The Power of the Page and Beyond

Jeff Hayes
Managing Director
June 2, 2016
<table>
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<th>Agenda</th>
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| 1 | Print Value in the Digital Age  
Jeff Hayes, Managing Director |
| 2 | Connecting with Data-Driven Pages  
Barb Pellow, Group Director |
| 3 | Inkjet Disruption in Promotional and Publication Pages  
Jim Hamilton, Group Director, Production Print & Media |
| 4 | Deconstructing Workflow for Multiple Industries  
Pat McGrew, Director, Production Workflow |
| 5 | Beyond the Page – Innovation in Packaging and Decorative  
Ron Gilboa, Senior Director, Production Hardware |
InfoTrends Products and Services

- Custom Projects & Testing
- Advisory Services
- Multi-client Studies
- Databases & Tools
BLI – A Leading Independent Test Brand for the Imaging Industry

- Over 50 years experience
- ISO 17025 Certified Labs in EU and US
- Lab analysts with an average of 20 years+ in the imaging industry
- Testing hundreds of devices every year

TYPES OF PRODUCT TESTED
- MFPs
- Printers
- Scanners
- Software
- Paper/Media
- Consumables
- Cut Sheet Production
- Aqueous Wide Format
Cut Sheet Production Test Services

Future Developments

• Launched program in 2008
• Generated over 24 million clicks
• Tested over 35 production engines
  – Xerox
  – Ricoh
  – Konica Minolta
  – Océ/Canon
  – Sharp
• Focus on hardware performance
  – Media handling
  – Productivity
  – Image quality
  – Ease of use
  – Job management
• Expanding test remit
• Areas being considered
  – Mid to high volume devices
  – VDP test element
  – Production workflow software
  – Finishing solutions
  – Media testing

Contact
Pete Emory,
Director of Production
Cut Sheet Test Service Program
Wide Format Test Services

Announcing at drupa

- **Launched program in 2008**
  - Initial focus on internal CAD and display
  - Generated 300,000 ft² of output

- **Tested over 40 wide format engines**
  - HP
  - Océ/Canon
  - Epson
  - Xerox

- **New program for Eco Solvent & Latex graphics**
  - Epson, OKI and Ricoh have committed to testing
  - Others in advanced discussion

- **Avery Dennison is BLI’s media partner**
  - Stocks for both US and EU

- **Evaluating other markets**
  - DTG, Dye Sublimation, UV
  - Private ink testing service
  - Lightfastness service

**Contact**
David Sweetnam,
Director of Wide Format and Graphic Arts Test Program
Recent InfoTrends Multi-client Studies

• Micro to Mega: Trends in Business Communications
  o Print and digital communication service requirements across 10 vertical industries in U.S.

• Direct Marketing Production Printing & Value-Added Services
  o Printing systems, software, paper, and inserting opportunities in direct mail and catalogs in North America and W. Europe

• The Future of Digital Packaging Workflows
  o Key drivers of digital transformation and supply chain integration across the global packaging industry
New InfoTrends Multi-client Studies

• **Lead with Data, Follow with Print**
  
  o Examine how U.S. marketers use data and how they would like to evolve relationships with PSPs for data-driven services

• **Service Expansion Opportunities for Document Outsourcing**
  
  o Understand the needs of U.S. and European enterprises outside of traditional print (e.g. creative, data hosting, analytics, app development, omni-channel) and test what brand permission they give PSPs to offer these services

• **Beyond CMYK: The Opportunity for Print Enhancement**
  
  o Analyze the usage, effectiveness, pricing, and customer requirements of digitally printed special effects in the U.S. and W. Europe

• **Print On Demand and Digital Packaging Printing in China**
  
  o Size the Chinese market for POD and digital Label & Package Printing devices and print volume, and investigate PSP and converter usage patterns and requirements
InfoTrends Business Development Services

- Licensed Content
  - White papers
  - Case studies
  - Newsletters

- Interactive Support
  - Webinars, customer events
  - Sales training
  - Strategy planning

- Customized Tools
  - Calculators
  - Assessments
  - Competitive guides

Strategy – Lead Generation – Customer Engagement
We Said at drupa 2012 ... Digital Displacing Print

