InfoPrint Solutions Company Showcases Success of InfoPrint 5000

Abstract
InfoPrint Solutions Company, the joint venture of Ricoh and IBM, has had remarkable success with the InfoPrint 5000 since the product’s launch in 2007. Of the many new customer sites worldwide, ten have agreed to be reference accounts. This analysis provides a technology overview of the InfoPrint 5000 and its controller, as well as insight on InfoPrint Solutions Company’s market strategy and a close-up look at one of those InfoPrint 5000 customers: National Hirschfeld in Denver, Colorado.

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Introduction

At Graph Expo in 2006, IBM Printing Systems demonstrated a concept the company called the IBM Infoprint color technology. This technology demonstration has since developed into the product now known as the InfoPrint 5000. Since that time, the IBM Printing Systems division has evolved into the InfoPrint Solutions Company, a joint venture of Ricoh and IBM.

About the InfoPrint Solutions Company Joint Venture

First announced in January of 2007 and officially launched later that year, the InfoPrint Solutions Company celebrated its first anniversary in June of 2008. Headquartered in Boulder, Colorado, the InfoPrint Solutions Company builds on a lengthy history of cooperation between Ricoh and IBM going back to 1988 via the relationship with the Hitachi Printing Solutions Group (now Ricoh Printing Systems). IBM’s Printing Systems division, the forerunner to the InfoPrint Solutions Company, was formed in 1991, but its products go back even further. Its heritage in high-speed continuous feed printing goes back decades and includes the InfoPrint 3800, which was launched in 1976. As the joint venture moves toward increasing Ricoh control, the representation on the InfoPrint Solutions Company board is shifting to include more Ricoh appointees. By June of 2010, the process will be complete and InfoPrint Solutions Company will become fully Ricoh owned.
The InfoPrint Solutions Company has more than 2,500 employees worldwide, including 1,100 maintenance service professionals. The company’s global headquarters is in Boulder, Colorado, where the company handles product and solution development. The company’s customer briefing center is also located in Boulder. Other key locations include a global logistics control center in Endicott, New York; a regional headquarters in London managing Europe, the Middle East, and Africa; a software development center in Timisoara, Romania; a product and solution development center in Yamato, Japan; the Japanese headquarters in Tokyo; and the Asia Pacific headquarters in Singapore City.

The company’s business draws strongly from the Americas with approximately 60% of total revenue. Europe, the Middle East, and Africa account for another 25% or so. Japan is the next biggest market with about 11%, and Asia Pacific accounts for a little under 6%.

The InfoPrint Solutions Company has been built as a standalone entity with its own human resources, accounting, and other administrative functions. No layoffs have occurred during the joint venture and, in fact, hiring has continued, with the company adding an estimated 300 to 400 new employees. During this time, the company reports that it has increased its research & development spending.

The InfoPrint Solutions Company mission is “to help customers to increase revenue and to decrease costs by providing solutions to complex print and output challenges.” Its vision is “to become the preferred global solutions and services provider in output management.” The environments it services include data center, corporate in-plant, print service providers, commercial printers (with a focus on direct mail and books), general office, manufacturing, industrial, and supply chain.

**Figure 1: InfoPrint Solutions Company Value Proposition**
The InfoPrint Solutions Company sees its value (see Figure 1) in providing a range of technologies, including print engine and computer hardware that are supported by third-party partners, middleware, and end-to-end solutions. These are all supported by open standards and the Advanced Function Presentation (AFP) architecture.

The InfoPrint Solutions Company Color Strategy

The InfoPrint Solutions Company developed its color strategy with the intent to enable its customers to implement a robust, end-to-end full color solution to complement their current environment. To make this strategy a reality, InfoPrint Solutions identified four steps:

- Create a common open standard architecture for variable data output
- Provide robust and scalable controllers to process the data in a mixed environment
- Enable workflow integration
- Provide best-of-breed print engines with acceptable costs and print quality

As the InfoPrint Solutions Company developed its plans for a high-speed continuous feed color offering, it had four requirements as it searched for a print engine partner. The desired print engine had to have:

- Competitive running cost and flexibility while promoting process automation and not requiring special paper
- Speed in excess of 400 letter images per minute (which would make it comparable to the existing black & white technology available at the time)
- High reliability with predictable preventative maintenance intervals and 90% uptime availability
- High quality with a minimum resolution of 600 dots per inch

After evaluating the options, the InfoPrint Solutions Company concluded that the InfoPrint 5000 print engine technology developed by Dainippon Screen either met or exceeded all of these requirements. In addition, the technology’s electrical consumption rates were quite low compared to other offerings. This is enabled in part by the product’s low-temperature dryers.

