

Package Printing in 2050: Will everything be digital?

Prof. Dr. Martin Dreher
Scientific Director
DFTA Technology Center, Stuttgart

Intro

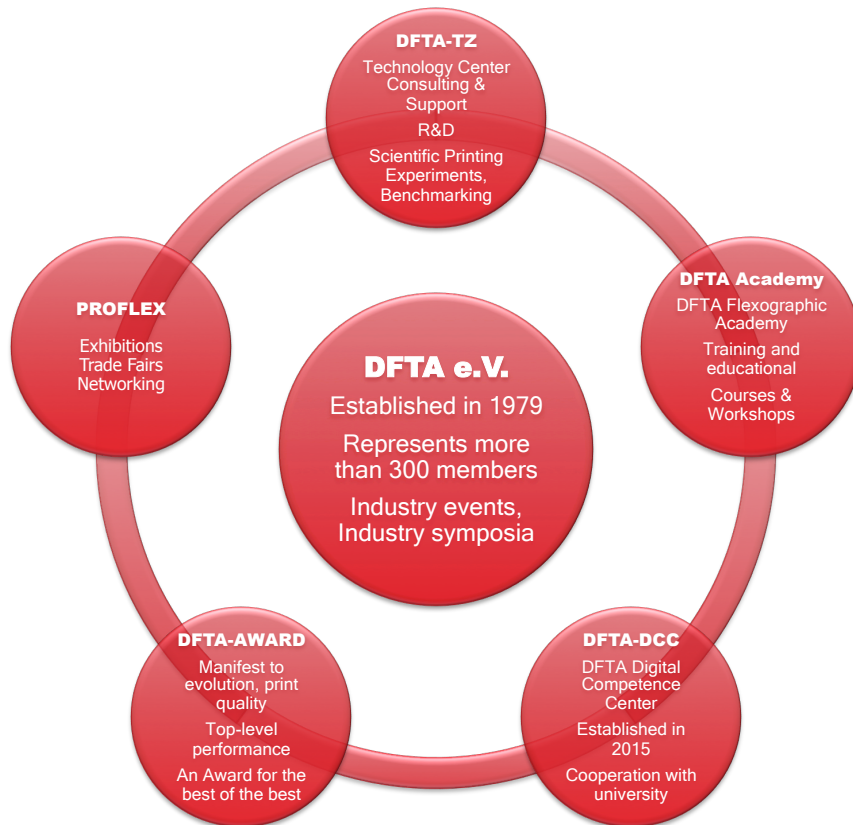
- Martin Dreher, Prof. Dr.
- DFTA Technology Center
Scientific Director

and

HdM Hochschule der Medien
Professor for Packaging Printing
in the Packaging Engineering curriculum



- martin.dreher@dfta.de
dreher@hdm-stuttgart.de



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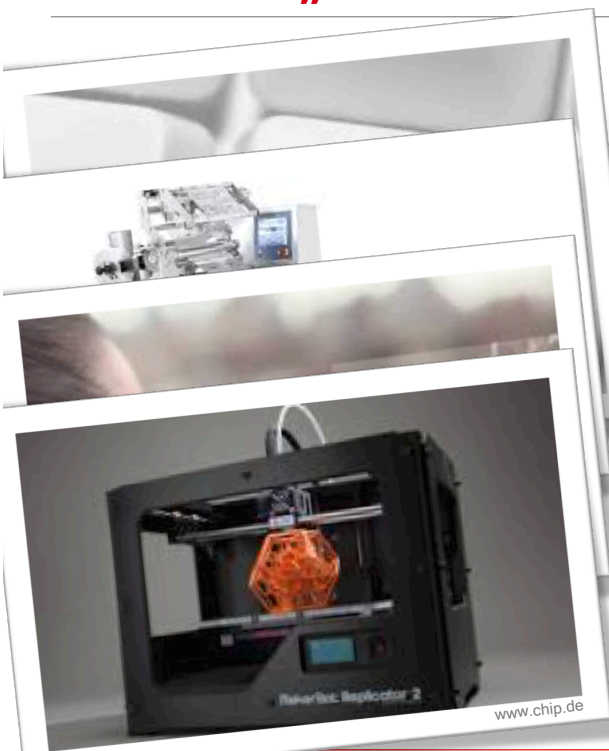
Part 1