U.S. Commercial Print and Digital Advertising ($B)

Segments: U.S. Commercial Print, Quick Print, In-Plant, Data Center, Photofinishing
Sources: U.S. Department of Commerce, IAB, InfoTrends

© InfoTrends
Mobile Driving Digital

U.S. Commercial Print and Digital Advertising ($B)

Segments: U.S. Commercial Print, Quick Print, In-Plant, Data Center, Photofinishing
Sources: U.S. Department of Commerce, IAB, InfoTrends

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Direct Mail – Co-existing with Digital Advertising or the Calm Before Next Storm?

U.S. Domestic Mail Pieces (B)

First Class
2001 = 103.7 B

Standard
2007 = 103.5 B

23% decline since peak
(-23.4 B pieces)

39% decline since peak
(-40.4 B pieces)

US Economic recessions

Source: US Postal Service

© InfoTrends
Digital Print ... The Next Wave

Global Value of Digital Production Print Shipments and Services ($B)

Source: InfoTrends
Toner and Ink ... Growing the Pie, Fighting for Share

Global Value of Digital Production Print Shipments and Services ($B)

Source: InfoTrends
Enable new jobs
Add value to existing jobs
Create competitive differentiation

Value creation

Data & content
- Targeting
- Message, version
- Reach

Enhancements
- Coatings
- White, foils, materials
- Finishing, converting

Quality
- Resolution
- Gamut, spot
- Consistency

Substrates
- Weights
- Grades
- Sizes

Running costs
- Consumables
- Service
- Equipment

Productivity
- Automation
- Throughput
- Uptime

Supply chain
- Inventory
- Delivery
- Time

Cost reduction

Enable shorter/longer runs
Improve margins on existing jobs
Create competitive cost advantage

Onshoring
Mass customization
Purchase activated manufacturing
Environment – water, energy, recycle
Conclusions

• Have the right perspectives
  o Print = $1.5T global market
  o Commercial = Print + Digital (mobile)
  o Digital Print = Commercial + Packaging + Decorative

• Digital Print redux
  o Same principals, different applications
  o Inkjet and toner – growing the pie, fighting for share

• Pursue print value and cost reduction
  o New applications, growth, profits
  o Change the world
Connecting with Data-Driven Pages

Barbara Pellow
Group Director
June 2016
What A Difference a Few Decades Makes!

15 Years Ago

Ding, You’ve Got Mail

Sigh! Letters

Today

OMG! A Letter

220 Unread Emails
Insight Into Direct Marketing in Western Europe

- Surveyed 900 Western European Consumers
- Conducted phone surveys with 25 senior direct marketing executives
- Completed in-depth interviews with 10 print and marketing services providers
Western European Direct Mail is a Big Business!

2014 Direct Marketing Spending: $65.2 Billion

- Direct Mail: $22.6
- Search: $23.4
- Display: $16.2
- Email: $0.9
- Other: $2.1

Western European Direct Marketers – Direct Mail is on the Rise

Regarding next year’s TOTAL volume of direct mail, do you think your company will send out:

- More pieces: 32%
- About the same: 64%
- Fewer pieces: 4%

N = 25 Western European Direct Marketers
Direct Mail … Gets Noticed, Causes Action, Builds Brands

Source: A Bias for Action, Canada Post and True Impact Marketing, July 2015
© InfoTrends
What Marketers Need:
It’s All About the Customer Experience!
Direct Marketers – Top Business Objectives

What are the most important business objectives that your company hopes to achieve in enhancing customer communications?

