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Strategic Assessment

Hybrid Offset/Digital Printing Workflow: A Key to Super-Efficiency

Authors

Adam Peck
Alex Sumarta
Bryan Yeager

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Abstract

Hybrid offset/digital printing workflow solutions represent the next generation of workflow, which further promote efficiency, flexibility, connectivity, and standards compliance. This document provides InfoTrends' perspective on hybrid workflow concepts, benefits, implementations, and future directions.

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Headquarters:
97 Libbey Industrial Parkway
Suite 300
Weymouth, MA 02189
United States
+1 781 616 2100
info@infotrends.com

Europe:
3rd Floor, Sceptre House
7-9 Castle Street
Luton, Bedfordshire
United Kingdom, LU1 3AJ
+44 1582 400120
euro.info@infotrends.com

Asia:
Hiroo Office Building
1-3-18 Hiroo, Shibuya-ku
Tokyo 150-0012
Japan
+81 3 5475 2663
info@infotrends.co.jp

Table of Contents

Abstract	1
Executive Summary	3
Introduction	4
Scenarios for Hybrid Workflow	4
Changing Run Lengths	4
Mixing Static and Variable Components	5
Web-Based Job Submission	5
Benefits of Hybrid Workflow	6
Increased Workflow Flexibility	6
Leverage Existing Workflow Investment	6
The Road to Automation.....	6
Implementation Considerations for Hybrid Workflow	7
System Scalability.....	7
Cost of Software	7
Ease of Integration	8
The Future of Hybrid Workflow	8
Canon’s Approach to Hybrid Workflow	8
Heidelberg Prinect	8
Screen Trueflow SE.....	9

Executive Summary

Increasing customer requirements for faster turnaround and shorter runs are driving print businesses to seek out a more efficient production workflow. To be competitive, printers need a workflow that can easily adapt to a customer's changing requirements as well as maximize their investments in print equipment and software. Implementation of a hybrid offset/digital printing workflow can help.

The concept of a hybrid workflow revolves around having a single workflow management system for offset and digital printing. Jobs can be processed, printed, and tracked using a common interface. A hybrid workflow can route jobs to offset or digital printing equipment based a number of considerations, including run-length, turnaround time, page size, substrate, and finishing.

Hybrid workflows can have a significant impact on efficiency in many production scenarios, especially ones that involve changing job requirements (e.g., run length), mix of static and variable components, and/or Web submission. In these scenarios, a hybrid workflow offers the benefits of higher flexibility, better job tracking, and enhanced automation through the production process.

Existing offset workflow solutions can be leveraged by adding digital print modules to create a hybrid workflow. An increasing number of workflow vendors are partnering with manufacturers to offer connectivity to a number of digital presses and computer-to-plate devices. As standards (such as JDF) are increasingly adopted, InfoTrends expects to see more vendors working together in providing richer workflow integration options and helping printers in their quest for super efficiency.

Introduction

Shorter run lengths, faster turnaround times, increased job complexity, and margin pressure are driving print establishments to seek out more efficient and automated production workflows. Advancements in speed and performance of offset and digital printing technologies have helped printers increase productivity. Nevertheless, the capability to move jobs from submission all the way to output and distribution with minimal or no manual intervention is critical in maintaining profitability, especially when dealing with an increasing mix of shorter run jobs. Such automation requires the integration of various components in the production workflow. Implementing a hybrid offset/digital printing workflow is a major step toward a fully integrated production workflow.

With the continued growth of digital printing, it is now quite common to find printers with offset and digital printing devices. Digital printing devices are making their way to predominantly offset operations to cover shorter run jobs and enable the delivery of value-added print services, such as print-on-demand and personalization. Meanwhile, offset presses continue to be the dominant production method for longer run jobs. While printers have been successful with digital printing, many find themselves managing their offset and digital printing separately. They use different people with varied skills and separate software tools. These circumstances result in two disparate workflows.

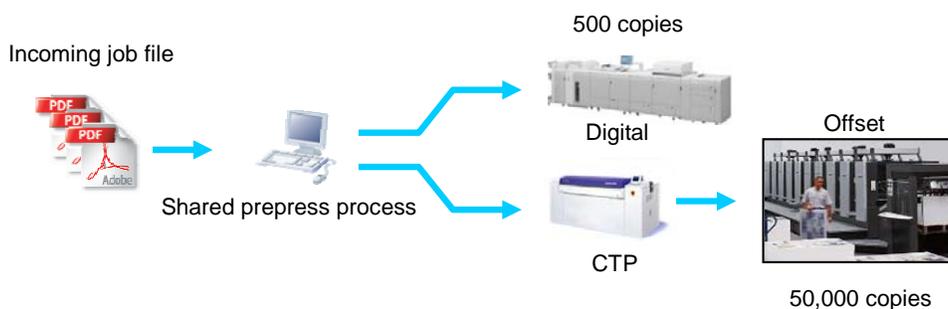
A hybrid workflow combines these disparate workflows into one streamlined and more efficient process. This involves having a single workflow management system that can automatically process and route print jobs to computer-to-plate devices for offset printing and/or digital printing devices. Through one common interface, the printer has a single point of control and the flexibility to choose how the jobs will be produced up to the very last minute. Customer requirements, such as run-length, turnaround time, page size, substrate, and finishing, are some of the driving factors when deciding to run a job on a digital printing device or an offset press.

