



Deinking results on a range of papers with HP Color Inkjet Web Press

Dr. Nils Miller, HP

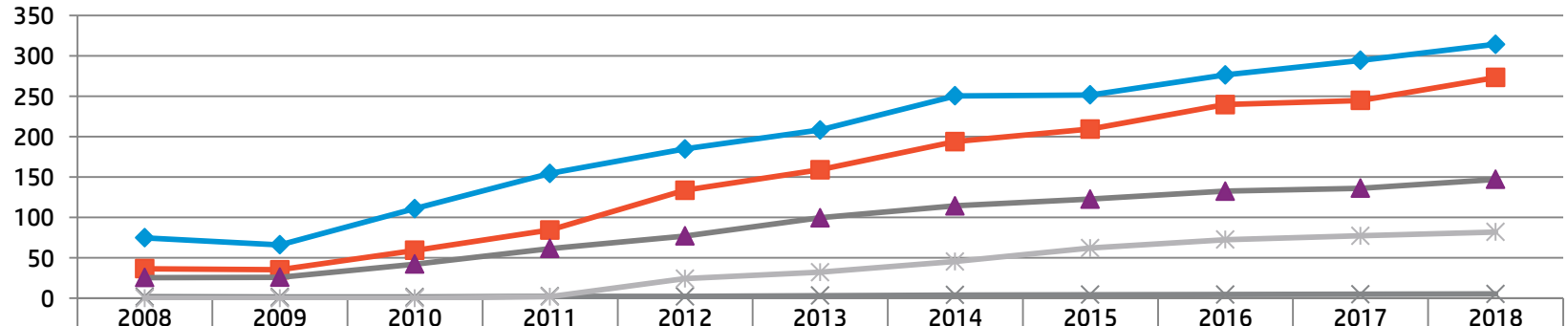
Commercial and Industrial Ink & Platform R&D

Dr. Silke Courtenay, HP

Media R&D

Production IJ Engine Sales by Dominant Application Use

(I.T. Strategies data, used by permission)



Transaction	75	66	111	155	185	208	251	252	276	294	314
Direct Mail	37	35	59	85	134	159	194	209	240	245	273
Books	26	26	42	62	77	100	114	123	132	136	147
Newspapers	2	2	2	3	2	3	4	4	5	5	5
Other	0	0	0	2	24	32	45	62	73	77	82

Transaction Direct Mail Books Newspapers Other

About 40% Transaction, 25% Direct Mail, 16% Books



Method 11/ERPC deinkability, coated and uncoated grade inkjet prints

Printed on the HP T-series webpress with HP A50 inks, standard print settings

Media name	Media Weight	description	Customer applications	CMYK vs K only	simplex/duplex	Bonding agent	good/fair/poor/not deinkable	Deinking Score
Sappi Jaz book	67gsm	Coated, wood containing	publishing	CMYK	simplex	no	good	83
Sappi Jaz Silk	115gsm	Coated, wood containing	DM	CMYK	simplex	no	good	98
Sappi Jaz Silk	115gsm	Coated, wood containing	DM	CMYK*	simplex	no	good	100
Sappi Jaz Silk	90gsm	Coated, wood containing	DM	CMYK	duplex	no	good	94
Sappi Jaz book	67gsm	Coated, wood containing	Publishing	CMYK*	simplex	no	good	100
Sappi Jaz gloss	90gsm	Coated, wood containing	DM	CMYK	simplex	no	good	93
Sappi Jaz gloss	90gsm	Coated, wood containing	DM	CMYK	duplex	no	good	94
Mondi DNS enhanced	90gsm	Uncoated, woodfree	Publishing, DM	CMYK	simplex	no	good	79
Crown Digital Silk/Letsgo Silk	90gsm	Uncoated, woodfree	Publishing, DM	CMYK*	simplex	no	good	95
Arjo Wiggins Cocoon Jet Pro	90gsm	Uncoated, recycled	DM	CMYK	duplex	no	good	89
Utopia Inkjet gloss	100# TXT	Coated, woodfree	DM	CMYK	duplex	no	good	86
Utopia Inkjet Book Matte	60# TXT	Coated, woodfree	Publishing/DM	CMYK	duplex	no	good	75
Stora Enso Creamy	70gsm	Uncoated, wood containing	Publishing	CMYK	duplex	yes	good	81