- Improve the customer experience: 37%
- Increase customer loyalty: 36%
- Better understand customer behaviors: 32%
- Reduce customer churn: 24%
- Increase up-sell/cross-sell opportunities: 23%
- Reduce risks: 22%

N = 800 Respondents in the U.S. and Western Europe

Multiple Responses Permitted
The Experience Must be Personal

IT'S ALL ABOUT YOU
# Businesses Turn to Relevant Personalisation that Sells

**How does your company plan to improve the customer experience as it relates to communication?**

<table>
<thead>
<tr>
<th>Improvement Area</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better tailored offerings</td>
<td>39%</td>
</tr>
<tr>
<td>Better data-driven personalisation and relevant comm.</td>
<td>38%</td>
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<tr>
<td>Offer or expand digital self-service capabilities</td>
<td>36%</td>
</tr>
<tr>
<td>More billing or payment options (e.g., mobile)</td>
<td>31%</td>
</tr>
<tr>
<td>Offer or expand mobile communications</td>
<td>29%</td>
</tr>
<tr>
<td>Better social media monitoring and responding</td>
<td>28%</td>
</tr>
<tr>
<td>Synchronize experience across touchpoints</td>
<td>25%</td>
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</tbody>
</table>

N = 297 Respondents who invest in CCM to improve the customer experience from the U.S and Western Europe


© InfoTrends
The Challenge... In a Word
The Data Challenge

How challenging are each of the following areas for your direct mail efforts?

- Predictive modeling: 12% Not at all, 84% Challenging, 4% Extremely challenging
- Cleaning data: 36% Small challenge, 64% Challenging, 0% Extremely challenging
- Personalization of direct mail pieces based on customer data: 48% Small challenge, 52% Challenging, 0% Extremely challenging
- Aggregating multiple data sources to create effective and targeted customer lists: 64% Small challenge, 36% Challenging, 0% Extremely challenging
- Data segmentation and analysis: 72% Small challenge, 24% Challenging, 4% Extremely challenging
- Collecting data: 88% Small challenge, 12% Challenging, 0% Extremely challenging

N = 25 Western European Direct Marketers
Reasons for Not Customising/Personalising Direct Mail

**Why do you choose not to personalise or customise any of your direct mail mailings?**

- Adds too much time: 35%
- Concerned about privacy issues: 29%
- Staff has difficulty executing programs: 24%
- Data available is not good enough to do effectively: 24%
- Adds too much cost: 18%
- Unable to objectively measure the impact of personalisation: 18%
- Does not generate sufficient increase in response: 6%

N = 12 Western European Direct Marketers who do not personalise/customise their direct mail
Using Direct Mail to Drive Consumers to Other Channels
Direct Mail Provides a Bridge to the Digital World

How important are the following print capabilities when direct mail designs are sent to print production.

- QR codes to bring consumers to website: 76% Very Important, 24% Somewhat Important, 12% Limited Importance, 12% Totally Unimportant
- Raised inks to create a tactile experience when touching direct mail pieces: 76% Very Important, 24% Somewhat Important, 12% Limited Importance, 12% Totally Unimportant
- Near field communication tags: 60% Very Important, 28% Somewhat Important, 24% Limited Importance, 12% Totally Unimportant
- Varnish placed on direct mail pieces: 64% Very Important, 32% Somewhat Important, 24% Limited Importance, 12% Totally Unimportant
- Lamination of direct mail pieces: 40% Very Important, 56% Somewhat Important, 24% Limited Importance, 12% Totally Unimportant
- Gold or silver foils used within direct mail pieces: 28% Very Important, 64% Somewhat Important, 12% Limited Importance, 12% Totally Unimportant

N = 25 Western European Direct Marketers

© InfoTrends
All Channels On!

How do you expect IT spending to change for the following areas between 2015 and 2016?

Mean Increase in IT Spending

- Social media listening, data analytics, response mgmt.: 6.4%
- Mobile (native) applications: 6.4%
- Interactive/correspondence communications: 5.5%
- Output management & workflow automation: 5.4%
- Campaign management & marketing automation: 4.9%
- Content management: 4.7%
- Document design & multi-channel composition: 4.6%
- Inbound & scanning: 2.4%

N = Varies; Base: All respondents U.S. and Western Europe
Direct Mail: Leveraging Technology Trends

Augmented Reality

NFC Tags

Mobile Bar Codes
And It’s Measurable!
Consumers Like Mail!

- 9 direct mail pieces received in the past week
- 73% of direct mail is opened
- 76% of direct mail is read for a minute or more
- 68% of consumers think direct mail is effective

N = 900 Consumers in Western Europe
Source: Direct Marketing Production Printing & Value-Added Services, InfoTrends 2015
How Can You Drive Results?
There’s a Gap in Frequency!

