



Packaging Technology Integrated Solutions

Standards Impact on Graphic Commercialization

March, 2013

A little bit about us

- HAVI Global Solutions (HGS) is a privately held HAVI Group Company
- The HAVI Group:
 - A diversified holding company that owns and manages global businesses in the supply chain, marketing and packaging industries
 - Founded in 1974 "on a handshake"
 - "Professionally Managed... Family Owned"
 - Comparable in size to the Forbes Top 20 Largest Private Companies
 - Serving 100 countries with 8,000+ employees
 - Among McDonald's largest global suppliers
 - Based in Downers Grove, IL

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A little bit about us



- Packaging Technology Integrated Solutions
- Analytics & Supply Chain Services
- Promotions Management
- Recycling & Waste Solutions

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HGS Overview and Discussion Set-up



Strategic Sourcing
Social and Environmental Responsibility
Product Development
Graphic Services
Quality Assurance

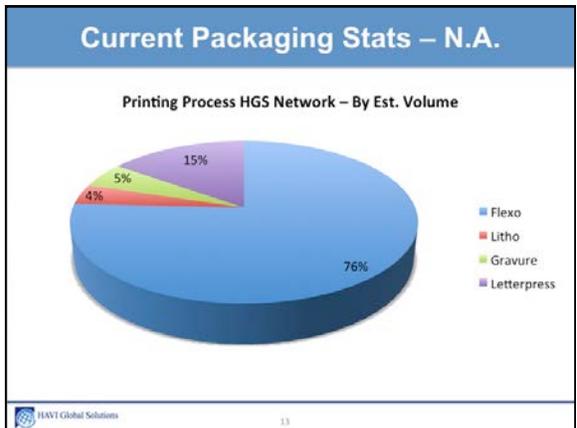
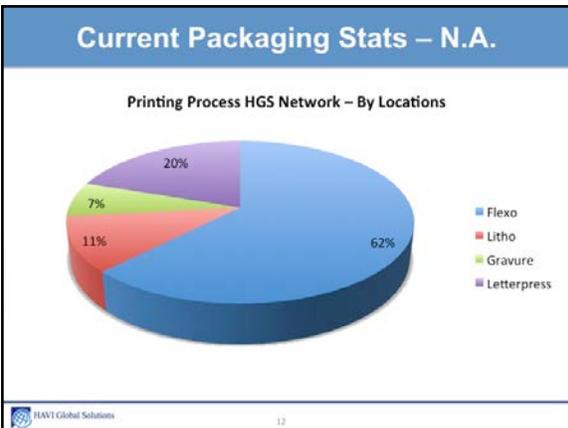
2.5 Bil. Packaging Mgmt.
Over 100 Countries

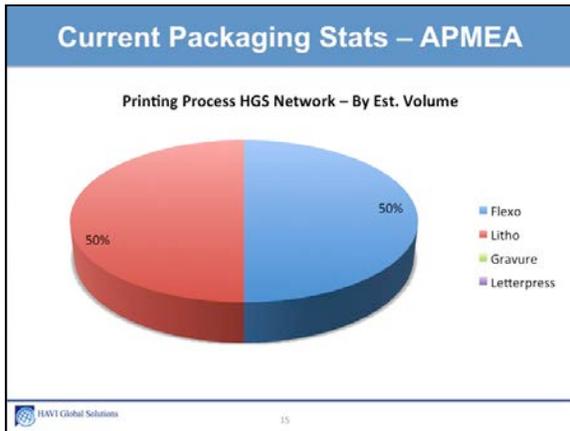
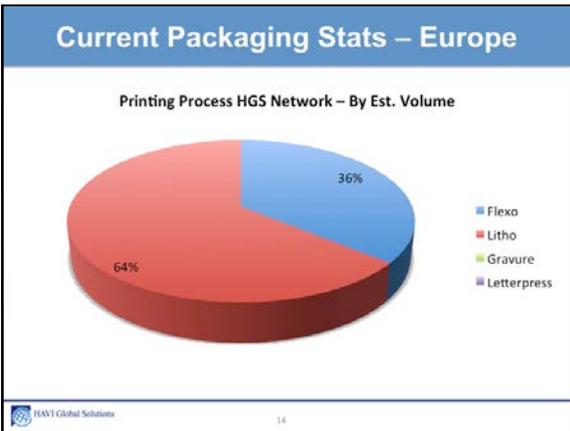
Demand Planning
Freight Management
Supply Planning
Supply Chain Analytics
Data Management

