and molded products applying peel and deinking technologies

Converter

Brand owner
Retailer

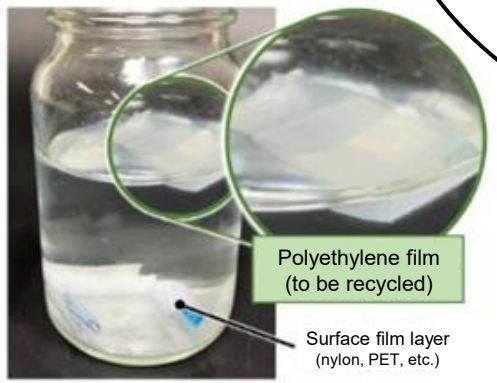
User

artience
TOYO INK
Peeling and deinking processes

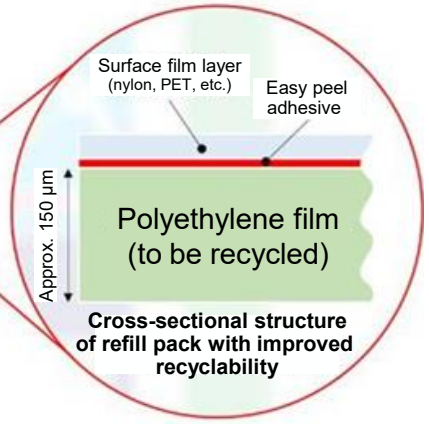
Recycler

When film is peeled off

Alkali treatment



Refill packs incorporating this technology bear a yellow mark



Cross-sectional structure of refill pack with improved recyclability

Materials provided by Lion Corporation

Demonstration experiment at pilot plant

artience's recycling vision
= High quality recycled materials

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Application of Our Technologies to New Markets

Building a track record as a newcomer in the optoelectronics market

Screen inks, various printing technologies
- Screening printing, pad printing, dispenser printing, etc.
- Technologies enabling special decoration and design effects

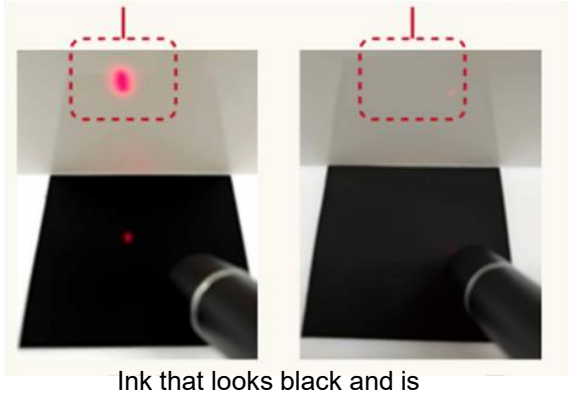
Wider application of existing technologies

Optical control technologies
- Light shielding, reflection control
- Wavelength control

Knowledge related to industrial materials
- High durability (construction materials, automotive materials)
- Compatible with a wide range of base materials

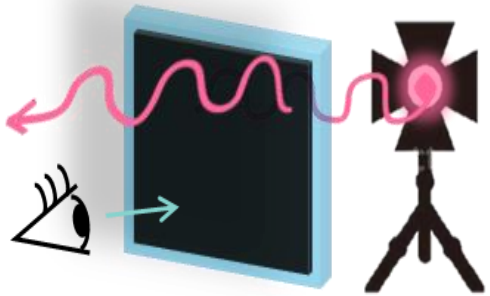
Reflection from lazer pointer

Reflection occurs **No reflection**



Ink that looks black and is permeable to infrared light

Reflection control

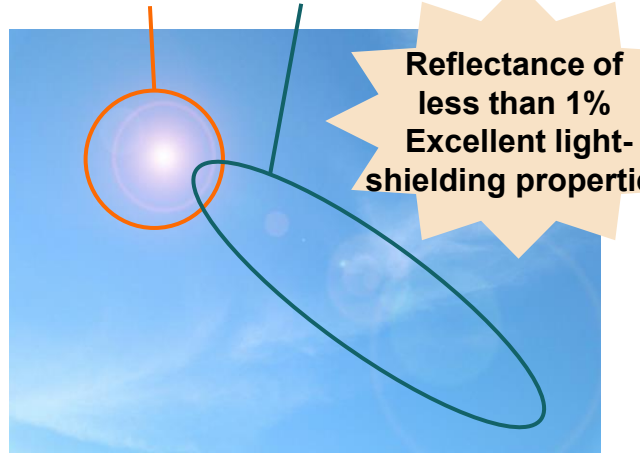


Wavelength control

Low reflection inks

Coating applied to the lens edge and the inner side of the lens barrel and prime lens

Removing flare and ghosts



Reflectance of less than 1% Excellent light-shielding properties

Infrared permeable ink

Covers infrared cameras and sensors, achieving both design and functionality

Face recognition system for smartphones, smart door locks, etc.

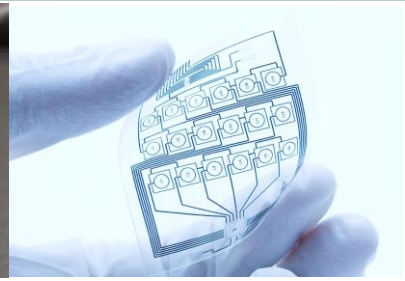
Driver monitoring system (DMS)

Commercialized in 2024; Targeting 2x Sales by 2026

Application of Our Technologies to New Markets

Sensor devices incorporating printed electronics technologies

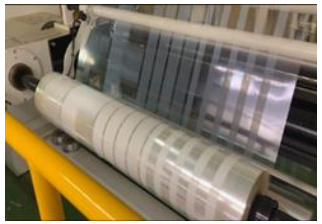
Semiconductor materials design technologies
- Technology for lowering resistance through the dispersion of high concentration conductive filler
- Technology that balances electrical properties with the viscoelasticity necessary for printing



Applying the technologies we have developed to challenge in the sensor business!