Scenarios for Hybrid Workflow

Here are a few example scenarios where hybrid workflow implementation can have a significant impact on production efficiency.

Changing Run Lengths

A customer requests 50,000 copies of a marketing brochure to be distributed across their local sales offices throughout the United States. The printer is setting up the job for offset printing due to the job's run length requirement. The customer, however, decides they need 500 copies of the new brochure for a trade show the next day. With a hybrid workflow, the printer can direct the first 500 copies to a digital printing device without creating a new job ticket and generating a separate set of print-ready files. The 500 digitally printed copies are shipped to the customer immediately. In the meantime, the printer can continue to use the same job ticket and print-ready files to make offset printing plates and produce the remaining copies on an offset press.

Figure 1: Hybrid Offset/Digital Printing Workflow Scenario

In another scenario, a customer is conducting a pilot program for a new product in a specific region of the country. To support the program, the customer initially requests 500 copies of the product's marketing brochure. The files are submitted, preflighted, and sent to a digital production device. If the pilot program is deemed successful, the customer plans to launch the product nationally and will require an additional 50,000 brochures. With a hybrid workflow, the operator can use the same job ticket and print-ready files to easily change the imposition from a 2-up template designed for the printer's digital color device to an 8-up template for an offset press.

In each situation, a hybrid workflow solution offers the flexibility to change the imposition on-the-fly and re-route the job to accommodate digital printing and the offset plate-making processes.

Mixing Static and Variable Components

A customer in retail wants to print a fall catalog of new merchandise. While the inside of the catalog is the same, the back cover will change based on store location listings. Because the inside is static, it can be cost-effectively produced in large quantities using offset printing. Nevertheless, the back cover localization requires digital printing. With a hybrid workflow, both pieces of the same job can be routed through one common interface, queuing the production of offset printing plates for the inside of the catalog and digital printing for the variable data covers. These two pieces are then married up in the finishing process.

Web-Based Job Submission

According to InfoTrends' recent *e-Enablement: The Future of Graphic Communications* study, nearly half of the print service providers surveyed are offering Web-to-print storefront services, with another third declaring intent to offer them within the next 24 months. The majority of jobs submitted through the Web end up being printed on a digital device, but some can be produced on an offset press. Pre-established rules can allow a job submitted through the Web to be routed to the appropriate device based on order quantity. For instance, an order of 50,000 is automatically imposed for offset printing and sent to the computer-to-plate system, but a similar order with a quantity of 500 is imposed and automatically routed for digital printing. This type of automation eliminates the need for a customer service representative or production manager to manually assign each job to a different production queue, saving time and increasing efficiency.

Benefits of Hybrid Workflow

Investment in a hybrid workflow can bring considerable benefits to a print establishment.

Increased Workflow Flexibility

InfoTrends' *Emerging Strategies Quarterly Survey* conducted in 2008 confirmed the trend toward shorter print run lengths. More than 300 printers were surveyed and at least 40% of respondents indicated that they saw an increase of jobs with run lengths of less than 1,000 copies. To support requirements for shorter run jobs, offset printers are adding digital printing devices to their infrastructure. Hybrid workflows offer higher flexibility in directing or repurposing jobs to the most appropriate, cost effective printing process without major rework of the existing workflow.

Leverage Existing Workflow Investment

Hybrid workflows allow printers to protect their existing workflow investment. One prevalent path to establishing a hybrid workflow is through the integration of digital printing devices with existing offset workflow solutions. Leading offset workflow software vendors are collaborating with digital print equipment vendors to introduce modular, JDF-based connectivity to digital printing devices. This connectivity allows printers to leverage their existing technology investments as they move into the world of digital printing.

Additionally, upgrading an existing workflow helps eliminate redundancy as well as minimize labor and training costs. Bringing offset and digital printing workflows together into one familiar interface reduces employee training requirements.

