Pantone: The Inside Scoop

How guides are made, common challenges, best practices, and managing expectations.
Quick Intro: Who Am I?

- Jason J. Campbell
- Solution Architect
  Professional Color Services
  - x-rite PANTONE®
- 20+ Years in Printing
- Background in Computer Science, Color Science, Color Management, and Software Development
Quick Intro: What Are We Covering?

- Pantone Guides
- Common Challenges
- Managing Expectations
- Best Practices
- FAQs
- Q&A
Pantone: A Little History…

- 1950s: Pantone was a Commercial Printer; Cosmetics
- 1956: Lawrence Herbert hired at Pantone.
- 1962: Lawrence Herbert buys out Pantone.
- 70s-80s: Pantone becomes leader in color standards.
- 2007: Pantone acquired by X-Rite.
- 2012: X-Rite acquired by Danaher; Part of PID Group.
Pantone: A Little History…
Guides: How It’s Made

- Offset Lithography
- Paste Inks
- Custom built press
- One-of-a-kind segmented ink key unit
Guides: How It’s Made

- Biggest challenge: number of colors!
- As of Sept. 2019: 3,026!
- Each color is blended and matched by hand.
Guides: How It’s Made

- Regular production cycle.
- Goal is $\leq 2.0 \text{ dE}_{00}$ on press to the digital Coated Masters.
- Process improvements over last 18 months.
- *More to Come!*
Guides: What They Are/Aren’t

- ARE: Useful in design for color inspiration.
- ARE: A quick reference for color visualization.
- ARE: Recognized globally for color communication.

- ARE NOT: The reference target of a color.
- ARE NOT: 0.0 ΔE to the reference target.
- ARE NOT: 0.0 ΔE to each other.

Measurements from Guides are not Standards!
Guides: Challenges

- Why are some colors challenging to manage?
  - Pastels and Neutrals are notorious.
  - "A drop of color in an ocean of trans-white…"
OBAs can also become a factor for light colors…
Managing Expectations: Consistency

- Relying on physical or mismanaged standards can lead to unexpected results.
- “Whisper down the lane” (aka “Error Stacking”)
Managing Expectations: Repeatability

- Using properly managed digital spectral standards minimize the risk of surprises.
- “Single point of truth”
- Visual evaluation is still a good sanity check.
Managing Expectations: Achievability

- Not all colors can be achieved by all inks on all substrates and processes.
- PantoneLIVE defines globally achievable targets for PMS Masters.
Managing Expectations: Achievability

- Digital emulation of the digital standard.
- Helps to articulate the differences across substrates/processes.

**MAST**: Pantone Coated Master  
**FSWF**: Flexo Solvent on White Film Wrapper  
**LPEB**: Offet Litho on Recycled Paper Carton  
**FYWT**: Flexo Waterbased on Recycled Paper Carton  
**FYBK**: Flexo Waterbased on Recycled Brown Kraft
Managing Expectations: Achievability

- Digital emulation of the digital standard.
- Helps to articulate the differences across substrates/processes.

**MAST**: Pantone Coated Master

**FSWF**: Flexo Solvent on White Film Wrapper

**LPEB**: Offset Litho on Recycled Paper Carton

**FYWT**: Flexo Waterbased on Recycled Paper Carton

**FYBK**: Flexo Waterbased on Recycled Brown Kraft
Managing Expectations: Achievability

- Not all formulated colors translate well to process.
- Process printing: Economy
- Process printing: 4C vs 7C
- ECG can emulate a large percentage of Pantone formulated colors!
FAQ: Color Bridge 2019 Update

- New version tied to G7 GRACoL Coated (CRPC 6) and Uncoated (CRPC 3).
- Prior versions reflected manually adjusted values.
- Updated representation of current commercial process printing to better manage expectations.
FAQ: Design Apps vs Guide Values

- Color conversion within a design app may not result in same values as guide.
  - Adobe Pre-CS2 vs Today
  - Lab vs CMYK Book Values
- Colorimetric data for design applications is M2.
FAQ: Design Apps vs Guide Values

- Data for design applications: M2
- Data for production applications: M0
- Don’t expect a perfect match using the RGB or CMYK values from the guide.
  - Very settings/process dependent!
- Digital targets are the most accurate.
  - Don’t measure a guide as your standard; bad practice!
FAQ: Missing Colors in Design Apps

- Vendor-supplied libraries are governed by license; not updated automatically.

- Solutions:
  - Adobe Pantone Plug-in
  - Pantone Color Manager
FAQ: “You Changed The Colors!”

- Common misconception!
- Pantone locked down digital standards in 2010.
- Pre-2010 libraries tried to follow book editions.
- Pitfalls…
  - PCM and M-Conditions
Best Practices: Age & Care

- 826 colors added since 2010.
- Driven by demand and industry trends.

<table>
<thead>
<tr>
<th>Launch Date</th>
<th>Colors Added</th>
<th>Total Spot Colors</th>
<th>Updates</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>224</td>
<td>1,341</td>
<td>If you haven't updated in the last 3+ years – you’re missing 756 colors</td>
</tr>
<tr>
<td>2012</td>
<td>336</td>
<td>1,677</td>
<td>If you haven't updated in the last 6 years – you’re missing 532 colors</td>
</tr>
<tr>
<td>2014</td>
<td>84</td>
<td>1,755</td>
<td>If you haven't updated in the last 4 years – you’re missing 196 colors</td>
</tr>
<tr>
<td>2016</td>
<td>112</td>
<td>1,867</td>
<td>If you haven't updated in the last 3 years – you’re missing 112 colors</td>
</tr>
</tbody>
</table>
Best Practices: Age & Care

- Ink/paper will fade/yellow over time.
- Replace every 12-18 months for color-critical applications.
- Keep out of light/UV, heat, and high humidity to maximize stability.
Best Practices: Viewing Conditions

- D50 Lighting
- Lighting Indicator provided at the back of every guide.
- Blocks will match under appropriate lighting.
- Available as stickers for use on projects/proofs.
What to do with what you’ve learned

- Review your color workflow; Where are the gaps?
- Use *physical* standards for *inspiration*.
- Use *digital* standards for *accuracy*. Spectral!
- Not all colors are achievable all the time on all things.
- **Manage expectations**; Set realistic tolerances!
- **Communication is critical**; Talk to your suppliers!
Thank you for attending!