INKJET INSIGHT™
Evaluate. Optimize. Grow.

Inkjet Explainers

Understanding the Realities of Brand Colors - and Inkjet

Tuesday, October 5, 2021

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#inkjetexplainer

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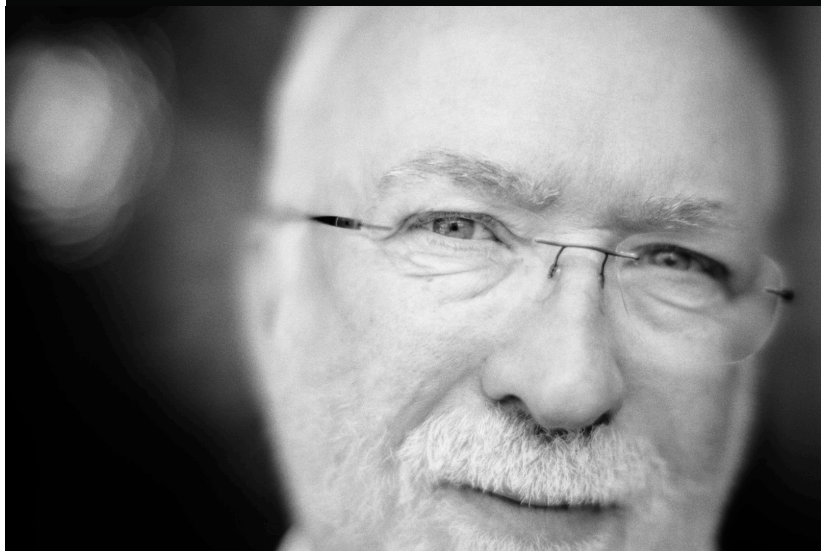

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Kenny Burger
CIO, Mele Printing

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Get the most from your time with us!

SEND US YOUR QUESTIONS DURING THE WEBINAR

- **Question control is in the lower left corner**
- We may answer during the presentation
- There is a Q&A at the end
- Video and audio archive will be uploaded later today along with PDF of slides

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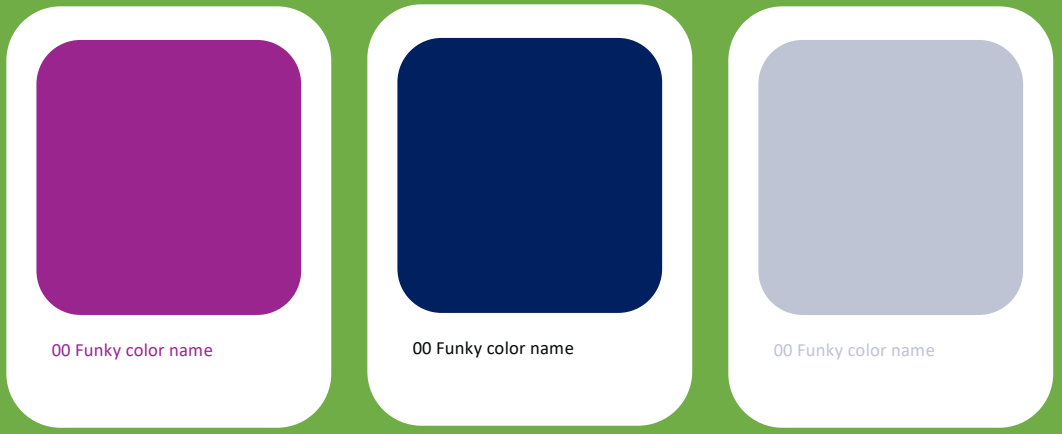
What are Brand Colors? Why Should We Care?



Brand identity: logo, color!

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Brand identity: logo, color!

But how important is color *really?*

XEROX®

Technology | Document Management | Consulting Services

Xerox Color

20 Ways to Share the Color Knowledge

Color Captures Attention, Enhances Productivity, Improves Communications and Helps Boost Sales.

Research has proven that using color in business documents can have measurable results. The following examples have been selected from a variety of sources to demonstrate the power your black-and-white

Capture Attention

- **Color emphasizes critical information and conveys a sense of professionalism.** Your company's first impression is the most important one. Using color demonstrates that you mean business. The decision whether to read or reject pamphlets and direct mail pieces is made by readers in just 2.5 seconds. Using color can keep your materials on the desk and out of the wastebasket.
- **Color increases readers' attention spans and recall by 82%.** Safety notices, warnings and vital technical information are more likely to be remembered if they stand out in color. That can help decrease costly and time-consuming errors throughout your company.
- **Color gains readership by 80%.** Adding color to product guides can help critical information get read, helping ensure that customers understand how to operate the products they buy from you. That alone can reduce

Boost Sales

- **Color helps sell up to 80% more.** Collateral materials, sales brochures and other consumer communications can help generate more sales with the application of color.
- **Color can improve brand recognition by up to 80%.** Local retailers, realtors, consultants and others can cut through the clutter with the help of color. Improved brand recognition can lead to increased sales.

Sources

Studies

Loyola College, Maryland, U.S.A., by Ellen Hoadley, Ph.D., Laurette Simmons, Ph.D., and Faith Gilroy, Ph.D.

Case & Company, Management Consultants

Bureau of Advertising, Color in Newspaper Advertising

Maritz Motivation, Inc., Southern Illinois

Published material

The Persuasive Properties of Colour, Marketing Communications; What's Working in Direct Marketing

How to Use Color to Sell, Cahners Publishing Company

Grasp Facts Fast with Color Copying, Modern Office Procedures

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INVESTIGATING THE EFFECTS OF COLOR, FONT, AND BOLD HIGHLIGHTING IN TEXT FOR THE END USER

by

Ellen D. Hoadley
Loyola College

Laurette P. Simmons
Loyola College

Faith D. Gilroy
Loyola College

ABSTRACT

In the age of information overload and proliferation of color presentation technologies, users and managers need to know whether the use of color can be justified on the basis of it improved productivity. This research investigates the use of color, font, and bold highlighting techniques in text blocks within a business decision making environment to help determine the effect on productivity. The purpose of the study was to determine whether the use of color highlighting in text improves performance in terms of speed and accuracy of sorting,

CURRENT RESEARCH DEVELOPMENT

Impact of color on marketing

Satyendra Singh

Department of Administrative Studies, University of Winnipeg, Winnipeg, Canada

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Revised March 2006
Accepted March 2006

Abstract

Purpose – Color is ubiquitous and is a source of information. People make up their minds within 90 seconds of their initial interactions with either people or products. About 62-90 percent of the assessment is based on colors alone. So, [illegible] of colors can contribute not only to differentiating products from competitors, but also [illegible] influencing moods and feelings – positively or negatively – and therefore, [illegible] attitude towards certain products. Given that our moods and feelings are unstable and that colors play roles in forming attitude, it is important that managers understand the importance of colors in marketing. The study is designed to contribute to the debate.

No proof! No references!

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CANVAS.

