3rd International Symposium on Technologies for Digital Photo Fulfillment 2012

From Clics to Pics: The Personalization of Photo Imaging Output

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Society for Imaging Science & Technology
7003 Kilworth Lane
Springfield, Virginia 22151

Phone: 703-642-9090
Fax: 703-642-9094

info@imaging.org

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Curran Associates, Inc.
57 Morehouse Lane
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Technical Papers Program: Schedule and Contents

SUNDAY JANUARY 8, 2012

From Clicks to Pics: Image Management

Session Chair: Steve Howe, FujiFilm/CES

1:30 - 2:45 PM

Welcome to Technologies for Digital Photo Fulfillment!

We are very pleased to have you join us in Las Vegas for the 3rd International Symposium on Technologies for Digital Photo Fulfillment (TDPF2012). Building on the success of our first two meetings, we are proud to provide this opportunity to stay on top of the latest technologies. This year, TDPF is part of the DIMA educational program, which offers even more value to participants. We urge you to take advantage of the opportunity to network and discuss the advances, synergy, and the directions of creating, printing, sharing, and keeping consumer and professional images.

We are excited to present 15 excellent papers covering image capture and processing, printed product fulfillment, and output equipment over the two days of the conference.

We are also fortunate to be able to include the DIMA keynote luncheon as part of our program. Join us Monday at noon to hear Tia Newcomer, general manager for Americas Retail Publishing Solutions at HP discuss "Customer at the Core: Hardware is Important, but Experience is King."

In addition, on Monday afternoon, there is an opportunity for attendees to present an overview of their respective companies. This will be followed by the DIMA Conference Reception. Also, be sure to join your colleagues at the DIMA Vendor Reception on Sunday evening.

On behalf of the conference committee, let me be the first to welcome you to this superb event focusing on an exciting and evolving industry. Enjoy!

—Stuart T. Gordon, 2012 General Chair

Plan to attend!

DIMA Vendor Reception

4:30 pm - 7:00 pm

Join colleagues at the DIMA Vendor reception, the premier networking event at DIMA 2012, where conference attendees meet with the most innovative manufacturers and suppliers in the imaging industry. This intimate setting provides attendees quality time to see the coolest new products and services being shown by vendor partners. Hors d'oeuvres and drinks will be served, creating a casual atmosphere in which to network with colleagues and discover new opportunities.

showed sensitivity to crack before exposure and increasing propensity to crack with exposure to light and ozone. The other paper was not sensitive to crack before exposure and only after twelve weeks exposure to xenon light showed surface disintegration. Because of this, it is difficult to reach general conclusions that represent the entire spectrum of inkjet print media. Additional work is needed to provide a more complete picture of brittleness behavior of these materials after exposure to light and ozone.

2:45 - 3:15 PM Coffee Break

3D Comes to the Desktop: New Options for Image Fulfillment

Session Chair: Joe LaBarca, Pixel Preservation International

3:15 - 4:30 PM

3:15 **Preservation of Photographic Images for Future Generations: New Opportunities for Prints and Photo Books,** *Joseph E. LaBarca, Pixel Preservation International (USA)* **17**

Upon discovering the 120 year old object in their grandparents' attic, most people today would be hard-pressed to play back a recording made on a wax cylinder of the late 1800s. What will people do just 50 years from now with an optical disk or magnetic hard drive? Over time, we have recorded our memories in many ways: letters, post cards, photographs, movies, audio and video recordings are a few examples. In earlier days, interpreting those recordings was independent of the technology used to create them – you could hold and view a hard copy document in your hand. How will future generations deal with those post cards, letters to the family, and photographs that have now been replaced by "Word documents", email, and digital images on the computer? While professional and mass-portrait labs recognize the importance of hard copy images, the word needs to spread from there. The end consumer in particular needs to become aware of long-term storage issues that relate to the preservation of the data behind digital documents including photographic images. Longer-term issues beyond routine backup and migration of data need to be considered, and preservation via human-readable hardcopy images is a key option. This paper provides an update on preservation strategies for the consumer and suggestions for the professional imaging laboratories to communicate these strategies to the consumer. While the familiar advice to "make a hard copy" provides a solid foundation, we go beyond this recommendation, with the intent to raise consumer awareness of the need to create a long-term preservation plan for their most treasured images and the data behind them.

