



**Problems with current
paper categories**

Paper categorisation meeting,

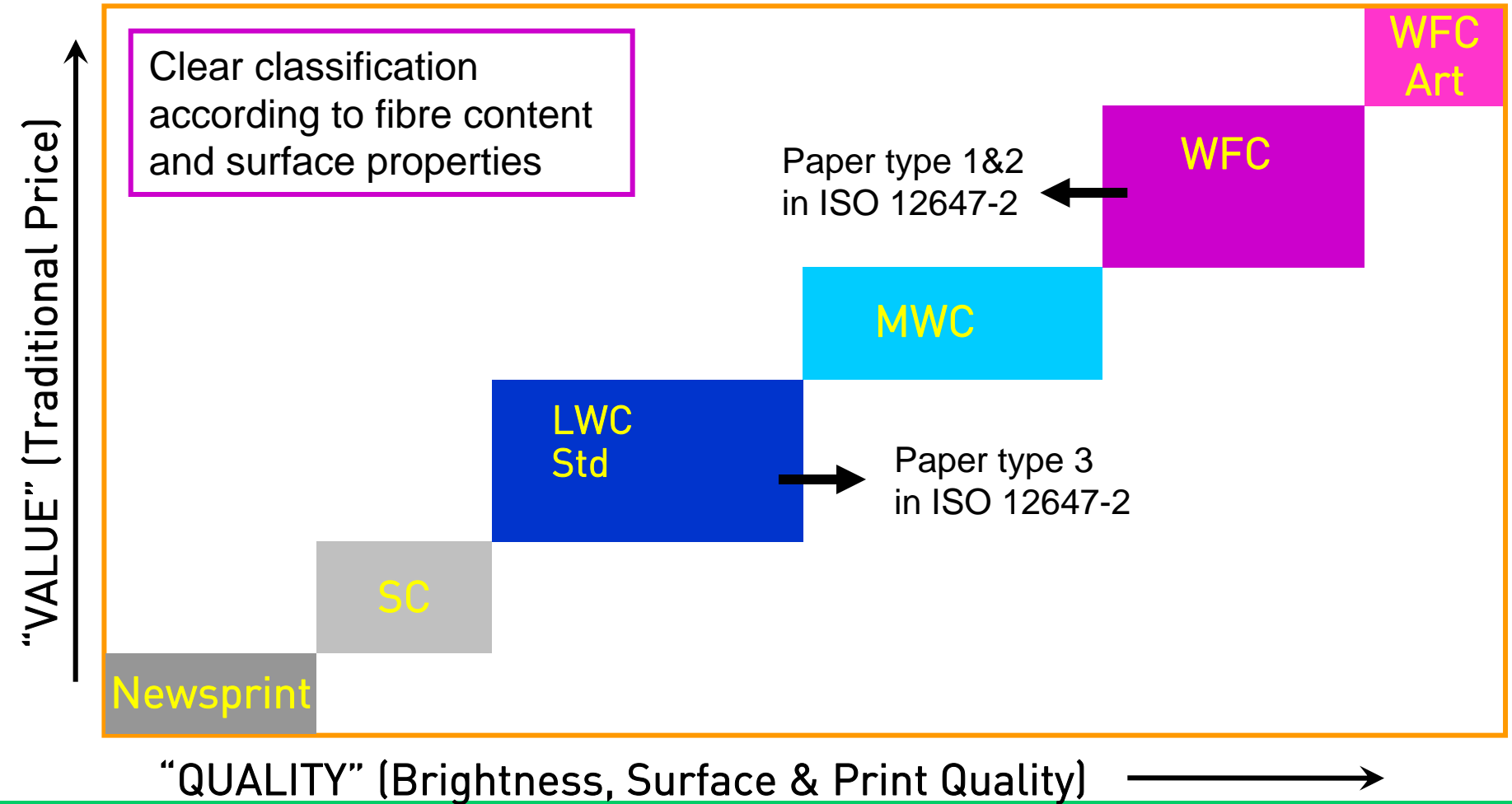
Leeds 15th June 2006

Paper classification in ISO 12647-2

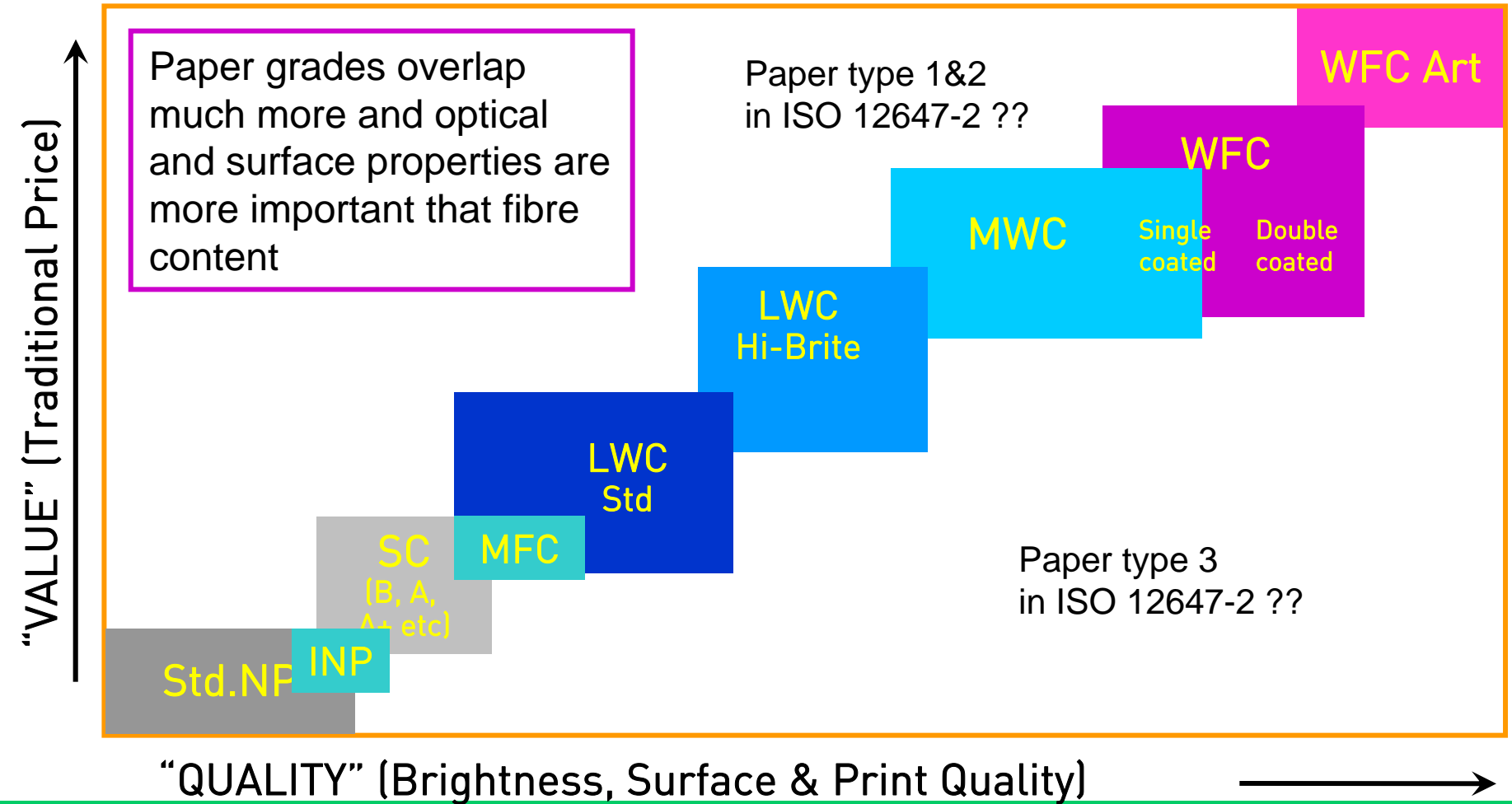
	L^*a	a^*a	b^*a	Gloss ^b	ISO brightness ^c	Mass per area ^d
Paper type	1	1	1	%	%	g/m ²
1: Gloss-coated, wood-free	93 (95)	0 (0)	-3 (-2)	65	89	115
2: Matte-coated, wood-free	92 (94)	0 (0)	-3 (-2)	38	89	115
3: Gloss-coated, web	87 (92)	-1 (0))	3 (5)	55	70	70
4: Uncoated, white	92 (95)	0 (0)	-3 (-2)	6	93	115
5: Uncoated, slightly yellowish	88 (90)	0 (0)	6 (9)	6	73	115
Tolerance	± 3	± 2	± 2	± 5	—	—