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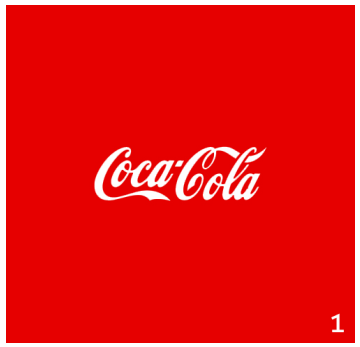

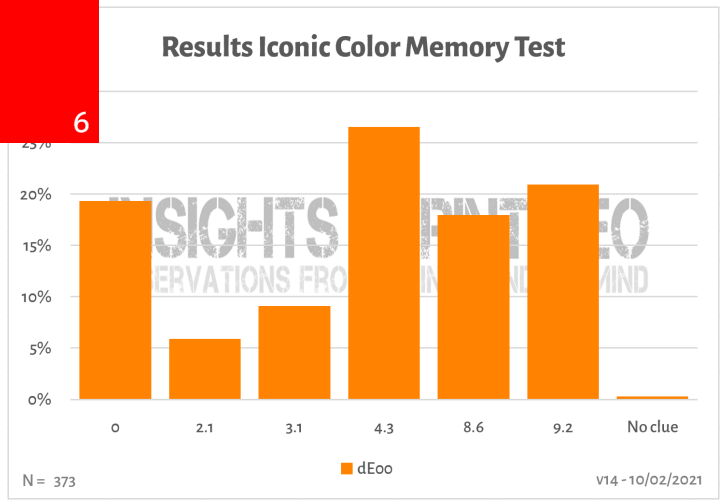

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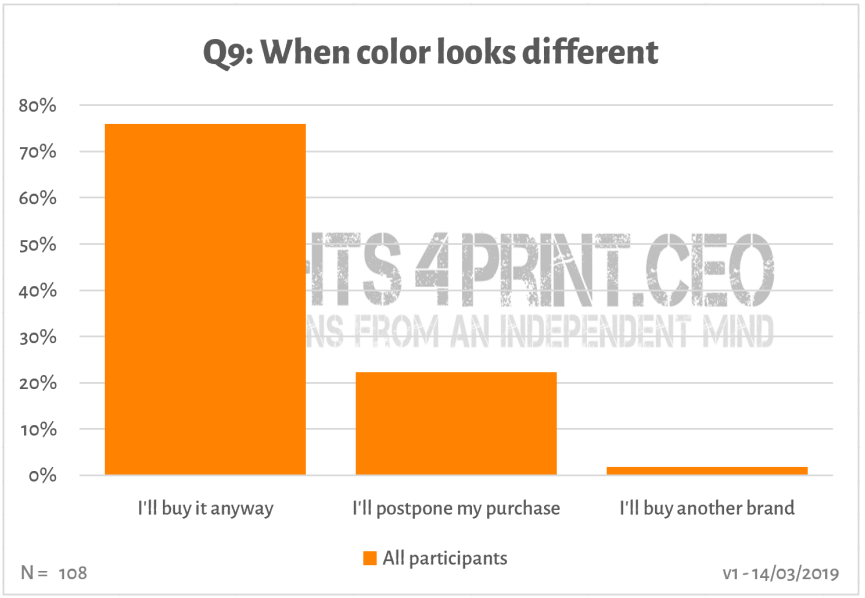
Q4: Reasons for buying other brands
80%
70%
60%
50%
40%
30%
20%
10%
0%
Promotions from other brands
Not in stock
Slight damage to all packages
Looks different than normal
I never buy other brands
All participants
N = 108
v1 - 14/03/2019


Q9: When color looks different
80%
70%
60%
50%
40%
30%
20%
10%
0%
I'll buy it anyway
I'll postpone my purchase
I'll buy another brand
All participants
N = 108
v1 - 14/03/2019

Brand identity: logo, color!

Shape, contrast precede color

- ‘Understanding consumers' in-store visual perception: The influence of package design features on visual attention’ – Jesper Clement (2013)
- “The regression analysis did **not** find a significant relation for design features like size, typography, brand letters, brand pictures, and **color**.”

Product quality precedes print quality

- ‘The Influence of color on purchasing decisions related to product design’ - Kate Goguen (2012)
- “Both genders agree that quality is not something that would ever be sacrificed for the perfect color.”

Image source: Fantastapack

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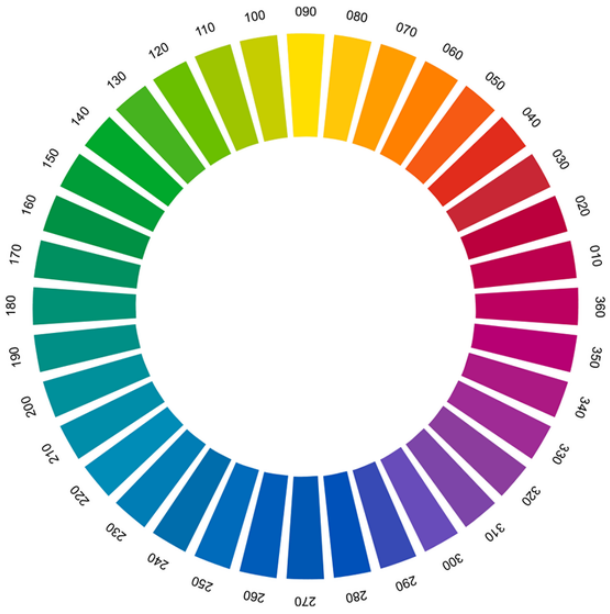
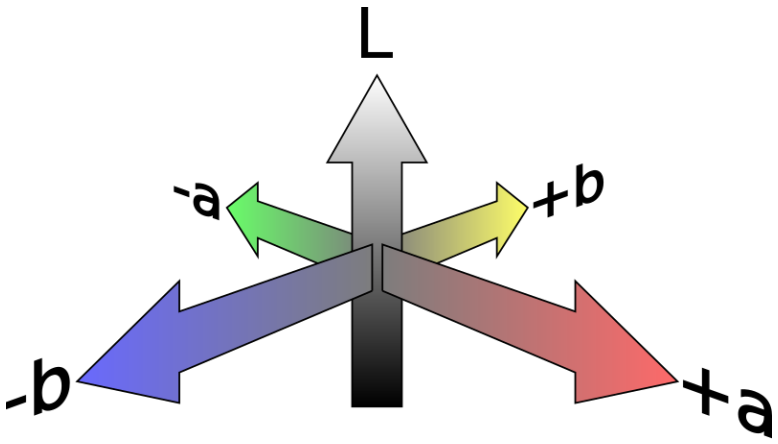
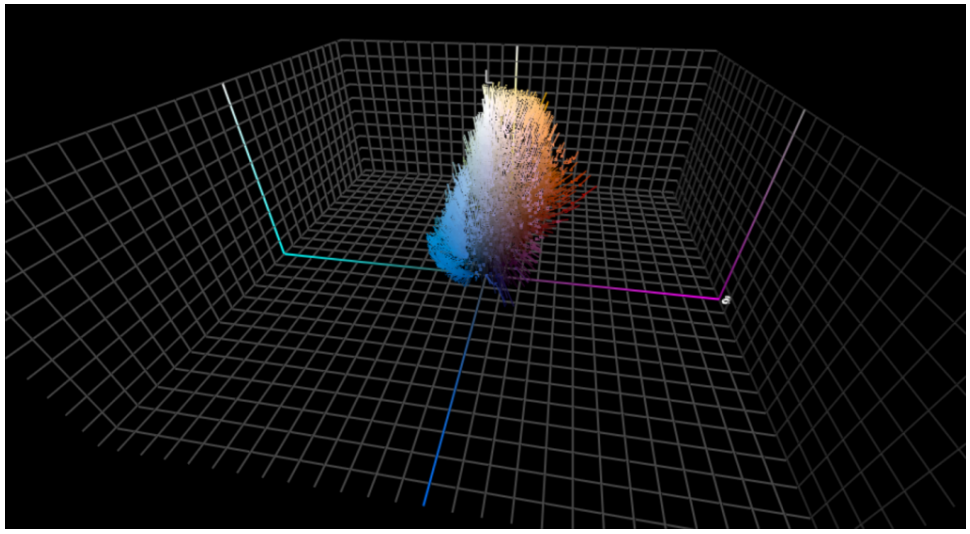
What Does “Color” Mean?