About the InfoPrint 5000

The InfoPrint 5000 is a piezo-electric, drop-on-demand, inkjet production color printer capable of print speeds up to 209.9 feet/minute. It offers 360 x 720 dpi spatial resolution and a tonal resolution of 2 bits per spot enabled by multiple drop sizes. It runs in a tight web configuration with a maximum web width of 20.4" (520 mm) and a maximum print width of 19.98" (507 mm). It supports papers ranging from 64 to 157 gsm. The InfoPrint 5000’s inkjet heads can be configured for use with either dye- or pigment-based aqueous inks. It can produce more than 20 million letter impressions per month in a tandem duplex.

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¹ At top speed, this is the equivalent of 916 four-color letter-size impressions/per minute in 2-up duplex mode (or 862 four-color A4 impressions/per minute). The exact printing speed depends on a variety of factors, including printer settings, document complexity, system configuration, software application, system environment, driver, and printer state.
configuration. Many components are customer maintainable and the product offers auto diagnostics and self-healing\(^2\) print quality features.

Its front end system supports AFP, PostScript, or PDF applications, and has a cluster-based printer controller that can handle parallel AFP, or PostScript raster image processors (RIPs). The front-end uses IBM’s Blade server technology. The InfoPrint 5000 was designed for transactional printers, service bureaus, direct mailers, and book printers.

The InfoPrint 5000 is currently sold in two configurations:

- **Model AS1**: Single-engine simplex
- **Models AD1/AD2**: Twin-engine duplex

The InfoPrint 5000 was introduced with pigment-based aqueous inks, but it can also use dye-based aqueous inks. Generally speaking, pigment-based inks provide a higher level of print quality, but they are also more expensive than dye-based inks. At drupa, InfoPrint Solutions announced that it was offering customers the choice of dye- or pigment-based inks. This gives potential buyers of the InfoPrint 5000 the ability to choose whether the quality of the lower cost dye-based inks is adequate for them. It should be noted that the customer must choose one or the other—the inks cannot be used interchangeably.

InfoPrint Solutions positions the pigment inks as capable of providing sharper text and graphics even on regular digital or electrophotographic paper. The company notes that the resin-coated pigment inks remain near the surface as opposed to typical dye-based inks, which are absorbed and “feather” into plain papers. Another benefit of the colorant staying near the paper surface is higher optical densities that produce darker blacks and brighter colors. The resins in the pigment inks also result in less bleed-through for duplex printing. InfoPrint Solutions reports that the resin-coated pigmented inks are more water- and fade-resistant.

For the InfoPrint Solutions Company, the value proposition of the InfoPrint 5000 revolves around four points:

- A market-changing cost of operation – less than two cents includes hardware, supplies, and maintenance in many applications (depending on volume and coverage)
- High-speed output and high print quality for new application opportunities
- High reliability and ease of use, particularly for production AFP environments
- InfoPrint Solutions 30+ years of experience in high-speed production variable print

InfoPrint Solutions also stresses its services and software capabilities, its AFP controller expertise, the reliability of the core inkjet technology, the product’s low energy consumption, and a large and growing reference base of successful customers in production sites around the world.

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\(^2\) This self-healing capability is facilitated by the device’s inkjet head cleaning unit.
Market Success with the InfoPrint 5000

The InfoPrint Solutions Company has publicly announced multiple customers that are using one or more InfoPrint 5000 units. These sites include commercial printers, direct mailers, and transactional printers looking to implement TransPromo solutions. The InfoPrint 5000 has been selected by customers in countries including Denmark, France, Germany, India, Italy, Japan, Spain, the United Kingdom, and the United States. Many InfoPrint 5000 units are being used to combine relevant personalized information and color on transactional documents for more effective marketing, such as incorporating a coupon for energy-efficient appliances on a monthly utility bill. The systems are also being used to produce books and booklets using a print-on-demand process.

Since December 2007, InfoPrint Solutions has been installing new InfoPrint 5000 units into customer production sites. Five of these sites have been showcased in press releases and many others have agreed to be reference sites. This willingness to publicly showcase their systems speaks to the level of confidence they have in the InfoPrint 5000 and the trust they have for the service and solutions capabilities of the InfoPrint Solutions Company.

The first announced site was Vesa Direct. Vesa Direct is a Spanish direct and promotional marketing company that is a subsidiary of the Telefónica Group. Vesa Direct installed multiple InfoPrint 5000 systems to enable a color TransPromo printing project for Telefónica Movistar. Vesa Direct’s InfoPrint 5000 systems join multiple InfoPrint 4100 and 4000 monochrome systems that were already handling Telefónica Spain’s invoices as well as statements for many banks. These systems produce more than one billion pages every year.