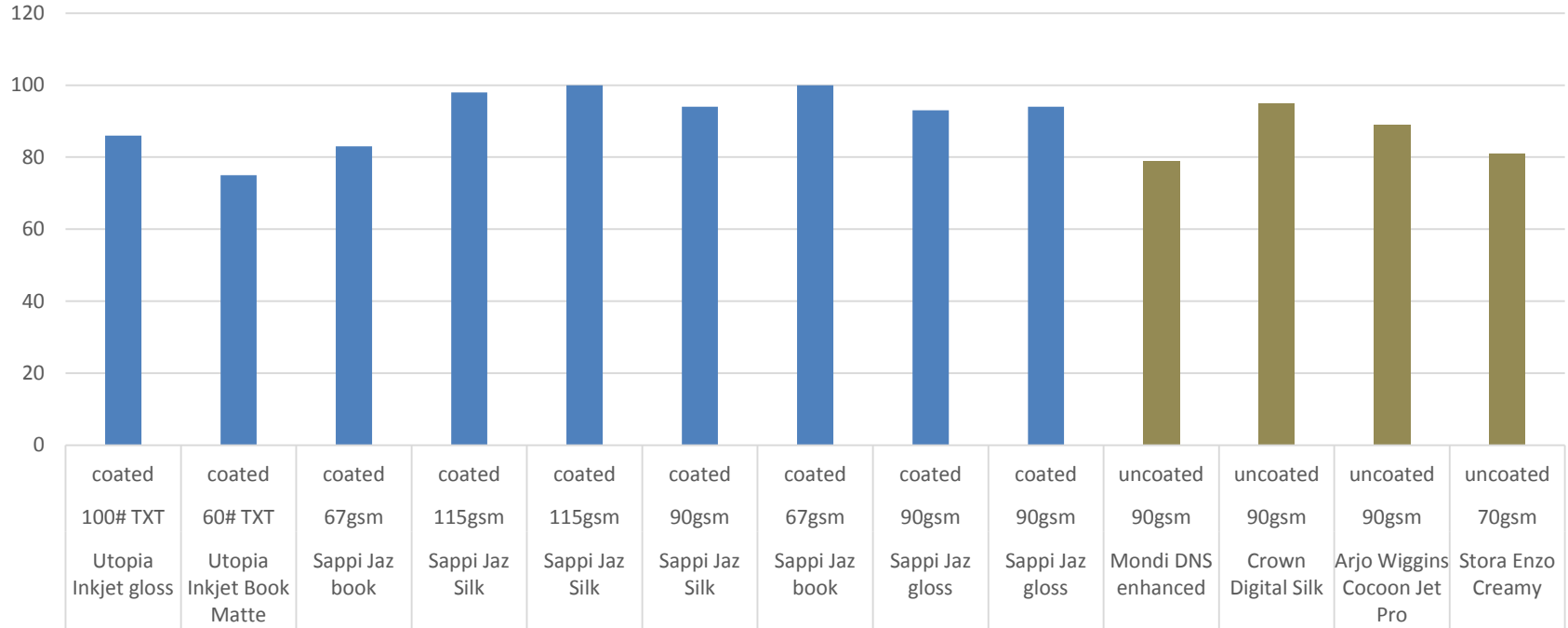
PTS data, Method 11 test image and scores based on Stationery Y>75 except:

*Fogra data, Fogra test image, scores based on magazine uncoated



Coated vs uncoated comparison

Deinking scores coated vs uncoated papers



Generally comparable deinking results



HP internal deinking lab - correlation to PTS results

Samples: Sappi Jaz Silk and Sappi Jaz book, Ingede Method 11

		Y	Y Score	a*	a* Score	A50	A50 Score	A250	A250 Score	IE eric %	IE eric Score	Δ Y	Δ Y Score	Total SCORE	Coated	Simplex/ Duplex
HP	Sappi Jaz Silk	86.8	32/35	0.2	20/20	0	15/15	0	10/10	84	10/10	1.1	10/10	97	Y	Simplex
PTS	Sappi Jaz Silk	87.1	33/35	-1.5	20/20	11	15/15	4	10/10	84.5	10/10	0.3	10/10	98	Y	Simplex
HP	Sappi Jaz Book	78.1	25/35	-1.4	20/20	0	15/15	0	10/10	65	6/10	5.4	10/10	86	Y	Simplex
PTS	Sappi Jaz Book	78.2	25/35	-2.2	16/20	18	15/15	7	10/10	68.1	7/10	2.3	10/10	83	Y	Simplex