3:40 **Photobook Market Evolution,** *Rainer Bauer and Craig Greenwood, Imaging Solutions AG (USA).* **23**

Recent market trends show increased personalized photo product volumes even in the face of decreasing conventional print volumes. A particularly high growth area is photobooks both consumer and professional. Innovations in formats are supported by new production technologies that automate manual processes to improve quality and efficiency. New book production processes are adding value to image products to sustain and improve fulfillment margins.

4:05 **How Constant Innovation Still Drives Tangible Products for Fulfillment Partners,** *Reiner Fageth, Cewe Color AG & Co. OHG (Germany)* **24**

This paper describes the need for the printing industry dealing with consumer images and memories to be much more innovative than they used to in the former "must print to see" business in the analogue times. It suggests a procedure how consumers can be involved in an open innovation environment to speed the development process up and offer accepted software and products to the market.

4:30 - 7:00 PM DIMA Vendor Reception

MONDAY JANUARY 9, 2012

Everything Old is New Again: New Equipment for the Output of Digital Images

Session Chair: Herb Stein, consultant

9:00 - 10:15 AM

9:00 **A Place for PUR in the Bindery,** *Charles W. Cline, Binding Solutions, LLC (USA)* **28**

PUR (PolyUrethane Reactive) adhesives have been available for decades, but have been in bookbinding primarily since 1989. PUR has been chosen over standard hot melt and liquid adhesives for many reasons. These reasons include adhesion, layflat of the book, heat and cold resistance, roundability and durability. Applications systems have improved reducing the overall cost of production. Even though the price per pound of PUR is higher than that of other adhesives, the cost per unit is comparable. Initial concerns centered around one of the components, MDI, but this has proven over the last 20 years to be a minimal concern. The future of PUR is bright. As newer versions emerge additional markets are opening. Some of those markets include photo albums and hard cover books.

9:25 **HP-Indigo Technology and its Application to Photo Printing,** *Boaz Tagansky, Hewlett Packard Company (Israel)* **31**

HP-Indigo technology delivers superb print quality at a high printing speed over a wide range of substrates, including glossy matt and textured papers, as well as photo or other non paper substrates. Together with its flexibility and end to end solution portfolio it brings state of the art capabilities to a variety of photo applications, making HP-Indigo the dominant player in the digital photo printing market.

HP Indigo digital presses use liquid electrophotography based on ElectroInk®, with a hot transfer blanket. After electrically charging the photoconductor a latent image is created by a multi-beam laser scanning unit. Then ink is developed onto the latent image by one of the various colored ink development stations. After ink transfers to the blanket using electric field, the carrier liquid is evaporated off the hot blanket, and the resultant hot melted ink film is transferred to the substrate by means of pressure and tackiness. This process is repeated once for each color.

During the printing process a nearly solid ink image is created on a blanket, subsequently adhered to the surface of the substrate with almost no change and without penetrating into the media. Thus the high image quality is independent from the substrate characteristics. In addition, the ink layer is thin enough to achieve the feel of the substrate, so by choosing the substrate one can control the feel of the image, without compromising on image quality.

The flexibility of the technology enable both sheet fed and web fed presses, with nearly identical image characteristics. By using HP Indigo unique special inks, such as the white ink or the photo inks (light cyan, light magenta), print providers can create premium products.

End to end solutions of workflow and finishing are also provided by HP Indigo and through a network of partners. Work flow solutions include creation software, automatic image enhancement, imposition, high speed rips, and color transformations. Finishing solutions include in-line lamination, in-line liquid coating, cutting, stacking, book binding and more.

HP-Indigo equipment is used by the Photofinisher and professional lab, to create photo books, self-Published books, calendars, invitations, greeting cards, yearbooks, portraits, photo prints, theme items and more. Most of the photo books printed worldwide today are produced using HP-Indigo technology because there is a consensus among Print Service Providers about the Indigo technology being the one appropriate for the quality needs of the segment.

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9:50 **Personalized Photo Products & Prints: Analog Products in a Digital World,** *David Haueter, InfoTrends (USA)* **35**
Digital photo output is an important and valuable part of the digital photography ecosystem, and photo merchandise products continue to have strong growth in challenging economic times. This session will give a top-level overview of both the photo print and merchandise markets in the U.S., presenting the most important findings from InfoTrends consumer surveys, as well as discuss the significant trends that are impacting the market and helping to drive growth. InfoTrends most up-to-date forecast data for both the digital print and merchandise markets will also be shared.

