



KONICA MINOLTA

Konica Minolta IJ Head for Industrial Applications

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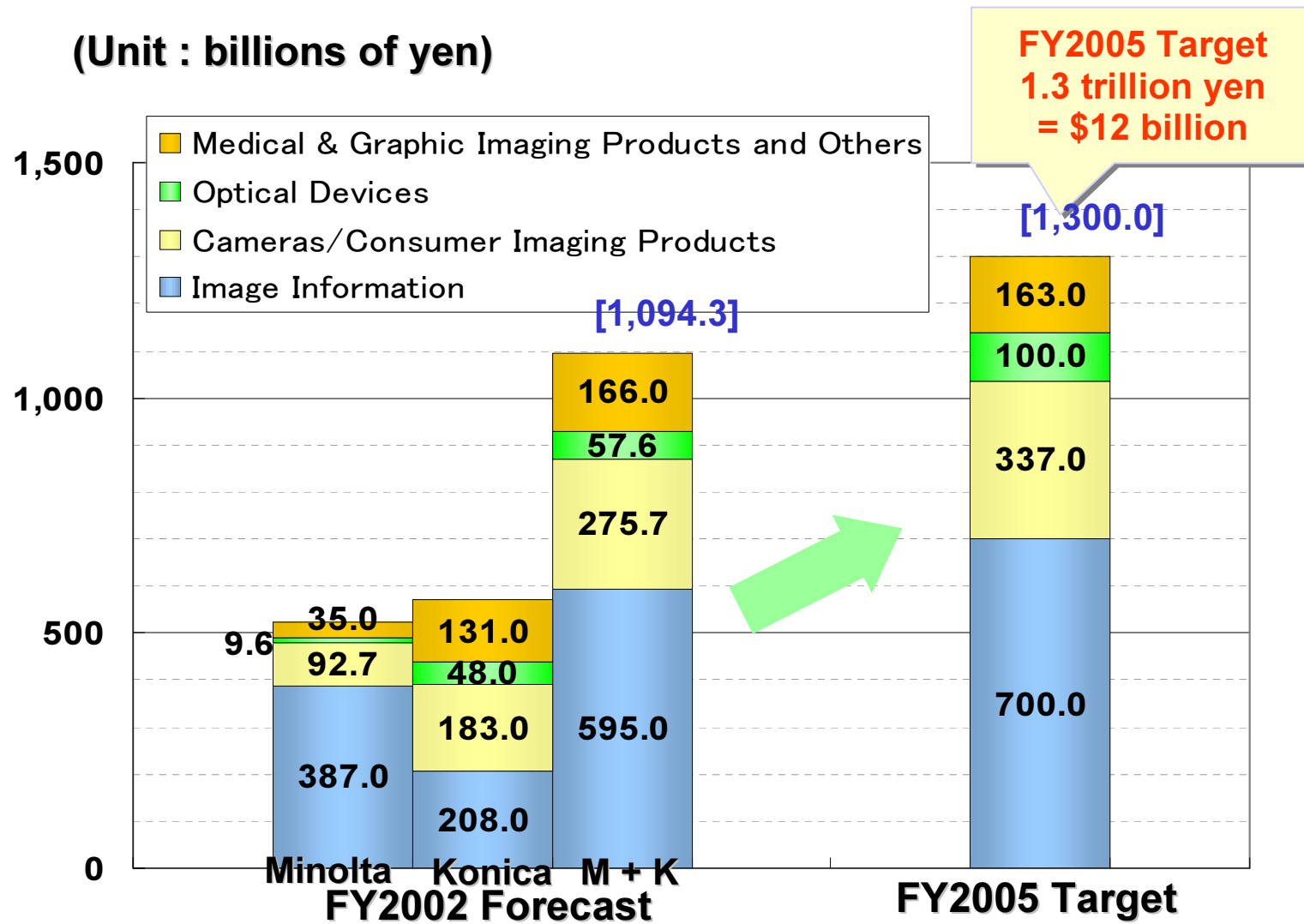
November 11, 2003

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1.1 Konica + Minolta ... Who?