Does the personalisation of a direct mail piece make you more likely to open/look at it?

- Don't Know: 52%
- No: 18%
- Yes, a Little: 25%
- Yes, Much: 77%

How frequently do you receive direct mail that is highly customised?

- Very Frequently: 24%
- Frequently: 41%
- Occasionally: 30%
- Rarely: 5%
- Never: 0%

N = 900 Western European consumers
Source: Direct Marketing Production Printing & Value-Added Services, InfoTrends 2015

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The Fight is On...
Likelihood of Reading E-mail vs. Direct Mail

Are you more likely to read an e-mail with a sales/promotional offer or look at a piece of direct mail?

Don’t Know 12%
Direct Mail 26%
e-Mail 26%
Read Both Equally 36%

N = 900 Western European Respondents
Source: Direct Marketing Production Printing & Value-Added Services, InfoTrends 2015
PSPs Respond to Changing Direct Marketing Demands

Mr X and Mrs Y no longer exist. **Address each customer personally.**

We help you take the step towards **personalised communication** and provide guidance in increasing the impact of your Printed Direct Mail. The use of client data will make your mailing truly **personal**, even more relevant and thus more effective.

[Links: WHY PERSONAL, OUR APPROACH, ABOUT US]
Strategies for Success: It’s About More Than Print!

Do you really know your customers?
Who they are? How and why they buy from you?
Which are the most loyal, most valuable and worth your investment?

Your data tells the full story. We work with you to gain a true 360° view of your customers, combining their long-term buying habits, needs and preferences, with an understanding of their current priorities based on their online activity. Our expert knowledge, breakthrough technologies and innovative techniques provide actionable customer insight to drive revenue and profit.

watch our video
GI Solutions: A Strategy to Compete

Data, create, communicate

Data, creative & document services
- 70 million transactions processed per annum
- 20 million customer records held and maintained
- 800 million records processed
- Over 10,000 documents created and maintained

The right sizing for projects
- From one to millions

Investments
- £5 million invested in the last 3 years
  - Small volume enclosing
  - Automated document factory
  - Mailmark
  - Inline glassine application
  - Digital envelopes
  - Reel fed high speed digital

Scale
- 400 million packs per annum

Breakdown
- Direct Mail: 15%
- Transactional: 35%
- Data, Creative & Document Services: 20%
- Critical Mail: 30%

Revenue
- FY11: £28m
- FY12: £2.6m
- FY13: Sales
- FY14: EBITDA*
- FY15: Evolution

Growth
- 7% compound growth over 4 years

* Before plant financing and rentals

Evolution
- Two machines in 1992
- Thirty one machines in 2015
Pondres: Repositioning Its Business

“Customers now want consultancy and innovation. Our business is changing and our ambition is to be the number one customer communication provider in the Netherlands.”
Data Services: At the Core of Direct Marketing
These are Table Stakes for Data Services

<table>
<thead>
<tr>
<th>Data Processing</th>
<th>Mailing Services</th>
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<tbody>
<tr>
<td>• Fundamental data hygiene</td>
<td>• Seamless acceptance/e-induction</td>
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<tr>
<td>– Mailing list hygiene</td>
<td>• On-site postal verification</td>
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<tr>
<td>– NCOA processing</td>
<td>• NDC/SCF destination delivery coordination</td>
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<tr>
<td>– CASS certification and presorting</td>
<td>• Full-service IMB-Certified Mail Service Provider</td>
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<tr>
<td>• Letter text setup with variable data programming</td>
<td>• Reporting systems for Drop Ship delivery verification and IMB mail piece tracking</td>
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<tr>
<td>• Custom programming/online proofing</td>
<td>• Complete postal reconciliation and reporting</td>
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<td></td>
<td>• Customised mail tracking reports</td>
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<td></td>
<td>• Mail tracking: In-home delivery dates for each mail piece</td>
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<tr>
<td></td>
<td>• Co-mingling/drop shipment/co-palletisation</td>
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</tbody>
</table>
How do I Become a Data Leader?

