Printing In a Workflow Environment v2.0

On completion of this module you will have developed a basic understanding of the use of PDF Workflow in the print production environment.

The specific areas and applications covered are:

- **Introduction to Printing in a Workflow Environment**
- **Definition of Terms**
- **The General Workflow Process**
- **The Production Process**

Module Training Overview

Target audience will be:

Specialists studying the Production Print Color & Black/White certification tracks.

Attainment Targets:

- Provide a comprehensive overview of the document workflow process.
- Define the terms and language of the document workflow process.
- Explain the objectives and advantages of using a workflow environment.

Contents

1 Introduction to Printing In a Workflow Environment

1.1 Objective of a Printing Environment

1.1.1 Traditional Production Printing

Production Printing enables organizations to automate the reproduction of mass quantities of an original document. The production printing processes may be categorized into two broad groups: traditional plate printing and non-traditional plateless printing. The traditional image carrier processes produce numerous reproductions of an original subject by means of a printing press, which holds an inked image carrier and applies the pressure necessary to transfer the image to a substrate. Traditional processes include such methods as letterpress, lithography, flexography, screen printing and gravure.

1.1.2 Newer Printing Processes

Newer, more modern printing processes do not use traditional image carriers or presses and include photography and non-contact processes like electro photography, thermal imaging, and ink jet printing. They use digital imaging and copier-like printers that produce an image during each cycle such. The non-traditional printing speed is much slower than traditional plate printing processing in that a large amount of computer memory is needed for repeating or changing information during each cycle. There is no make ready and no drying time, but the overall costs are slightly higher than the traditional printing. The non-traditional printing process is used for mainly short runs, on-demand or variable information printing.

1.1.3 The Current State of the Printing Industry

The past decade has seen a dramatic transformation of the publishing industry. There has been a significant impact to the print industry as the popularity of digital publishing and the internet have caused a decrease in demand for printed magazines, books and newspapers.

Digital imaging has begun to transform the entire prepress production process by replacing both photography with digital imaging systems and the elimination of the need for film by the Computer-to-Plate and Computer-to-Press processes. The prepress process has been almost completely converted to device independent desktop publishing hardware and software.

1.1.4 What's Driving the Change?

There have been dramatic improvements in image quality, reliability, features and cost of ownership from all categories of digital equipment. Because of these improvements in printing technology, there has been an increase in demand for digital color printing in both the personal and network printers.

Although personal and network printers are not production printing devices, they are changing the printing market space in several ways. As these devices become more capable and more affordable for the individual or business user, the demand for a centralized printing outsourcer has diminished. By using these devices, customers are becoming accustomed to the high quality they provide and drive additional business for the larger, more profitable, print jobs.

Distributed print on demand continues to drive interest due to the globalization of the economy, and the ever-increasing robustness of the Internet. More printers will offer the service through partnerships, or through printing networks, but growth will remain modest.

1.2 Knowledge Check

1.2.1 Knowledge Check

Two truths and a lie – Each of the following questions contains two statements that are true and one that is not. For each grouping, select the statement that is false and provide an explanation of why it is not true.

1. **Which of the following statements is not true?**

    a. **Production Printing enables organizations to automate the reproduction of mass quantities of an original document.**

    b. **Digital imaging has begun to transform the entire prepress production process by replacing both photography with digital imaging systems and the elimination of the need for film by the Computer-to-Plate and Computer-to-Press processes.**

    c. **In the past decade, the popularity of digital publishing and the internet have caused an increase in demand for printed magazines, books and newspapers.**

    Why is the selected statement not true?

2. **Which of the following statements is not true?**

    a. **Personal and network printers have now replaced traditional methods of printing as the "method of choice" for most businesses.**

    b. **The prepress process has been almost completely converted to device independent desktop publishing hardware and software.**

    c. **Customers are becoming accustomed to the high quality provided by digital printing and are driving additional business for the larger, more profitable, print jobs.**

    Why is the selected statement not true?