A month later, two more InfoPrint 5000 sites were announced: Personix and Poligraphico Roggero & Tortia. Personix, headquartered in Houston, Texas, provides information technology services to the financial services, healthcare, investment services, retail, and telecommunications industries. Personix plans to use the InfoPrint 5000 to provide clear and concise communications and to allow customer-facing transactional documents to be used as a central part of its customers’ marketing strategies. The other site is the Italian company Poligraphico Roggero & Tortia, which serves enterprises across Italy and France. Markets served by Poligraphico Roggero & Tortia include financial services, insurance, utilities, government, non-profits, industrial, editorial, and advertising. The company expects to use multiple InfoPrint 5000 systems to produce TransPromo output, which it sees as a new business opportunity that will provide one-to-one highly-personalized capabilities while at the same time providing an output solution that allows them to comply with local regulations.

Next InfoPrint Solutions announced the installation of multiple InfoPrint 5000 systems at dsicmm, the largest direct communications company in the United Kingdom. dsicmm is using the InfoPrint 5000 systems initially for a financial statement application, and will use the products to expand the range of personalized statements and reports it produces. The InfoPrint 5000 was installed with an intelligent finishing system including a Hunkeler guillotine and unwinding equipment, an MBO folder, and a Hohner stitching unit. In addition to its digital solutions, dsicmm provides traditional print/mail services; direct marketing; and financial, regulatory, and corporate mailing. dsicmm was impressed with the environmental benefits of the InfoPrint 5000, including a dramatic reduction in the number of printed pages produced, lower postal costs, use of recycled paper, and a reduced carbon footprint due to the device’s low power consumption rate.
The cadence of new installations continues with InfoPrint 5000 systems now in production at Williams Lea in Germany; CDMS in the United Kingdom; and several news sites in the United States, including Fidelity Output Solutions, Blue Cross Blue Shield of Florida, Principal Financial Group, and National Hirschfeld (this site is described in greater detail later in this document).

**InfoPrint Customer Satisfaction Process for the InfoPrint 5000**

The InfoPrint Solutions Company has developed a customer satisfaction process that it uses to determine if the InfoPrint 5000 solutions is a good fit for potential customer’s requirements. The goal is to ensure great customer satisfaction. This is a disciplined sales process that InfoPrint Solutions’ account teams are trained to follow, and through which the company gathers information on the customer’s environment and requirements. This includes (but is not limited to) items such as:

- Overall customer requirements and expectations across multiple functional areas (such as IT, marketing, and executive)
- Key applications, special needs, and service level agreements
- Requirements for network, servers, and IT attributes
- Paper requirements
- Print quality expectations and color management needs
- Finishing requirements
- Operator skill sets
- Current prepress requirements and anticipated future prepress needs

**InfoPrint Solutions Company at Graph Expo 2008**

At Graph Expo 2008, the InfoPrint Solutions Company showed a range of new developments for the InfoPrint 5000, including a dual simplex configuration\(^3\), productivity tracker support for the InfoPrint 5000 and the InfoPrint 4100, a new attention light, enhanced DBCS font support, multiple density settings, operator switchable speed, an enhanced print verification system, an alternative maintenance offering\(^4\), 720 by 720 dpi resolution support (at 32 meters per minute), and a new entry-level offering. InfoPrint Solutions brought a two-engine InfoPrint 5000 system to Graph Expo.

The entry-level InfoPrint 5000 offering is targeted at customers who want to grow color volumes to a level to justify the current 64 meter-per-minute system, but who do not have committed volumes in hand. This offering has additional components that allow it to operate at 32 meters-per-minute (105 feet-per-minute). It is field upgradeable to the 64 meter-per-minute system.

The InfoPrint Solutions Company also showed the InfoPrint Pro C900 printer, based on Ricoh’s engine. The base equipment pricing in the United States will not exceed $125,000 for the base printer unit with the digital front end. Order taking and availability in the United States, Europe, the Middle East, and

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\(^3\) The dual simplex configuration is a two-engine configuration that can be set up either as two separate simplex lines or as a single duplex system.

\(^4\) The alternative maintenance offering will allow a certified operator to handle service operations such as inkjet head replacement.
Africa will begin for the InfoPrint Pro C900 in the first quarter of 2009 and will roll out in other geographies during the year. InfoPrint Solutions has a history of offering 24/7 service for its products and it expects to offer this level of support worldwide wherever it introduces the product.