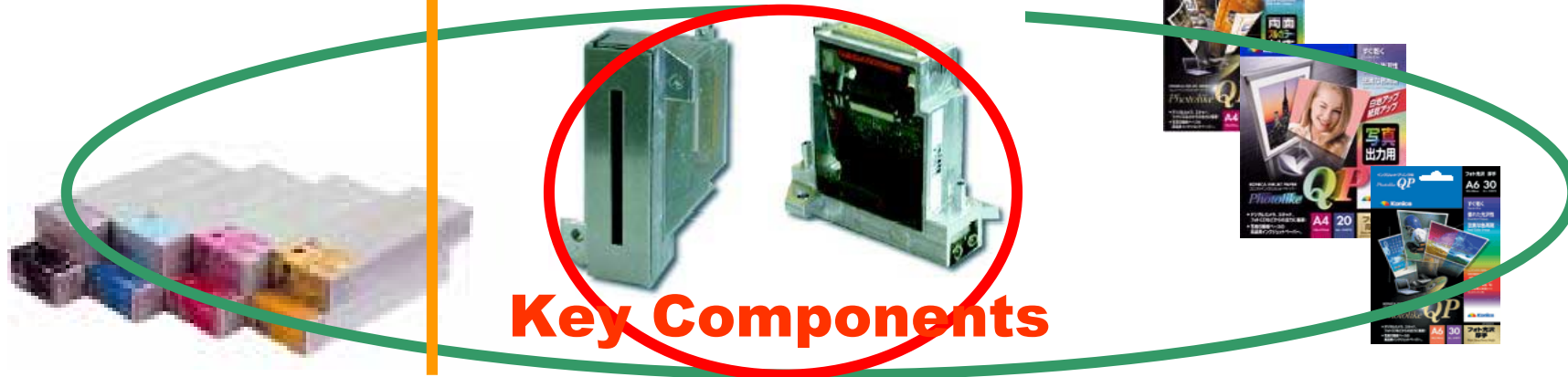
1.2 Konica's Ink Jet History



- '70~'80s Konica once had IJ Technology, but sold out to re-allocate resource
- '95 Started IJ R&D again
- End '90s Micro porous type IJ Media (QP)
- End '90s Shear mode PIEZO Head
- Dec '97 IJ Textile Printer (Nassenger/Stork)
- May '00 IJ Head for OEM supply
- May '01 IJ Wide Format Printer (Prototype)
- Feb '02 IJ Photo Printer (Prototype:PMA 2002)
- 2003~ Business Expansion

1.3 IJ Business Development

Integration



Key Components

2. Head Family

Non-Aqueous Model

Type	nozzle	dpi	ink	pl	KHz	built in Heater		Application
						with	without	
L	512	360	Oil Solvent	42	7.6	X	X	Single-pass
S			UV Special	14	13	(X)	X	Fine print image

X available (X) coming soon

Aqueous Model

Type	nozzle	dpi	ink	pl	KHz			Application	
	64		Aqueous (special)	60				Textile	
	128			7					Special
	256			18					Textile
	512			4					Photo

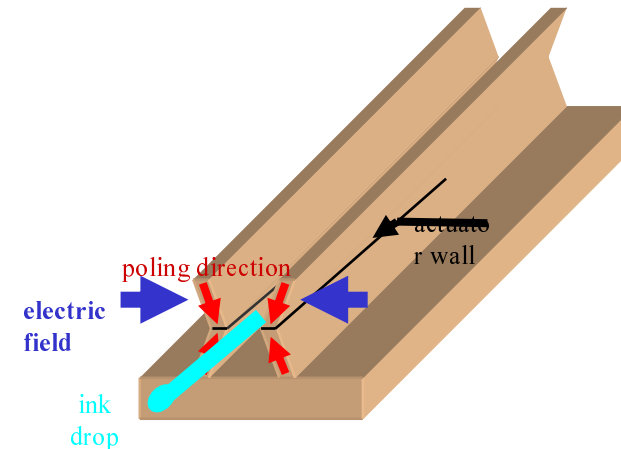
3.1 Non AQ : Common Feature

Non-Aqueous Model

Type	nozzle	dpi	ink	pl	KHz	built in Heater		Application
						with	without	
L	512	360	Oil Solvent	42	7.6	X	X	Single-pass
S			UV Special	14	13	(X)	X	Fine print image

