Inkjet Textile Printing
History - Today – Tomorrow
Keys for Success to be real industry

KonicaMinolta IJ Technologies
Managing Director : Akiyoshi Ohno
1. IJ Textile Printer is finally taking off
   1. Market is cultivated by Entry Models
   2. Players are increasing / Application is expanding
   3. ITMA Quick Review

2. Now, Higher Productivity / Reliability is required
   1. Sophisticated Modification of Entry Models
   2. Realistic Mid-range Machines
   3. High-end Attempt

3. Challenges / Keys for Success
   1. Consistency vs. Collaboration (Patch work?)
   2. Confusion: Some hints to predict the next step
   3. Real Industrial Aqueous Head

4. KonicaMinolta’s Position / Approach
   1. Commitment / Consistency
   2. Reliability
   3. Safety Conscious
   4. Open Policy
History Overview

HIGH

MID

LOW

PAST

NOW

NEXT

REGGIANI

Locally Modified

STORK

STORK

MUTOH

Konica

ColorSpan

Mimaki

ENCAD

d-gen

Mimaki

KONICA MINOLTA

DUPONT

KONICA MINOLTA

KONICA MINOLTA

HIGH

MID

LOW

PAST

NOW

NEXT
History Review : Past

1. Early Attempt : ENCAD / ColorSpan
   1. Limitation of Thermal Head (?)
   2. Too Early ?
   3. Too small return to cover the resource required ?

2. Past : MIMAKI as a “Market Cultivator”
   1. More than 1,500 units was shipped
   2. Most of them were modified by Partner / End User
   3. Opened Market for “Third Party Ink Suppliers”
   4. Opened Market for “Local Modification Provider”
   5. People learned “IJ Textile Printing Business”

3. Past (2) : MUTOH / Roland
   1. Similar Situation with MIMAKI
Positioning: Realistic Mid-range

Performance

20 – 60 m²/hour

1,500 – 5,000 m²/month

Euro 150k – 250k

Price
History Review: Today

1. Low End (Entry Models)
   1. MIMAKI (Mutoh/Roland as well) try to recover position
   2. STORK / D-Gen: Sophisticated Modification Providers

2. Realistic Mid-range: Most Asked
   1. DuPont “Artistri”: Ink Vendor Driven
   2. Robustelli “MonnaLisa”: Joint Effort Driven (or EPSON)
   3. KonicaMinolta “TP-V”: IJ Technology Supplier Driven

3. High End
   1. REGGIANI “DReAM”
ITMA Asia : Quick Review

• Nothing Exciting
• Honghua ( Hanzhou / China ) VEGA
  – Ricoh Head ( not confirmed )
  – DyStar Ink
• Mid / High range Machine Manufacturers : Quiet
  – REGGIANI : Video Exhibition
  – KonicaMinolta : Poster Exhibition
  – DuPont / Robustelli : Not Exist
• Still many MIMAKI / Roland / Mutoh modified Machines
  – D-Gen
  – STORK
  – Yuhan-Kimberly
  – A-Tex
# Technology Consistency vs. Collaboration

<table>
<thead>
<tr>
<th>VENDOR</th>
<th>PRINTER</th>
<th>HEAD</th>
<th>INK</th>
<th>OPEN POLICY</th>
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<tbody>
<tr>
<td>Robstelli</td>
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<td>EPSON</td>
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<tr>
<td>REGGIANI</td>
<td>REGGIANI</td>
<td>SCITEX VISION</td>
<td>Ciba</td>
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<td>Mimaki</td>
<td>Mimaki</td>
<td>EPSON</td>
<td>(Original)</td>
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<td>(Local)</td>
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<tr>
<td>d·gen</td>
<td>Roland</td>
<td>EPSON</td>
<td>(Original)</td>
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<td>(Local)</td>
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<tr>
<td>STORK</td>
<td>MUTOH</td>
<td>EPSON</td>
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Confusion: Hints to the Next Step

1. Why Modified MIMAKI (Roland/Mutoh) so popular?
   1. Because … They use Aqueous capable EPSON head
   2. Because … They are (have been) generous for modification
   3. Third Party Ink Vendors are happy. Market is activated
   4. Is MIMAKI (who invested R&D for the machine) happy?
   5. Is EPSON (who expects Ink Revenue) happy about it?