Let’s Talk Color Math

Lab (CIELab) and color math







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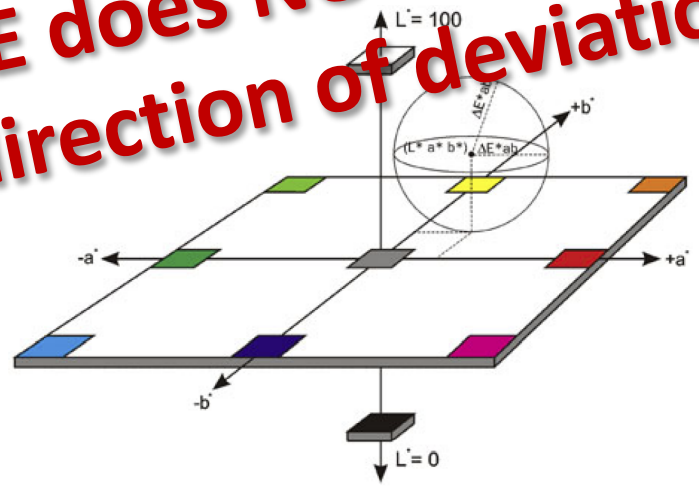
Lab (CIELab) and color math

$$\Delta E^*_{ab} = \sqrt{(L^*_2 - L^*_1)^2 + (a^*_2 - a^*_1)^2 + (b^*_2 - b^*_1)^2}.$$

dE does NOT show direction of deviation!



$$\Delta E_{2000} = \sqrt{(\frac{\Delta L'}{K_L S_L})^2 + (\frac{\Delta C'}{K_C S_C})^2 + (\frac{\Delta H'}{K_H S_H})^2}$$

where:

$\overline{L'} = (L_1 + L_2)/2,$
$\Delta L' = L_2 - L_1,$
$C_1 = \sqrt{a_1^2 + b_1^2},$
$C_2 = \sqrt{a_2^2 + b_2^2},$
$\overline{C} = (C_1 + C_2)/2,$
$G = (1 - \sqrt{\frac{\overline{C^7}}{\overline{C^7} + 25^7}})/2,$
$a'_1 = a_1(1 + G),$
$a'_2 = a_2(1 + G),$
$C'_1 = \sqrt{a_1'^2 + b_1^2},$
$C'_2 = \sqrt{a_2'^2 + b_2^2},$
$\overline{C'} = (C'_1 + C'_2)/2,$
$\Delta C' = C'_2 - C'_1,$
$\Delta H' = 2\sqrt{C'_1 C'_2}\sin(\Delta h'/2),$
$S_L = 1 + \frac{0.015(\overline{L'} - 50)^2}{\sqrt{20 + (\overline{L'} - 50)^2}},$
$S_C = 1 + 0.045\overline{C'},$
$S_H = 1 + 0.015\overline{C'}T,$
$\Delta\theta = 30\exp\{-(\frac{\overline{H'} - 275^o}{25})\},$
$R_C = \sqrt{\frac{\overline{C^7}}{\overline{C^7} + 25^7}}),$
$R_T = -2R_C\sin(2\Delta\theta),$
$K_L = 1 - default,$
$K_C = 1 - default,$
$K_H = 1 - default.$

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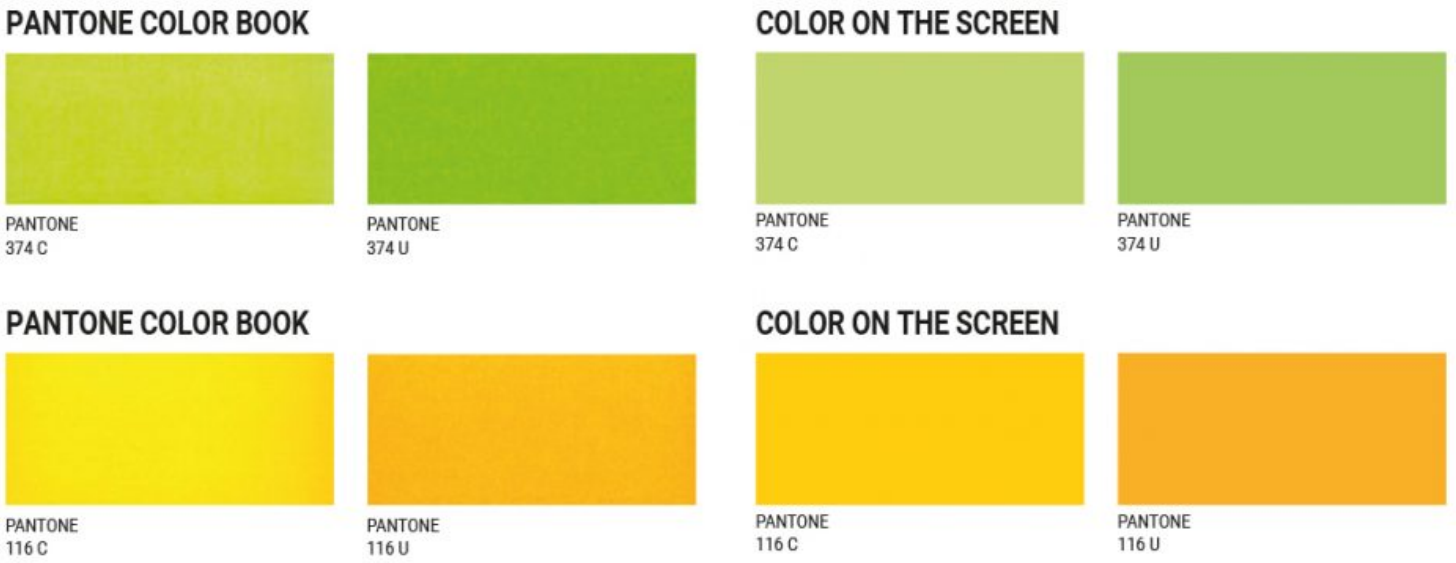
What the designer thinks they want. WYSINOTWYG.