Project Management
Business Process Mgmt.
Execution Management
Post Evaluation
Logistics Optimization

Analytics **Packaging Services** **Promotions Management**

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Discussion Today

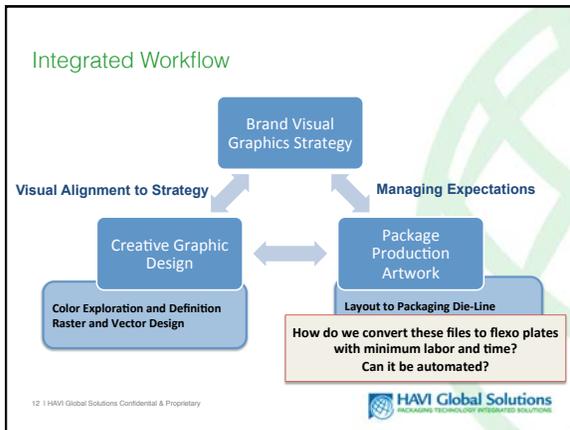
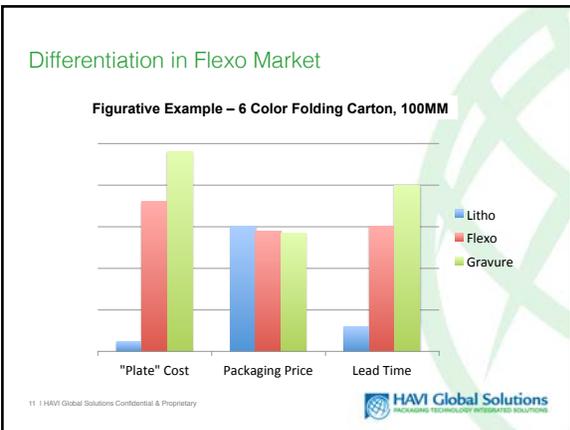
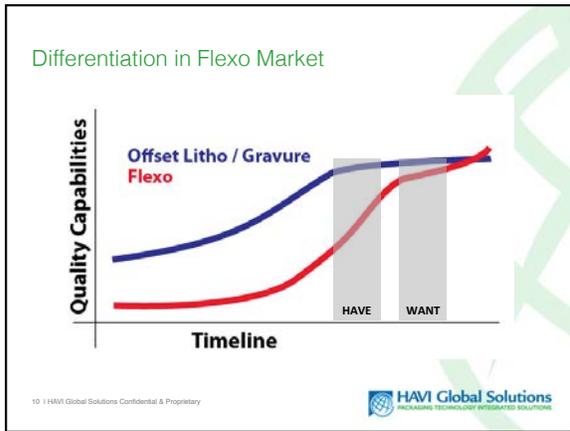
- Print Standards impact to Brand Graphic Commercialization
- Opportunity for Imaging Specification / Simplification