- Classification is almost the same in 2004 version as with 1996 version
- Paper world has changed in last 10 years quite a much!

Traditional classification of printing paper grades as in early 90'



Classification of printing paper grades nowadays

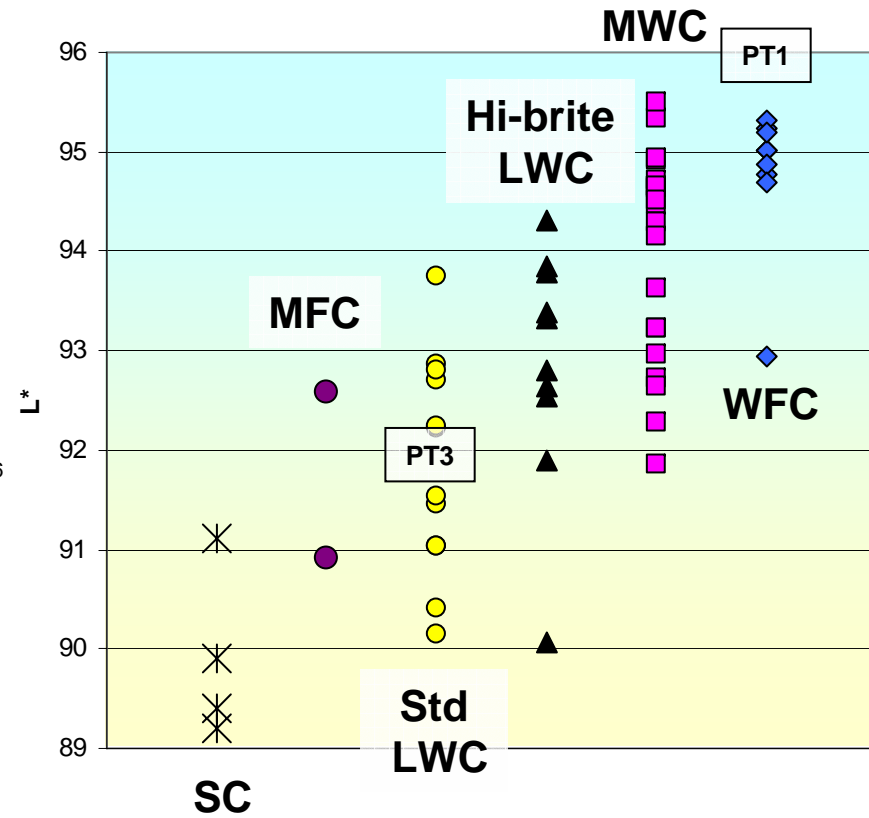
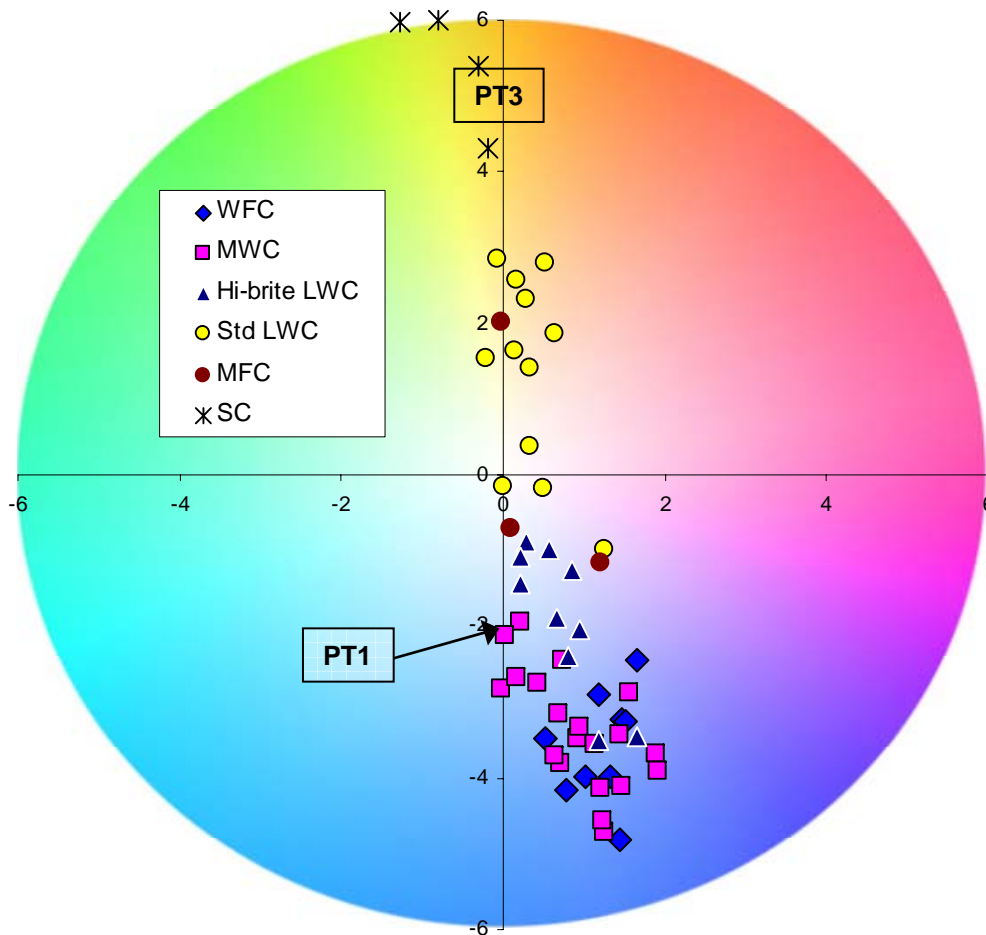