• **Partnering**
  
  “We bought a data analytics company that handles online analytics. We can evaluate SMS responses, e-mail, and web-based interaction. This will also help us with future direct mail campaigns.”
  
  – Large Direct Mailer in the U.K.

• **Acquisition**
  
  “We created a five-step process for handling data-driven campaigns, and we put the right resources in place to execute the campaign.”
  
  – Large Direct Mailer in Belgium

• **Building**
GI Solutions Acquires Analytics Firm and Launches a Creative Agency
The Resulting Services Portfolio

- Data audit
- List management and purchasing
- Audience identification and scope
- Data mining
- Predictive modeling
- Primary and secondary research
- Attribution analysis
- ROI analysis
Digital Print Investments ...

• **Technology**
  - Inkjet for affordable personalisation

• **People**
  - Programmers
  - Data Processing Specialists
  - Data Analysts/Data Scientists
  - Workflow Architecture Specialists
  - Creative talent for cross-media campaigns
Managing Changing Sales Dynamics

- Moving away from responding to RFPs and RFQs
- Selling *programmes* (rather than projects) with higher margins
- Migrating from sales rep to account manager/account executive
Recommendations

• **Direct mail will continue to be a growth opportunity**
  - More personalized, higher quality, links to digital media

• **Leading with data is a key differentiator**
  - Collect, clean, analyse, manage

• **Service providers must be channel-agnostic**
  - Marketers want what works for them, not what works for you

• **Technology and selling skills portfolio is critical for growth**
  - Equipment, software
  - Data
  - People
  - Partnerships
Inkjet Disruption in Commercial, Promotional, and Publication Pages

Jim Hamilton
Group Director
June 2, 2016
The Top Ten drupa Exhibitors

1. HP
   Hall 17

2. Heidelberg
   Hall 1

3/4. Canon
   Hall 8a

3/4. Landa
   Hall 9

5. Kodak
   Hall 5

6. Konica Minolta
   Hall 8b

7. Xerox
   Hall 8b

8. KBA
   Hall 16

9. Komori
   Hall 15

10. Bobst
    Hall 10

- HP is the largest exhibitor
- Digital print will have the largest floor space of all printing processes
- Companies with inkjet offerings are well represented in the top 10

Note: Agfa (Hall 8a), Muller Martini, (Hall 2) and Ricoh (Hall 8a) are just out of the top ten
• 2012 attendance down 29% from peak in 1990
• Will a shorter show (11 days vs. 14) result in lower numbers?
• Will category expansion boost attendance?
What’s the Most Likely drupa 2016 Show Theme?

• The Inkjet drupa (again)
• The B1 Digital drupa
• The Un-drupa (beyond paper)
• The Calm before the Storm drupa
• The Cloud drupa
• The Nano drupa
• The 3D printing drupa
• The ‘Don’t Forget about Me!’ drupa
The Inkjet drupa 3.0

• drupa 2008
  – Market entrance of high-speed roll-fed inkjet products
  – First demos of cut-sheet B2-format inkjet

• drupa 2012
  – New inkjet products plus speed and quality enhancements

• drupa 2016
  – Brings inkjet into commercial and packaging applications in a big way
  – The mainstreaming of digital print
Higher Quality Applications Will Drive High-speed Color Inkjet Growth

U.S. & W.E. – 10M+ Color Duty Cycle Segment
A4 impressions (B)

<table>
<thead>
<tr>
<th>Year</th>
<th>Brochures</th>
<th>Catalogs</th>
<th>Magazines, Newspapers</th>
<th>Direct Mail</th>
<th>Books</th>
<th>Transaction, other</th>
<th>TOTAL</th>
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<tbody>
<tr>
<td>2014</td>
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<td>2019</td>
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CAGR: 21%


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The Coverage versus Cost Dilemma for Inkjet

What can help bring that cost advantage back?

And don’t overlook non-cost related digital print advantages

As page coverage goes up

Page coverage

Cost advantage

Inkjet’s cost advantage goes down

Low page coverage

Compelling cost advantage

Dense inks
Savvy ink consumption
The impact of substrates
Bulk ink pricing

What can help bring that cost advantage back?