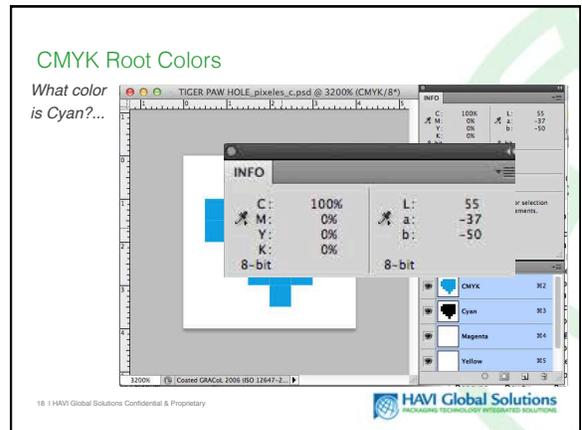
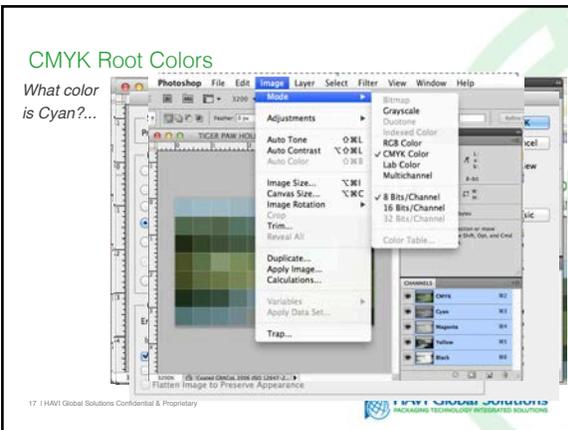
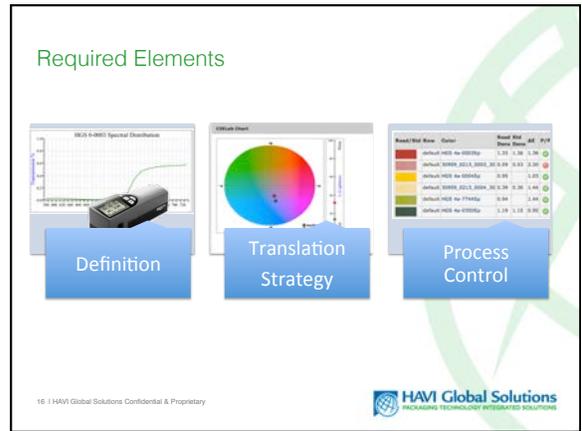
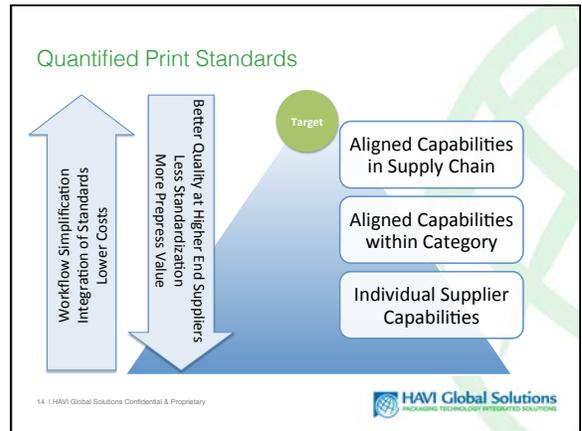
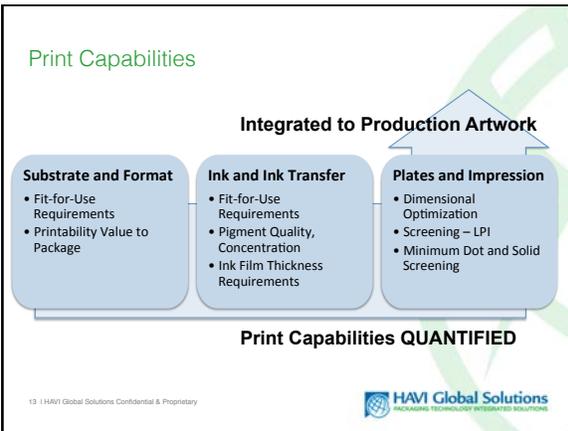
Spot Color Definition

ISO Process Color

G7® Tone Calibration

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CMYK Integration



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Print Standards

Wouldn't it be nice if...

The Substrate, Printing Process, and location of Print Supplier didn't influence how the color expectations were managed with the customer!!

Is there an ideal color for cyan regardless of the above?

