# Production Inkjet – The Market, Technology, and Pigments

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# Content

- Market trends and Omya's focus
- Technology
- Pigment solutions



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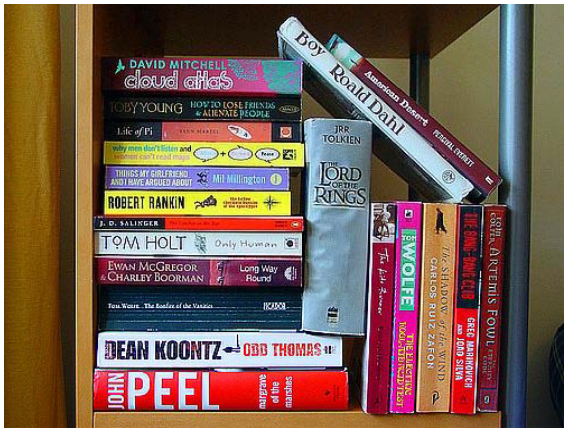
# Future Outlook for the Publishing Industry

## Traditional paper media




- Printed on paper substrate
- High volume print jobs

## Digital paper media


- Print on-demand on paper substrate
- Personalization
- Variable data printing
- Target marketing

## Electronic media


- Electronic books
- Electronic news papers
- Electronic advertising
- “Substrate” laptop, tablets, smart phones…



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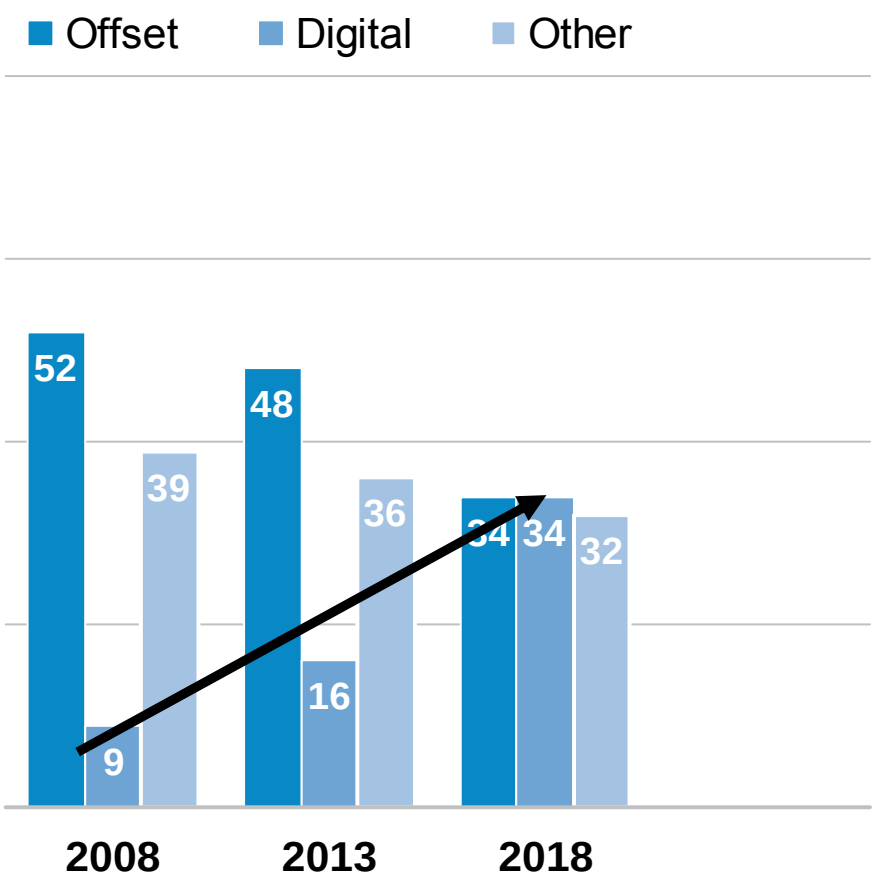
# Development of Digital Printing

Market share of various printing processes based on revenue (source PIRA)




