Multi-Client Study

Summary

Survey Report

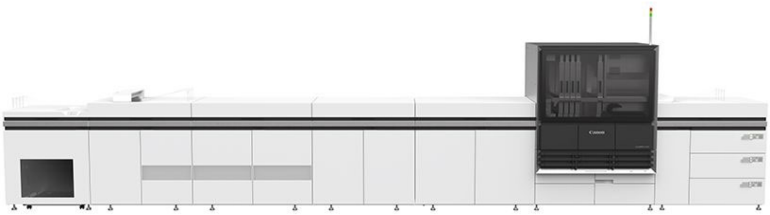
[2023 version of Inkjet Printing Market Forecast]

"The Latest Market Trends in the Inkjet Industry: Opening the Way to the Smart Manufacturing Industry"

=Comprehensive analysis of the commercial and industrial inkjet market (hardware, ink, and printheads) =

HP's BinderJet metal 3D printer "HP Metal Jet S100 Solution"

Epson's first 12-color digital textile printer "Monna Lisa ML-24000"



"varioPRINT iX1700" B3 sheet-feed printer with Canon's thermal heads

December 2023
Data Supply Inc.

<Overview>

I. Theme

[2023 version of Inkjet Printing Market Forecast]

"The Latest Market Trends in the Inkjet Industry: Opening the Way to the Smart Manufacturing Industry"

= Comprehensive analysis of the commercial and industrial inkjet market (hardware, ink, and printheads)=

II. Abstract

As reported in our previous publications, the target markets for inkjet technology range from the paper printing market, including indoor and outdoor advertising printing, commercial printing, and packaging printing, to the non-paper printing field, including textiles, ceramic tiles, and building materials, as well as the pattern formation of displays, printed circuit boards, and solar cells, and even the biotechnology field.

By market, the outdoor signage market, one of the largest industrial inkjet applications, covers 70% of its total market demand in China, and thus this market is strongly affected by the country's economic trends and environmental regulations; the market has remained sluggish since 2022. In contrast, the textile market, commercial printing, and packaging printing have seen advanced inkjet applications even amid the COVID-19, and industrial inkjet applications such as displays and printed circuit boards are also considered promising for future growth. Expectations of strong growth are high from overall commercial and industrial inkjet perspectives.

The shift from analog to digital inkjet technology is not only linked to IoT/smart manufacturing and AI trends but is also consistent with today's social values favoring a sustainable, recycling-oriented society and seeking a shift away from an industrial system supported by mass production, mass consumption, and mass disposal. In addition, the industrial inkjet industry is not dominated by large companies such as head manufacturers and ink manufacturers, but also includes many small and medium-sized integrators that supply inkjet-related expertise externally for each application. All this can lead to expectations of innovations from a wide range of companies around the world.

The 2023 version of Inkjet Printing Market Forecast marks the seventh publication in the series. This latest report provides a professional and objective look beyond a general viewpoint at the future of markets comprised of: signage & graphics, textiles, transaction, commercial printing, labels & packaging, marking & coding, ceramic tiles & building materials, and 3D printing. We hope that this report will help the industry further develop.

III. Items and Makers

1. Surveyed Markets

Graphics Market	Wide-format printers (A2 and up) for photos, proof, and posters printing and the market mainly handling sales of inks for wide-format printers.
Technical Market	Wide-format printers (A2 and up) for CAD and GIS (Geographic Information System) printing and the market mainly handling sales of inks for wide-format printers.
Signage Market	It's a market of wide-format printers mainly used for large outdoor signs and sales of inks for wide-format printers but includes related markets of flatbed UV printers, as well as latex printers derived from the same market.
Textile Market	It is a market centered on the sale of hardware and inks for direct textile printers that print directly on fabric, sublimation transfer printers that use transfer paper, DTG (Direct to Garment) printers for T-shirt printing, and DTF (Direct to Film) printers.
Transaction Market	It mainly refers to a printing market of high-speed and mass variable data processing such as credit card bills/statements. The market has spread to include DM printing based on customer information.

