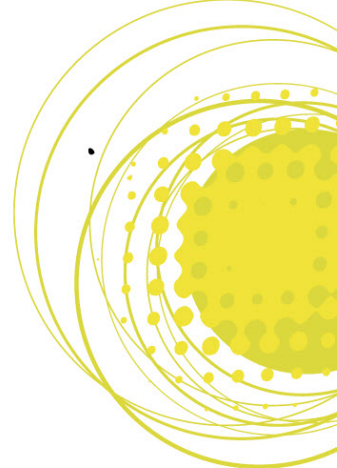
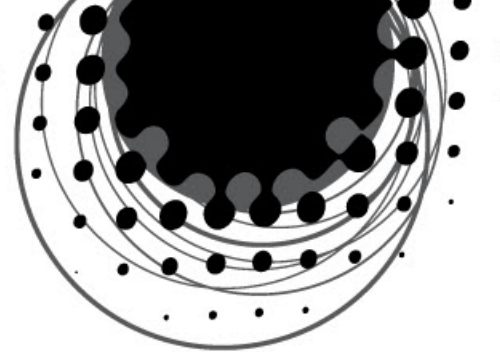


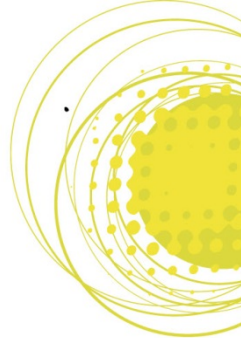
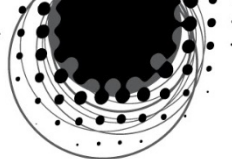


Standardized Workflows Requirements

Elie Khoury
Alwan Color Expertise

February 12, 2015 • India Expo Centre • Greater Noida, Delhi NCR





Color Control and Standardization across Printing Technologies

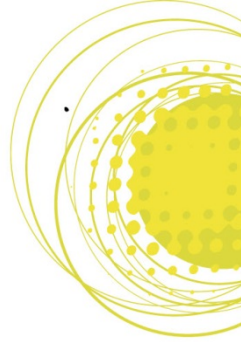
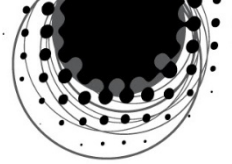
- Alwan Color Expertise: Software
- KEE Consultants: Services
- ISO TC130: Standards



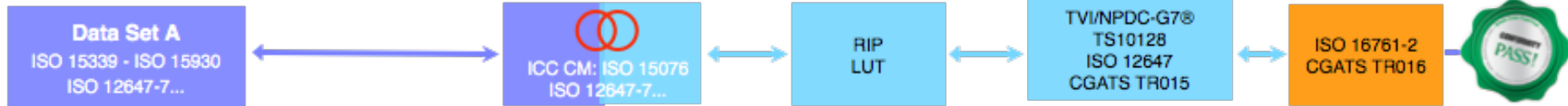
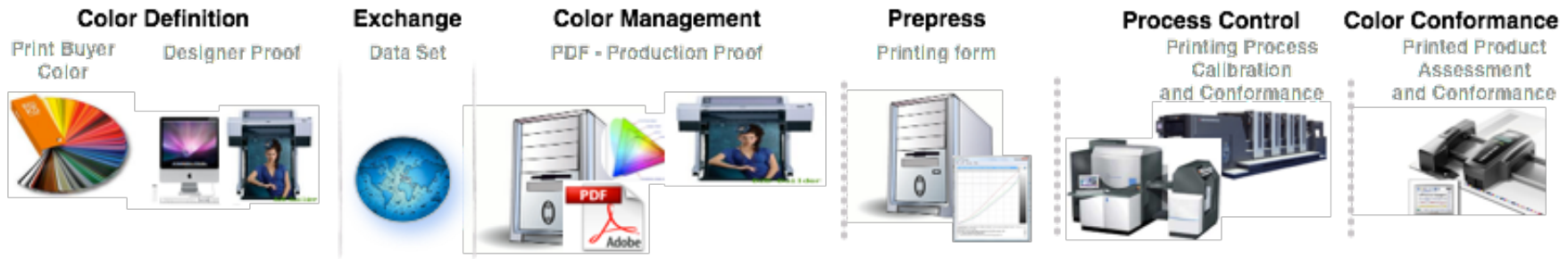
What is the purpose of a printing business?