1.3 Objectives of a Workflow Environment

1.3.1 What is Workflow?

Workflow is a technology that uses electronic systems to manage and monitor business processes. It allows the flow of work between individuals and/or departments to be defined and tracked. Workflow helps you automate a range of business tasks, and electronically route the right information to the right people at the right time. Users are notified of pending work, and managers can observe status and route approvals through the system quickly.

Crucial to successful workflow implementation is automation. Workflow systems provide for automatic routing of documents and projects to the users responsible for working on them. Workflow is concerned with the timely provision of information required to support each step of the business cycle. Information (documents, project info etc) may be physically moved over the network or maintained in a single database with the appropriate users given access to the data at the required times. Triggers can be implemented in the system to alert managers when operations are overdue.

1.3.2 Advantages of Adopting Workflow

By applying a workflow process to the production printing process high quality results can be obtained in a shorter period of time, with significant cost savings. The workflow process allows jobs that have traditionally required handoffs between a number of people to be completed by single individuals or teams. Furthermore, because of the ease of sharing files electronically, the overall print process can be shortened because days are no longer lost awaiting feedback on proofs. Finally, with the use of new technological advances, tasks that used to require long periods of time, can now be completed much more quickly. And, with additional improvements in analysis and reporting, many common problems and/or errors can be identified earlier in the print process and corrected much quicker and easier than in the past.

1.3.3 Customer Relationships

Helping customers understand the benefits of a PDF workflow is important to both the customer and the print provider. A streamlined PDF system can increase production and shorten delivery time, which can result in loyal customers. Many print providers offer discounts to customers that furnish PDF files because the lower cost in using PDF allows the print provider to share some of the savings with the customer. This makes pricing more competitive, which is a key factor for any customer when choosing a vendor.

Training is a key element in helping customers understand and accept a different workflow process. There are several ways that training can be made more effective:

- Important features of PDF can be explained to the customer in order for them to become accustomed in its use.
- The client can be shown the speed in which PDF files can be transferred electronically, compared to other formats, and the consistency in which files are received.
- Examples of jobs that have been output using PDF can be used to demonstrate consistency and efficiency of the format.
- The use of other Adobe software tools for designing and layout, such as Illustrator and InDesign, can be demonstrated to show the customer how using other Adobe products can make the process even more efficient.
- The benefits of PDF in relation to time and cost savings can be shown to the client.

1.4 Knowledge Check

1.4.1 Knowledge Check

1. **What is workflow?**

   _____
   _____
   _____

2. **List three advantages of adopting a workflow environment.**

   a. _____
   _____
   _____

   b. _____
   _____
   _____

   c. _____
   _____
   _____

3. **Training is a key element in helping your customers understand the advantages of a workflow environment. List the topics that should be included in this training.**

   a. _____
   _____
   _____

   b. _____
   _____
   _____

   c. _____
   _____
   _____

   d. _____
   _____
   _____

2 Definitions of Terms

2.1 Introduction

In order to understand the steps in the workflow production process, it is vitally important to develop a common vocabulary. There are a number of terms that you will need to recognize in order to understand the process. This section is designed to provide you with an overview of these terms.

2.2 Terms

2.2.1 File Types

There are a number of types of files that are created as part of the general workflow process. In order to fully understand the process, it is vital to understand these file types.

PDF (Portable Document Format)
A file format developed by Adobe. It can capture formatting information from many publishing applications. This makes it possible to send a formatted document to a computer screen or printer and have it look exactly the way in which it was created. You need Acrobat Reader to read PDF files.

PDF/X
Portable Document Format/X - A set of rules that determine which PDF features are allowed. PDF/X defines what is allowed in the PDF document so the printer will know what to expect when he receives the file. This ensures reliability and makes it easier to work with and transfer PDF documents.

PostScript
A page description language developed by Adobe Systems. This is a language used for printing documents on laser printers and other output devices, such as image setters, which are used to produce camera-ready copy. PostScript is an object-oriented language, which means it treats images, including fonts, as geometrical objects rather than as bitmaps. It allows output devices from different manufacturers, that would not normally read a file in the same way, to read and print the file basically the same.