CMYK

INTERNATIONAL STANDARD ISO 12647-2



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CMYK Print Standards

INTERNATIONAL STANDARD ISO 12647-2

ISO 12647 consists of the following parts, under the general title *Graphic technology — Process control for the production of half-tone colour separations, proof and production prints*:

- Part 1: Parameters and measurement methods;
- Part 2: Offset lithographic processes;
- Part 3: Coldset offset lithography and letterpress on newspaper;
- Part 4: Publication gravure printing;
- Part 5: Screen printing;
- Part 6: Flexographic printing;
- Part 7: Processes using digital printing or reproductions made on various traditional printing processes from digital files (under preparation).

prints —
Part 2:
Offset lithographic processes

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CMYK Print Standards

Table 2 — CIELAB coordinates of colours for the printing sequence cyan-magenta-yellow

Paper type ^a	3			4			5			
	L*	a*	b*	L*	a*	b*	L*	a*	b*	
1	50	20	0	0	31	1	1	31	1	2
2	(20)	(0)	(0)	(31)	(1)	(1)	(31)	(1)	(3)	
3	55	-38	-44	58	-25	-43	59	-27	-38	

Table 3 — CIELAB ΔE*₀₀ tolerances for the solids of the process colours

	Black	Cyan	Magenta	Yellow
Deviation tolerance	5	5	5	5
Variation tolerance	4	4*	4*	5*

* The contribution of the hue difference shall not exceed 2.5.

Table 4 — CIELAB coordinates of process colours

	Black	Cyan	Magenta	Yellow
Blue-CM ^a	(24)	(17)	(-46)	(25)
C-MY ^a	22	0	0	22

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CMYK Print Standards

Circle back...

	L	a	b
Cyan	54	-36	-49
	(55)	(-37)	(-50)

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CMYK Print Standards – In Practice

	L	a	b	C	H	Density
Reading	55.9	-36.2	-51.2	62.7	234.7	1.43
Anchor	55.0	-37.0	-50.0	62.2	233.5	1.45
Difference	0.9	0.8	-1.2	0.5	1.2	-0.02

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CMYK Print Standards – In Practice

Color Sentry

Home Assets Readings Jobs Workorders Setup Help Logout (admin)

COLOR READING DETAILS: #13884 – #39191 (31668_FINGERPRINT_ISO_56.14.11 CMYK ISO)

Reading - Standard

Block ID: 4293
 Compared?: Yes
 Job: AE 2000
 31668_Fingerprint_ISO_56.14.11 5:47 (Pass)

	L	a	b	C	H	Density
Reading	55.4	-37.3	-49.3	61.8	232.9	
Anchor	55.0	-37.0	-50.0	62.2	233.5	1.45
Difference	0.4	-0.3	0.7	-0.4	-0.6	

Date: 06/15/11 @ 8:54 a.m. R G B 0 152 218

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CMYK Print Standards – In Practice

Color Sentry

Home Assets Readings Jobs Workorders Setup Help Logout (admin)

COLOR READING DETAILS: 172682 – #28292 (17159_FINGERPRINT_ISO_11.61.2011 CMYK ISO)

Reading - Standard

Block ID: 7523
 Compared?: Yes
 Job: AE 2000
 17159_Fingerprint_ISO_11.61.2011 @ 8:10 (Pass)

	L	a	b	C	H	Density
Reading	54.9	-36.9	-49.7	61.9	233.4	1.46
Anchor	55.0	-37.0	-50.0	62.2	233.5	1.45
Difference	-0.1	0.1	0.3	-0.3	-0.1	0.01

Date: 05/05/12 @ 1:48 p.m. R G B 0 151 217

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CMYK Print Standards – In Practice

Color Sentry

Home Assets Readings Jobs Workorders Setup Help Logout (admin)

COLOR READING DETAILS: 371535 – #33758 (36989_TEST_TRIAL)

Reading - Standard

Block ID: 3026
 Compared?: Yes
 Job: AE 2000

	L	a	b	C	H	Density
Reading	55.8	-28.6	-40.9	49.9	235.1	
Anchor	55.0	-37.0	-50.0	62.2	233.5	1.45
Difference	0.8	8.4	9.1	-12.3	1.6	