The device will have the same EFI Fiery digital front end as the Ricoh version. At introduction, there will be no significant differences between the Ricoh and InfoPrint Solutions versions. InfoPrint Solutions is considering developing an IPDS controller, but does not have it yet. The Plockmatic bookletmaker and GBC punch unit, which are accessories for the Ricoh Pro C900 and have been available for some Ricoh monochrome products, are new for InfoPrint Solutions.

In regard to cut-sheet monochrome devices, InfoPrint Solutions announced a new ring binder and perfect binder at Graph Expo. It demonstrated the ring binder on the InfoPrint 2235.

From a continuous feed monochrome perspective, InfoPrint Solutions showed the InfoPrint 75 and 100 for the first time in the United States. These products are currently only shipping in Japan. InfoPrint Solutions also ran the newspaper and book applications that were shown at drupa 2008 on the InfoPrint 4100.

InfoPrint Solutions also introduced a mailroom integrity solution that is described in greater detail later in this document.

**Solutions, Software and Services**

The InfoPrint Solutions Company has positioned its solutions to focus on customers’ key print applications as well as document processes. Using this solutions approach, the InfoPrint Solutions Company integrates its own hardware, software, and professional services, along with software and finishing hardware from selected partners, to provide a differentiated value proposition.

- **Automated Document Factory (ADF):** This solution addresses three key customer needs in print and mail production environment: postal optimization, mailroom integrity, and output management. For ADF implementation, InfoPrint Solutions offer multiple approaches, from modularized software tools to custom professional services engagements.

- **Direct Mail and TransPromo:** These two applications are a major focus for InfoPrint Solutions, as the company presses on with its color strategy. In addition to the InfoPrint 5000, the company has built up its software and services portfolios. The portfolio includes InfoPrint Solutions’ own software tools as well as partners in areas such as document composition, data analytics, and marketing message tracking/management.

- **Optimization:** This solution considers optimization opportunities in customers’ workgroup and production environments. InfoPrint offers a combination of hardware, software, as well as services, which could include managed services. InfoPrint Distributed Print Management Services (DPMS) is InfoPrint Solutions’ managed services offering that provides the right-sizing of a fleet of multi-function devices, as well as ongoing support.

- **Productivity:** This solution uses data from multiple enterprise systems and provides multi-channel output management capabilities, addressing communication through print, Web, e-mail, or mobile.
• **Print on Demand (POD):** This solution is focused on addressing POD-type applications, such as books, manuals, and marketing collateral. This is an area where products such as the InfoPrint Pro C900 will play a key role for the company. To support this offering, InfoPrint Solution has also built a network of software partners, which includes EFI, IoFlex, Press-sense, and Ultimate Technographics.

**Software Strategy**

InfoPrint Solutions’ software strategy builds on a workflow transition that moves from a custom model (InfoPrint Workflow offering) to a standardized product-based model (InfoPrint ProcessDirector) using bundled offerings. The previous model delivered custom workflow reengineering, with high levels of professional services involvement, and the associated high cost of business transformation. The new model builds on a modular workflow using InfoPrint ProcessDirector as the backbone. Some professional services can be brought in where needed, but the customer can begin at an affordable point and grow without the large upfront professional services cost. This provides the benefits of automated workflow management to a larger set of customers.

InfoPrint Solutions’ software strategy uses InfoPrint ProcessDirector as the foundation for connecting InfoPrint software, professional services, and third-party software products into best-of-breed solutions that can be bundled for the ADF, POD, TransPromo, and other initiatives. InfoPrint Solutions intends to extend the functionality of InfoPrint Manager by providing additional workflow capabilities via InfoPrint ProcessDirector. InfoPrint Solutions expects that this solutions strategy will support migration and coexistence with InfoPrint Manager and will promote expansion into new markets. All of this is the basis for the Mailroom Integrity Solution that InfoPrint Solutions announced at Graph Expo.

InfoPrint Solutions’ new Mailroom Integrity Solution is designed for small to medium print and mail shops that want to start with a basic level of functionality and then build up in a modular fashion. It provides real-time job and document tracking; mail piece boundary indexing and re-barcoding, based on specific document data; automated process management; basic document re-engineering; automatic reprints; and audit trails. It is installable by field technical sales support staff and includes the base InfoPrint ProcessDirector software, inserter support, and reporting capabilities. The Mailroom Integrity Solution carries a competitive price point that the company believes will be attractive even for small and medium-sized businesses. The new Mailroom Integrity Solution uses InfoPrint ProcessDirector as its foundation and benefits from the product’s open programming interfaces. It is the first in a series of solutions that could include future postal optimization and output management offerings, all of which will build on the InfoPrint ProcessDirector and will integrate with professional services extensions and customizations.