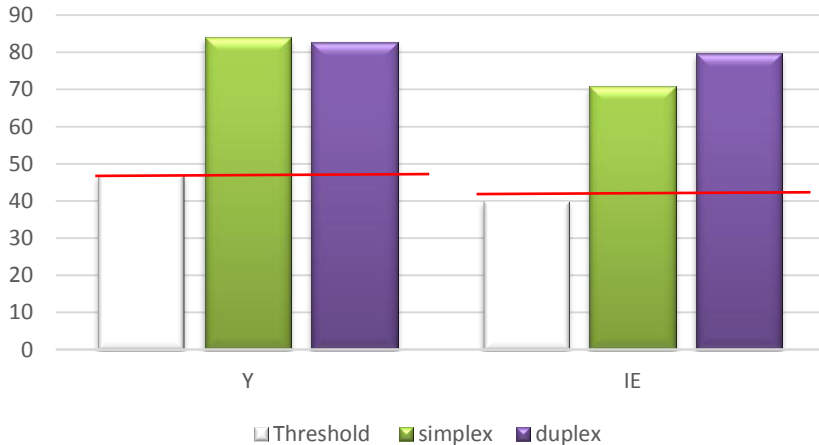
Good correlation exists between HP internal and PTS test labs



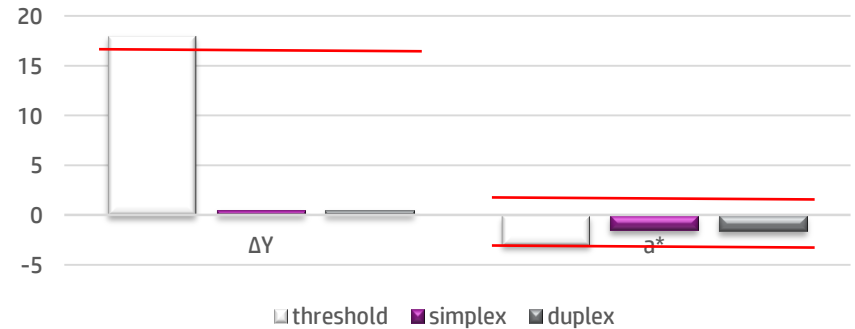
Simplex vs Duplex – influence on deinkability

Sappi Jaz gloss 90gsm, T350 Color Inkjet Web Press, HP A50 inks, Ingede test plot

Simplex vs duplex results for luminosity (Y) and ink elimination (IE)



Simplex vs duplex results for filtrate darkening (ΔY) and a^*

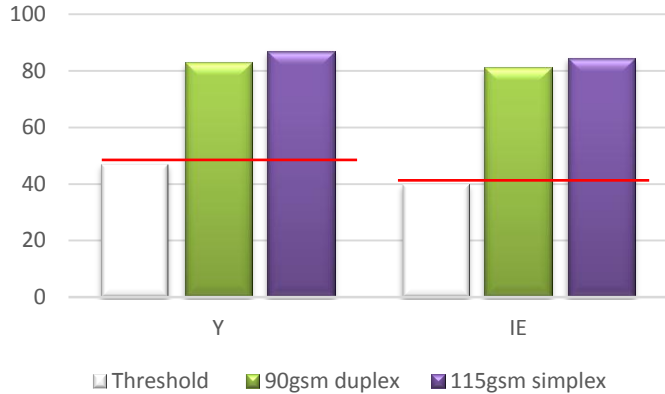


The performance of simplex and duplex papers are comparable for deinking

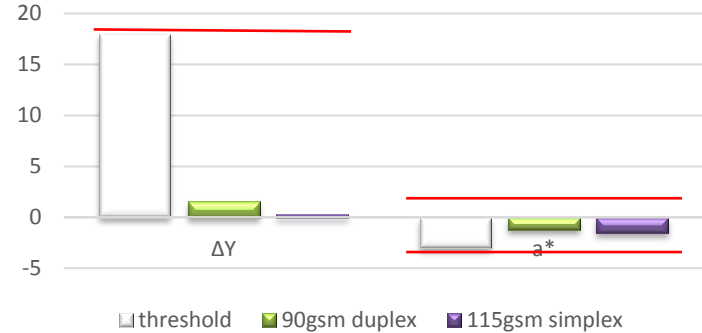
Impact of basis weight

Samples printed on the T350 Color Inkjet Web Press, HP A50 inks, Ingede test plot

90gsm vs 115gsm results for luminosity (Y) and ink elimination (IE)



90gsm vs 115gsm results for filtrate darkening (ΔY) and a^*



Small signal that lower paper basis weight with more ink (duplex) shows slightly worse deinking performance,

Recommendation to always test thinnest grade

Deinking results on a range of papers with HP T-Series Color Inkjet Web Presses



Conclusions

- **Coated vs. Uncoated - Generally comparable deinking results with HP A50 pigmented inks**
 - 2 Wood Free Uncoated papers with good deinkability identified
 - No Bonding Agent 'fixer' used in this set of prints
- **Good correlation exists between HP internal and PTS test labs for Method 11**
- **Simplex vs Duplex - comparable deinking results with HP A50 pigmented inks**
- **Basis weight impacts – lower basis weight may show slightly worse deinkability**
 - Recommendation to test lowest basis weight commercially available