The Future of Package Printing

My Visions



Potential „Derailers“ for Package Printing

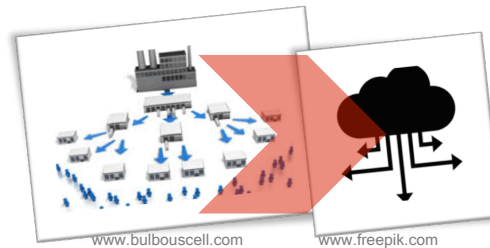


- Online-Purchases
- Integration of Printing into packaging lines
- Data goggles: No more surface decorations
- 3D-Printing of “everything” at home



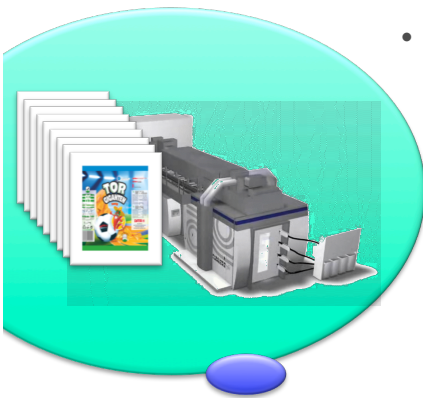
Potential „Sponsors“ of Package Printing

- No Transition from “Print & Distribute” to “Distribute & Print” as with commercial printing
- **Cost!**
 - Integration is costly and complex
 - Data goggles need separate identification of item
 - 3D printing is extremely more costly than mass production
- Expertise and Specialization of Players