And don’t overlook non-cost related digital print advantages

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Production Roll-fed Inkjet Print Engines Shipments

- Color placements took off in 2008
- Only flattening in 2009
  - When other categories were in steep decline
- 2015 was not a strong year for color
  - B&W placements picked up the slack

Source: InfoTrends, Quarterly Market Tracking Program

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Inkjet and Electrophotographic Product Activity

Acquisition Price (list)

$10,000,000

$1,000,000

$100,000

$10,000

Throughput (A4 images per minute)

10

100

1,000

10,000

Roll-fed Inkjet

Cut-sheet Inkjet

Cut-sheet Toner
Production Color Value Per Letter-Sized Page (US)

Print Production: A Battle of the Processes

**EP**
- Short-run, quick turnaround champion
- Pushing the boundary on special effects
- Broad substrate support
- Making some format and speed advances

**Inkjet**
- Productivity and cost champion for high digital print volumes
- Big success in high volume, low coverage (transaction, direct mail, and books)
- Expanding into smaller and larger formats

**Offset**
- Productivity and cost champion in manufacturing print
- Extensive ability to add special effects
- Broad substrate support

**Substrates**

**Cost**

**Quality**

**Business process automation, mass customization**
Similar Dynamics in Other Markets

- **High-speed single-pass inkjet arrays**
  - Very productive
  - Multiple passes not required
- **Speed is a key benefit**
  - Quality is important, but may trail behind productivity, automation, or other factors
- **Overcoming traditional boundaries**
  - Wide format: Technical & graphics
  - Packaging: Digital into corrugated
  - Decorative: Textiles, ceramics, and woodworking products
Pat McGrew, Director of Production Workflow Solutions

• Customer Engagement Evangelist for the HP PageWide Web Press group
  – Starts with InfoTrends the last week in June

• Previous roles at Kodak, Pitney Bowes, and GenText
  – McGrew was a Consultant with InfoTrends from 1998 to 2003

• Well-respected speaker, author, and recipient of numerous awards
  – 2016 Xplor Brian Platte Lifetime Achievement Award
  – #GirlsWhoPrint 2014 Girlie Award
  – 2010 Xplor President's Award

• Certifications from Xplor, DMA, and USPS
Deconstructing Workflow for Multiple Industries

Pat McGrew
Director
June 2, 2016
Deconstructing Workflow – Growing Opportunities In Market Adjacencies

• Workflow – Makes Work Flow
  o Begins as automation to mitigate bottlenecks and enable efficiency
  o Embodies cross-organizational business and information process
  o Enables transition from mass production to mass customization
  o Simplifies color management across platforms
  o Supports interaction among creatives, marketers, and output
Deconstructing Workflow – Growing Opportunities In Market Adjacencies

• Deconstructing workflow pain points = Opportunities
  o Job on-boarding, job management, job execution, job delivery
  o Object management across output channels: graphic files, data files
  o Adding capabilities without complete reinvention: geolocation, data
  o Identifying adjacencies with compatible new techniques
Conclusions/Recommendations

• **Workflow is more important today than ever before**
  o Workflow drives cost out and adds value in
  o Workflow architecture allows growth in capabilities without disruption
  o Component-based workflow architectures provide a path to differentiation

• **Both cloud and server-based workflows demand review**
  o Scalability, reliability and cost are weighting factors

• **InfoTrends and I can help...!**
Beyond the Page

Innovation in Industrial Printing for Packaging, Decorative, and Beyond

Ron Gilboa
Director, Production & Industrial Printing Advisory Service
June 2016
Growth in Digitally Enabled Opportunities

Color

Packaging
- Folding carton
  - Flexible packaging
- Corrugated

Digital
- Ticket, Tag & Label

Textile Printing
- Apparel
  - Small batch manufacturing

Material Science
- Decorative printing
  - Glass
  - Ceramics
  - Textile

Consumer
- Architecture

Production
- Rapid development
  - Prototyping

3D Printing
- Prosthetics
  - Plastics
- Resins

Plastics
- Deposition
- Rapid development

Paper

Resins
- Plastics

Wood
- Glass
Mass Customization – Drives Adoption of Digital Printing
Packaging

A billion new consumers
Consumers ‘going green’
Shifting demographics
Rise of digital consumers
Health and wellness concerns
Modernization & concentration of trade
Rise of the value segment