**Services Strategy**

InfoPrint Solutions believes service is a distinct differentiator as the company expands and moves into new application areas. The company services portfolio extends from basic, highly standardized offerings (such as integration, implementation, and training) to custom professional services proposing major business transformation, or in some cases managed services engagements. These services areas are built up to support the overall solutions go-to-market strategy.
One of the newer services offering is the TransPromo consulting and integration services. The service offering, announced at drupa this year, is geared toward helping clients in making the transition to TransPromo. The new practice focuses not only on technology, but also on business transformation involving print & mail operation, IT, and marketing. In addition to technology-oriented consulting, the company offers business advisory services, direct marketing consulting, data analytics consulting, and document composition. To enable these services, InfoPrint Solutions is building its own service practice. The staff includes principals or subject matter experts in areas of direct marketing and data analytics. The company is also building a network of technology and services partners to complement their own practice. Current partners include companies such as Exstream Software, GMC, StreamServe, Mapping, SAS, and Prinova.

To highlight its capabilities in the TransPromo market, the InfoPrint Solutions Company launched a pilot program in conjunction with the CMO Council and Best Western International. Leveraging the InfoPrint TransPromo Consultancy Practice, software from GMC, and an InfoPrint 5000 for full-color inkjet statement printing, InfoPrint Solutions is producing full-color rewards statements for Best Western customers that include relevant marketing messages. Best Western is also sending non-TransPromo statements to a control group. InfoPrint and Best Western plan to compare and analyze response rates from each group of Best Western customers and report the findings at the CMO Executive Council meeting in early December.

**Denver-Based National Hirschfeld’s InfoPrint 5000 Enables Color Printing Capabilities for Textbook and Other Applications**

National Hirschfeld ([www.nh-access.com](http://www.nh-access.com)) is one of the early InfoPrint 5000 customers. The company acquired the InfoPrint 5000 first and foremost for color textbook applications, but is also assessing its possibilities for direct marketing and transactional applications. The InfoPrint 5000 has been at National Hirschfeld since the middle of July and had already produced 15 million impressions by the time InfoTrends visited the site in early September. The story of National Hirschfeld and its selection of the InfoPrint 5000 provide insight into the digital color market and the impact that high-speed continuous feed products are having on this growing segment.

**About National Hirschfeld**

National Hirschfeld LLC ([www.nh-access.com](http://www.nh-access.com)) was formed in 2005 through the consolidation of three regional printers: C&M Press, National Printing and Packaging, and A.B. Hirschfeld Press. Each company brought special skills to the merger. As its name would suggest, National Printing and Packaging offered packaging and general printing services with offset print technologies, including heatset web. A.B. Hirschfeld also offered general printing services through larger sheet-fed and web offset presses. C&M Press was the digital facility, with monochrome and color digital print capabilities.

Today, National Hirschfeld is a privately-held company with revenues of approximately $40 million. It has more than 250 employees and operates a 160,000-square-foot facility in Denver, Colorado. This facility houses the company’s conventional heatset web and sheet fed offset press technology as well as its sheet- and roll-fed monochrome and color digital print technology. National Hirschfeld’s services include customized Web-based systems, content management (for book publishing and marketing), data management, full bindery, mailing, and fulfillment.
**Nine Capabilities**

Although National Hirschfeld’s heritage can be traced back more than 100 years to the founding of A.B. Hirschfeld in 1907, the company has a much more contemporary feel. National Hirschfeld positions itself as one of the largest combined digital/commercial printing and direct marketing service providers in the West. Its goal is to help clients increase lead generation and boost revenues with full-service print and media solutions. The company identifies nine capabilities that it provides to customers:

- **Direct Marketing**: Delivering and tracking customized, targeted messages to customers using multi-channel options like mail, e-mail, personalized URLs (PURLs), print, and other emerging technologies.
- **Data**: Data intelligence services including data hygiene, segmentation, cloning (to target comparable demographics from one list to another), list acquisition, and back matching (to assure that changes are tied to the main database).
- **Web-to-Print**: De-centralized order placement and content collection via National Hirschfeld’s Internet-based Argos suite of services. (See more on Argos below.)
- **Digital Services**: Front end processing including variable programming, mail data processing, image assembly, archiving, and workflow.
- **Digital Printing**: National Hirschfeld digital print technology includes black & white or four-color cut-sheet technology and web-fed four color inkjet.
- **Conventional Printing**: National Hirschfeld’s conventional capacity covers the complete press spectrum, from sheet fed to heat set web.
- **Bindery**: In-house support for cutting, folding, stitching, perfect binding, die cutting, tip-in gluing, punching, wiro, spiral, lamination, and shrink wrap.
- **Fulfillment**: Ranges from print on demand to pick & pack to skid fulfillment. National Hirschfeld’s Argos system provides the ability to place and build orders online, upload documents that need to be printed and included in the final package, and communicate all necessary shipping information. Once the order is placed, confirmation, status, and tracking updates can be e-mailed to all members of the project team.
- **Mailing**: Mailing services include labeling, postage optimization, data scrubbing, and targeted mailings. Addressing is achieved with digital presses, in-line on stitchers, and off-line inkjet units.