X available (X) coming soon

- Shear mode / Shared wall structure
- 3 Cycle Operation
- 256 x 2 rows = 512 nozzle
- 180 x 2 rows = 360 native dpi
- Built-in Heater
- Built-in Thermistor
- Drop Velocity 6+/-0.5 m/sec
- Driving Voltage 16+/-2 V



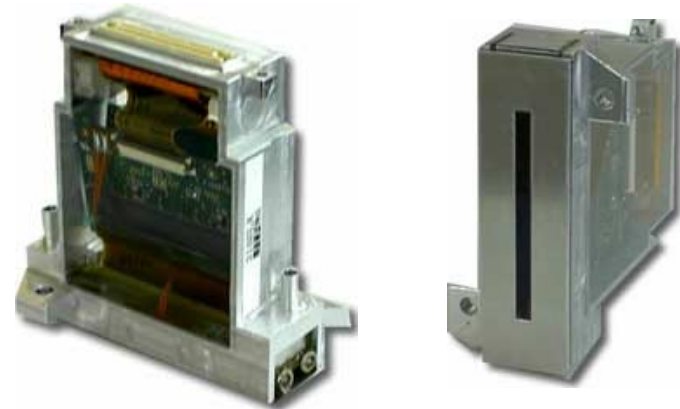
3.2 Common Feature (2)

Non-Aqueous Model

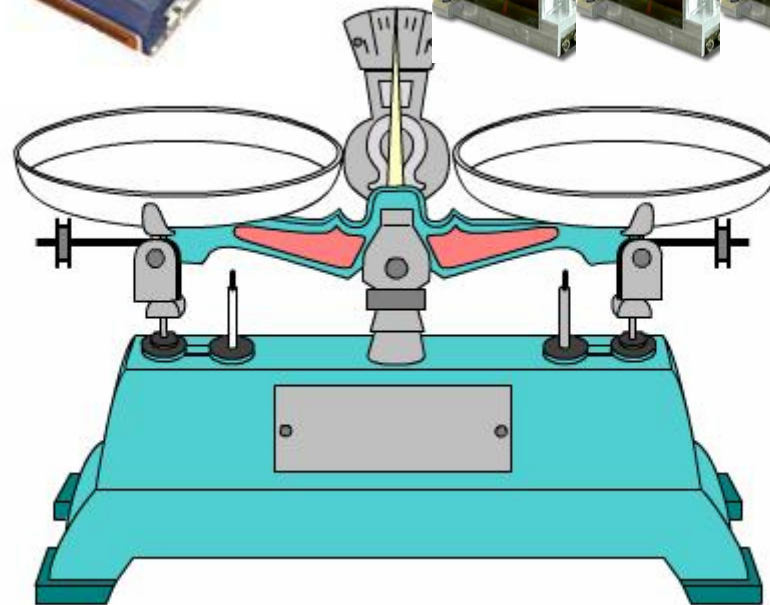
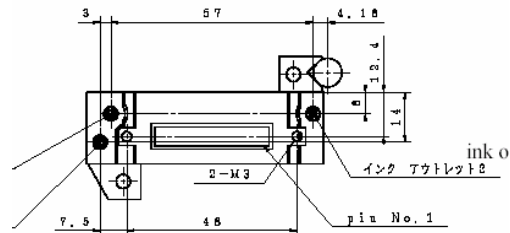
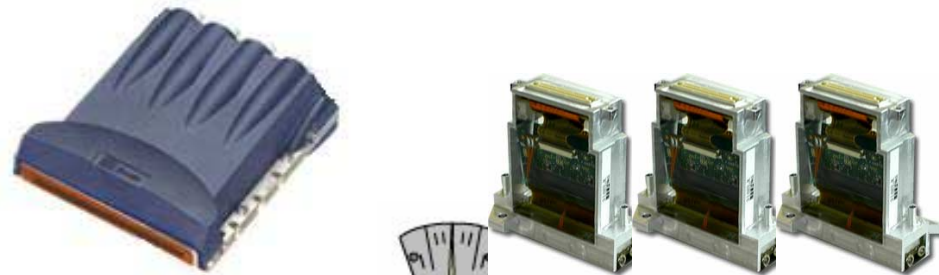
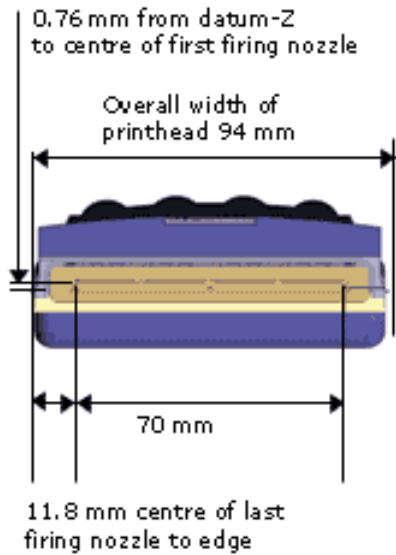
Type	nozzle	dpi	ink	pl	KHz	built in Heater		Application
						with	without	
L	512	360	Oil Solvent	42	7.6	X	X	Single-pass
S			UV Special	14	13	(X)	X	Fine print image