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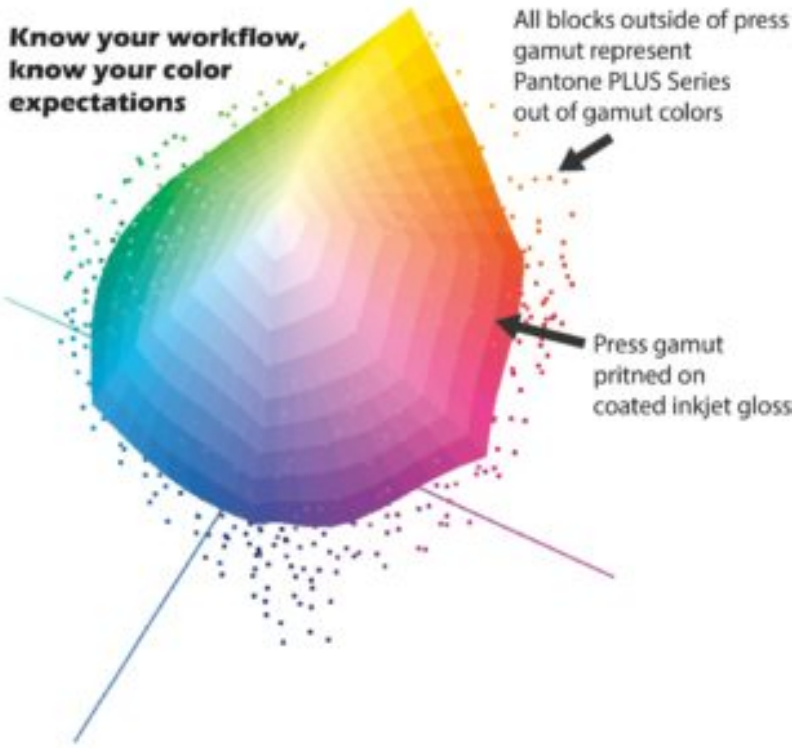

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Brand Colors Matter!

But not as much as invested stakeholders would like you to think

Most people can’t discern small differences.

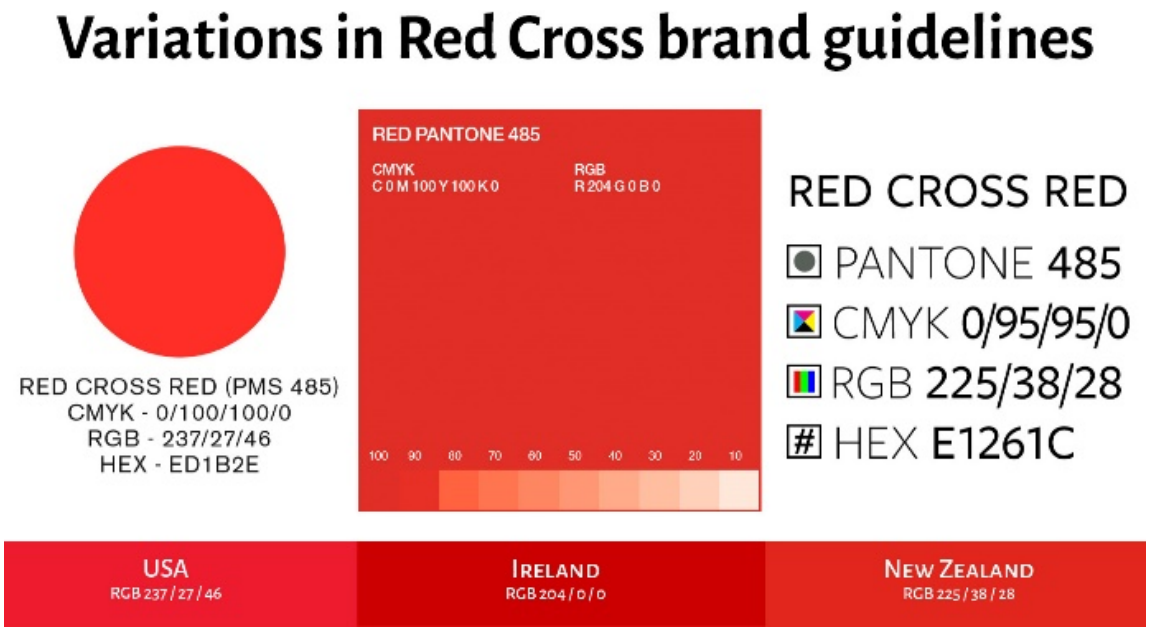
Overreaching on color matching is expensive!

Match to a realistic sensitivity.

How do most people “match” colors

Why are many color guides flawed?

Brand color guides are flawed…



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Can you consider Pantone a standard?

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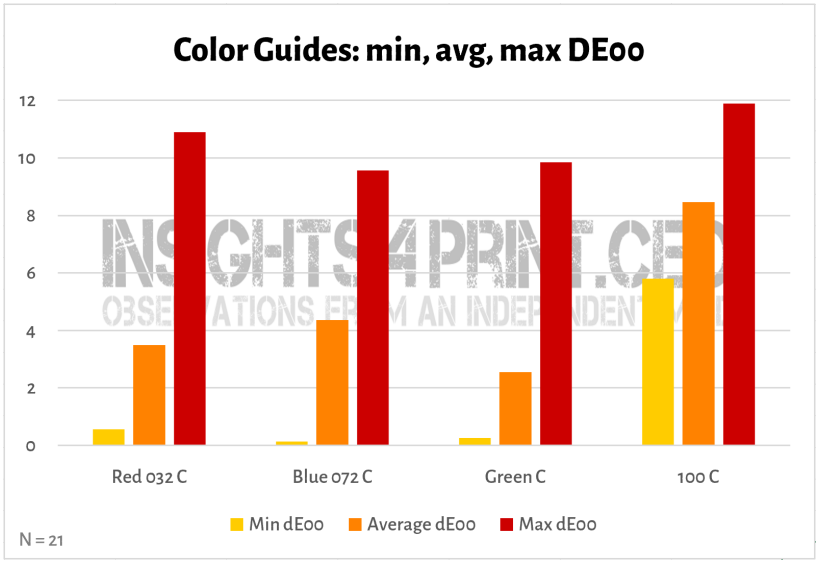
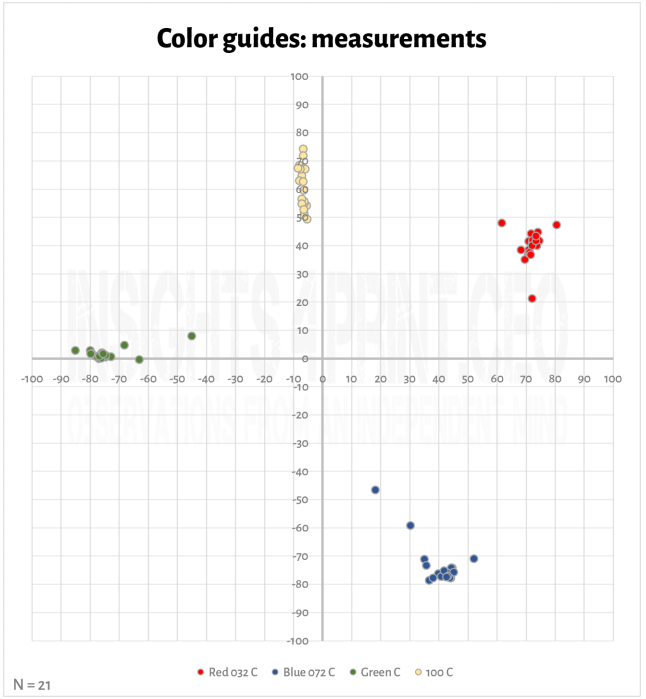
Can you consider Pantone a standard?