Commercial Printing Market	The market is mainly formed by printing of corporate promotional tools such as catalogs and leaflets, but this reports extends to include publication printing such as books and magazines, among others.
Labels Printing Market	This market is centered on the sale of adhesive label printers that produce labels placed on consumer products and the sale of ink. Only printing machines costing 10 million or more per unit are covered and small-sized or desk-top machines are not included.
Packaging Market	It is a market centered on sales of large-size printers and inks for decorative corrugated board, folding carton, and flexible packaging printing.
Marking & Coding Market	This is a market centered on sales of printers and inks for product information printing (production date/place of origin/barcode) on cardboard, folding carton, and aluminum cans.
Ceramic Printing Market	The market is mainly comprised of the sale of hardware machines and ink for ceramic tile and related product printing.
Building Material Printing Market	The market is mainly comprised of the sale of hardware machines and inks for interior and exterior building material printing such as wall coverings and exterior walls.
Other Markets	They include the 3D printer market, displays, solar cells, circuit boards, etc.

2. Surveyed Makers
   1) Hardware makers (Over 100 makers in Japan and abroad)
   2) Printhead makers (18 makers in Japan and abroad)
   3) Ink・dispersions makers (Over 150 makers in Japan and abroad)
   4) Others (integrators and parts makers among others)

IV. Research Period and Methodology
1. Research period
   The research period is set from 2020 to 2026 and target regions are Japan, North America, Europe, China, and other regions.
2. Methodology
   1) On-site and in-person interviews with target makers in principle
   2) Analysis and review of open literatures, materials, statistics, and other sources
   3) Analysis of Data Supply's own proprietary database

V. Format and Report Preparation Period
1. Research form: Multi-client study
2. Research period: August to October of 2023
3. Publication date: December 8, 2023
4. Report format: PDF format
5. Price: $5,000-
6. Researchers

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Extract from < Comprehensive Analysis >

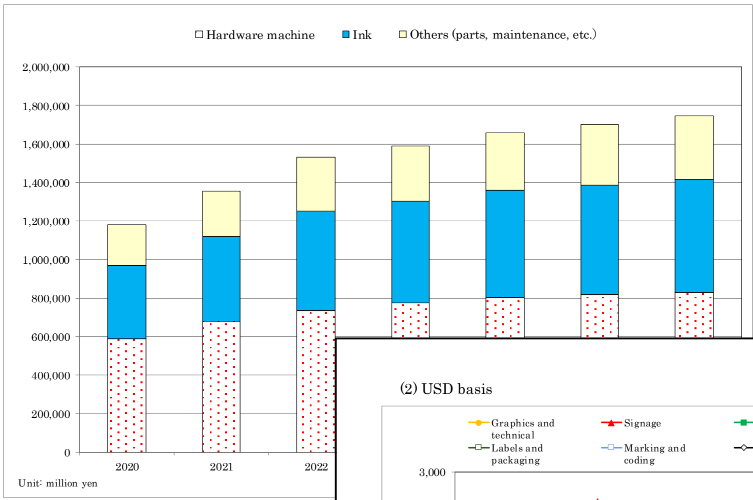
*Tables are filled with numbers and comments in the real report.