X available **(X)** coming soon

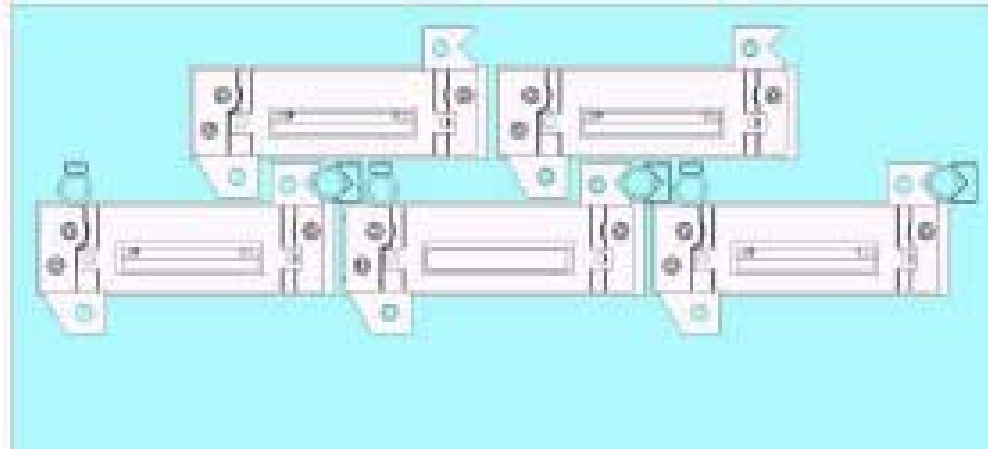
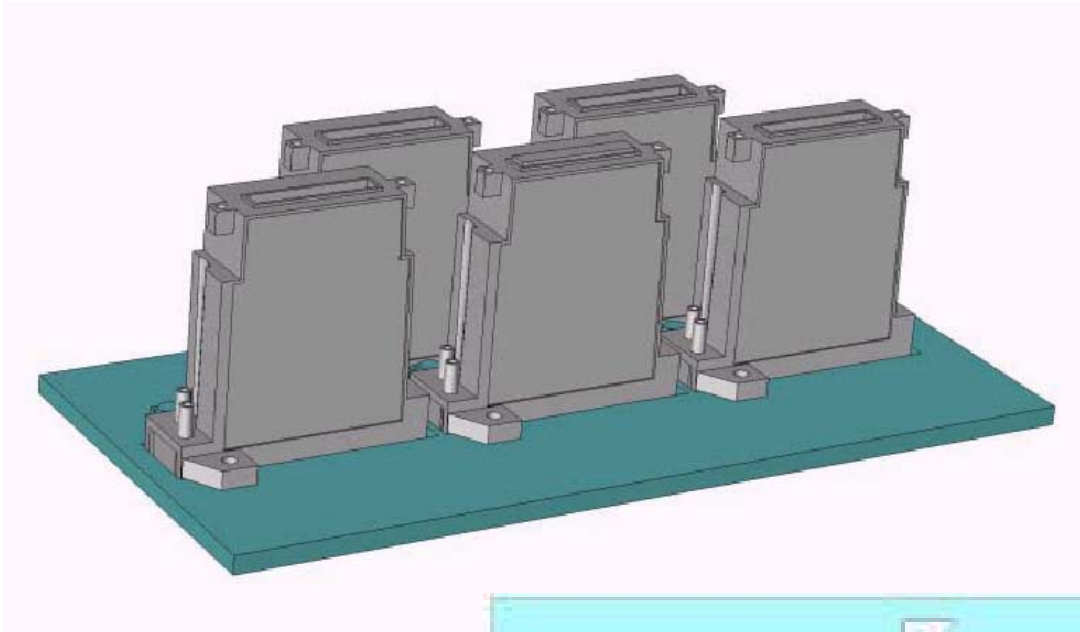
- Universal to ink type
- Native 360 dpi (npi)
- Compact (85x67x20 mm)
- Light (ca.85 g)
- Same Design
- Easy to stitch
- High Drop Placement Accuracy