Pain points in ISO 12637-2 paper classification

	L^*a	a^*a 1	b^*a	Gloss 3	ISO brightness ^c	Mass per area 4
Paper type	1	1	1	%	%	g/m ²
1: Gloss-coated, wood-free	93 (95)	0 (0)	-3 (-2)	65	89	115
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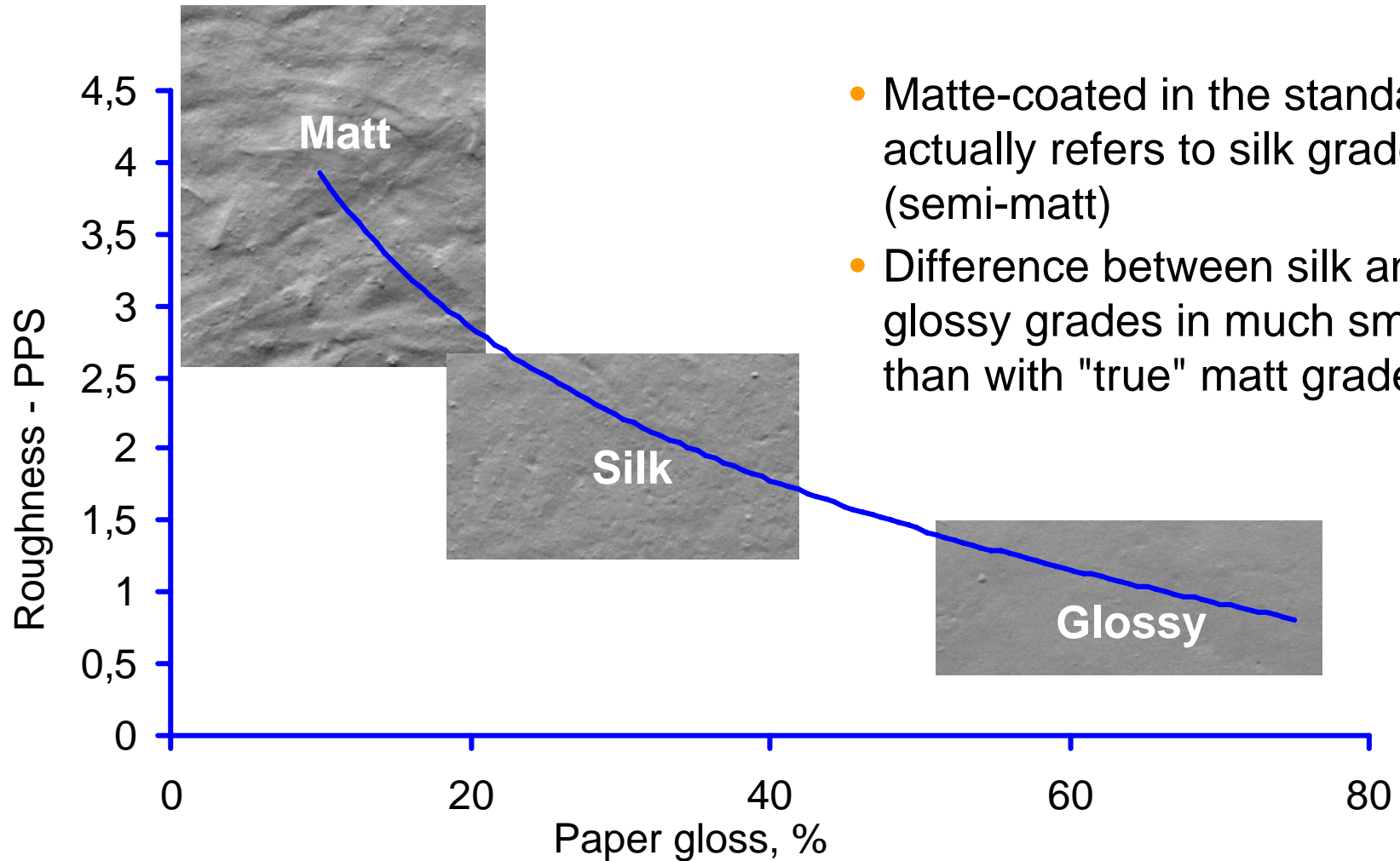
1. Paper shades – do they reflect reality nowadays?
2. Matte-coated – what is meant with that?
3. Gloss – does it have anything to do with CM?
4. Is grammage important from CM and standardization point of view?
5. Slightly yellowish uncoated papers – very minor product group – is it worth mentioning?