- A test in real life: 21 Pantone color guides, 4 patches measured
  - 14 within warranty: still **only** 16 out of 56 measurements within 2 ΔE_{00}
  - You can still participate: http://i4p.ceo/my4patches!





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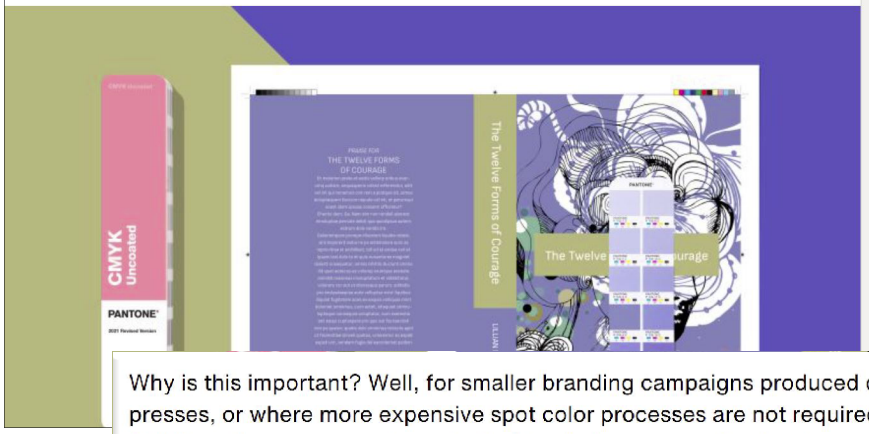
Can you consider Pantone a standard?

- The new CMYK color book

Our updated CMYK guides make it easy to find unique (non-PMS) colors, then match them easily and accurately on press! Learn all the ways this can streamline your process: https://lnkd.in/g4xtZiAA
#cmyk #printing #printdesign #printdesigner



Why is this important? Well, for smaller branding campaigns produced on digital presses, or where more expensive spot color processes are not required, unique CMYK options are a great way to find fresh, less exposed colors for use in a company's brand identity, packaging, or materials. Just think of it – the Pantone CMYK Guide offers an incredible 1,889 coated and 1,653 uncoated unique colors that have no Pantone Spot Color equivalent less than 2.0 Delta E.

6.0 G7 Colorspace Pass/Fail Requirements

"G7 Colorspace Compliance" is achieved when a device or process passes G7 Targeted Compliance and the CIELab values in an IT8.7/4 target match those in the selected CRPC within the following tolerances.[10]

6.1 Proof and Press Tolerances

Target	Proof Tolerance	Press Tolerance
Substrate	$\Delta E_{00} \leq 1.5$	$\Delta E_{00} \leq 3.0$
CMY Solids	$\Delta E_{00} \leq 3.5$	$\Delta E_{00} \leq 3.5$
K Solids	$\Delta E_{00} \leq 5.0$	$\Delta E_{00} \leq 5.0$
RGB Solids	$\Delta E_{00} \leq 4.2$	$\Delta E_{00} \leq 4.2$
All patches of IT8.7/4	Average $\Delta E_{00} \leq 1.5$ 95th percentile $\Delta E_{00} \leq 3.0$ Maximum $\Delta E_{00} \leq 5.5$*	Average $\Delta E_{00} \leq 3.5$ 95th percentile $\Delta E_{00} \leq 5.0$

*Maximum ΔE_{00} of IT8.7/4 will change to ≤ 4 beginning October 1, 2019.

the proofing paper. Regarding deviation between books, since these are almost literally hot off the presses, we can't answerjust yet, but we will measure a few over time so that we are sampling different parts of the run and then we can comment on that. Feel free to reach out to Lou Prestia directly – he'd be happy to discuss any of your techincal questions!

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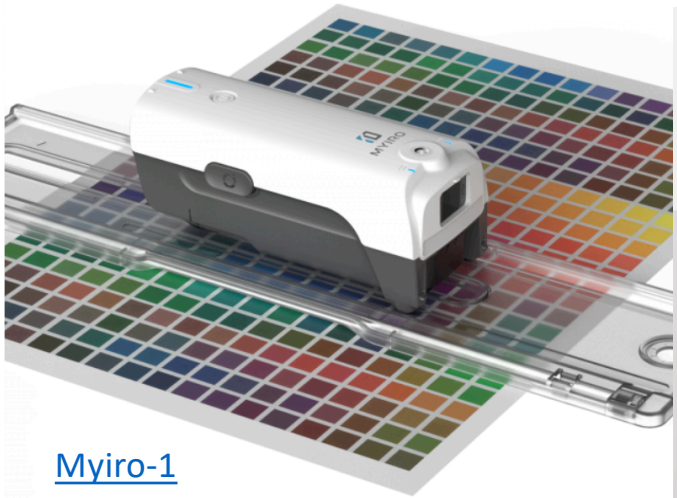
Starting from a physical reference? Measure!



Myiro-1

Spectro 1 $299.99

KEY FEATURES:

- Professional-grade color measurement for solid colors.
- New, patent pending spectrophotometer technology.
- Diffused illumination, specular excluded optical geometry.
- Outputs reflectance curve and Lab colors.
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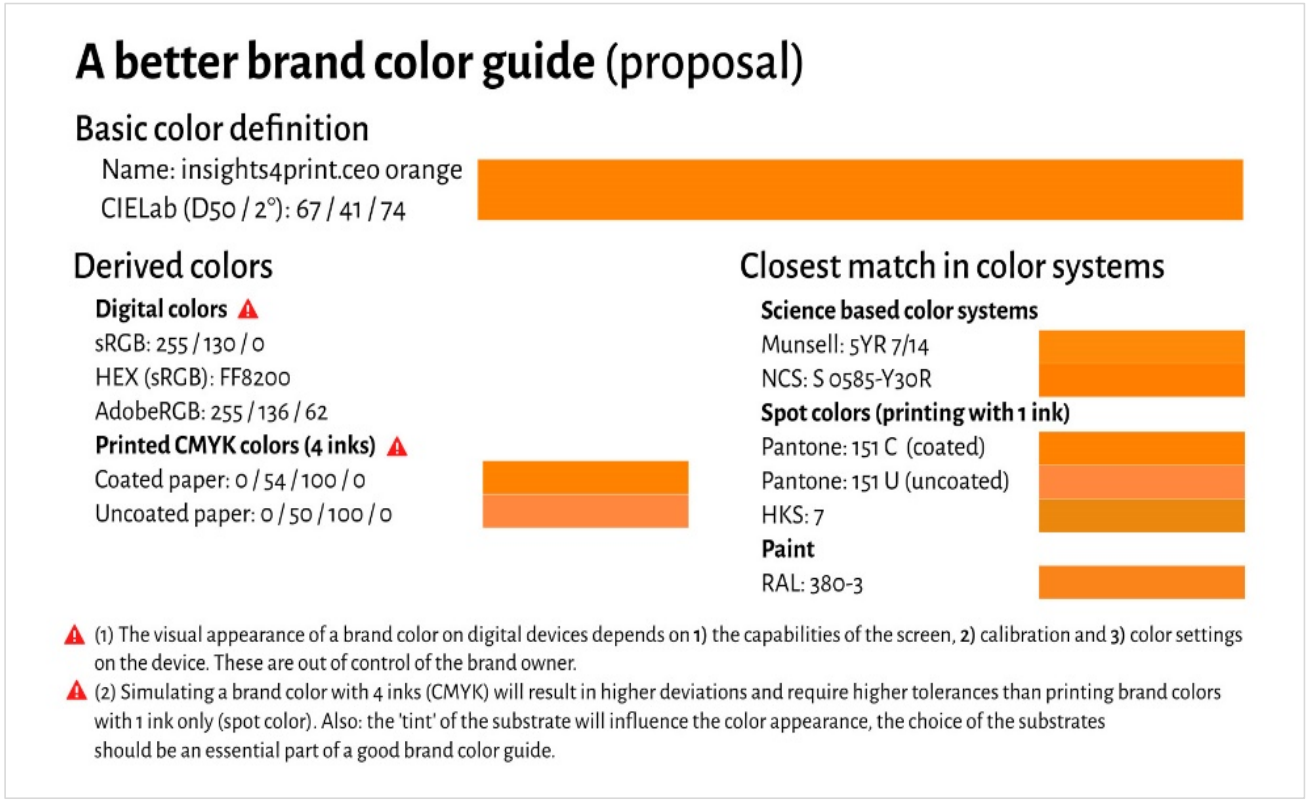
Brand color guides are flawed - but fixable



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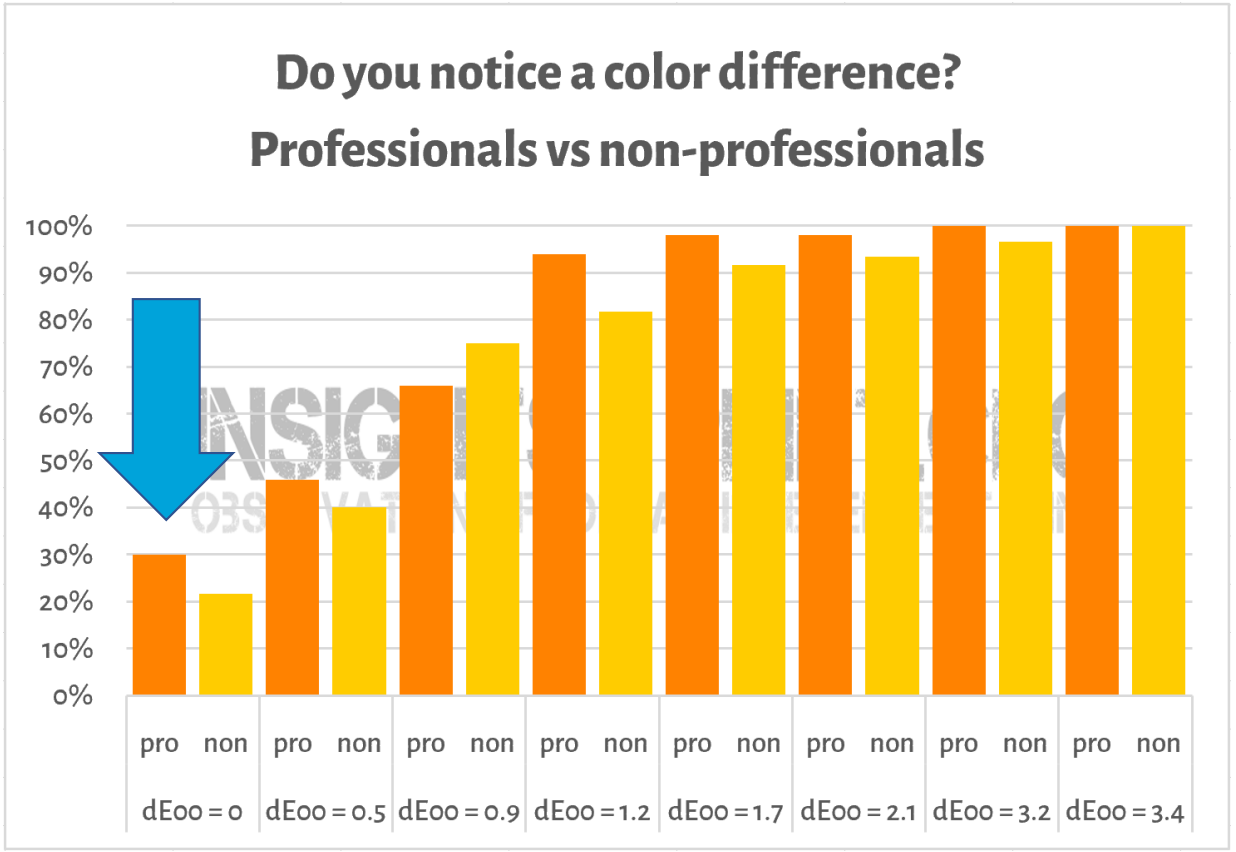
Visual control: if you look long enough…