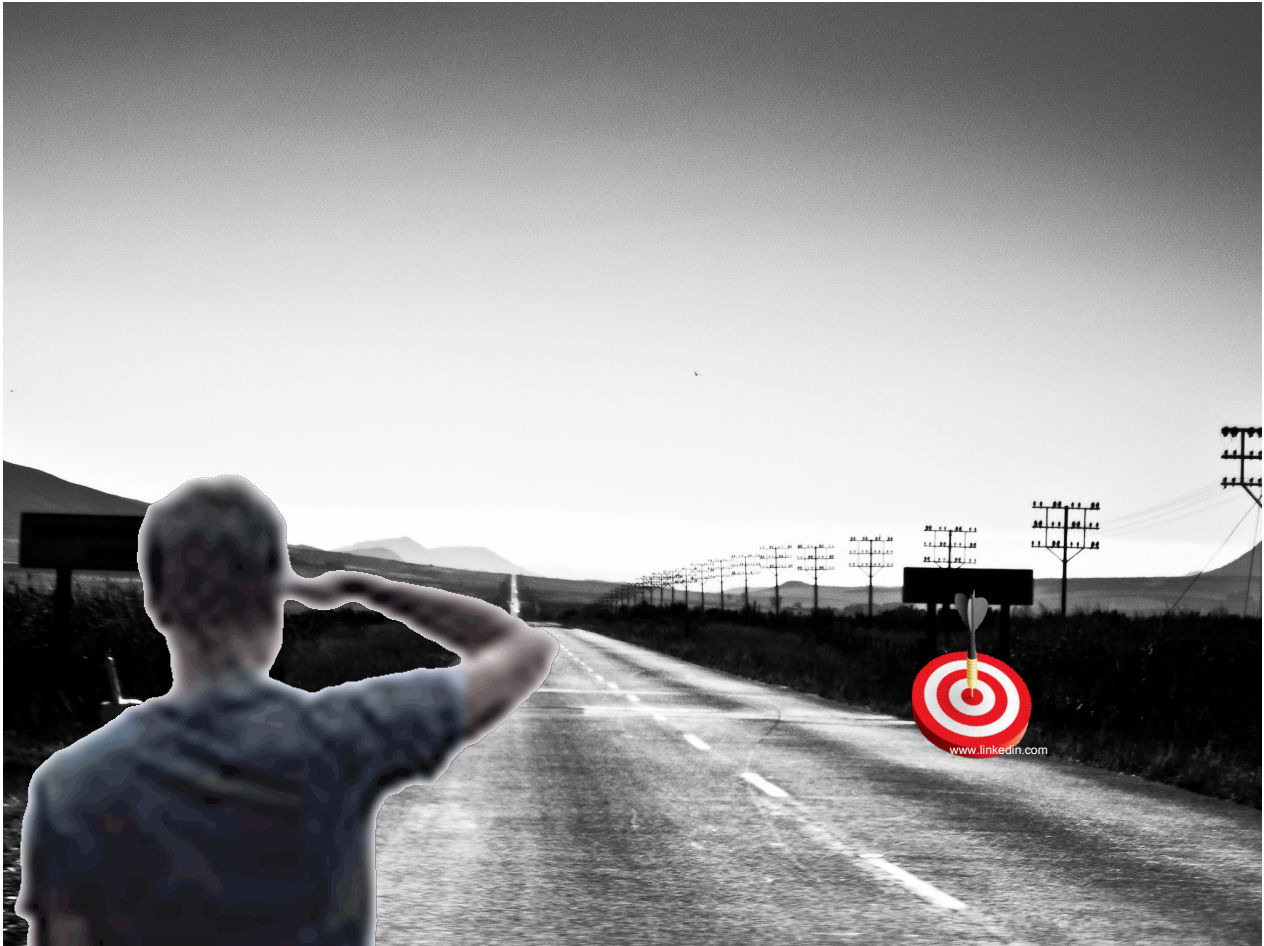




Roadmap of Package Printing: “2017”



- Concentration on Conventional Printing Method
 - Print Quality
 - Number & Character of Printing Inks: CMYK+“X”
 - (Minimum) Order Quantities
 - Lead Times
 - Flexibility
 - (Per-Item-) Cost
 - Etc.



Roadmap of Package Printing: „2022“



- Concentration on **Conventional** Printing Method
- **Digital Printing** complementing
 - Smaller & smallest Order Sizes (Fragmentation)
 - Minimum Order Quantities
 - Pre-Press Cost
 - Lead Times
 - Obstacles persist!
 - **Packaging Requirements!**
 - Very few presses ww
- Will Online-Sales simplify Package Printing Graphics???
- Lesser no. of colours?
- Fixed Colour Palette? (7C rather than 4C+++)?



Roadmap of Package Printing: „2030“



- Concentration on Digital Printing Method
- Flexography complementing
 - Remaining Large Order Quantities
 - MUCH better Per-Item-Cost
 - **Colour Separation like Digital Printing!**
CMYKRGB?



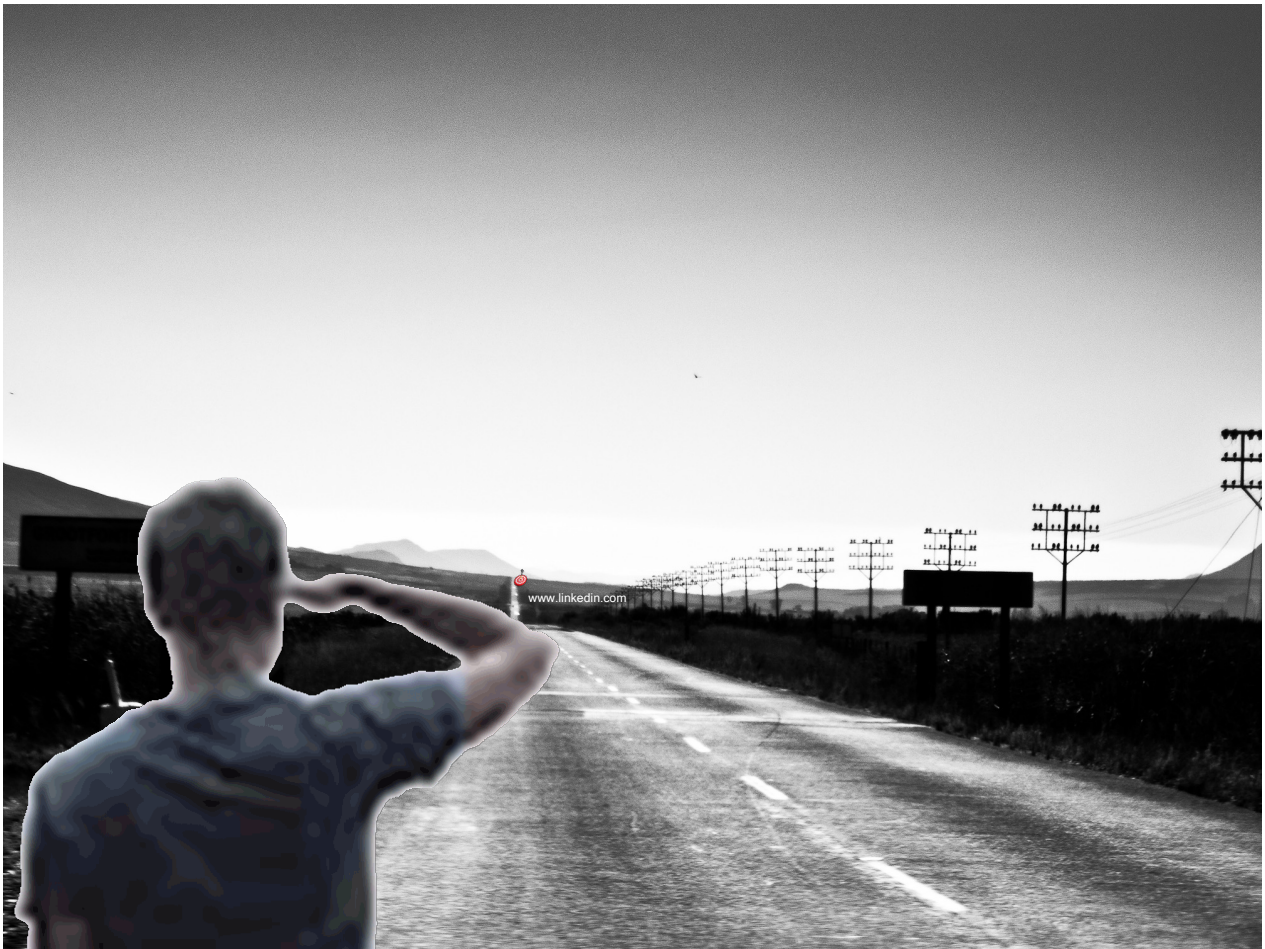
- **Massive Integration in Packaging Lines**