3.3 Compactness



3.4 Easy to Stitch



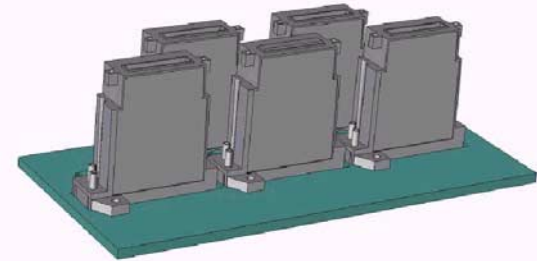
4.1 Type 512L_/LH



Non-Aqueous Model

Type	nozzle	dpi	ink	pl	KHz	built in Heater		Application
						with	without	
L	512	360	Oil Solvent	42	7.6	X	X	Single-pass
S			UV Special	14	12.8	(X)	X	Fine print image

- Ideal for **Single-pass** print
 - Coding/Marking
 - Industrial
- (Outdoor) Signage



4.2 Type 512S_/SH

Non-Aqueous Model

Type	nozzle	dpi	ink	pl	KHz	built in Heater		Application
						with	without	
L	512	360	Oil Solvent UV Special	42	7.6	X	X	Single-pass
S				14	12.8	(X)	X	Fine print image

- Fine Image Quality (Smaller Drop Size)
- Higher Driving Frequency
- (Indoor) Signage
- Industrial
 - where small drop size required

5.1 Assisting Tool

Head Evaluation Electronics

Specifications

Available head: 512/ 128 nozzle series
Image data bit : Binary or 2 bit (1/2/3 dpd)
Drive method : Separate / 3 cycles
Controllable heads: 4 print heads
Image data memory: 256 Mbytes
Interface to PC: LVDS / USB
Data transfer rate: 4.7 Mbytes/s (LVDS)
1.5 Mbytes/s (USB)
PC OS : Windows 2000
Multi purpose I/O: Each 4 bits
Power supply voltage: 24V 2A and 5V 2A