PPD (Postscript Printer Description)

2.2.2 Applications

The file types mentioned above are generated using a number of different software applications.

Acrobat
Software developed by Adobe for creating and displaying Portable Document Format

(PDF) files. It can capture formatting information from many publishing applications. This makes it possible to send a formatted document to a computer screen or printer and have it look exactly the way in which it was created.

Acrobat Reader
Adobe software that allows Portable Document Format (PDF) files to be viewed.

Acrobat Distiller
Adobe software that enables a user to create Portable Document Format (PDF) files from desktop publishing and PostScript files.

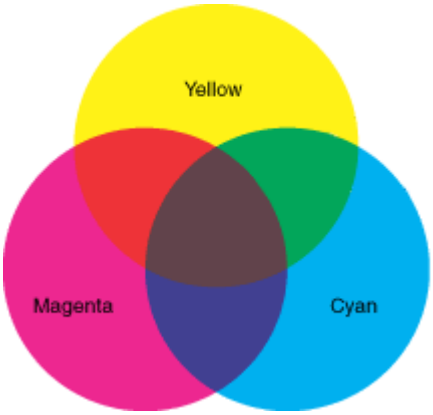
2.2.3 Processes

Preflight
A procedure used to be sure all digital files have been prepared properly before putting them into production. They are checked for correct type fonts, completeness, composition, and compatibility.

Color Calibration
Calibration is the first step in obtaining color management. It is the process of tuning a device (scanner, monitor, printer, etc.) to a known or defined standard to ensure that it will meet the manufacturer's specifications predictably and accurately. It establishes a baseline of operation to ensure that the device does not vary from the standards.

2.2.4 Color Designation

CMYK
Cyan-magenta-yellow-black, or CMYK, are the primary pigment colors used in 4-color process printing and most desktop publishing programs. CMY are the subtractive primary colors and are used to reproduce full color on the printed sheet. If these pigments are combined in equal amounts, black is supposed to be produced, but because of imperfections with the pigments, a muddy brown color is produced. For that reason, black (represented by K) is added to give definition to color reproduction and to create bolder text.



RGB

The additive primary colors, red, green and blue, used to display color in video monitors.

2.3 Knowledge Check

2.3.1 Color Designation

Match each of the terms in Column A with the appropriate definitions in Column B.