Roadmap of Package Printing: „2040“

- Package Decoration mostly integrated in Packaging Lines
- Digital and Conventional Printing complementing





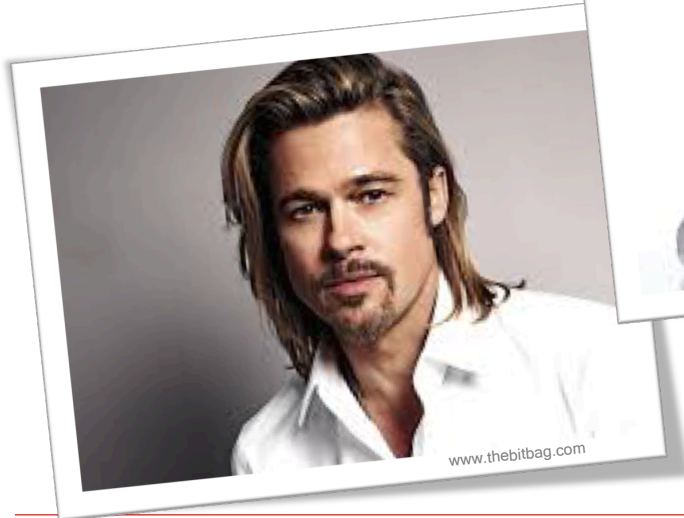
Roadmap of Package Printing: „2050+“

- **Surface decorations mostly redundant** through Data Goggles!
- **Virtual no more**
 - Printed packages
 - Printed wall cars
 - Wall
 - ...
- See “Matrix” Movies



Roadmap of Package Printing: „2050+“

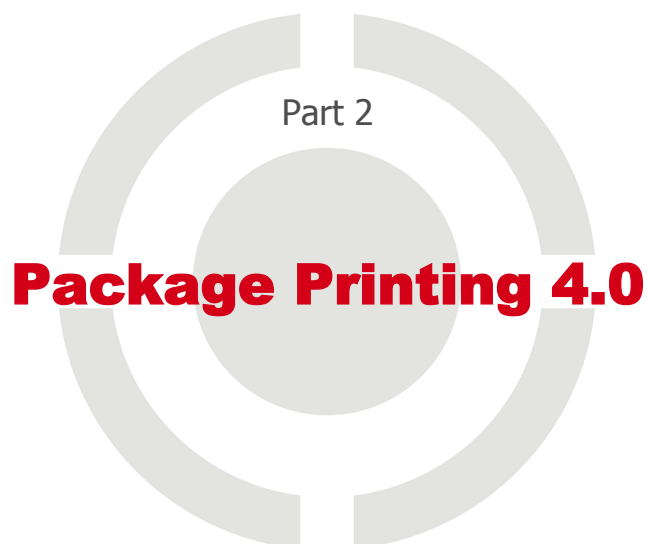
- We may all look like we WANT to look!