10:15 - 10:45 AM Coffee Break

Diving into Substrates: The Latest in Output Media

Session Chair: Daniel Burge, Rochester Institute of Technology
10:45 AM - 12:00 PM

10:45 **Finish Before You Start,** *David Williams, Convertible Solutions (USA)* **36**
The value of a printed piece is greatly influenced by how it is finished after it is printed. Finishing and binding can add complexity and increased production times that don't always fit well into a digital workflow.

New paper substrates from companies like Mohawk Fine Papers, Bravo, FormStore Incorporated and Convertible Solutions simplify the finishing by pre-converting the paper before it is delivered to the printer.

This talk will explain cohesives, perforations, scores and other pre-conversion techniques and how each impacts the final product. Examples of pre-converted substrates will be shown along with explanations of how they can be used to make everything from postcards to lay-flat books.

11:10 **Review of Research at RIT Comparing the Print Value and Permanence of Digital Prints vs. Offset Lithography and Silver-Halide Prints,** *Daniel Burge, Susan Farnand, and Franziska Frey, Rochester Institute of Technology (USA).* . **39**
Both print value and permanence are critical to consumer satisfaction of printed images. Over the last four years, the Printing Industry Center and Image Permanence Institute at the Rochester Institute of Technology have published a variety of studies evaluating the print value and permanence of inkjet and electrophotographic prints and compared their performance to the traditional printing technologies of offset lithography and color silver-halide photography. This paper reviews the published work to date.

In the print value studies comparing electrophotographic digital press and offset lithography, it was found that the media had the greatest impact on perceived value. There were significant differences in the perceived value between electrophotographic and offset lithographic prints on coated media, with those made on offset equipment being generally preferred. For prints on uncoated media, the differences were less significant. Another study evaluated the perceived print value of inkjet (desktop and wide format) and electrophotographic photofinishing relative to digital silver-halide prints. Targets were generated to resemble photo album pages and photobooks. The results indicated that observers generally found higher value in full-size photobooks and inkjet prints as compared to electrophotographic prints and mini photobooks.

The print permanence experiments subjected inkjet, electrophotographic, digital silver-halide, and offset prints to a variety of environmental and user stresses including heat, light, humidity, pollutants, abrasion, and water fastness. The electrophotographic prints were generally more resistant to environment and use forces than offset lithography except for the liquid-toner electrophotographic system which was less water resistant. Because inkjets prints are made with a greater variety of possible colorant and paper combinations, they showed extremely varied responses to deterioration forces. Some were more robust than electrophotography or color silver-halide and others more vulnerable.

In comparing the two lines of inquiry, the primary significance was the fact that the prints with the highest perceived value are not necessarily the prints of the highest permanence. Print equipment, colorants, and papers need to be selected for both perceived value and permanence, but no clear metrics exist on which consumers can base such decisions. An understanding of all the key factors and access to the critical information will likely not be possible for end users, so they must rely on knowledgeable photo fulfillment providers to help guide them to the right decisions.

11:35 **The Transition from Silver Halide to Digital Printing and Its Effect on Print Quality,** *Mark B. Mizen, Creative Memories (USA)*. **44**

Printing technology is changing from traditional silver halide based photographic printing to alternative digital printing methods. As this change takes place, image quality differences alter the appearance of the photographic print in subtle but definite ways. These differences are particularly noticeable when migrating from continuous tone printing to electrophotographic systems that require halftone technologies to simulate the continuous tone. Creative Memories has changed the technology for producing its standard digital scrapbook page from traditional photographic printing to electrophotography. This presentation highlights image quality and other differences between the two systems, as well as customer responses to the change.

DIMA Keynote Luncheon

12:30 – 1:30 PM

Customer at the Core: Hardware is Important, but Experience is King

Tia Newcomer General Manager,
Americas Retail Publishing Solutions, Hewlett-Packard Company (USA)

Through the Viewfinder: The Evolving Image Fulfillment Market

Session Chair: Kurt Freund, Imaging Power GmbH

1:30 - 2:45 PM

1:30 **Print versus Screen Presentation Medium-Dependent Picture Consumption,** *Franziska Frey, Susan Farnand, and Frank Cost, Rochester Institute of Technology (USA)*. **47**

We all have experienced the move from print to screen with the advancement of digital technology. We see college-aged young adults use their laptop for many things that previously involved print. This gives rise to many questions, including: Which medium do these young adults prefer? Are information consumption and retention different based on the viewing medium? Does the medium preference change depending on whether people look at a magazine or at photographs that they took?