## Drivers for digital printing

- Low TCO (total cost of ownership)
- Low cost of entry
- Sustainability
- Various business models
  - Transpromo
  - Multi channel marketing
  - On-demand printing
  - Etc…



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# One Business Model - Transpromo

## From transactional document to transpromotional communication

Traditional statement → Transpromo statement



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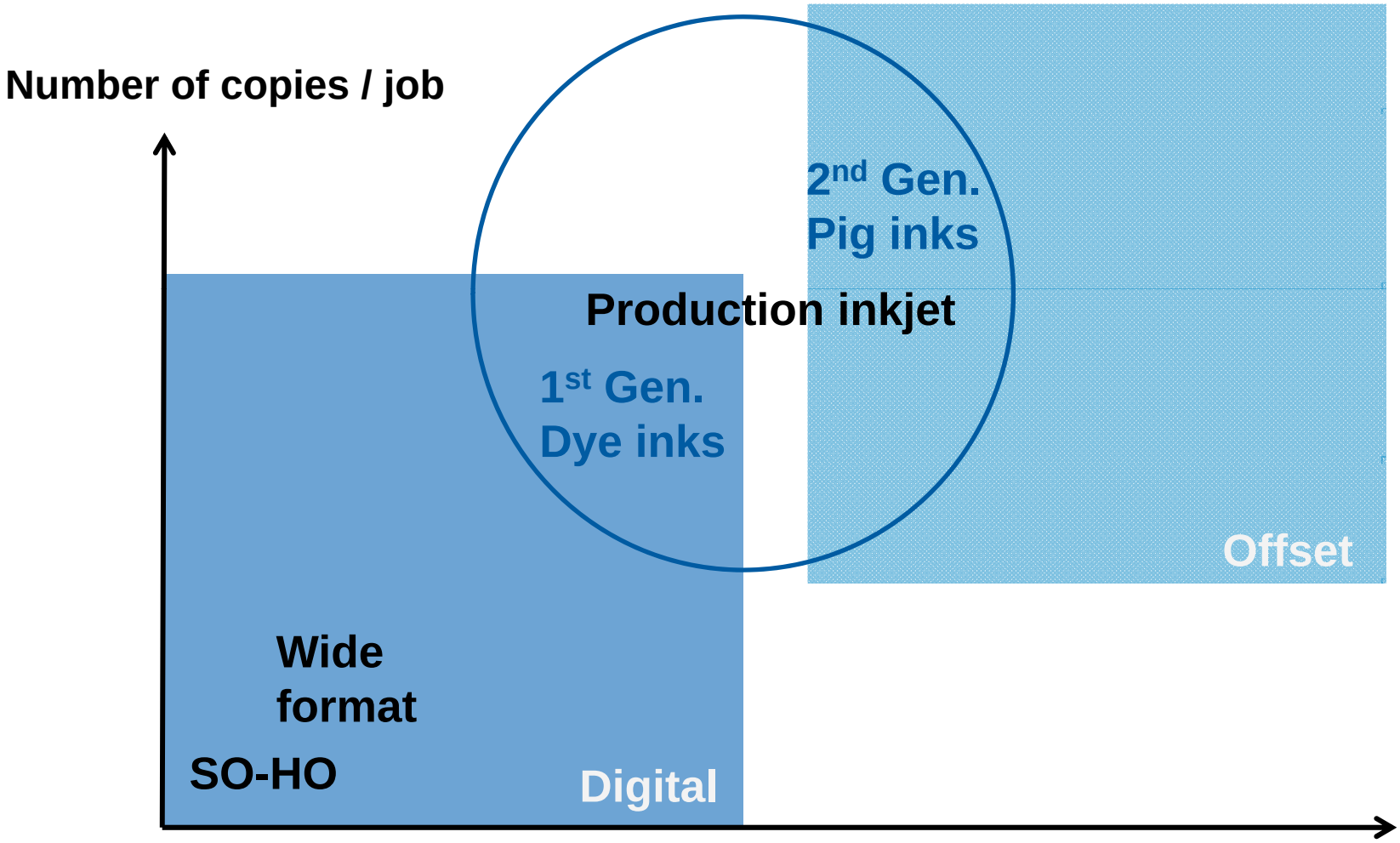
# Positioning of Inkjet Printing and Omya's Focus