Résumé

- Packaging Printing may not be everlasting, but ...
- It will be performed for quite a number of years to come - ...
- Flexography and Digital Printing in particular!

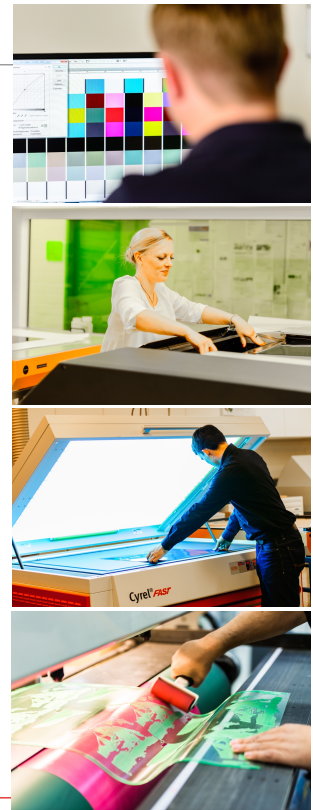
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What the conventional Package Printing Methods
should adopt for the future!

Prepress Cost

- **Repro: Image Manipulation and Retouching**
 - Re-engineering unsuitable design files
 - Make files “ready” for Rotogravure and Flexo
 - (DFTA Planoflex and DFTA Screens *)
 - **Plate Making (Flexo)**
 - Materials
 - Processing
 - Imaging
 - Exposure
 - Wash-out & Drying
 - (DFTA Planoflex *)
 - Mounting
- * Enables substantial savings



Automation and Shortening of Make-Ready

- **Automated Mounting and Setup?**
 - Print formes
 - Anilox rollers (Flexo)
 - Printing inks ...
- **Shorten Make-Ready**
 - Reliable formulation of special inks outside of printing press!
 - Minimise changes of inks
 - **Print forme changes only!**
 - ...



Fixed Colour Palette (Multicolour Separation/Extended Colour Gamut)

Get Right on Target and Reproducible!



Right direction!

- New print forme materials stabilize plate making (Flexo)
- Knowledge about print parameters has advanced much
- Integration Prepress/Print Shop has to improve
(* see also following proposal)

* Flexo Colour
Transfer Standard

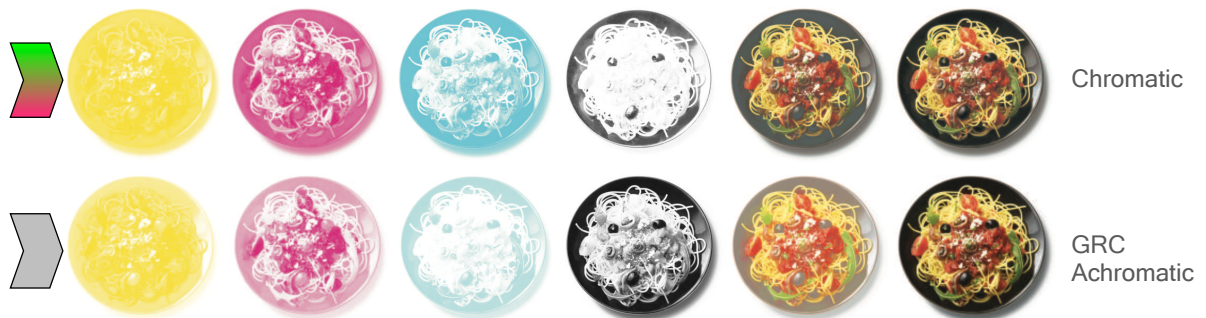
Inline Colour Measurement in Printing Press