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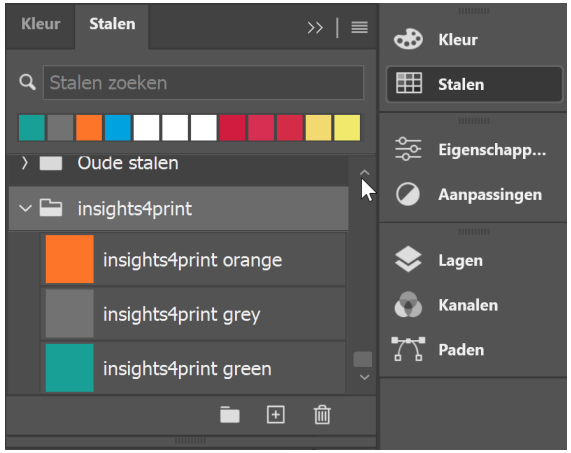
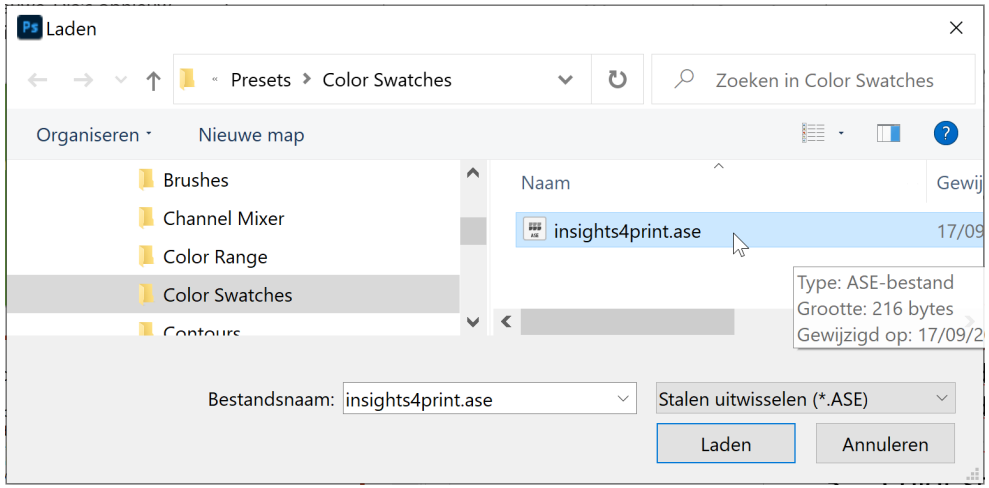
Finding appropriate tools

for appropriate precision

Appropriate tools

1. Science based color definitions!
2. Rock solid brand guidelines!
    1. Including guidelines for the right tools!
    2. Including digital exchange of color information: ASE, CxF
    3. And educate everybody…





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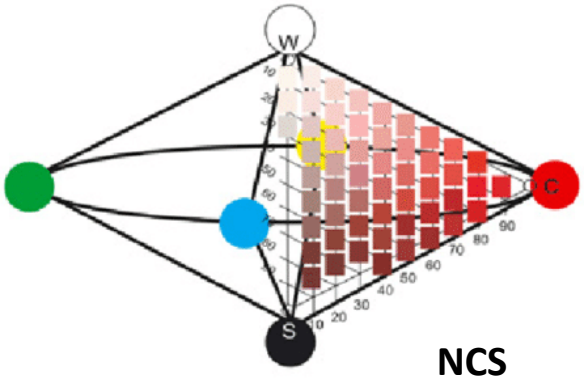
Appropriate tools

1. Science based color definitions!
2. Rock solid brand guidelines!
3. ‘Color standards’: more than Pantone
    1. Science based systems: Munsell, NCS
    2. Ink based systems: HKS, Focoltone, …
    3. CMYK: Spot Matching System
    4. Freie Farbe (free colors)
    5. And more

HKS



NCS

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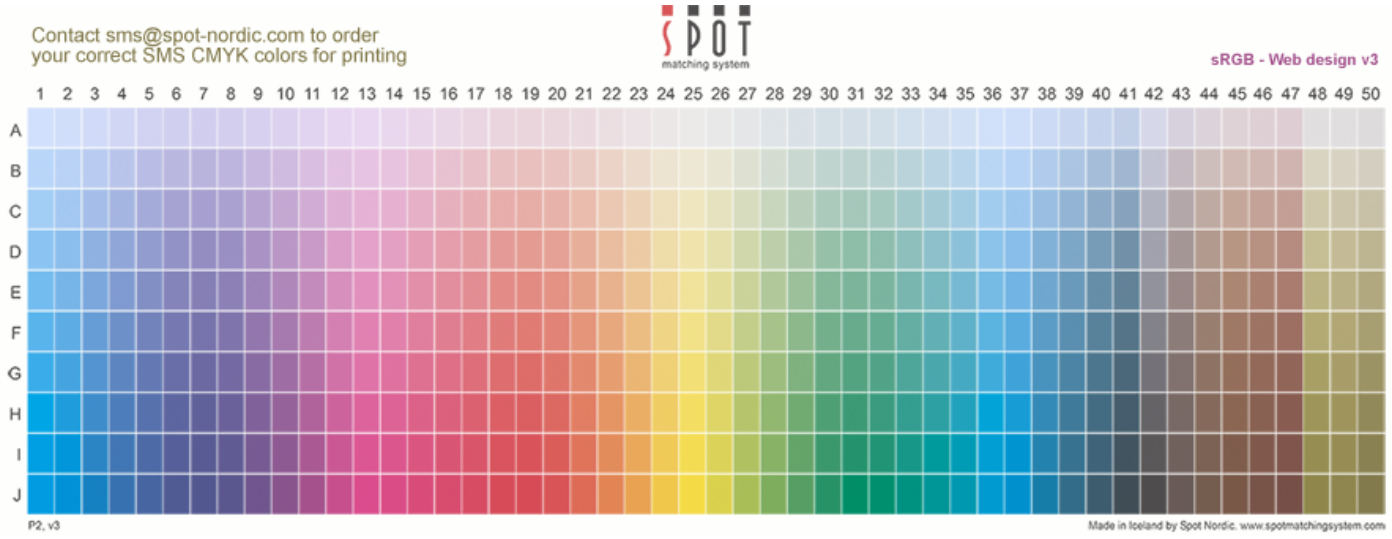
Appropriate tools

- Spot Matching System:
  - custom definition (depending on profile used)
  - visual match between coated and uncoated