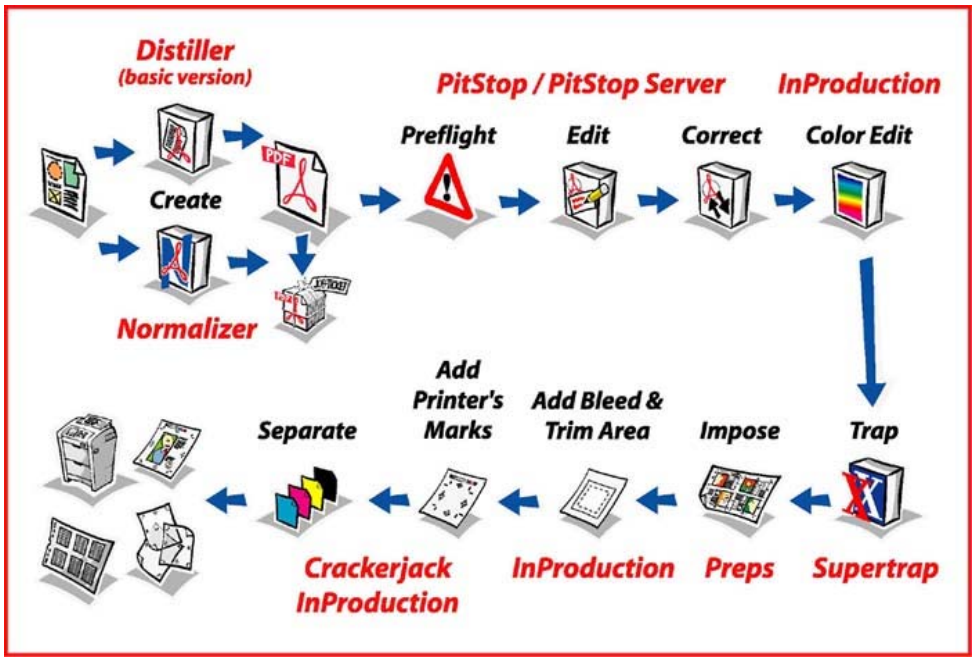
	Column A	Column B
	Color Calibration	a. The additive primary colors, red, green and blue, used to display color in video monitors.
	PDF (Portable Document Format)	b. A procedure used to be sure all digital files have been prepared properly before putting them into production. They are checked for correct type fonts, completeness, composition, and compatibility.
	PostScript	c. A file format developed by Adobe. It can capture formatting information from many publishing applications. This makes it possible to send a formatted document to a computer screen or printer and have it look exactly the way in which it was created. You need Acrobat Reader to read PDF files.
	Preflight	d. Adobe software that allows Portable Document Format (PDF) files to be viewed.
	RGB	e. A page description language developed by Adobe Systems. This is a language used for printing documents on laser printers and other output devices, such as image setters, which are used to produce camera-ready copy. PostScript is an object-oriented language, which means it treats images, including fonts, as geometrical objects rather than as bitmaps. It allows output devices from different manufacturers, that would not normally read a file in the same way, to read and print the file basically the same.
	Acrobat	f. The first step in obtaining color management. It is the process of tuning a device (scanner, monitor, printer, etc.) to a known or defined standard to ensure that it will meet the manufacturer's specifications predictably and accurately.
	PPD (Postscript Printer Description)	g. A set of rules that determine which PDF features are allowed. PDF/X defines what is allowed in the PDF document so the printer will know what to expect when he receives the file. This ensures reliability and makes it easier to work with and transfer PDF documents.
	Acrobat Distiller	h Software developed by Adobe for creating and displaying Portable Document Format (PDF) files. It can capture formatting information from many publishing applications. This makes it possible to send a formatted document to a computer screen or printer and have it look exactly the way in which it was created.
	PDF/X - Portable Document Format/X	i. The primary pigment colors used in 4-color process printing and most desktop publishing programs.
	CMYK	j. Adobe software that enables a user to create Portable Document Format (PDF) files from desktop publishing and PostScript files.
	Acrobat Reader	k. PPD Definition goes here.

3 The General Workflow Process

3.1 Introduction

In a traditional printing environment, specific jobs were assigned to different people in each step of the process. The advancement of technology has caused the definition and roles of these jobs to be re-evaluated and in many cases combined. Today the integration of the creative process and the printing process is commonplace. Now, most jobs arrive in a digital format that eliminates the need for many of the tasks previously done by printers and pre-press services. File preparation now controls the entire workflow process.

The workflow for a print project refers to the movement of documents and steps that are necessary to produce the project and the order in which the steps are to be completed. More specifically, workflow is the operational aspect of a work procedure: how tasks are structured, who performs them, what their relative order is, how they are synchronized, how information flows to support the tasks and how tasks are being tracked. Workflow processes differ from organization to organization, but the major steps remain pretty consistent.



3.2 Steps in the Workflow Process

3.2.1 Distiller/PDF Creation

In most cases today, the majority of the design and layout of printed documents is being handled via various desktop publishing or graphic design programs prior to delivery to a print vendor. Thus, many decisions – such as fonts, image types and transparency –

are being made earlier in the design process, often time without consulting the people responsible for producing the final printed documents. For this reason, the preflight process – the first time you review the documents you receive – becomes a pivotal point in the success of any print project.

3.2.2 Transmission

Because of the portability of the PDF format, files can now be transmitted using a variety of methods and technologies without fear of altering the layout or appearance of the document.

Listed below are several systems that are used to deliver digital files to their destinations.