**Argos: Enabling Change**

Developed over the past nine years as an integration of partner software components and internally-developed solutions, Argos is National Hirschfeld’s customizable front end content management system. An evolving solution offering, Argos is based on Pageflex Storefront and uses the product’s open architecture as a foundation on which to build new capabilities through National Hirschfeld’s own programming scripts. National Hirschfeld is also working with InfoPrint Solutions to take the concept beyond current capabilities. InfoPrint Solutions is helping National Hirschfeld to examine opportunities in metadata and tagging that will allow dynamic indexing for educational materials. Another topic of interest is adjusting tagged content to templates of varying sizes, which is a requirement for the type of publishing model that National Hirschfeld’s clients intend to implement in the future.
Argos is currently marketed by National Hirschfeld to two of its prime constituencies—publishers and marketers. These are marketed as Argos Publisher and Argos Marketer.

- **Argos Publisher**: Argos Publisher uses its online content management system and editing tools to allow publishers to build and distribute products online. Files can be downloaded or uploaded easily, which results in inventory reduction and the elimination of out-of-date products. Argos also provides a range of online payment capabilities.

- **Argos Marketer**: Argos Marketer focuses on decreasing time to market through an automated system that supports a company’s need to manage its brand while simultaneously providing real-time content management. Channel-agnostic by design, Argos Marketer is designed to increase participants’ marketing dollar ROI (return on investment) by enabling them to deliver appropriate messages and by providing the tools to track the results of marketing campaigns.

The system’s capabilities, built as they are on an open architecture, have the potential to serve other applications beyond the publishers and marketers. It is mainly a question of the direction in which National Hirschfeld and its customers choose to take it.

**A Changing Market Picture**

Segments served by National Hirschfeld include advertising & design, education & government, financial services, insurance/health, manufacturing, non-profit, printing services, publishing, real estate, retail, telecommunications, and travel & entertainment. InfoPrint Solutions and the InfoPrint 5000 solution components are enabling National Hirschfeld to further penetrate current markets and expand into new markets.

National Hirschfeld’s work today is still heavily weighted towards its offset presses. Four-color brochures, magazines, annual reports, manuals, and other publications account for 60% or more of the total volume. National Hirschfeld’s digital solutions, however, are accounting for a growing piece of the business. Perhaps a quarter of the company’s business comes from digitally-enabled direct mail, fulfillment, or online solutions. Directionally, digital is accounting for more and more of National Hirschfeld’s business. A significant number of National Hirschfeld’s customers are also taking advantage of the company’s hybrid digital/offset solutions, which include in-line inkjet capability for addressing and other applications. In addition, National Hirschfeld uses pre-printed offset output as shells for printing on its cut-sheet digital equipment. In the future, National Hirschfeld anticipates that its digital volume will exceed its conventional volume. This is the result of two trends combined. One is the move to shorter run lengths and the other is the move to color. National Hirschfeld’s monochrome digital volumes began dropping about three years ago. There has also been a decline in its heatset web offset volume. National Hirschfeld has found that two heatset web presses running 24 hours a day can handle the current volume.

The impact of more color, shorter runs, and the move to more customized and personalized documents is driving work to digital. There has also been an evolution away from craft-oriented printing. Customers believe that “everybody prints well” these days, and as a result quality is not the differentiator it once was. In addition, per-unit buys are dropping. What used to be a 100,000-unit job is now 20,000 units, the 10,000-unit job is now 5,000 units, and the 5,000-unit job is now 2,500. Print service providers can’t manage these lower run lengths effectively with paper job ticket systems and a heavy reliance on customer service representatives. National Hirschfeld has adapted to this trend by moving to an online
order system. The company estimates that about 15% of its work currently comes through its online system.

National Hirschfeld’s extensive capabilities enable the company to run a variety of book and booklet applications. The company prints up to a quarter of a million City Guides in a single print run. High-quality “boutique” books are offered in runs up to 2,000. Many of the books and publications are printed using National Hirschfeld’s heatset web. In some cases, when National Hirschfeld’s customers are looking to reduce warehoused inventory, it means moving down from 10 million books to 5 million. In other cases, it means producing much shorter runs. The issue of standing inventories, and also re-work and re-binds of textbooks, relates to the strengths of digital print for economic short runs.