System Configurations

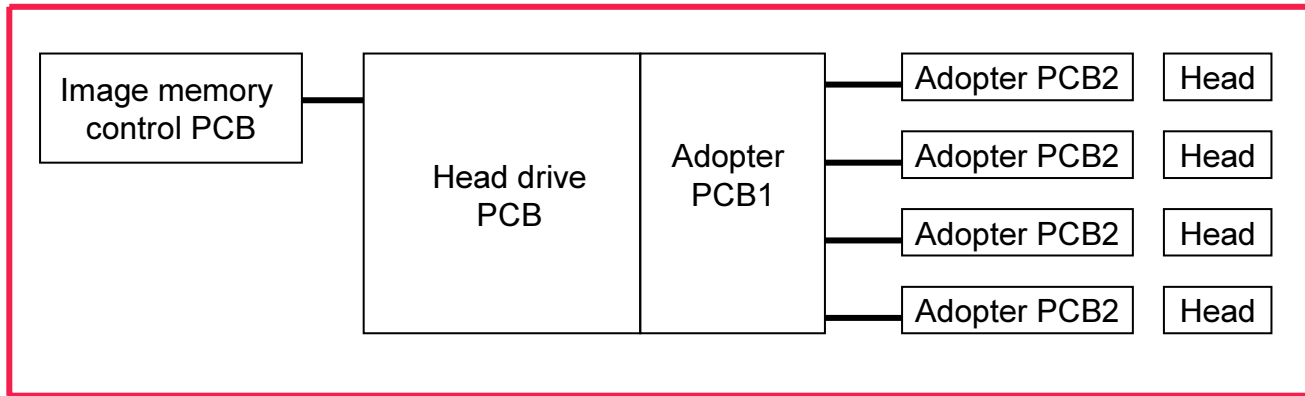
- PC I/F board (for LVDS)
- Memory board
- Head drive board
- Head adaptor board
- Application software

5.2 Assisting Tool (2)

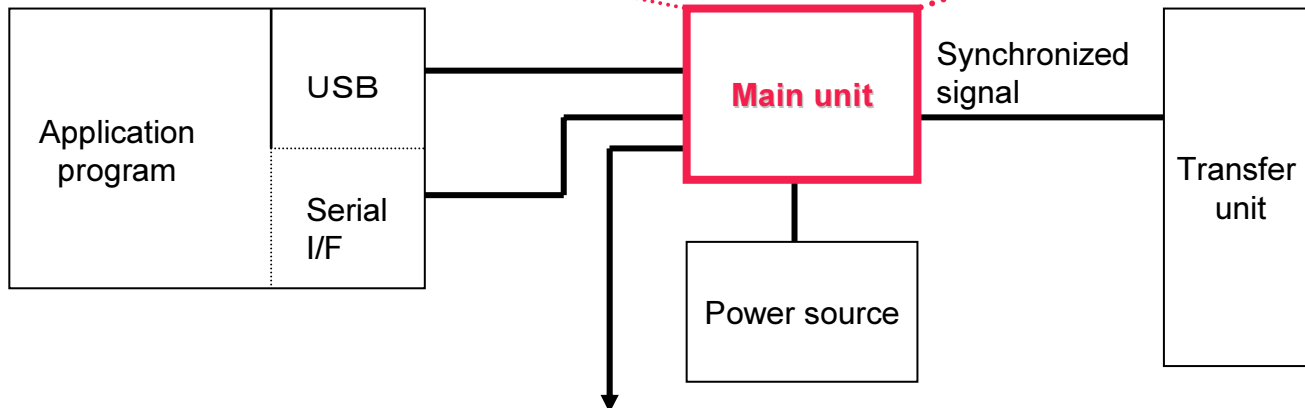
System Block Diagram

Preliminary

Main unit



System diagram



6. Future Direction / Strategy

- Universal to ink type
- Single-pass oriented / Easy to stitch
- Compact

- Gray Scale
- More Nozzle
- Aqueous
- Smaller Drop



KONICA MINOLTA

7. Our Strength

- **Knowledge in Chemistry**
 - For 130 years as a player in Photo (Chemical) Industry
 - Chemists support Head Development
 - Ink Handling / Material Compatibility
 - Adhesive Development
 - Chemists support Head Customers / Ink Partners
- Head / Ink / Media / Printer System in One Hand
 - Internal Collaboration
 - Quick Feed Back to Head Development
- ISO9001
- Quality “**Made in Japan**”