- **Telephony:** The telephone system is an example of an existing communications system which is used to deliver digital information from one point to another. **Modems** are used to enable the analog telephone system to carry the digital files.
- **LAN/WAN Networks:** Several computers can be linked into networks which allow digital files to move to any location within the network.
  - **(LAN) Local Area Network:** A LAN is the connecting of multiple computers to a private network which is located in a specific area such as within a single facility.
  - **(WAN) Wide Area Network:** WAN is the connecting of two separate LANs (Local Area Networks) or the connecting of multiple computers in multiple locations.
- **Internet:** Files can be transferred via the Internet, either through FTP (File Transfer Protocol), e-mail attachments, or through a direct connection. Check with your supplier to see what they can accept.
  - **FTP (File Transfer Protocol):** A tool that is one of the fastest and most efficient ways to transfer graphic files. A password is required to access files when using FTP, so it is a secure method of transferring data. There is also no limit on the size of the file that can be transferred.

    One problem that may occur is that the recipient may grab the file too soon before the transmission is complete, so it is best to notify them verbally that the file will be coming. Make sure the file is compressed and don't send more than one file at a time. This will ensure that every file is transferred as efficiently as possible.
  - **E-mail:** Useful for small files, but it isn't as secure as FTP. File transfers should be limited to 1 Mb or less which puts restrictions on the types files that can be sent by E-mail. If the recipient does not have the same application that was used to create the file, they may not be able to open the file. Most computers will be able to open word processing files that have been saved as plain text or in Rich Text Format.

- **Direct Connection:** A direct connection to the Internet can speed up the file transfer process. For example, you can operate one or more host computers as a local area network (LAN) wired directly into the Internet. A small business can acquire status as a network and register a user name. Once registered, a network number is provided to allow the host computer to operate multiple computers as a local network with each having direct Internet access.

3.2.3 Preflight

Once a job has all the graphical, text and layout requirements completed by the graphical artist, the digital file is sent to a pre-flight process. This process involves checking to verify that the digital file contains all the elements necessary to perform properly within the production workflow. There are currently software programs, some proprietarily or mass market, that check automatically for embedded fonts and images, with the right RGB or CMYK format. This process of verification within the pre-flight process ensures that any issues are resolved as early in the process as possible to avoid future issues within the printing process.

Some of the most common preflight problems include:

- Fonts that are incorrect or missing
- Banding of colors
- Spot colors that are not converted to process colors and vice versa
- Image trapping
- Bleeds that are not adequate
- Hairline rules
- Hidden elements
- TIFF files that have not been converted from RGB mode to CMYK mode
- Incorrect instructions on job tickets
- Disks that are not usable

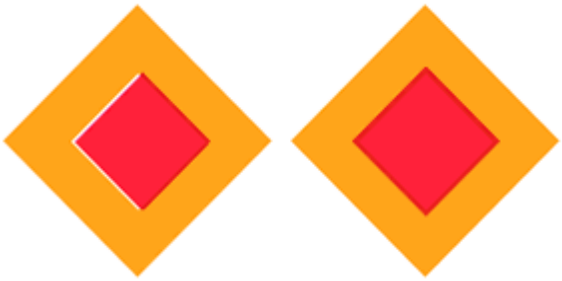
Any problems that arise during the preflight process will require you to coordinate with the graphical artist to resolve. Often times, the problems can be resolved by making some simple changes to the document you received. But, it is important for everyone to fully understand the expected end product, and to make decisions that will best meet those objectives.

3.2.4 Color Editing

One of the greatest challenges in producing a consistent color for print jobs is making sure that the colors the graphical designer has chosen or created are the same colors that are printed. In most cases, several devices can be used to create the final printed document. Problems can arise when the devices that are used do not produce the same digital values for the colors. For instance, images that were scanned as RGB (red, green, blue) can look different when viewed on different devices. Colors viewed on a monitor (RGB) can look different than the same colors output from a printing press, which uses CMYK (cyan, magenta, yellow, black) for color reproduction. With monitors, printers and presses all using different varieties of color, keeping the color consistent throughout the production of a job can be very challenging.

