1. Introduction
   1. Konica Minolta … Who ?
   2. Konica’s IJ History
2. Head Family
3. Non-Aqueous Model : Common Feature
4. Non-Aqueous Model
   1. Large Drop : Single-pass capable
   2. Small Drop : Fine Image Quality
5. Assisting Tool
6. Future Direction
7. Our Strength
1.1 Konica + Minolta ... Who?

(Unit: billions of yen)

FY2005 Target
1.3 trillion yen
= $12 billion
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

<table>
<thead>
<tr>
<th>Type</th>
<th>nozzle</th>
<th>dpi</th>
<th>ink</th>
<th>pl</th>
<th>KHz</th>
<th>with</th>
<th>without</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>512</td>
<td>360</td>
<td>Oil Solvent UV Special</td>
<td>42</td>
<td>7.6</td>
<td>X</td>
<td>X</td>
<td>Single-pass</td>
</tr>
<tr>
<td>S</td>
<td>14</td>
<td>13</td>
<td></td>
<td>(X)</td>
<td></td>
<td></td>
<td></td>
<td>Fine print image</td>
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</table>

*X available (X) coming soon*

## Aqueous Model

<table>
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<tr>
<td>64</td>
<td>60</td>
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<td>Aqueous</td>
<td>7</td>
<td>18</td>
<td>Textile</td>
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<tr>
<td>128</td>
<td>7</td>
<td></td>
<td>(special)</td>
<td>4</td>
<td></td>
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</tr>
<tr>
<td>256</td>
<td>18</td>
<td></td>
<td>(special)</td>
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<td></td>
<td>Textile</td>
</tr>
<tr>
<td>512</td>
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<td></td>
<td>Aqueous</td>
<td></td>
<td></td>
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3.1 Non AQ : Common Feature

Non-Aqueous Model

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<td>S</td>
<td>180</td>
<td>360</td>
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- 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

X available (X) coming soon
### 3.2 Common Feature (2)

#### Non-Aqueous Model

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

*X available (X) coming soon*
3.3 Compactness

0.76 mm from datum-Z to centre of first firing nozzle

Overall width of printhead 94 mm

70 mm

11.8 mm centre of last firing nozzle to edge

Diagram showing dimensions and components.
3.4 Easy to Stitch
### 4.1 Type 512L_/LH

**Non-Aqueous Model**

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<td>12.8</td>
<td>(X)</td>
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- Ideal for **Single-pass** print
  - Coding/Marking
  - Industrial
- (Outdoor) Signage
### 4.2 Type 512S_/SH

#### Non-Aqueous Model

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- 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

**Main unit**

- Image memory control PCB
- Head drive PCB
- Adopter PCB1
  - Adopter PCB2
  - Head
  - Adopter PCB2
  - Head
  - Adopter PCB2
  - Head

**System diagram**

- Application program
- USB
- Serial I/F
- Main unit
- Synchronized signal
- Transfer unit
- Power source
6. Future Direction / Strategy

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

- Gray Scale
- More Nozzle
- Aqueous
- Smaller Drop
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”