- To meet customer expectations:
« I just want my color right... »





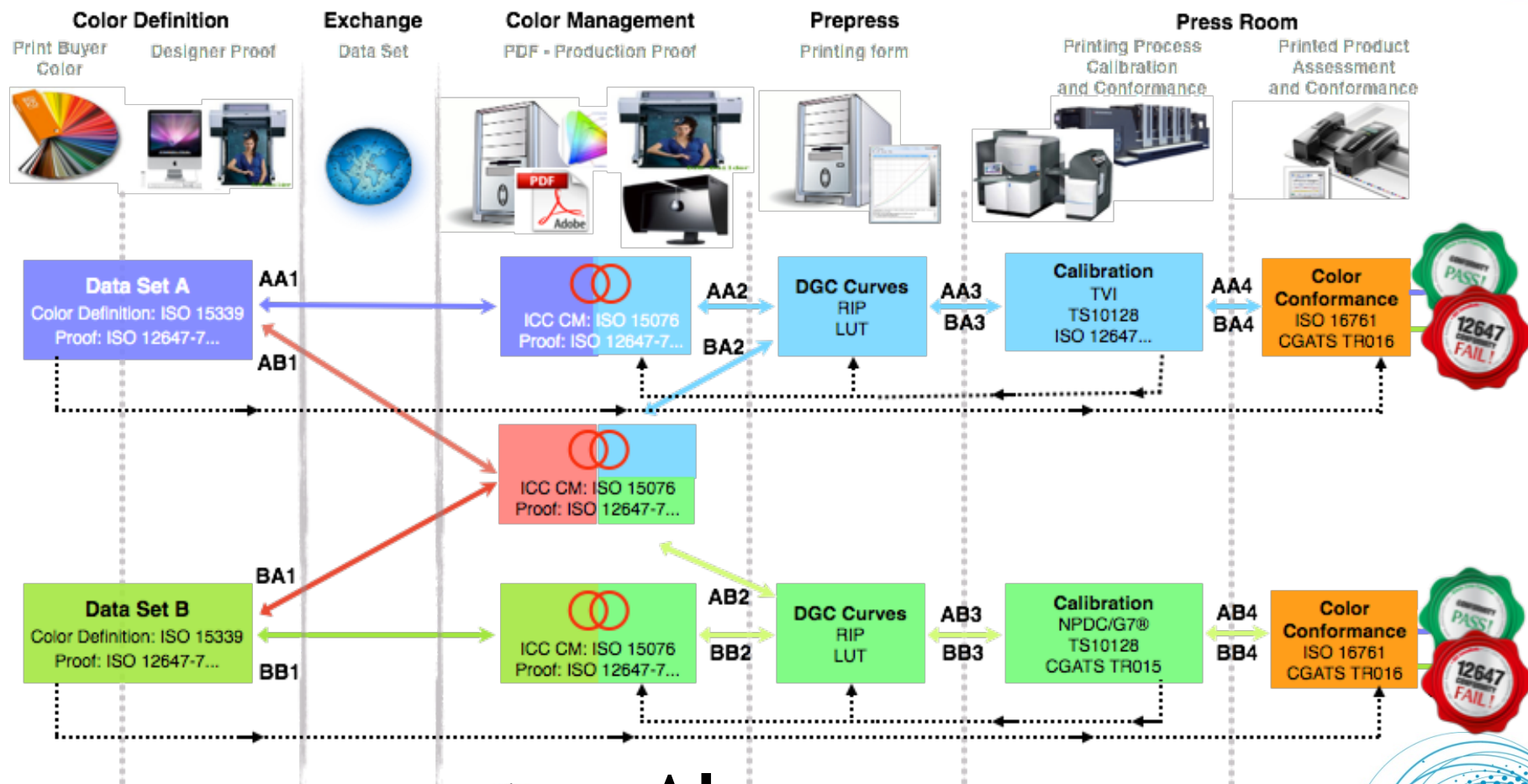
Ideal Printing Workflow



Alwan
Color Expertise



Actual Printing Workflows





Universal Printing WORkflows Diagram

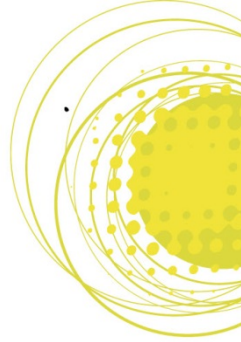
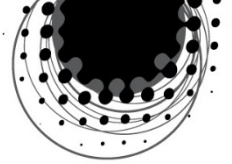
- Distinguish 3 areas :
 - Customer expectations identification
 - Needed printing process to fulfill these expectations
 - Required reproduction accuracy accepted by the print buyer and the printer

1. Color Definition (DTP)

Design
PDF Generation,
Proofing



- Print Buyer and designer choose, design, proof and approve colors
- Brand Colors: CxF, PMS, sample...
- Process Colors: ICC profile - Data Set
- Unambiguous definition
- ⇒ Printer can easily identify print buyer intended colors

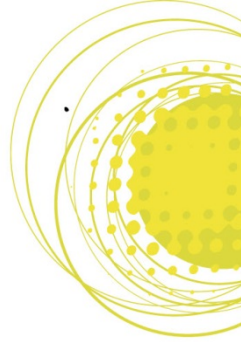
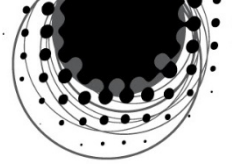


