Integrating Digital Color Management

May 2018

Color & Comfort

DIC Corporation
Regional Technical Service
Introducing the SunColorBox

The SunColorBox is a set of applications and services that DIC supply to implement a digitally color managed workflow.
What’s in the SunColorBox?

- SunDigiGuide
- SunDigiProof
- SunMatch
- SunColorConsulting
- Color Instruments & software resell
- PantoneLIVE
- PantoneLIVE
SunColorConsulting

- Customer site audit
  - Pre site audit questionnaire followed by site visit from a SunColorBox specialist.

- Color Management Proposal
  - Based on audit and customer feedback.

- Color Audit
  - Digitally measure and capture customer palette.
  - Rationalisation audit to remove duplication.
  - Harmonisation audit to PantoneLIVE.

Building the foundation to implement a digitally color managed workflow
<table>
<thead>
<tr>
<th>Group</th>
<th>No. Colours</th>
<th>After Rationalisation DE 1.5</th>
<th>Harmonised to Pantone C DE 1.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virgin Board Conventional Ink Gloss</td>
<td>2399</td>
<td>1134 (53% reduction)</td>
<td>268</td>
</tr>
<tr>
<td>Virgin Board Conventional Ink Matt</td>
<td>72</td>
<td>54 (25% reduction)</td>
<td>N/A</td>
</tr>
<tr>
<td>Virgin Board UV Ink Gloss</td>
<td>565</td>
<td>350 (38% reduction)</td>
<td>94</td>
</tr>
<tr>
<td>Recycled Board Conventional Ink Gloss</td>
<td>104</td>
<td>71 (32% reduction)</td>
<td>18</td>
</tr>
<tr>
<td>Recycled Board UV Ink Gloss</td>
<td>63</td>
<td>49 (22% reduction)</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>3203</td>
<td>1658 (48% reduction)</td>
<td>385</td>
</tr>
</tbody>
</table>
Sun Chemical SEINE

- Simple application utilizing Adobe Photoshop.
- On site, on demand, color accurate inkjet proofs.
- Fast turnaround for repeat color swatch requests.
- Improved repeatability over manual wet proofing.
- Bespoke professional presentation.

Quick, repeatable method to produce digital swatches of the customers color palette
Digital handy book & Color standards

- Bespoke to customer needs.
- Digitally printed to very tight tolerances.
- Accurately communicate color to customers.
- Substrate rendering
- Tonal information included.

Accurately communicate colors to customers in a digital format
SunMatch

- Enabling full digital color communication between ink supply and customer network.
- Connecting multiple customer sites allowing them to work from the same central data.
- Hosting a customer « room » on DIC / SC platform with customers digital palette and specific conditions.
- Ink Formulation and QC functionality
- Software updates, support and training included

Digital color communication between multiple locations
Digital color communication between multiple locations
Turnkey solution

- DIC / SC obtains quote from X-Rite for the relevant software, subscription licenses and hardware for the implementation
- DIC / SC manages the purchasing process directly with the customer
- Various software bundles available to fit customer requirements

DIC / SC can manage the instrument and software purchase process
PantoneLIVE™ A Communication tool for the entire Packaging Supply Chain

- Master Standard: The **ideal representation** of a brand color
- Dependent Standard: Close representation of the Master Standard with a **defined, accepted & controlled** color shift based on the reality of the medium and process
PantoneLIVE - Scope of Packaging applications

- PantoneLIVE Dependent libraries cover 80% of the application technologies in the market today
- Dependent libraries are based on Sun Chemical ink
- Brand Owner specific libraries are built on-demand
- Color data from real ink on real substrate

<table>
<thead>
<tr>
<th>Application</th>
<th>PantoneLIVE</th>
<th>Libraries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Folding Cartons, Tags, Cards</td>
<td>Yes</td>
<td>8</td>
</tr>
<tr>
<td>Labels, Narrow Web</td>
<td>Yes</td>
<td>2</td>
</tr>
<tr>
<td>Paper Labels</td>
<td>Yes</td>
<td>3</td>
</tr>
<tr>
<td>Flexible Packaging and Wide Web Labels</td>
<td>Yes</td>
<td>9</td>
</tr>
<tr>
<td>Paper Packaging and Corrugated</td>
<td>Yes</td>
<td>5</td>
</tr>
<tr>
<td>Metal Decoration</td>
<td>Pilot</td>
<td>3</td>
</tr>
</tbody>
</table>
PantoneLIVE - Brand Owner Case Study

THE OPPORTUNITY WITH HEINZ
Inconsistency at every consumer touch point.........
THE PantoneLIVE HEINZ PROJECT
RESULTS ACHIEVED...FOR HEINZ

Litho Carton  Gravure Film  Flexo Film  Litho Paper
THE PantoneLIVE HEINZ PROJECT:
THE PantoneLIVE DIFFERENCE...

dE8.9 reduced to dE1.5

A reduction of dE 7.4
ON SHELF RESULTS

BEFORE

AFTER

Mission accomplished
PantoneLIVE Summary

- Brand Owners need their color right!
- Industry is constantly moving toward standardization
- Digital color communication is transforming packaging
- The language of color is key and based on real data
- Digital technologies are delivering ‘Right color, first time, everywhere, every time’

PantoneLIVE is a digital color communication tool for the entire packaging supply chain
SunColorHouse

• Customer house constructed to customer specific requirements using the SunColorBox:-
  • SunColorConsulting
  • SunDigiProof
  • SunDigiGuides
  • SunMatch
  • Color Instruments & software resell
  • PantoneLIVE connectivity

Customer house constructed from SunColorBox services
Since 2014

**Press make-ready time**: 25-30%

**Color matching time**: 5-20%

**Right first-time on press**: 10-40%

**Color correction time on press**: Up to 70%

**Ink returns usage**: 20-70%

**Substrate waste**: 30-40%

**Color palette**: 30-80%
Color & Comfort