The Road to Automation

InfoTrends research shows that on average, for every \$1 spent on printing, \$6 is spent on process-related activities that take place before and after printing. Automating print production can drastically reduce the cost associated with job ticketing, document preparation, pre-press, and job routing. Implementing a hybrid workflow that connects with other systems and solutions is an essential part of enabling automation.

For a printer that has already implemented some JDF-enabled systems within his or her print shop, such as print MIS, a hybrid workflow solution can offer greater connectivity, allowing real-time process tracking and management. In addition, a printer just getting started with automation can use a hybrid workflow solution as the centerpiece and continue to integrate with new systems and devices as they are added.

A hybrid workflow system that is connected with all aspects of a printer's business makes it easier to increase efficiency and add value, while still maintaining reasonable profit margins on print jobs. As more JDF-enabled hardware and software products are adopted, having a workflow system that can connect to these solutions using standards like JDF and JMF offers a much greater opportunity for increased automation, which can lead to greater cost savings over time.

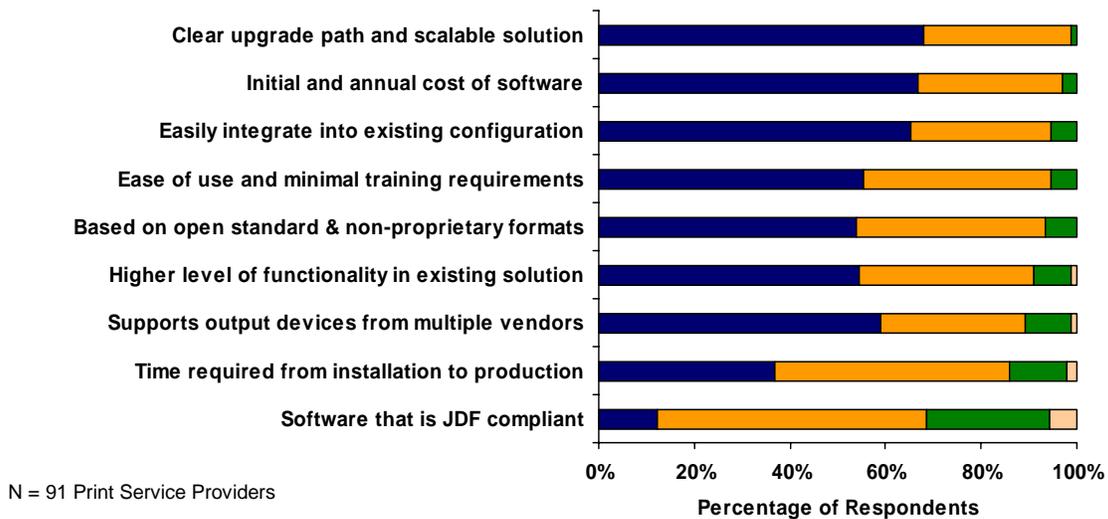
Implementation Considerations for Hybrid Workflow

There are numerous considerations that printers need to assess when purchasing and implementing any piece of software or hardware. As shown in Figure 2, InfoTrends' research reveals that printers place a high importance on scalability, cost, ease of integration, and training requirements when considering a workflow solution.

Figure 2: Important Characteristics When Purchasing Workflow Software

Please indicate the importance of the following characteristics when purchasing production workflow software.

■ **Extremely Important** ■ **Somewhat important** ■ **Somewhat unimportant** ■ **Extremely unimportant**



Source: InfoTrends' Print Production Tracking, Q1, 2007

System Scalability

Figure 2 shows that the top considerations for printers when purchasing a workflow solution include having a clear upgrade path and scalability. As a print shop invests in additional capabilities and equipment, the workflow solution needs to be able to support new devices as they are added. Software vendors are working with more device manufacturers to ensure interoperability between systems. Printers need to check what type of devices the solution currently supports, and what future support will include.

A clear upgrade path is important, especially because desktop publishing software and PDF standards are typically updated on an ongoing basis. A workflow solution needs to be able to support those constant developments. In addition, as print volume grows and designers push the limits on complex print layouts, the ability to add processing power to the workflow solution is crucial.

Cost of Software

As mentioned, it can be advantageous to add digital printing to an existing offset workflow. Figure 2 illustrates that the initial and ongoing investment in a new solution is an extremely important factor when purchasing workflow software. A hybrid workflow solution provides the benefits of managing digital and offset printing from a single workflow, while minimizing additional software expenditures.

The solution also allows printers to leverage their existing investment in personnel and applications to help maximize return on investment. By utilizing a familiar workflow printers can apply their current expertise producing high quality output to digital printing.