A. Comprehensive Analysis

1. Overall trend in shipment value of industrial/commercial inkjet printing (2020-2026)

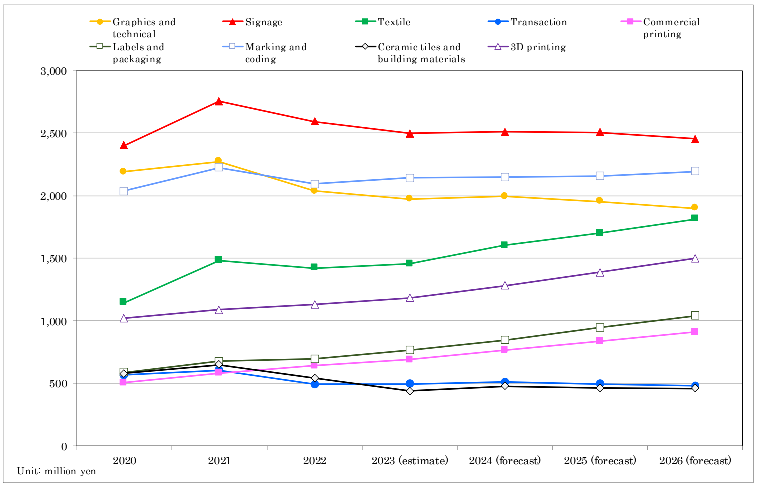
1) Overall (hardware machines, inks, others)

(1) JPY basis



	2020		2021		2
		%		%	
Hardware machine					
%					
Ink					
%					
Others (parts, maintenance, etc.)					
%					
Total					
%					

(2) USD basis



Unit: million dollars

	2020		2021		2022		2023 (estimate)		2024 (forecast)		2025 (forecast)		2026 (forecast)	
		%		%		%		%		%		%		%
Graphics and technical														
%														
Signage														
%														
Textile														
%														
Transaction														
%														
Commercial printing														
%														
Labels and packaging														
%														
Marking and coding														
%														
Ceramic tiles and building materials														
%														
3D printing														
%														
Total														
%														

Extract from < Comprehensive Analysis >

*Tables are filled with numbers and comments in the real report.

3) Demand (%) by region in each market

	Global demand (2022)	Japan	North America	Europe	China	Others
Graphics & technical	1.3-1.5 billion ㎡	Around 10%	30-35%	20-25%	10-15%	20-25%
Signage	4.5 billion ㎡	4-5%	15-20%	15-20%	40-45%	Around 20%
Textile	4-4.5 billion ㎡	1-2%	Almost none.	Around 35%	Around 35%	25-30%
Textile (DTG & DTF)	0.3-0.4 billion sheets	1-2%	40-45%	Around 20%	Around 20%	Around 15%
Transaction	250 billion sheets/ In A4 terms	3-4%	40-45%	20-25%	10-15%	Around 20%
Commercial printing	800 billion sheets/ In A4 terms					
Labels	0.3 billion ㎡					
Flexible packaging	1.4 billion ㎡					
Marking & coding	275 billion yen					
Ceramic tiles	5-6 billion ㎡					
3D printing	Cumulative total 20-30K units					

The ratio of inkjet demand by regio
North America creates the largest
China is the world's largest produc
Europe creates great demand for te
Japan fills less than 5% of demand
market.

