Photo industry is transforming from film and chemistry to digital printing and technology. There is an unmistakable shift towards use of digital technologies for creation and printing of a new and exciting category of photo products that include custom photo books, calendars, greeting cards, postcards, playing cards and posters – all personalized by end users (consumers, professionals or commercial users) with their own photos, text and design. The main beneficiaries of this transformation are digital print service providers – see sidebar titled *The Future of Photo Industry Belongs to Digital Print Service Providers*.

Photo Value Chain

In the emerging photo industry, the new photo value chain starts with an end user (a consumer, a professional or even a commercial user) capturing photos and using private-labeled DigiLabs software to create a custom photo book, calendar or card. At this point, the created photo product is in the form of an electronic file (PDF or JPEG), and it needs to be routed to a digital print service provider for fulfillment. This would require the end user to place an order either online or in a store based on the service provider's business model. The order is processed and the job is routed to the service provider for printing and finishing. The finished product is then delivered to the end user.

There are several important points to consider:

1. All creative work required to design custom photo products is shifted upstream and performed by the end user. This relieves the service provider from having to incur any cost associated with creative work. That may be true in general when a digital print service provider is only responsible for printing. But when a service provider becomes a photo service provider responsible for the

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The Future of Photo Industry Belongs to Digital Print Service Providers
Here is why:

1. Custom photo books, calendars and cards require personalization, and digital press technology is suitable for that purpose allowing variability with image, text and design content for as few as one copy … photo applications are the ultimate variable data applications.

2. Digital press technology has advanced to meet image quality requirements for photo applications.

3. Digital print service providers have the required and scarce skill set to print and finish high quality photo books, calendars and cards.

4. Photo represents a new revenue stream for digital print service providers, many of whom are focused on other digital print segments.

5. Photo is the fastest growth segment in digital printing. Studies from Infotrends and Photofinishing News indicate around 22% compounded annual growth rate through 2013.

6. Custom photo applications are highly profitable. Average retail price of 4/0 page is $1, while the cost of producing that page is somewhere between $0.15 and $0.22.

7. There are plenty of opportunities for growth and success. Digital printers can offer photo services directly to consumers online or partner with retailers, professional photo labs, photo studios, photo specialty stores, local businesses (e.g. travel agencies) or affinity groups such as schools, universities, churches, clubs and associations. Existing corporate accounts can also be targeted for promotional photo-rich publishing.

With private-labeled and customized solutions for online or in-store deployment, DigiLabs makes it easy for digital printers to enter the photo market. Furthermore, DigiLabs provides advanced marketing tools to help with growth and ensure success.

entire value chain, it becomes critical to enable end users to perform the creative work. Of course, this would require a simple-to-use yet powerful and feature-rich software application, which is exactly what is delivered by DigiLabs.

2. Order entry and production are streamlined and automated with DigiLabs back-end solutions that include an optional branded and hosted e-commerce solution and back-office capabilities in addition to integrated solutions with a variety of workflow middleware. This is critical because average quantity per order is low (e.g. 1.8 photobooks per order) while number of orders per day is high (hundreds of orders per day especially in high season during holidays in November and December).

3. When a job is routed to a digital print service provider for fulfillment, it is paid for. Service providers do not need to wait 30 to 60 days after printing to get paid.

DigiLabs Value Proposition

DigiLabs provides powerful software that is branded and customized. Customization consists of selecting/specifying a product mix (photo books, calendars, greeting cards, postcards, playing cards and more in different sizes, types and options) and content (backgrounds, themes, page layouts, book templates and more) as well as connectivity with service provider's existing e-commerce and back-office. Customization allows each and every service provider to differentiate themselves and their offerings.

DigiLabs has a back-end strategy to ensure production workflows for printing and finishing are streamlined and automated as much as possible.

DigiLabs supports multiple deployment models: (a) home creation with online order submission, (b) In-store creation and order submission, and (c) home-to-store.

DigiLabs offers a click-free business model allowing customers to maximize their return on their investment.

DigiLabs software can be integrated with customer's existing e-commerce and back-office for minimum impact to their existing infrastructure.

DigiLabs software produces a layered PDF that is print-ready for any digital press. Since the PDF is layered, it supports the highest image and text quality when printed. This is a strong differentiation feature for Digilabs and DigiLabs customers as it avoids flattened PDFs which make image-based color management and enhancements impossible.

DigiLabs uses a server-free architecture with many benefits – another differentiator for DigiLabs and DigiLabs customers – see section on *DigiLabs Differentiation*.

DigiLabs software is currently self-contained with 18 languages for user interface. DigiLabs also supports unicode characters allowing end users to use any font to add content within a photo book, card or calendar.

DigiLabs Differentiation

DigiLabs solutions are primarily differentiated with Server-Free Architecture and Layered PDF output.

Unlike other solutions in the market, DigiLabs does not use a "central processing server" between the client software and the press. Other solutions send information from the client software – including photos, layout, and font and design selections – to a central processing server under the control of the software provider where this information is used to assemble a PDF file for printing. DigiLabs does not use such a process. The PDF is produced by the client software and sent to the press for printing. Key benefits of this architecture are as follows:

1. Without worrying about a central server, DigiLabs client software can be deployed to support (a) home creation with online order submission, (b) In-store creation and order submission, and (c) home-to-store

2. The overall cost to the customer is much lower because a central server does not have to be managed or sold. This results in the "click-free" business model where the customer only pays for licensing of the software without having to pay ongoing service charges.