Ease of Integration

InfoTrends also found that easily integrating with existing systems, as well as the use of open architectures and open standards in workflow solutions, are very important characteristics. Just as more software vendors are working with equipment manufacturers to achieve interoperability, software vendors are also working with each other to increase system interoperability with the use of open standards (JDF, JMF, and XML). Integrating a workflow solution with print MIS, Web-to-print, and other solutions can lead to increased automation and efficiency.

While some level of integration setup may be done internally, it is possible that one will require a vendor's professional services to help with more complex integration issues, even with the use of an open architecture and open standards. Look internally, as well as externally, to determine what the cost and level of technical expertise is needed to integrate systems together.

The Future of Hybrid Workflow

Hybrid workflow solutions represent the next generation of workflow, which further promotes efficiency, flexibility, connectivity, and standards compliance. As hardware and software technology evolves, hybrid workflows will also evolve, becoming more integrated and dynamic. An increasing number of vendors are working together, creating better interoperability between their solutions. The amount of information shared among solutions will increase, enabling better tracking and control of the entire production workflow.

At the same time, the scope of integration will expand to include not only pre-press and device management functions, but also Web-based job submission, print management information systems (MIS), finishing devices, and distribution. With standards like JDF, we expect integration between these various components in the print production workflow to improve. Such integrations will take printers closer to becoming a super efficient organization and pave the way for the next level of print production automation.

Canon's Approach to Hybrid Workflow

Canon has partnered with Screen and Heidelberg to develop integrations between imagePRESS digital presses and leading offset workflows. These hybrid workflows help customers realize greater efficiency, faster turnaround times, and easier job management.

Heidelberg Prinect

Heidelberg Prinect Prepress Manager and Digital Print Manager with the Canon Gate enable Heidelberg customers to integrate an imagePRESS digital press into their existing workflow creating a hybrid environment. Within the Prinect Printready Cockpit, jobs are managed and produced centrally using the same file for output. This eliminates the duplication of prepress work and potential errors, increasing productivity and press utilization, while decreasing turnaround time.

The Heidelberg Prinect integration utilizes the Fiery JDF Connector with JDF and JMF to foster bi-directional communication for a tighter integration. Bi-directional communication enables Prinect and the imagePRESS digital press to “talk” to each other regarding job output instructions and status, decreasing manual intervention. To facilitate communication between the imagePRESS digital press and Prinect, the Device Capability File (which describes the configuration of the imagePRESS digital press in use) is imported directly into Prinect Prepress Manager. This allows Prinect to understand and use the specific features of the connected press. For further automation, the Paper Catalog containing media information is exported from the imagePRESS Server and imported into Prinect Prepress Manager. Prinect Prepress Manager can then recognize the available media loaded in the imagePRESS digital press. Currently, Canon imagePRESS C7000VP/C6000VP/C6000, and imagePRESS C1/C1+ support this integration with Heidelberg Prinect.

Screen Trueflow SE

Screen Trueflow SE with the POD Option allows Screen customers to seamlessly drive a Canon imagePRESS digital press from their current offset workflow. Within Trueflow, customers have a common prepress application for digital and offset presses, eliminating the duplication of prepress work as well as increasing productivity and turnaround times.

The Screen Trueflow SE and POD Option integration offers two different options for implementation. The first option is using a Hot Folder workflow. A Hot Folder workflow allows simple PDF job submission to an imagePRESS digital press via Trueflow Hot Folder. With this type of workflow, job settings are made at the imagePRESS Server. The second option for implementation is using a JDF workflow with the Fiery JDF Connector. With a JDF workflow, output instructions regarding output device, number of copies, simplex/duplex, output location, and halftone can be added to a print job via a job ticket that is sent with the job to the imagePRESS Server, decreasing manual intervention. Canon imagePRESS C7000VP/C6000VP/C6000, and imagePRESS C1 (Hot Folder workflow only) can integrate with Trueflow SE.

ApplePress, a commercial printer located in Exton, Pennsylvania has been using Screen’s Trueflow SE workflow solution with the POD Option since mid 2008. The company not only drives its Screen Plate Rite 8000 II computer-to-plate device, but also its Canon imagePRESS C7000VP and Canon imagePRESS C1 digital color devices. John Strong, Vice President of ApplePress, says that since the implementation of the POD Option to his existing Trueflow solution, productivity and job flexibility have increased. According to John, “It’s becoming more common for customers to ask for short-run samples of a job we typically print offset. The Canon and Screen integration provides us with the flexibility to facilitate late stage corrections utilizing our digital press before the job goes to offset. If a customer wants 12,000 magazines for a conference but needs 50 right away, we can send those 50 to our Canon imagePRESS digital press, make any necessary corrections, and send the final file to our Screen Plate Rite, all within the same interface.”

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