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# Production Inkjet – High Speed Presses

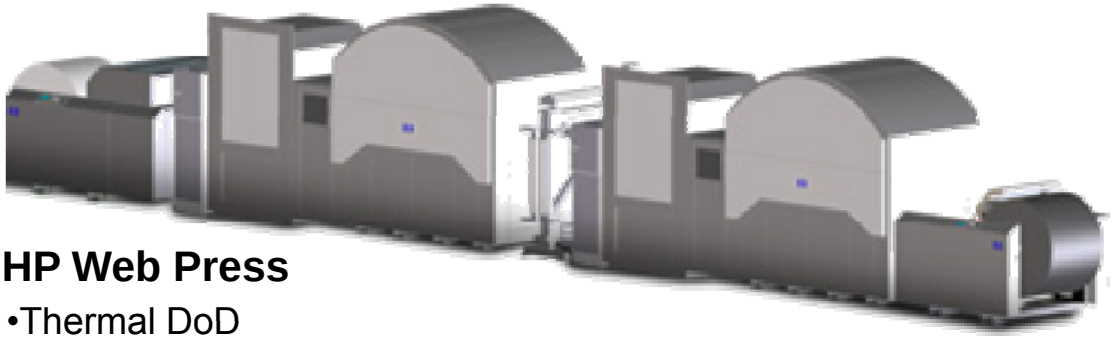
## New technology of inkjet web printing

**Kodak Stream**

- CIJ
- Pigmented inks

**Océ Jetstream**

- Piezoelectric DoD
- Dye based inks



**HP Web Press**

- Thermal DoD
- Pigmented inks
- Bonding agent





*Source: www.kodak.com; www.hp.com; www.oce.com*

# Paper Requirements for Production Inkjet

- **1st generation** (dye inks)
  - Cationic surface
  - Medium absorption capacity
- **2nd generation** (pigmented inks)
  - Functional coating required
  - Low to medium absorption capacity
- **Pigment solutions**
  - Omyajet® 5000 for 1st generation
  - New pigment solution being developed for 2nd generation

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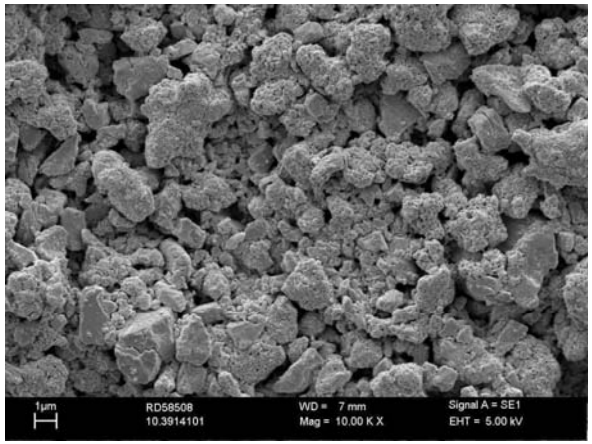
# Pigment Requirements for Production Inkjet – Omyajet® 5000

- Simple formulation
- Excellent runnability
- On-line single coated
- High solids content
- Excellent rheology
- Low binder demand
- Superior cost / performance
- Excellent b/w and color printability with dye inks
  - → **Omyajet® 5010 FL** (50 % solids)
  - → **Omyajet® 5020 ME** (60 % solids)
- Fills gap between surface treated & specialty inkjet grades