Date: 05/10/11 @ 2:40 p.m. R G B 0 149 204

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CMYK Tone Standards

Color Sentry

Home Assets Readings Jobs Workorders Setup Help Logout (admin)

COLOR READING DETAILS: 371535 – #33758 (36989_TEST_TRIAL)

Reading - Standard

Block ID: 3026
 Compared?: Yes
 Job: AE 2000

Approximate RGB Values

	R	G	B
Reading	152	218	152
Anchor	151	217	151
Difference	1	1	1

Date: 05/10/11 @ 2:40 p.m. R G B 0 149 204

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Resolution

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LPI

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Min and Max Dot

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Tone Reproduction

Angles

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1-Up Graphic Management

Color Managed PDF

Color Managed Proof

Supplier A - Substrate A

Supplier B - Substrate A

Supplier C - Substrate B

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Released to Supply Chain

Supplier A - Substrate A

Supplier B - Substrate A

Supplier C - Substrate B

Step and Repeat

Printer Marks

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Released to Supply Chain

Supplier A - Substrate A

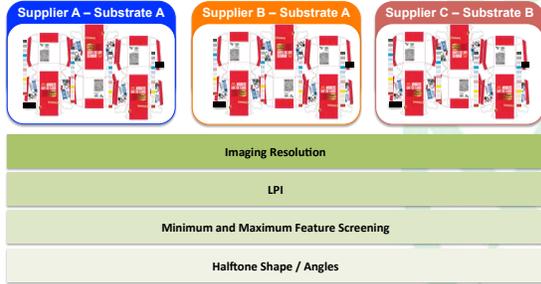
Supplier B - Substrate A

Supplier C - Substrate B

G7® Curves Applied (Based on Printer Optimization and Qualification)

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Released to Supply Chain



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Could I...

Produced DIGITAL NEGATIVES, screened to an imaging standard for the substrate 1 classification, of the stepped files, and released those directly to the supplier...

Yes. It is done today in certain segments of the market.

Very customized to Application and users



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Then I would be able to...

Utilize a network of certified plate processing facilities to image and process flexo plates

Costs of flexo plates would be restricted to raw consumable costs, processing labor, and facility costs.

This is I believe the trend.

It has been demonstrated in the Offset litho world. How many litho plates are made off-site, and are inclusive of all the prepress and proofing activities?

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Gap Identification

- Plate costs with new graphics/prepress removed
 - Reduce in general 50% eliminating prepress, automating screening / imaging standard
- Lead time shortened
 - Reduce 50% eliminating custom color management, 2-stage proofing approval
 - Integration of imaging standards
- Packaging Price
 - Throughput
 - Manufacturing Overhead
 - Profit (return on innovation / investment)

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Perspective

Flexo printing capability gap can be reduced significantly specifically related to the image carrier

Shift value for high resolution imaging and plate quality from specific packaging opportunities to industry elevation and simplification

Bring capability to easily provide digital negatives to brand management

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Perspective

Imaging Standards

Allow digital negatives to be completed without knowing where they will be imaged...

Standardize on 4000 DPI

Define substrate classifications that bucket into 3 groups

Simplify to 3 available LPI options (80, 125, 160), inclusive of highlight screening strategy (transition to spot/stochastic)

Standardize angles (7.5, 22.5, 52.5, 82.5)

Publication of Standard Operating Procedures for Imaging Certification

Certified by industry trade organization

(similar to IDEAlliance and G7)

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Perspective

Flexo Plate Costs

Allocate physical plate charges (polymer and processing) to cost of operations/package

Done today for all duplicate sets of plates / re-orders

Provide incentive to bring flexo plate-making in-line with litho plate-making as it exist in market today (on-site, lead time, cost vs. profit)

Costs of executing new/promotional graphics specifically to activities related (design integration, prepress, proofing, color management)

Focus on maximizing throughput and reducing operating overhead through increased plate performance, in-the-round, ink interaction, mounting, etc.

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THANKS

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