The authors conducted three related projects aimed at taking the first steps toward identifying and understanding the differences in how information is consumed from print on paper versus computer display. Each project encompassed experimentation and an interview with the participants.

1:55 **Testing the Permanence of Photobook Pages,** *Henry Wilhelm, Kabenla Armah, and Barbara C. Stahl, Wilhelm Imaging Research, Inc. (USA)* **48**

The market for digitally-printed photobooks has rapidly expanded in recent years, and they have become an increasingly important method of viewing and preserving photographic images together with captions and other textual material. A photobook may be printed as a single copy, or in multiple copies for distribution to relatives and friends. Many advanced amateur and professional photographers make use of photobook printing and binding technology for producing illustrated books for sale, and this has

Plan to attend!

DIMA Conference Reception

4:30 pm - 6:00 pm

Join colleagues for the DIMA Conference Reception and/or make your way to the CES opening keynote. Shuttle service will be provided. See DIMA registration materials for details.

spawned an entirely new industry of high-quality, print-on-demand books. In the short-runs typical of photobooks, the per-unit costs of this type of book would be prohibitive using traditional offset printing.

The great majority of the photographs that appear in photobooks do not exist in any other hardcopy form and, for this reason, the images in a photobook can be thought of as having the same validity and importance as traditional silver-halide, inkjet, or other black-and-white and color photographic prints. As is the case with traditional photographs, the long-term permanence of photobook pages is very important to both the photographers—the authors—of photobooks, and to the people who purchase the books or receive them as gifts.

This paper discusses testing methods for evaluating the permanence of photobook pages printed by a variety of commonly used technologies, including liquid toner electrophotography, dry toner electrophotography, digitally-printed silver-halide papers, inkjet, and thermal dye transfer (dye-sub) printing. [The remainder of this extended abstract can be found on page 48.]

2:20 **Needs for Successfully Output On-Site,** *Kurt H. Freund, Imaging Power GmbH (Switzerland)* **49**

There is no doubt our industry has not realized the real change when analog was moving to digital and I am very pleased to share my thoughts with such an excellent audience.

What has really happened is not only a technical move; the main change was the new consumer habits. Comparable with evolution from steam to electric trains, where habits are still same, photo consumers do not have to wait for film processing any longer and can choose right now!

This additional "right now" gives today a new potential. Not only do kiosk users want to have pictures in short time and especially the new creative products such as photo books, photo gifts e.g. are exploding tremendously!

Other good news that gives on-site producing new opportunities to grow: women are back. Women (especially Moms) are making more of the decisions regarding how printing will be processed. Plus consumers in general are not having as much fun printing at home due to inconvenience, poor quality, and costs. This is the other good news to print on-site.

The new trends will be to get the prints and all new creative prints on-site faster and faster. Today's studies shows that consumers want to have their photo books in less than 1h! Also personalized photo products will became more and more important!

Todays and tomorrows technologies will help to solve this new customer needs. On-site production with chemicals is dropping very fast and will soon be history! (The change is of course dependent on different countries). The quality and printout speed

2012 Conference Committee

General Chair
Stuart Gordon
Eastman Kodak Company
stuart.gordon@kodak.com

Program Chair
Steve Howe
FujiFilm/CES
showe@fujifilm.com

Program Committee
Dan Burge
Image Permanence Institute
dmbpph@rit.edu

Tom Cuffari
retired
tcuffari@gmail.com

Kurt Freund
Imaging Power GmbH
kurt.freund@imagingpower.com

Tony Henning
6Sight Report
thenning@6sight.com

Joe LaBarca
Pixel Preservation Int'l.
jlabarca@rochester.rr.com

Michel Molaire
mike.molaire@yahoo.com

Herb Stein
Photo Imaging Consultant
herbstein@comcast.net

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of dye-sublimation is increasing fast. New technologies such as dot-size manipulation in inkjet systems are allowing high grade quality with only CMYK.

Double-sided print production will be a must for creative products.

New technology innovations will be driving our still fantastic industry, but they have to increase convenience and will need the acceptance of the consumers!

2:45 - 3:15 PM Coffee Break

Company and Product Profiles

Session Chair: Stuart Gordon, Eastman Kodak Company

3:15 – 4:30 PM

A select group of leading digital photo fulfillment-related companies share overviews of their organizations and products. This moderated session will be followed by the DIMA Reception, where you can talk one-on-one with leaders in the field.

4:30 - 6:00 PM DIMA Reception

Shuttle buses to CES Keynote also begin at 4:30 PM
(see DIMA registration materials for details)