Extended Gamut Printing (ECG)

Going beyond CMYK printing: Neon and Fluorescent inks/toners

By Richard Ainge

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Overview

- Common buzz words are: Extended/Expanded Gamut • Fixed Color Palette • CMYK+

- The addition of extra spot colors to increase the color gamut CMYK inks.

- ECG is commonly used for converting Pantone® colors into a 7 color fixed ink set

- Metallic and White ink printing is also a form of extended gamut printing

- Some digital devices now neon/fluorescent inks/toners, which also expand the color gamut

In this presentation we will focus exclusively on NEON & FLUORESCENT inks/toners.

Extending the gamut using neon colors

What will it do?
Achieve colors that cannot be reproduced out of CMYK. This will improve the vibrancy and saturation of the print.
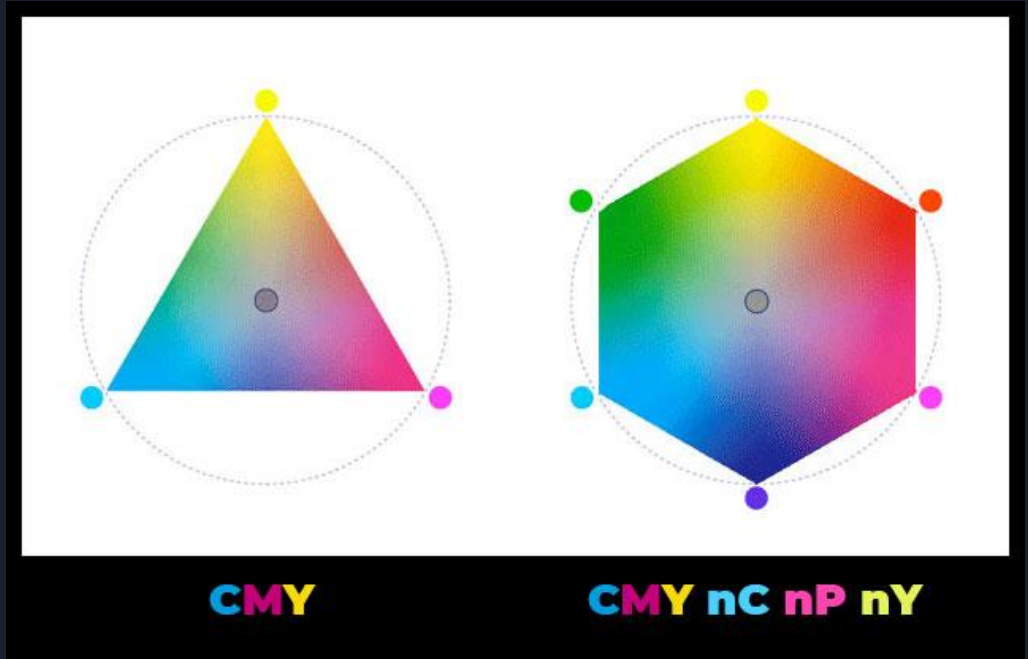
How do we achieve that?
By creating a new color space using a fixed ink set:
CMYK + Neon Cyan
CMYK + Neon Pink
CMYK + Neon Yellow

Understanding the problems

01 There is no ISO specification for Neon or Fluorescent inks – Each press has different inks/toners with their own unique color and appearance.

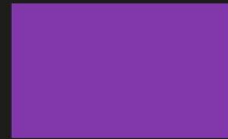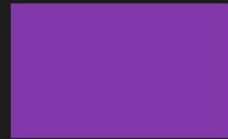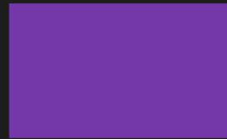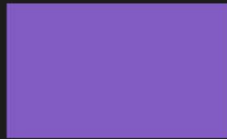|	HP INDIGO FLUORESCENT PINK	HP INDIGO VIVID PINK	RICOH NEON PINK	FUJIFILM / SHARP / XEROX FLUORESCENT PINK	XEROX VERSANT FLUORESCENT PINK
100% PINK					
100% PINK + 100% YELLOW					
100% PINK + 50% CYAN					

Understanding the problems

Adobe CC cannot accurately show you extended gamut spot channels and there are no monitors capable of displaying neon colours accurately

This is the same image viewed using different profiles/color spaces:

RGB + Neon Pink

RGB profile (Additive color space)

CMYK + Neon Pink

CMYK profile (Subtractive color space)

Final Print Simulation

Combined image > RGB profile

Understanding the problems

03   Pantone® Neon & Pastel guides don't work in digital!

Pantone® Neon & Pastel guides are printed on an offset press

210 colors to choose from

Each color is a SPOT ink mixed to a formula by the press operator, leaving the print process open to errors in formulation

Mixing separate inks is wasteful and results in lots of ink thrown away that is not used – this is bad for the environment.

You have to pay for each color you use! Each extra ink requires an additional printing plate, which increases production costs.

Spot inks are formulated by mixing multiple inks together, often requiring 3 inks to create one spot color!

A solution to the problem

The solution to designing and printing in neon/fluorescent:

Neon Color Guides printed by the end user off their own machines

Use as many colors as you like – it's only a 5 color job. CMYK + Neon Pink or CMYK + Neon Yellow.