2. Digital applications versus analog applications in the printing market

1) Comparison of production technology

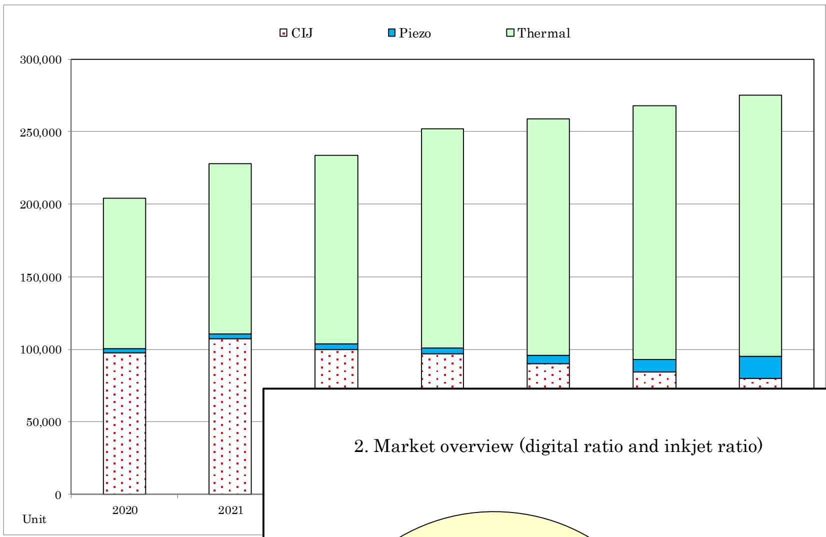
	Digital	Analog
Graphics & technical	Inkjet Electrophotography (dry toner)	Offset printing
Signage	Inkjet	Hand-painted, cut and seal, silk screen printing
Textile	Inkjet Electrophotography (dry toner)	Hand screen, automatic flat screen, rotary screen, belt transport system
Transaction	Inkjet Electrophotography (toner transfer)	The transaction printing market known for high-speed and high-volume variable data processing for printing is very typical to digital printing. Analog printing is applied when printing logos, ruled lines, and description sentences on a cardboard.
Commercial printing	Inkjet Electrophotography (liquid toner) Electrophotography (dry toner)	Offset printing
Labels	Inkjet Electrophotography (liquid toner) Electrophotography (dry toner)	Flexographic printing in Europe and USA Gravure printing in Japan and Asia
Flexible packaging	Inkjet Electrophotography (liquid toner)	Flexographic printing in Europe and USA Gravure printing in Japan and Asia
Corrugated cardboard	Inkjet	Flexographic printing
Folding carton	Inkjet	Offset printing, flexographic printing
Marking & coding	Inkjet Thermal transfer (ribbon thermal) Laser marker	Hot stamping, roller coding
Ceramic tiles & building materials	Inkjet	Flexographic printing Rotary screen
3D printing	Inkjet Various material extrusion methods	Casting, injection molding, cutting

Extract from < Individual Inkjet Market >

*Tables are filled with numbers and comments in the real report.

5. Shipment trend by type of hardware machines (CIJ/DOD from 2020 to 2026)

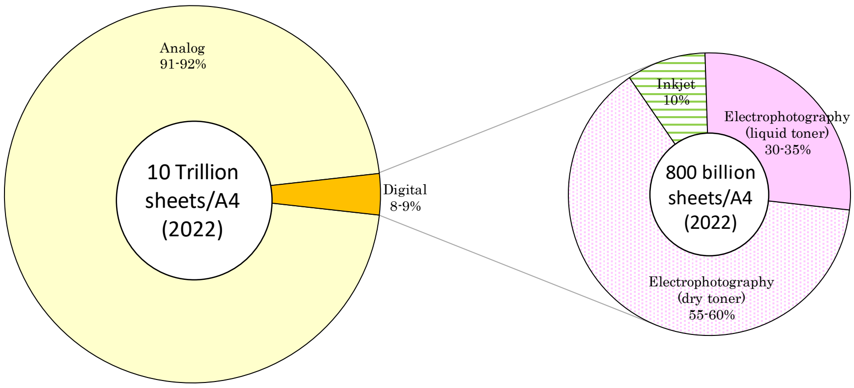
1) Shipment volume



	2020	
		%
CIJ		
%		
Piezo		
%		
Thermal		
%		
DOD total		
%		
Total		
%		

*CIJ: Continuous Inkjet, DOD: Drop On De

2. Market overview (digital ratio and inkjet ratio)



・The commercial printing market, including analog printing and ink consumption, is estimated to be a huge market of 10 trillion sheets (in A4 terms) per year. The market itself has passed its peak, but digital printing continues to grow (digital rate of 8-9% in 2022, or 800 billion sheets in A4 terms).

・In terms of digital printing technology, electrophotographic printing (dry toner and liquid toner) is the leading technology, while inkjet printing, a latecomer technology, accounts for about 10% of the total digital printing market.

・In the electrophotographic method, copier manufacturers have expanded their lineups of dry toner machines (POD machines), mainly covering the light to mid-volume range, and quickly captured the low-volume, high-variety needs. As a result, they now account for 55-60% of the total digital market. While some believe that dry toner machines have limitations in terms of productivity and therefore future growth can hardly be expected, others say that their market needs are solid because they are the most technologically advanced and do not require operator skills.