2. Color Reproduction (CM)

Color Management
PDF Production, Proofing



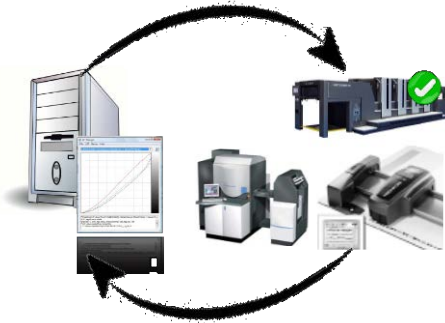
- The printing process can “naturally” reproduce customer colors
- ⇒ Process control
- The printing process can not “naturally” reproduce customer colors
- ⇒ ICC Color Management + Process Control



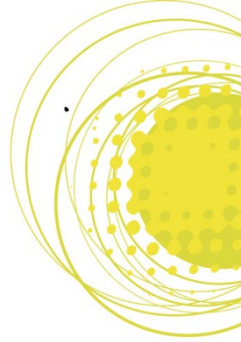
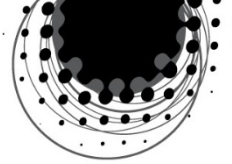
2. Color Reproduction (PC)

Prepress
Printing form

Process Control
Printer Calibration
& Conformance



- Check Aims and Tolerances
- ISO 12647 and G7®
- Closed-loop for analog
- Closed-loop for digital
- ⇒ Print output is stable
- ⇒ Print output is predictable



3. Color Conformance (QA)

Print Control

Color Control

Print Assessment & Conformance

Color Assessment & Conformance



- How accurate is the product color
- Brand Colors: ΔE_{00} , Spectral, Metamerism
- Process Colors: ΔE_{ab} , TRC, Data Set
- Unambiguous distinction and definition of process (device) and color (product) conformance
- $\Rightarrow$ Print Buyer and Printer can easily agree on aims and tolerances for a job

Ideal = Actual Printing Workflow

Color Definition

Design
PDF Generation,
Proofing



Color Reproduction

Color Management
PDF Production, Proofing



Prepress
Printing form



Process Control
Printer Calibration
& Conformance



Color Conformance

Print Control
Print Assessment
& Conformance



Color Control
Color Assessment
& Conformance



Data Set A

ISO 15339 - ISO 15930
ISO 12647-7...

ICC CM: ISO 15076
ISO 12647-7...

RIP
LUT

TVI/NPDC-G7®
TS10128
ISO 12647
CGATS TR015

ISO 16761-2
CGATS TR016



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Standardized Workflows: ISO 16761

- Printing Workflows Definition, Requirements and Testing
- Part 1: CMYK+Spot for « commercial » products
- Part 2: CMYK+Spot, Multicolor for « packaging » products

Design

PDF Generation,
Proofing



Color Management

PDF Production, Proofing



Prepress

Printing form

Process Control

Printer Calibration
& Conformance



Print Control

Print Assessment
& Conformance



Color Control

Color Assessment
& Conformance



Standardized Workflows Benefits

- Feedback from more than 150 PSO and G7[®] sites worldwide
- Realistic figures (up to)

Color Preflight -50%
Proof Mismatch -50%

Design
PDF Generation,
Proofing



Color Management
PDF Production, Proofing



Process Control -50%
Ink Saving -30%

Prepress **Process Control**
Printing form Printer Calibration
 & Conformance



Color Problems - - -
Customer Satisfaction +++

Print Control **Color Control**
Print Assessment Color Assessment
& Conformance & Conformance



Alwan
Color Expertise

Standardized Workflows Bottom Line

- Non quality issues cost printers 5%+ net profit (Observatoire des medias, UNIC France 2009)
- Automation and Education are mandatory.

Design

PDF Generation,
Proofing



Color Management

PDF Production, Proofing



Prepress

Printing form

Process Control

Printer Calibration
& Conformance



Print Control

Print Assessment
& Conformance

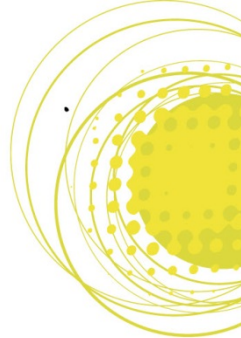
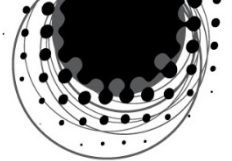


Color Control

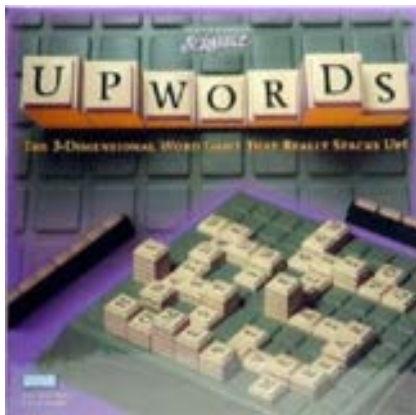
Color Assessment
& Conformance



Alwan
Color Expertise



धन्यवाद!



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Color Expertise