3. Deployment is faster.

4. Client software can be self-contained with features. For example, selection of fonts that can be used to add content into a photobook are not limited to a set of fonts that reside in the central server - ANY font that is available on the desktop running the client software can be used for content. Or the actual PDF file that will be used for printing can be proofed before transaction is completed.

5. There are less variables in the workflow (no central server); therefore, there is less risk in a successful deployment.

6. Products can truly and completely be created off-line.

7. There is less IT dependency when the solution is deployed. For example, if an in-store deployment model is used, there is less worry about getting passed any store firewall to reach the central server.

Separately, DigiLabs may be the only solution provider that produces layered PDFs for printing. Other service providers, in general, take all elements that are placed on a page (multiple photos, background, text and picture borders) and flatten them into one JPEG file say at 300 dpi representing that page. Conversely, PDFs produced by DigiLabs client software are layered and all page elements are included in the PDF as separate objects. This means that individual photos can be enhanced, corrected or color-managed separately without affecting other photos or background. And text can be processed and rendered separately for highest text quality.

Key Workflow Features

Key workflow features are listed below by deployment model

A. Key workflow features for home creation with online order submission:

a) Modular solution: Client software can be deployed to interface with customer's existing e-commerce solution and back-office or with some restrictions, the customer can choose to use an e-commerce solution and back-office services offered by DigiLabs for added value. This means that if a customer already has an online shopping cart, and they want to use it for processing orders for photo books, cards and calendars, they can. There is minimum impact to the existing infrastructure of the customer. And if a customer does not have an e-commerce solution or does not want to adapt their existing solution for use with photo services, value-added services are available.

b) Self-contained solution: The actual PDF that will be used for printing is produced by the client software and proofed by the client (where client is the end user or customer's customer). It will contain actual fonts, photos, etc.

c) Optimized output: To manage the size of the PDF, DigiLabs automatically resizes photos for the size defined in the photobook. So, if a photo is very large but it is placed on a page with the size of a postage stamp, the PDF will carry the photo in the size of the postage stamp at 300dpi.

d) Multi-platform support: Client software is JAVA-based; therefore, it runs on any PC (XP or Vista) or MAC ... with the same user experience.

e) Simple-to-use but feature-rich: DigiLabs has recognized that there are many different types of clients: professionals or consumers, highly creative to not creative, computer proficient to computer novice, or clients with lot of time to spend to clients with very little time. Since 2001, DigiLabs has created a solution that satisfies all such clients/users. DigiLabs has a wizard-assisted process that guides users step by step helping them create even a nicely designed photobook in less than a minute, while the software provides features to allow other users create their own designs: place/resize/rotate photos or text anywhere on the page, change page layout or borders or templates with drag and drop movements.

f) Multi-lingual: The client software is currently self-contained with 18 user interface languages. Clients can switch the language on their own. Customers can target different groups within one country by nationality or ethnicity.

g) Advanced marketing tools: All customers at some point struggle with continual growth of their business. DigiLabs includes advanced marketing tools in the software to help customers grow their business. Two examples: online sharing which enable viral marketing and "News Page" in the next version, which includes an embedded browser in the application to let the customer communicate with clients every time that the application opens.

h) Control: Even though the PDF file is generated by the client software (which is running at the client's home or studio), only the customer gets it for printing ... client cannot print at home.

i) Customization: DigiLabs offers basic software in terms of product sizes/types/options and content (backgrounds, themes, page layouts, book templates, picture borders, cliparts, etc.). This allows individual customers to independently differentiate themselves by customizing the solution with different product size/type/options and content.

j) Content update: DigiLabs has a process that allows customers who wish to update their content (backgrounds, themes, page layouts, book templates, cliparts, etc.) to do so. For example, they can design themes that suit their local (country/culture) or business (e.g. sports team) needs, send DigiLabs these designs for quality assurance and distribution. This is very powerful for continued growth of the business.

B. Key workflow features of in-store creation and order submission:

Key features b, c, e, f, h, i and j from above apply here.

k) In addition, the store version includes a "job management console" that allows the store owner/operator to set up, manage and track jobs and orders for each store.

l) As part of set-up, pricing can be set for each store separately.

m) As part of set-up, jobs can be routed for in-store or centralized printing

C. Key workflow features of home-to-store:

All features described above (a – m) apply here.

n) Jobs that are created at home are encrypted and saved on a removable media giving access only to the customer/printer. Countries that find online order submission prohibitive or difficult benefit from this model.

Additional key features

o) More than Software: Currently, DigiLabs is better known for its client software. However, DigiLabs offers value-added service for (i) branded shopping cart and e-commerce solutions, and (ii) back-office functions including job/order verification, job ticketing, shipping ticketing, rule-based job routing, printer notifications, and secure and real-time access for tracking, reporting, and monitoring.

p) Back-end Strategy: DigiLabs works with other vendors to deliver a streamlined and automated production workflow.

q) Traditional Photofinishing: DigiLabs solutions support photographic photofinishing equipment and minilabs for silver-halide books or prints.