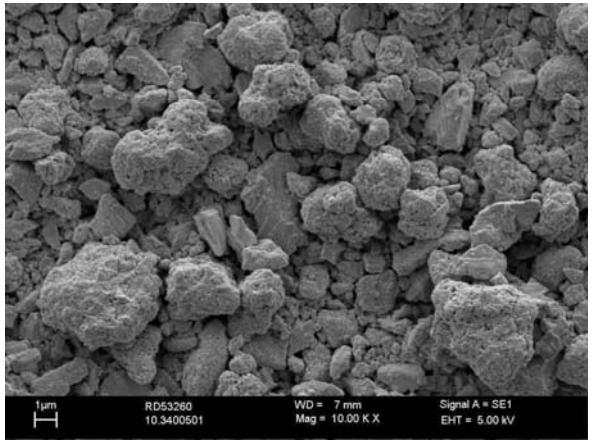
# Development Status of Omyajet® 5010

- **Omyajet® 5010 50 % FL**
  - Commercially available, produced in Vermont
  - 50 % solids
  - MCC technology
  - Cationically dispersed
  - Model formulation for dye inks:
    - 5…7 pts PVOH
    - 0…3 pts Starch
    - 3…5 pts P-DADMAC (Cationic additive)
  - MSP / Blade coating



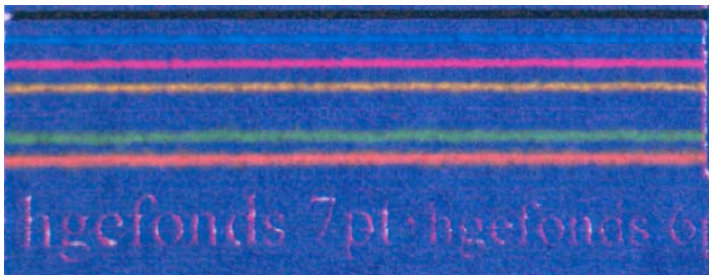
# Development Status of Omyajet® 5020

- **Omyajet® 5020 60 % ME**
  - Commercially available, produced in Norway
  - 60 % solids
  - MCC technology
  - Anionically dispersed
  - Model formulation for dye inks:
    - 3…5 pts PVOH
    - 0…3 pts Starch
    - 5…7 pts P-DADMAC (Cationic additive)
  - MSP / Blade coating

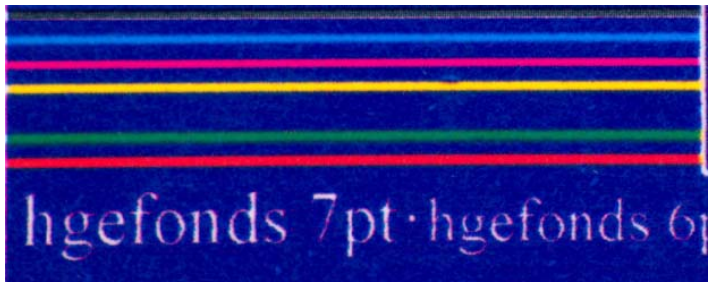


# Application Example Using Omyajet® 5000

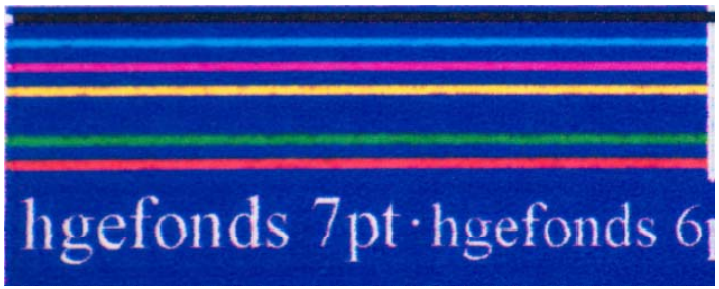
## Image analysis printed with OCE Jetstream (dye based inks)




- **Coated offset paper**
  - Lack in absorption volume → bleeding, mottling
  - Anionic surface → poor optical density, no water fastness