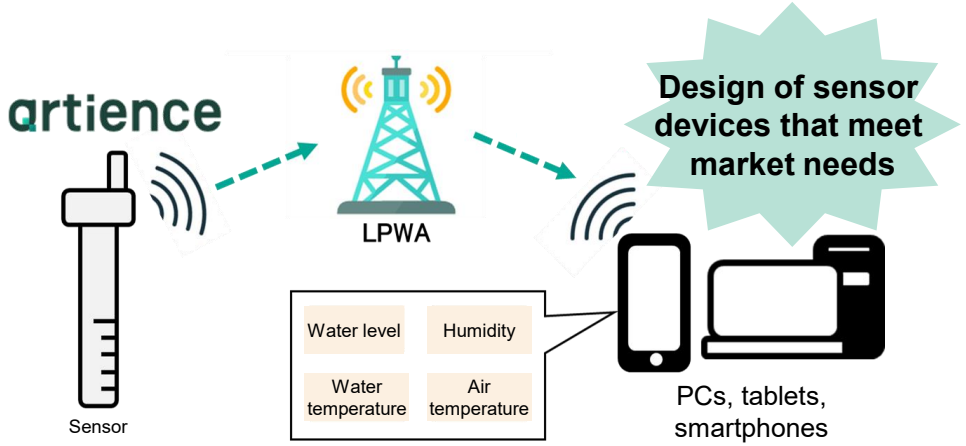
Technologies for forming sensor electrodes and circuits
- Fine pattern printing technology
- Knowledge about substrate adhesion/lamination

System of wide cooperation
- Co-creation through industry-academia collaboration
- Collaboration with device manufacturers



Circuit printing | **Sensor electrode** | **Sensor device**

Improvement of added value through increase in processing

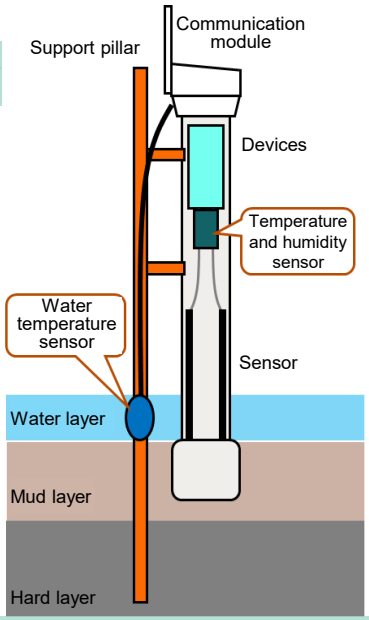


Sensing changes in temperature, humidity, strain, etc.

POC Example: Rice paddy water level sensor

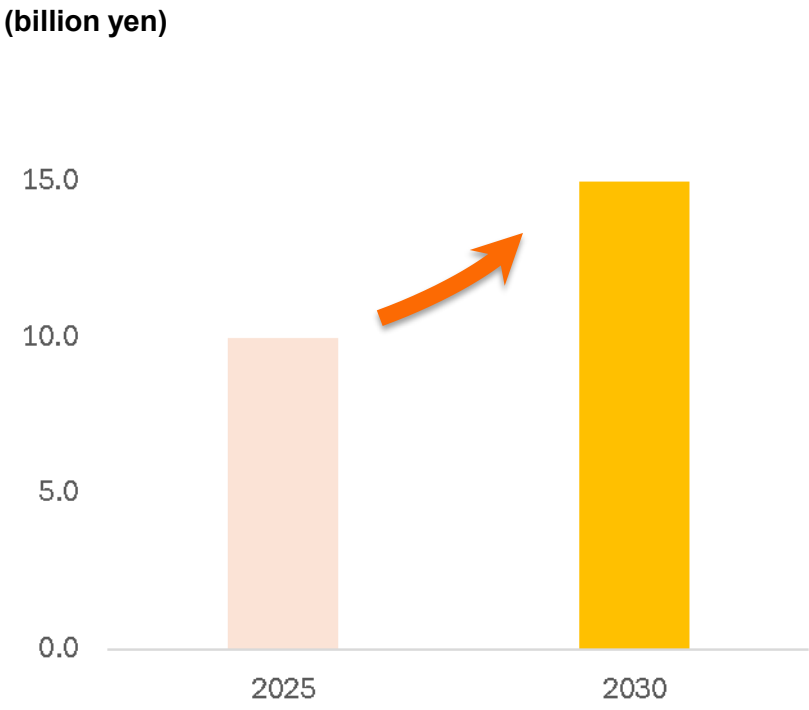
Issues facing rice production
- Decline in producers (aging)
- Expansion of managed areas
- Complexity of water level management for each growing season (control of pests such as giant snails)

Development of high-precision sensors capable of centimeter-level accuracy control
- Protection of rice from pests
- Improvement of harvests
- Increase in income from J-Credits through reduction of methane gas emissions



Continuing to conduct demonstration experiments with farmers and farming corporations aiming for social implementation in 2027

Our promise for the future



As a leading company, we will deliver value beyond expectations.
We target a 50% increase in global operating profit in the ink business by 2030.