・HP's liquid toner machines gained attention with their high-speed, high-quality, and wide-format technologies, and they have expanded into the heavy-production market, where high printing volume is expected. However, since their shipments have passed the peak, HP aims to expand sales of used machines to increase the number of machines in operation and print volume.

・Inkjet printers are increasingly adopted in fields such as publication and direct mail printing as its image quality has improved and it can better handle offset paper. Unlike the liquid toner solely developed by HP, inkjet printers by several companies are under active competition to respond to customer needs, and there are sheet-feed presses ranging from B1 to B3, in addition to continuous-feed presses. Inkjet printing quality has also improved significantly over the past few years, and the technology is now at a period of full-scale adoption, particularly in the U.S. and European markets.

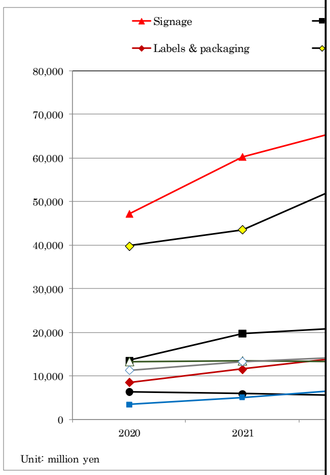
Extract from < Individual Inkjet Market > < Inkjet Printhead Market >

*Tables are filled with numbers and comments in the real report.

2) Changes in shipment value by markert (2020-2026)

Unit: million yen

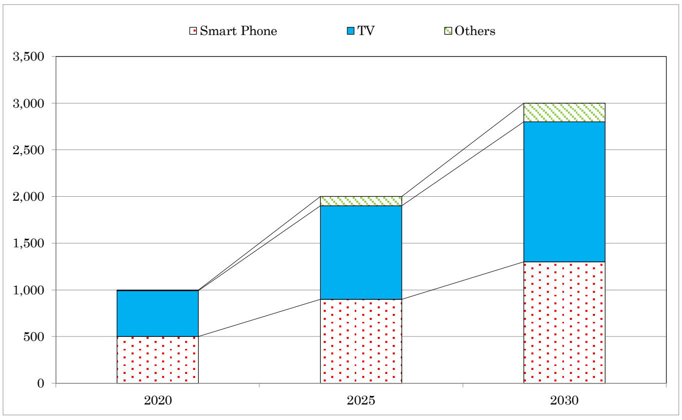
	2020	%	2021	%	2022	%	2023 (estimate)	%	2024 (forecast)	%	2025 (forecast)	%	2026 (forecast)	%	CAGR (2022/2026)
Signage															
%															
Textile															
%															
Transaction															
%															
Commercial printing															
%															
Labels & packaging															
%															
Marking & coding															
%															
Ceramic tiles & building material															
%															
Others															
%															
Total															
%															



moves to introduce inkjet technology in the areas of (1) color filter formation, (2) alignment film formation, and (3) spacer application. While some progress was made in (2) and (3) to make them available, (1), the core part of this, was not successful because of the technological hurdles and the large price fall of LCDs, which made it difficult to keep this as a business.

In contrast, the OLED (organic light emitting diode) is expected to grow the most in the future display market. Demand for OLEDs was an estimated 10 million square meters in 2020, but it is expected to double to 20 million square meters in 2025 and 30 million square meters in 2030 (see graph below).

Unit: 10K ㎡



Changes in print demand for OLED (Year 2020/2025/2030)

As for OLED applications, demand is split between TV and smartphone applications (around five million square meters each in 2020). As mentioned earlier, the demand for OLEDs is expected to increase significantly in both applications in the future due to population growth in emerging countries, and demand for OLEDs in other applications (notebook PCs, tablet PCs, gaming PCs, and other IT monitors) is also expected to grow.

OLED manufacturing methods can be broadly classified into vapor deposition and inkjet, while both large and small OLEDs are currently produced by vapor deposition. The well-established vapor deposition method can manufacture OLEDs with high resolution and high pixel density, but its installation and operation costs are enormous