1. Paper shade and luminance – case study



Spektrolino D50, 2°, white backing

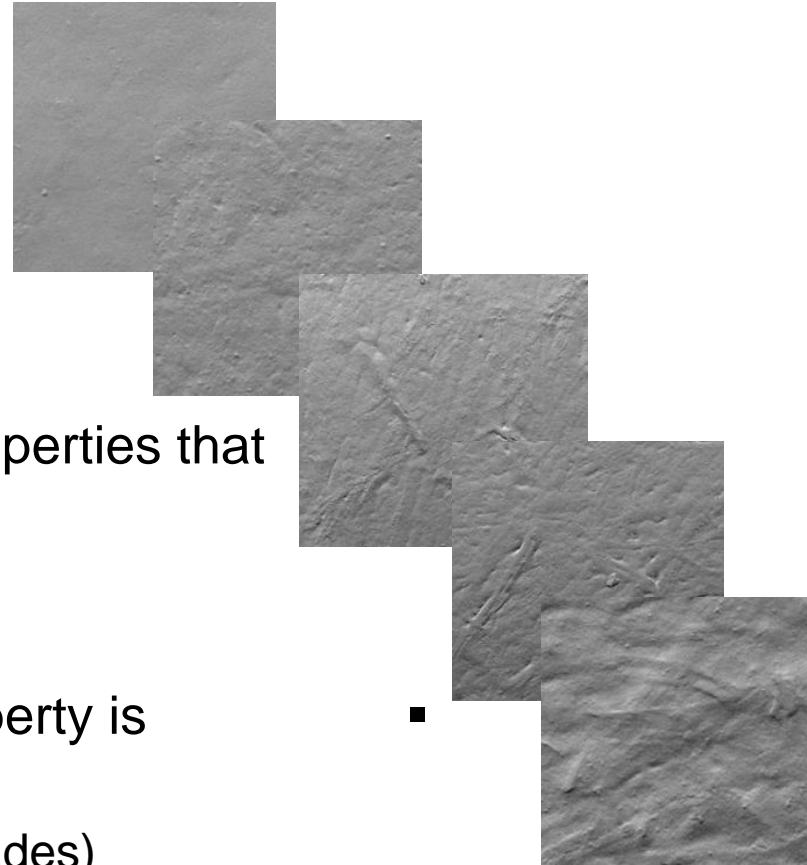
2. Matte-coated



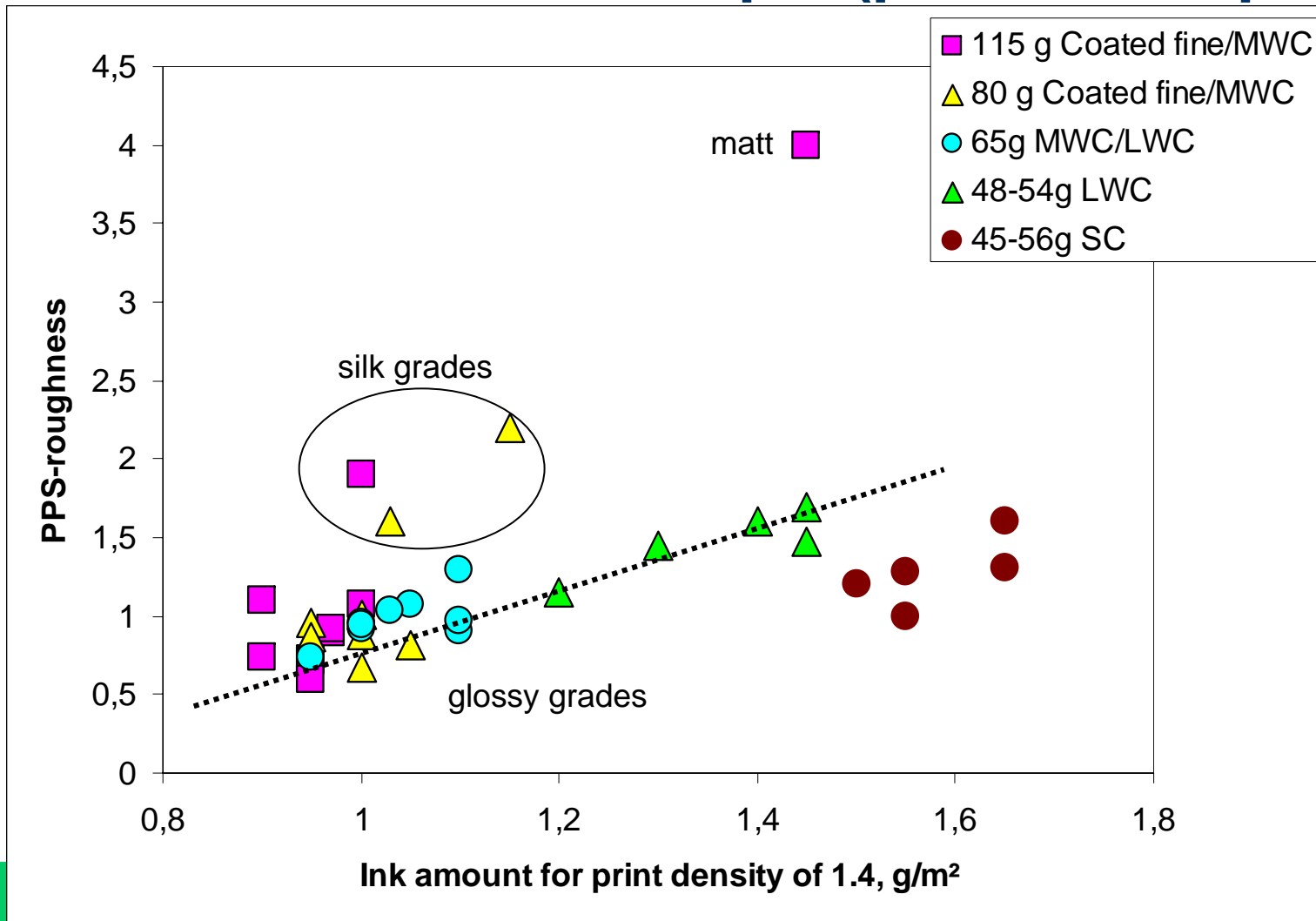
- Matte-coated in the standard actually refers to silk grades (semi-matt)
- Difference between silk and glossy grades is much smaller than with "true" matt grades