Source: McKinsey & Company
Competition on Consumer Share of Wallet Drives Mass Customization…

- Digital improves…
  - Demographic diversity
  - Geographic reach
  - Time to market
  - Inventory control
  - Supply chain efficiency
  - Quality / Compliance
  - Security
Color Digital Packaging Press Print Volume Grows at 31% GAGR to Reach ~4 Billion Square Meters!
Q6: Of the vertical industries that you cited, which ones are the most likely to order short runs of labels or packaging?

- Food - Gourmet, other specialty foods
- Food - Private label products for retailers
- Health and Beauty (shampoo, soap, cosmetics)
- Nutritional supplements
- Wine
- Food - All other
- Beverages - non-alcoholic, private labeled
- Beer
- Medical products (non-pharma)
- Consumer durables (toys, sporting goods, etc.)
- Other

2015 NAPCO / InfoTrends Emerging Trends Research
Digital Can Be Effective across a Wide Range of Production Volumes

Q7: For the jobs that you print on a conventional press (flexo, offset, gravure, etc.), what shares are in the following run lengths?
Q8: Regarding all the jobs that you print on a digital press, what shares of those jobs are in the following run lengths?

Q7: For the jobs that you print on a conventional press (flexo, offset, gravure, etc.), what shares are in the following run lengths?
Q8: Regarding all the jobs that you print on a digital press, what shares of those jobs are in the following run lengths?

[Bar chart showing shares of run lengths for digital and conventional printing]

2015 NAPCO / InfoTrends Emerging Trends Research

N = 87 Respondents who own a conventional press, 47 Respondents who own a digital press
Welcome to drupa ...
2014-2019 Worldwide Wide Format Print – Print Volume (M$^2$)
Aqueous (Sublimation, Latex) and UV Curable key Growth Drivers

Aqueous (Sublimation, Latex) and UV Curable key Growth Drivers

2% CAGR
Q18: Thinking just about your wide format graphics printing business, approximately what % is produced using the following methods?

Q19: What do you think it will be in 2 years?

Wide Format Usage By Ink Type (Means)

Source: FESPA 2015 Census by InfoTrends
N = Varies
Base: All respondents
Inkjet Moves up into Decorative Printing

Nozzle  Printhead  Print array

Textile  Decor Paper  Glass  Woodworking  Ceramic Tiles
2015 Estimated Worldwide Value $564 Billion – Potential Opportunities for Digital Conversion

- Wallcovering
- Flooring / Carpet / Laminate
- Ceramic/Flat Glass
- Textile
Case In Point - Digital Textile

• Production efficiency

• Endless Creativity & Short Runs

• New Business Opportunities

• Environmental Impact
Glass
Source: Dip Tech

Ceramics
Source: DalTile

Textile
Source: InfoTrends

Laminates
Source: Formica
Going Digital – Diverse, Integrated Solutions

Graphic Communication

Packaging

Decorative

Functional

Graphics Arts

Functional & Industrial

Ink & Toner

Materials

Paper

Paper/Board/Plastic

Industrial Substrates

Objects

Addressing

CAD

Photo

Promotional

Publishing

Sign & Display

Transactional

Brand protection

Coding/Barcodes

Consumer Labels

Corrugated

Direct-to-shape

Flexible Packaging

Folding carton

Ceramics

Glass

Architectural

Automotive

Consumer electronics

Consumer goods

Laminates

Wall/Floor covering

Wood

Textiles

3D

Prototypes

Tooling

Manufacturing

Printed Electronics

Semiconductors

Displays

Solar panels

Biomedical

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Key Takeaways

• **Digital printing of decorative applications goes mainstream**
  o Mass customization is driving digital adoption
  o Growing awareness by print service providers & brand owners
  o Capabilities and economics in line with market expectations

• **Digital technology needs to be meet market requirements**
  o Workflow
  o Ink and materials
  o Feeding & Finishing automation

• **Growth accelerators**
  o Demand generation & education
  o New economic of digital print
  o Positive environmental impact