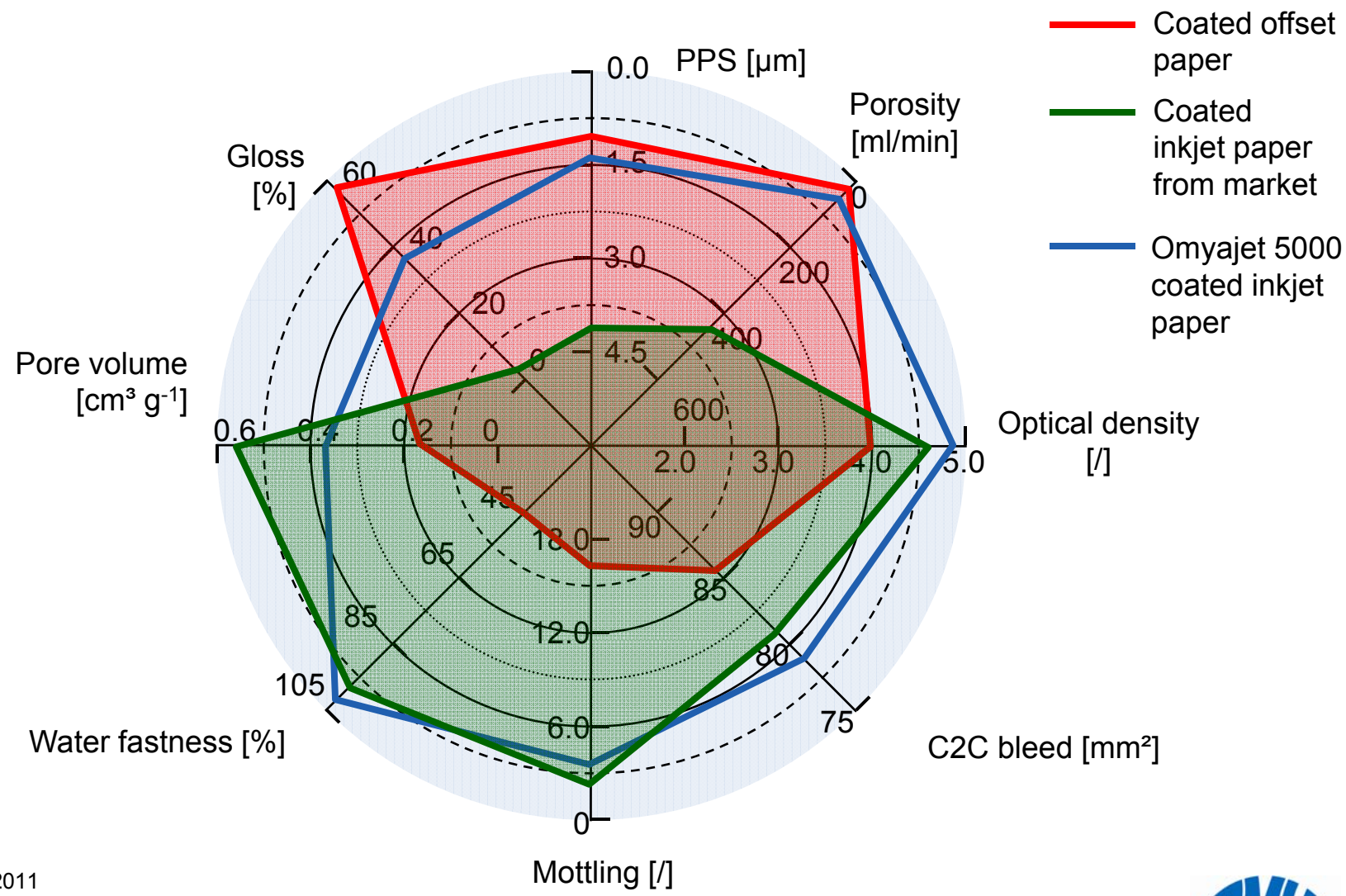



- **Coated inkjet paper from market**
  - 100 pts Silica pigment
  - 20…40 pts PVOH binder
  - 20…30 % coating solids




- **Omyajet 5000 coated inkjet paper**
  - 100 pts $CaCO_3$ pigment
  - < 5 pts of binder
  - 50 % solids

# Omyajet® 5000 Approach for Coated Inkjet Paper



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# Thank you for your attention!