Print using your own print standards e.g Fogra 51

Chromatically sequenced so colors are easy to find and mathematically calculated across the color spectrum

Up to 1520 colors – from vibrant neons to subtle pastels

Four separate neon guides:

OVERPRINT GUIDES The neon is printed atop of the CMY inks/toners, increasing color saturation

SCR GUIDES (Source Color Removal) The neon color substitutes either the Magenta or Yellow ink/toner - for lighter and more vibrant colors

Understanding the problems

04 There are no proofing devices with neon inks or toners, only production presses

Xerox Iridesse

Xerox Versant (Adaptive CMYK+)

Xerox Igen 5

NEW! SwissQprint > Nyala

Ricoh Pro C7xxx / Heidelberg Versafire

HP Indigo

Roland DG

Mimaki

Epson

Canon

Dye Sublimation Printers
Developed for the textile print industry

File separation: Adobe Photoshop

*N-Color press profiles and why they don't work. Profiles take away your creativity – software companies want to do all this at the RIP/DFE.

ESKO Equinox | Requires ESKO Color Engine. High end prepress color separation technology User Guide

GMG ColorPlugin: | Requires GMG Color Server. High end prepress color separation technology More information

Touch7 Photo ECG | Touch7 Photo NEON
Photoshop Extensions More information

Manual working | Photoshop Trial and Error = Cost

*the term given to the multi-color ICC profiles

File separation: Adobe Illustrator

Tips & tricks for color separation – Video guides for simple vector graphics or complex gradient meshes
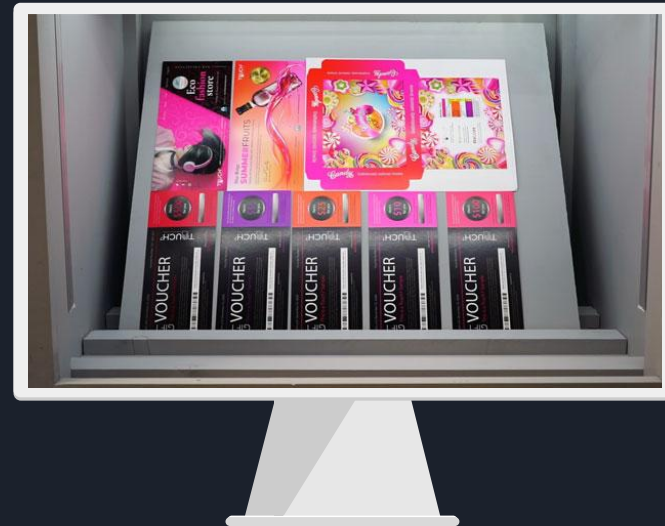

Simple vector separation

Gradient mesh separation

Additional Videos

Adding prepress trapping to your files | Your designs under UV lighting


Adding trapping to your designs

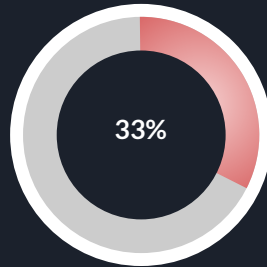Designing for UV lighting

Market Trends

Premiums for Print Enhancements

Recent studies have shown that the addition of neon/fluorescent, ECG and metallic inks can increase the premiums charged per job compared against a standard Pantone® spot color | **NAPCO Research** (North American Publishing Company)
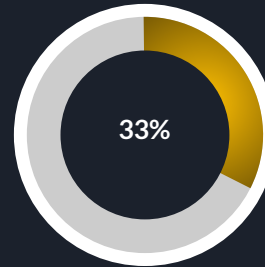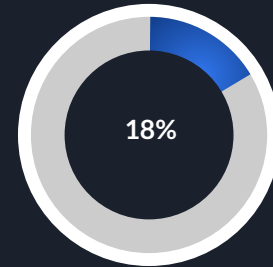
Brand owners average premium paid:
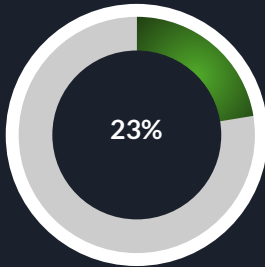
23%	33%	33%	18%
ECG INKS	NEON/FLUORESCENT	METALLICS	PMS COLOR

The future is embellishments!
Industry Printing Trends Videos and Articles

- **Barb Pellow and Jim Hamilton "Reveal Digital Printing Trends for 2020" Video Link**
- **Barbara Pellow "Time to Embrace Change" Link to Article**
- **People Love Embellishments—But Often Fear Them - Trish Witkowski, Chief Fold Fanatic for Fold Factory Link to Video**
- **Request Your Free Research Report Now:"Adding Value to Digital Printing" Link to Download report**
- **Patrick Henry "Make Your Jobs Stand Out With Print Embellishments & Specialty Applications" Article Link**
- **LaManna Alliance's Print Industry Prediction from Mark Geeves of Color-Logic Link to Video**

Questions & Answers

Thank you for your time. For more information regarding extended gamut and neon printing, please visit:

www.touch7.co/FAQs