- Mostly in web printing
- Tight connection with 100%
Inspection System

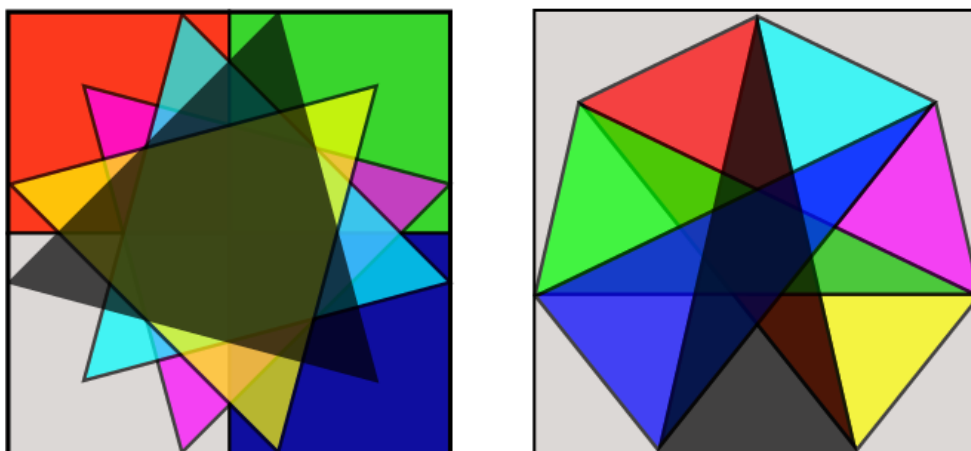
Colour Separation: GCR

- Higher demands for print shops:
 - High K-Density required ...
 - ... but with soft vignette to substrate white
- ... Then delivering large advantages:
 - Reduced consumption of chromatic inks
 - Colours stable over print run
 - Better starting point for Multicolour Separations



Mastering Multicolour Separations

- 4C++++ vs. 7C+



Which "Type" are you?

- „Special Colour Simulator“ or „Photo Enhancer“?

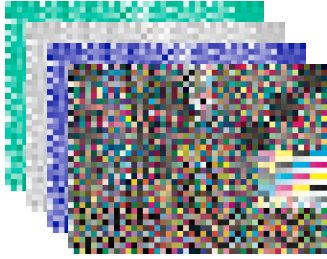


Register

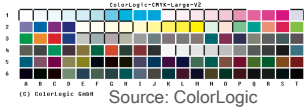
- Imperative for 7C+
- Will automatic Plate Mounting help? (Flexo)
- Or else In-The-Round print formes? (Flexo)



(Multi Channel) Colour Management



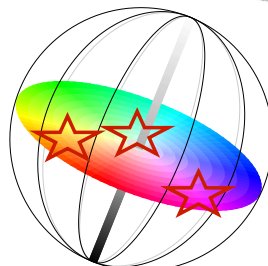
- 7C Colour Management = (4C Colour Management)³? Will not work!



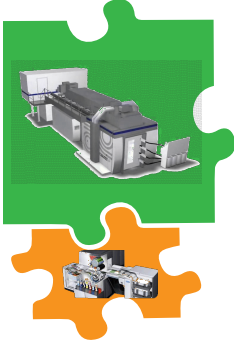
- Clever simplification required
- Spectral profiling is very constructive and advanced

Offset-like Print Quality

- Rotogravure and Flexo Colour Gamut \geq Offset!
- But: the real „(Flexo-) construction site“ are the highlight tonal tints!
- True „1% dot“ required!