**Software, Hardware, and Solutions**

National Hirschfeld’s nine capabilities are enabled by a wide range of software and hardware supported by solution components from InfoPrint Solutions. Broadly, these capabilities can be grouped into the following categories:

- **Electronic prepress:** The recently-acquired Kodak Magnus 800 platesetter served as the impetus to move to a Kodak Prinergy workflow to support trapping, imposition, and Web-to-print. National Hirschfeld also provides color scanning and proofing support through products from Canon, Kodak, Epson, and HP.

- **Digital print:** The newest addition to National Hirschfeld’s digital print portfolio is the InfoPrint 5000 and its associated software and front end components. In addition, the company has cut-sheet monochrome and color products from Xerox, including two DocuTechs and an iGen3. These are supported by two Xerox DigiPath scanners. National Hirschfeld also has a two-color Océ VarioPrint 5160 cut-sheet printer. In addition to the InfoPrint 5000, National Hirschfeld’s continuous feed capabilities include a monochrome Océ VarioStream 7000 Twin.

- **Offset print:** National Hirschfeld’s cut-sheet press capabilities include a four-color Heidelberg GTO perfector (14” x 20” format), two 20” x 28” inch presses (including one two-color Sakurai presses and one six-color Mitsubishi with a coater), and two Komori 28” x 40” presses (one six-color and one seven-color with a coater). Its web press systems are all heatset and include a five-unit Hantscho, a five-unit Beiren, and an eight-unit Baker Perkins. All of these systems have folders and sheeters.

- **Finishing:** National Hirschfeld has folders and cutters from Baum, Challenge, MBO, Polar, Prism, Saber, Stahl, and Wohlenberg. It offers perfect binding, mechanical binding, and saddle-stitch capability (with associated trimming) from Bostitch, C.P. Bourg, Duplo, GBC, Kolbus, Kugler, Müller Martini, Renz, Rossback, Sickinger, Sulby, Wohlenberg, and others. Other finishing capabilities include counting, die cutting, drilling, gluing, lamination, perforating, punching, scoring, and shrink wrapping.

- **Mailing:** Insertion is handled by four multi-station Bell & Howell and Mailcraft Edge inserters. Inkjet systems from Domino Inkjet, Kirk Rudy and Image Pro provide addressing capabilities. National Hirschfeld maintains its own post office on-site.

Given the variety of technologies in-house, National Hirschfeld has workflow software offerings from multiple vendors. As noted above, the company’s recent platesetter acquisition has sharpened the focus on
Prinergy for computer-to-plate output. InfoPrint Solutions’ components, including hardware, software, and services, are being used to enhance National Hirschfeld’s digital book production backbone. In the case of the many hardware and software choices that National Hirschfeld faces, an internal technology group assesses the possible opportunities and recommends solutions. National Hirschfeld also has three full-time programmers and two information technology (IT) support people.

From a print management information systems perspective, National Hirschfeld uses Hagen, which EFI has recently rebranded as Monarch. Monarch combines features from Hagen OA (its MIS toolset), Prograph (production planning and JDF control), PrintFlow (dynamic scheduling and optimization), and Auto-Count (shop floor data collection via direct machine interface). National Hirschfeld uses Pageflex Storefront for on-demand order intake to complement the more conventional order-taking capabilities of Hagen. Kodak’s InSite, connected through Prinergy, is also used for a variety of purposes including preflighting and job editing.

**Solutions Sales**

National Hirschfeld’s sales force includes some with a traditional contractual focus and others who are selling solutions, but this is evolving. National Hirschfeld thinks that its traditional transaction sales representatives need to migrate to a solution-oriented approach. This requires some underlying changes in the focus of the sales force. They must become more creative and entrepreneurial. They need to consider more than just print, and focus on broader campaign development. In this fashion, solutions selling links InfoPrint Solutions and National Hirschfeld. Both companies have a similar philosophy—pick best-of-breed technologies and bundle them together with software and services to create a solution that works for customers.

**Rebinds and the Educational Publishing Market**

National Hirschfeld has provided a range of services to book publishers for decades. These companies look to National Hirschfeld to improve productivity and meet customer deadlines through on-demand printing, kitting, finishing, and delivery services. Using National Hirschfeld’s Internet-based content management system, digital archives, and a blend of digital and conventional print processes, these publishing customers have established digital archives containing thousands of print-on-demand publications. National Hirschfeld also handles “re-bind work” for these publishers. “Re-binds” take existing materials, specifically hardcover higher educational textbooks, and combine them with new customized information. This typically involves matching the paper type and quality levels of the existing materials (which are printed in large quantities using offset presses) with short runs of customized materials (which are printed using digital processes). It also requires the ability to trim and re-bind the various components together, matching the look of the long-run textbook. National Hirschfeld’s skill in the re-binding process enables publishers to take advantage of existing warehoused inventory and to repurpose it to meet the needs of college professors (the bulk of this re-bind work is in higher education rather than K-12). Throughout the process, National Hirschfeld must produce a quality product with narrow turnaround times to meet tight deadlines.