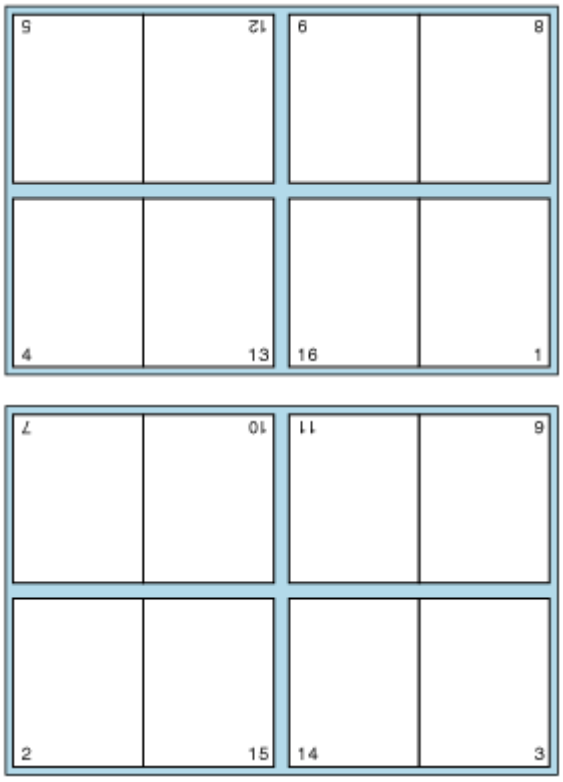
3.2.5 Trapping

Trapping is the process of creating small overlaps between abutting colors in order to mask registration problems on the printing press. These inaccuracies are inherent to the graphical production process. While they can be minimized, they will never completely disappear. But, through the trapping process, the small gaps showing up as a result can be hidden by creating overlaps between the two adjacent colors. When a print job has adjoining graphical objects of different colors, proper registration is critical. Trapping can help compensate for registration problems by slightly expanding one color into another and eliminating the gaps and shifts between colors.



3.2.6 Imposition

Printing presses print an entire set of pages on a single large sheet of paper to make the most efficient use of the paper and to shorten the time required for printing a large number of different pages. Imposition is the process of arranging the individual pages on the sheet of paper so that after they are printed, folded and trimmed, the resulting pages will be in the proper order. The order in which the pages are placed on the large sheet of paper is referred to as printer spreads. The pages are arranged on a large sheet called a flat, which is then used to produce the plates. Two forms are printed back to back on a press sheet. That sheet is then folded into a signature. Depending on the size of the page and the size of the paper, signatures are usually 4-, 8-, or 16-pages. The signatures are combined, either by nesting signatures inside each other or stacking one on top of the other, which are then bound to create the publication. (See diagram page 19)



3.2.7 Raster Image Processing (RIP)

The Raster Image Processor (RIP) is a hardware device or program that calculates the printing instructions for PostScript text and graphics and converts the instructions into dot patterns that are output streams that can be understood by a specific digital printer, imagesetter or platesetter for image rendering.

The RIP process has three main internal functions:

- **Interpretation** – The RIP interprets and decodes the PostScript coding. Once decoded, it prepares the information to the display list
- **Display List** – is the creation of an intermediate list of objects and instructions before rasterizing. It is a list and order of page elements will be displayed or imaged once the file is rasterized.
- **Rasterization** – Is the conversion of the graphic elements into bitmaps for rendering on a specific digital printer or imagesetter. RIP takes the display list and converts it into pixels or dots for the final print job.

3.2.8 Proofing

A Proof is a final quality control review of the job as a means to communicate the entire job concept of a project to the printing staff and the customer prior to printing. There are different kinds of proofs available that range from traditional proofs that are film based, to digital proofs. The reason for completing the proofing process is to detect any error in the file prior to printing the job. Proofing may be completed using either analogue or digital processes.

3.2.9 Printing

The final steps in the workflow process involve the translation of the initial electronic files into a marketable product. This includes the actual printing of the pages, as well as the binding and finishing of the final document.

Paper
Since paper stock can represent about 30-35 percent of the total cost of the printed job, it is critical to identify the proper paper. The paper chosen for the final print run should have the desired printability and runnability to ensure optimum results. Everyone involved in the print job should be as well versed as possible about the manufacturing and characteristics of paper, since these can have a significant bearing on the appearance of the job.