2. Why EPSON Allied with Robustelli?
   1. Because … EPSON wished to sell their ink more
   2. Isn’t it a competitive activity against EPSON head users?
   3. Is MIMAKI happy about it?

3. How could M/R/M keep motivation to develop the next model,
   1. if They could not get enough profit from their own ink?
   2. if Modification Providers offered better machines than their Original?

4. If M/R/M lose motivation, how can their Dependents survive?
## Background: Open or Closed?

<table>
<thead>
<tr>
<th>Open</th>
<th>OFFSET</th>
<th>Independent Printing Machine Maker</th>
<th>Independent Printing Plate Maker</th>
<th>Independent Offset Ink Supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Many Players</td>
<td>SCREEN</td>
<td>Independent Printing Machine Maker</td>
<td>Independent Screen Maker</td>
<td>Independent Screen Ink Supplier</td>
</tr>
<tr>
<td>100 + years</td>
<td>SCREEN TEXTILE</td>
<td>Independent Printing Machine Maker</td>
<td>Independent Screen Maker</td>
<td>Independent Printers' Own Ink Kitchen</td>
</tr>
<tr>
<td>Closed</td>
<td>HOME INKJET</td>
<td>CLOSED SYSTEM</td>
<td>Printer Maker provide/protect its own Ink</td>
<td></td>
</tr>
<tr>
<td>Few Dominants</td>
<td>OFFICE PRINTER(EP)</td>
<td>CLOSED SYSTEM</td>
<td>Printer Maker provide/protect its own Toner</td>
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</tr>
<tr>
<td>20 + years</td>
<td>TEXTILE INKJET</td>
<td>?</td>
<td>Third Party Consumables</td>
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Tomorrow: Prediction or Suggestion

• More WFP Printer Manufacturers will join the market, at first with Flag/Banner (Soft Signage) Application and then ...

• In order to make “IJ Textile Printing” real industry …

1. Let Head Vendors to develop “a real aqueous capable industrial IJ Head” and return them a due share (Maybe “Ink Royalty”)

2. Let Printer Manufacturer(s) survive … otherwise, all Dependents have no chance to survive

3. Let Printer Manufacturer take Leadership
   1. IJ Head, Ink, Software, Options are important, however they are not more than “building blocks”
   2. IJ Printer Manufacturer, as a General Constructor, should be responsible for the total performance and should receive a due (or biggest) share to re-invest it for the next machine

4. Let Printer Manufacturer open its door for the technology partners
About Konica Minolta’s Printer
1. **Commitment / Consistent & Independent / Real Industrial**
   1. Commit ourselves to the market and industry
   2. Own technology: Aqueous Capable Head / Ink / …
   3. Ink: Reactive / Disperse / Acid: YMCK + Spot Colors

2. **“Realistic” Mid-range = Reliability**
   1. Ink Misfire detection
   2. Belt Transport

3. **Safety Conscious: Working Environment**
   1. Ink Safety
   2. No Solvent required to maintain Transport Belt sticky

4. **Open Policy**
   1. Options
   2. Software
   3. Ink ..
   4. Geographic Market
Ink: High Performance & Safety

Solidità Inchiostri

Dispersi
Colore Testato
Luce
Lavaggio
Sudore
Stregamento
Giallo 70+ 70+ 70+ 70+
Magenta 70+ 70+ 70+ 70+
Cyan 70+ 70+ 70+ 70+
Nero 70+ 70+ 70+ 70+

Reattivi
Colore Testato
Luce
Lavaggio
Sudore
Stregamento
Giallo 4 4 3 4
Magenta 4 4 3 4
Cyan 4 4 3 4
Nero 4 4 3 4

KONICA MINOLTA
Ink A
Ink B

Y M C Bk Y M C Bk Y M C Bk

Ames test
N N N N P P P P P N P P

N: Negative P: Positive
• First, Consistency
• Then, Open Policy
  • Options
  • Software
  • Ink ..
  • Geographical Market
720 dpi Single-pass unit (Prototype)
Unique Inks: Function & Safety Conscious

- Cationic UV ink
- Aqueous UV ink
- Aqueous based “Non-Curl/Non-Cockling” ink