Re-binds represent an evolutionary step leading to a full print-on-demand model. There is an immense cost associated with overproducing books and warehousing the inventories. As process-color digital print processes become more economical, it is easy to envision how customized editions could move from the hybrid offset/digital re-bind process to a more efficient 100% digital print process that enables professors
to produce books that are customized and produced on demand as required. This is beginning to happen now that a custom product can be produced efficiently at a cost point that provides a level of return-on-investment (ROI) that supports a publisher’s business case. A top enabler of such a strategy is print technology such as the InfoPrint 5000, which can produce variable output on demand at a reasonable cost point.

**Choosing the InfoPrint 5000**

National Hirschfeld first saw the underlying inkjet print technology in the InfoPrint 5000 at Print 05 in Chicago. From 2005 to 2008, the company conducted an exhaustive evaluation of all current and future full-color digital ink jet technologies and chose the InfoPrint 5000. It liked the speed, cost, and quality levels that this high-speed process color inkjet technology afforded. Technical support and service infrastructure were important to National Hirschfeld and played a key role in the selection. The flexibility of InfoPrint Solutions’ front-end was also pivotal. National Hirschfeld knew that color textbooks, typically a PostScript or PDF application, would be important initially, but the company anticipated that direct marketing and transaction (or transpromotional) work (an AFP/IPDS application) would likely be in its future. The InfoPrint 5000 is capable of handling both. National Hirschfeld also knew that production throughput has two components: print engine speed and up-front processing. The company was confident in the processing capability of the InfoPrint 5000 front end components. Since the product’s arrival this July, National Hirschfeld has seen excellent levels of uptime and has been able to drive impressive volumes. The InfoPrint 5000 is currently set up in a roll-to-cut-sheet configuration, but National Hirschfeld has been considering moving to a roll-to-roll configuration.

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5 AFP stands for Advanced Function Presentation. The AFP architecture provides features such as page-level error recovery, data integrity, auditability, and security control. Teamed with the Intelligent Print Data Stream (IPDS), it provides page composition and output tools. AFP’s color capability has been expanded with the AFP Color Management Architecture (ACMA), one facet of which is the inclusion of standard ICC (International Color Consortium) color profiles.
One other topic that National Hirschfeld and other customers are exploring with InfoPrint Solutions is expanding the range of supported media. National Hirschfeld has application needs above and below the current supported weight range of the InfoPrint 5000 (64 to 157 gsm). Low gsm papers are valued in book publishing applications for the obvious reason that the use of such a stock can result in a significantly lighter book. At the same time, though, the paper must be opaque enough so that the image on one side of the sheet is not visible from the other side. National Hirschfeld also acknowledges that publishers, who sometimes require use of the same stock when its books are run on digital and offset, have eased up their standards somewhat. Equivalent page per inch (ppi) values and comparable weight are adequate today. National Hirschfeld is also experimenting with nine point stocks (and heavier) for postcard and mailable brochure applications. The current maximum specification for the InfoPrint 5000, 157 gsm, is approximately 7 point. National Hirschfeld would also like to see the InfoPrint 5000 handle coated stocks.

**Driven by Innovation**

National Hirschfeld is an innovative company that has identified the importance of workflow automation, content management, digital print, and market-driven innovation to provide solutions to its customers. The company knows that a multi-channel approach and a solid understanding of its customers’ application requirements is the key to success. Through this strategy, National Hirschfeld has won over customers with a winning combination of service, technology solutions, and a forward-thinking attitude.

National Hirschfeld has made a significant investment to become a major player in digital color. The company was able to justify the purchase of the InfoPrint 5000 in large part because of volume that it expected would come from its publishing customers. Other color applications in transaction or direct mail will surely follow. Moving to a new level of cost-effective, high-volume digital color with the InfoPrint 5000 marks the beginning of an exciting era in National Hirschfeld’s history.
Conclusion

The early successes of the InfoPrint 5000 underscore the opportunities provided by a productive and cost-effective color print engine, a tightly integrated and versatile front-end system, and the support offered by a solutions-oriented organization, such as the InfoPrint Solutions Company. Driven by a range of applications, including transaction, TransPromo, direct marketing, and publishing, the InfoPrint 5000 is breaking new ground in the high-speed continuous feed color world.