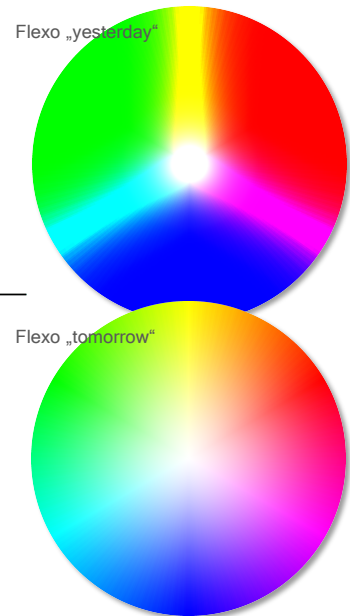


Seamless „Docking“ to Digital Printing



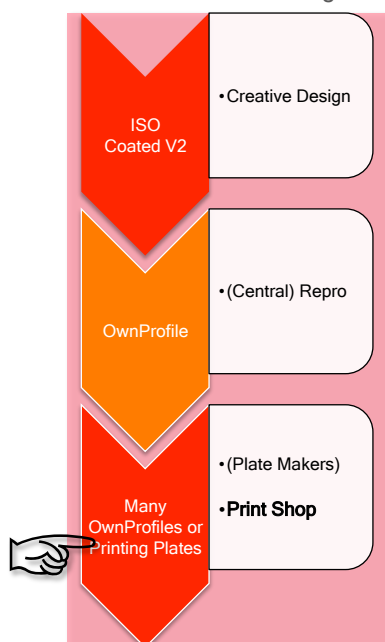
- Direct use of existing design files
 - No extra colour separation
 - No time-consuming retouching
 - Colour separation/design files like in Digital Printing: CMYKRGB(WL)
 - ...

- Built colours with faint colour channel portions need true „1% tint“



Colour/Communication Standard

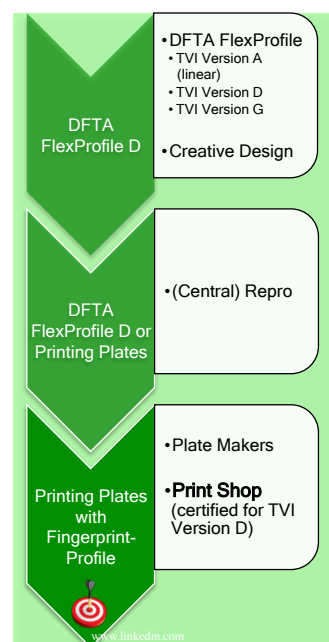
Current Dilemma of Package Print Shops



👉 NOT this way, but THIS 👈

- Print shops must **no longer adapt to several different Central Repro Agencies!**
- Even if the Central Repro Agency forces through to deliver printing plates they will be much more “Flexo-ready”
- Print shop maintains possibility to involve own/preferred plate maker

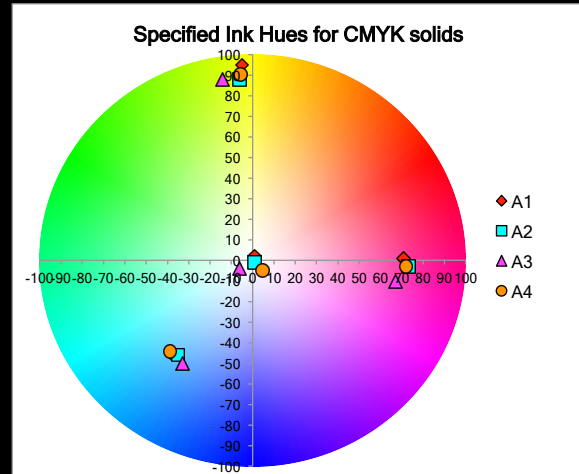
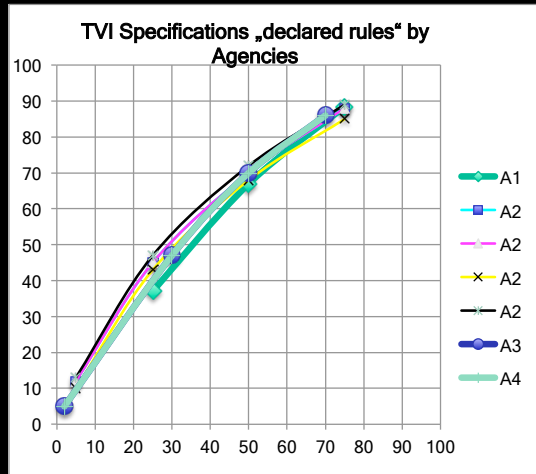
Potential DFTA Flexo Colour Standard



This is what happens if there are no rules:



- Different **Assumptions** about printing configurations (!) by the (Central) Repro Agencies:



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And finally ...

Don't Overdo Things!

- Quality and its perception should match! (Shouldn't they?)
- Reverse conclusion:
Quality that exceeds its own perception is a waste of money

- See the DFTA „Print Quality Assessment Course“:

- Halftone screen ruling for photos:
AM or Hybrid, approx. 54 L/cm
- Halftone screen ruling for Linework:
FM or AM, approx. 60 L/cm



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dreher@hdm-stuttgart.de