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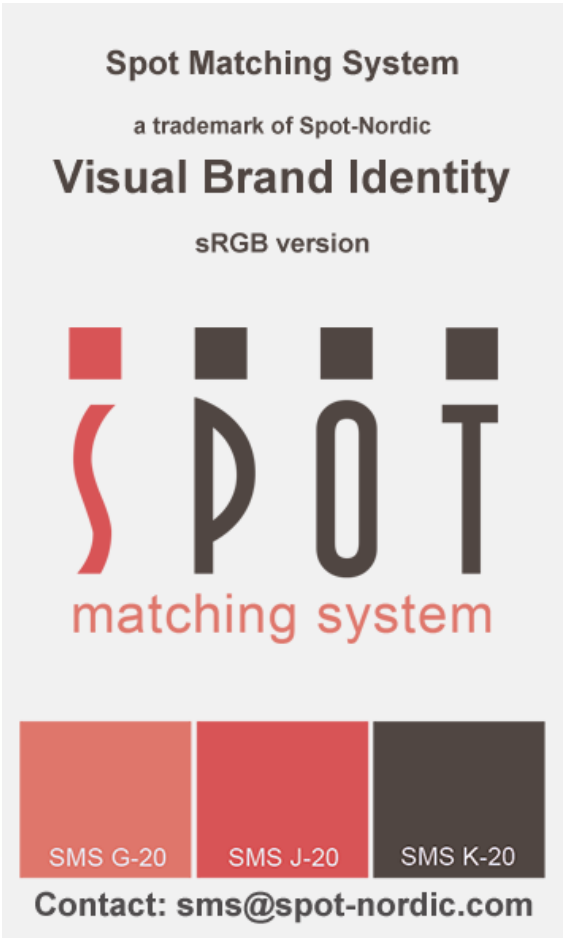
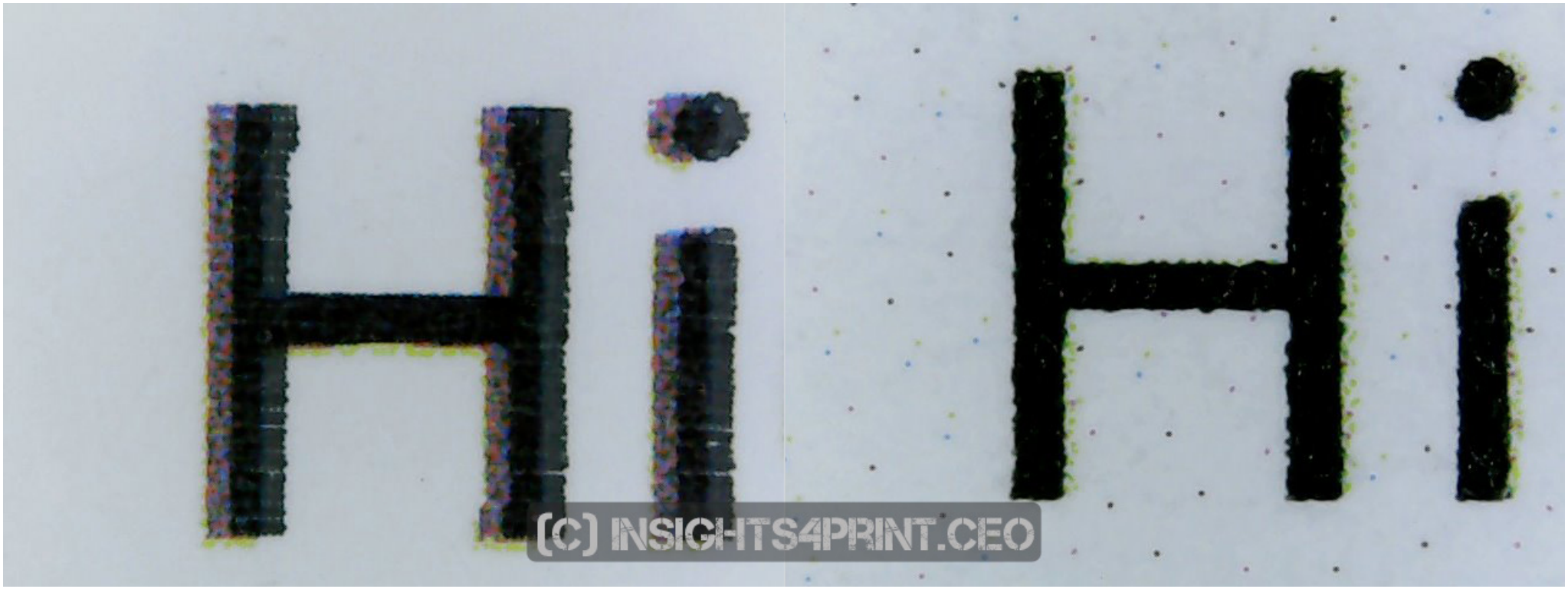


Consider Your Workflow

for appropriate precision

Inkjet: check the capabilities!

- Landa Nano (left) vs Canon Varioprint iX (right)



Inkjet: check the capabilities!

- Canon iX – uncoated (right), Canon iX – coated (middle), Landa – coated (right)

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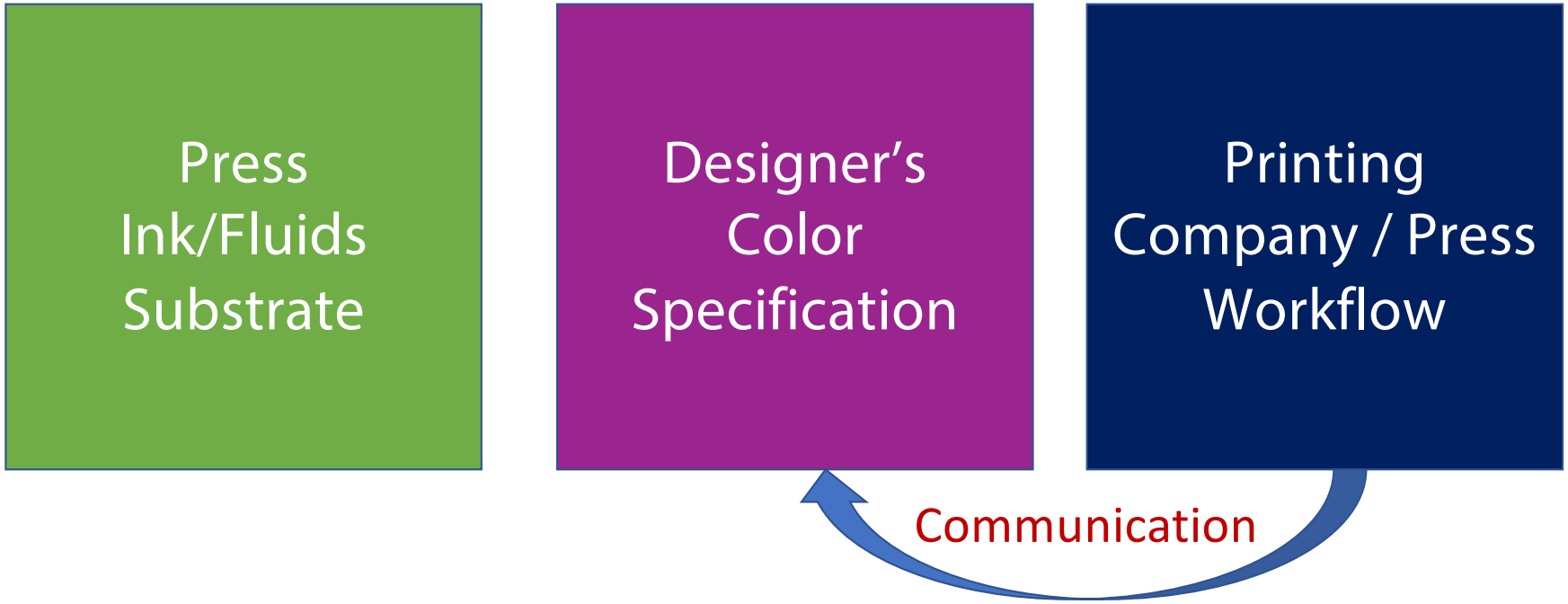
Can Inkjet deliver great color? **It Depends.**



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Questions?

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Repeat

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Inkjet Explainers:

Mary Schilling of Inkjet Insight and
Mark Bale of DoDxAct Ltd.

Learn more and register here.

Understanding Printhead Requirements for Single-Pass Applications

Tuesday November 9 at 1 pm

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Need something explained?
Let us know.

For more information please contact:

Elizabeth Gooding
elizabeth@inkjetinsight.com

Thank you for your time and attention.

We look forward to the opportunity to help you reach new customers through valuable technical and educational content and to grow your business through market analysis and expert media qualification support.