3. Gloss

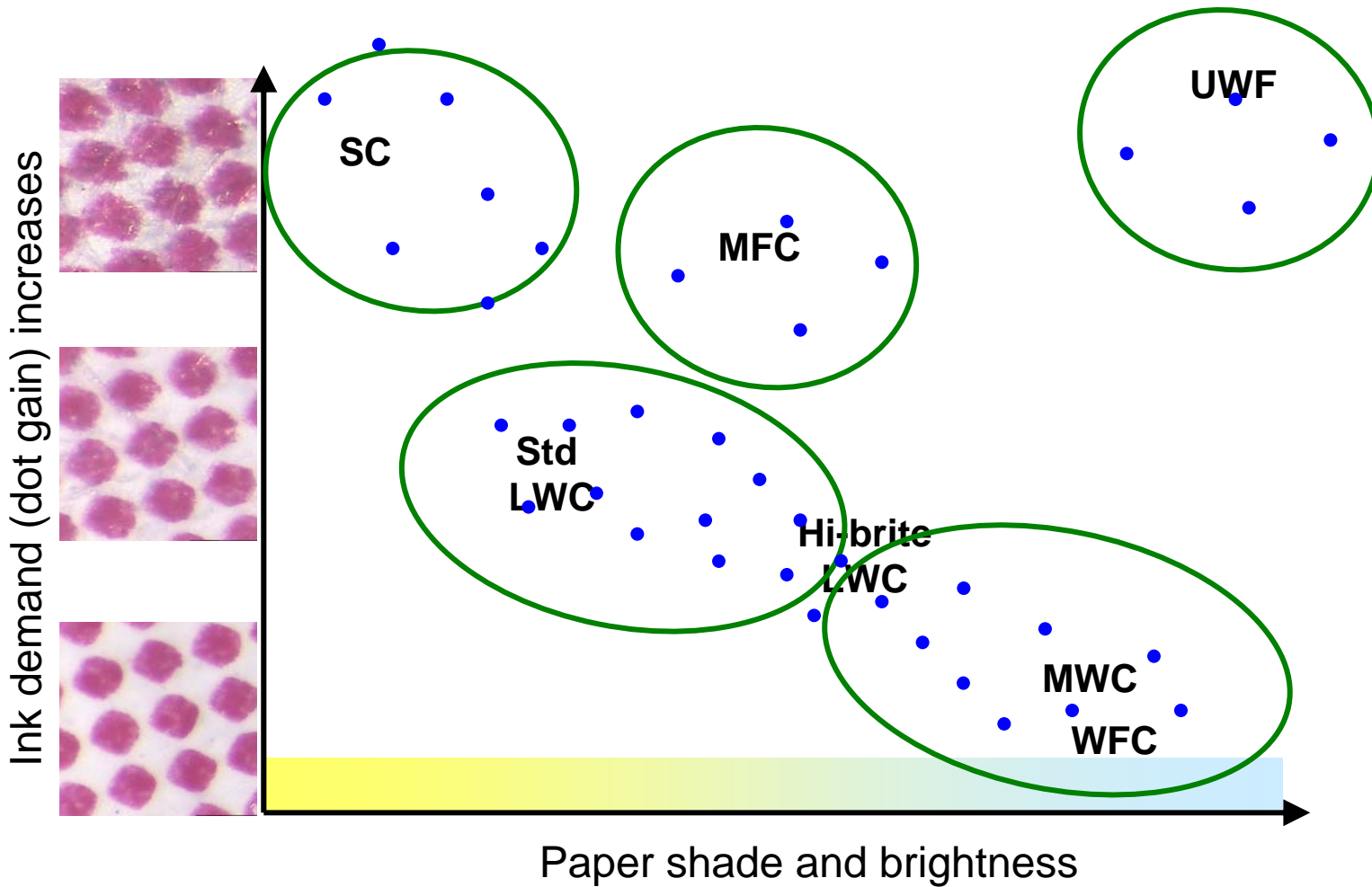
- Paper surface has different properties
 - roughness
 - porosity
 - gloss
- From CM point of view important are properties that affect
 - print density
 - dot gain
- In both cases most important paper property is
 - Ink demand, which is controlled
 - mainly by roughness (with coated grades)
 - partly by porosity (especially with uncoated grades)



Ink demand – an example (publication papers)



Classifications – shade vs ink demand



ECI/WOWG

- Web Offset Working Group under European Color Initiative
 - Work started in 2004 by evaluating the usability of current ISO profiles in web offset printing
 - It continued by developing new profiles for SC and MFC papers
 - Chairman: Olof Druemmer

ECI/WOWG – ICC profile naming

- ECI/Fogra will publish new set of characterisation data along with profiles in near future (autumn06?)
- WOWG made suggestion, which influences also to paper classification

Profile naming	Paper grade	TAC	Characterisation data
ECI_ISO_Web_WFC	Woodfree coated, Medium weight coated	320%	Fogra xx (39?) same as in sheet-fed
ECI_ISO_Web_LWC	Light weight coated	300%	Fogra xx (40?) same as in sheet-fed
ECI_ISO_WEB_SC	Supecalandered	270%	Fogra xx created by WOWG
ECI_ISO_Web_MFC	Machine finished coated	tba	Fogra xx to be created by WOWG
ECI_ISO_Web_NP	Newsprint (in heatset)	tba	Fogra xx to be created by WOWG
ECI_ISO_Web_WFU	Woodfree uncoated	tba	Fogra xx

Summary

- Classification from CM point of view should be based on
 - paper shade and brightness
 - needs to be fine-tuned in future revisions of ISO 12647-2
 - dot gain (which can be predicted through ink demand)
- Clear categories can be found
 - WFC/MWC
 - LWC
 - MFC
 - SC
 - UWF
 - NP
- However there will always be papers on the borderline and decisions have to be made case by case