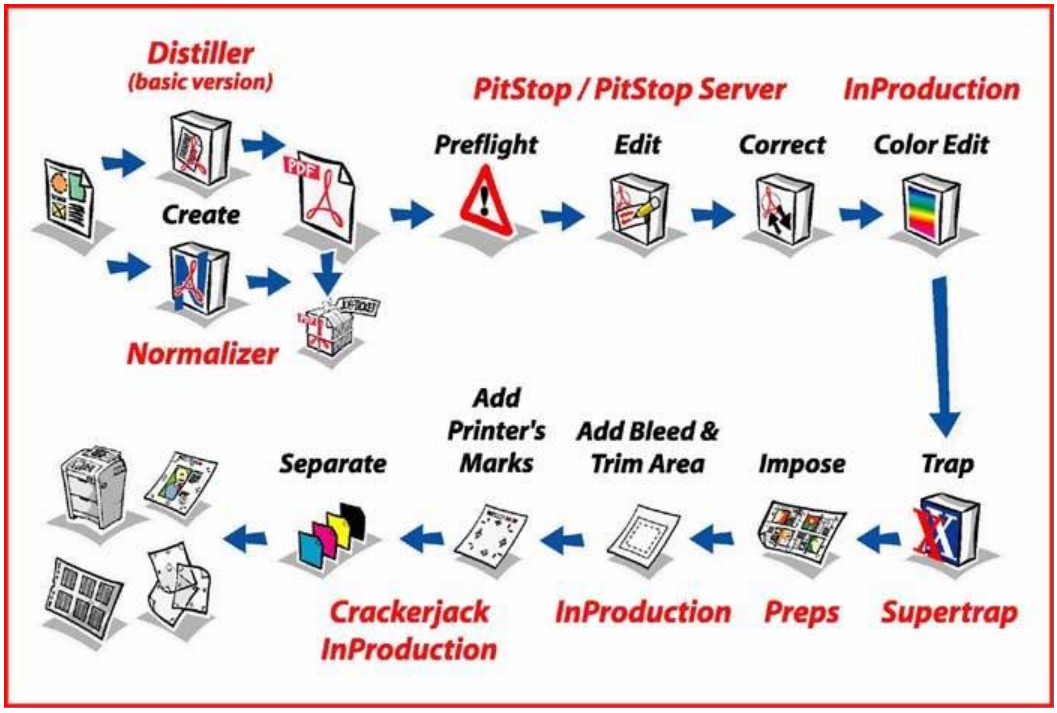
Binding
Binding is one of the final parts of the printing process and is considered to be the process of fastening the sheets of a publication in the proper order within a cover. There are various methods of binding available that can be selected for the type of publication and/or for the type of handling it will receive.

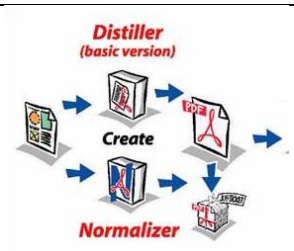
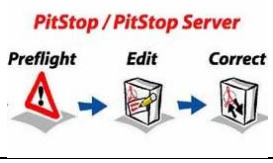
Finishing
Finishing is a general term used for a number of different operations and specialties. Some finishing operations are performed during the job with printing on web-fed presses.

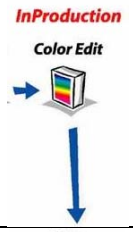
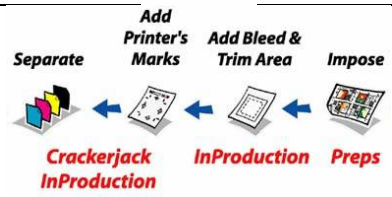
3.3 Knowledge Check

3.3.1 Color Designation

Using the workflow diagram below, match each of the stages is the Workflow process with the appropriate description.



	Stage	Description
		a. Checking to verify that the digital file contains all the elements necessary to perform properly within the production workflow.
		b. The process of creating small overlaps between abutting colors in order to mask registration problems on the printing press. These inaccuracies are inherent to the graphical production process. While they can be minimized, they will never completely disappear.

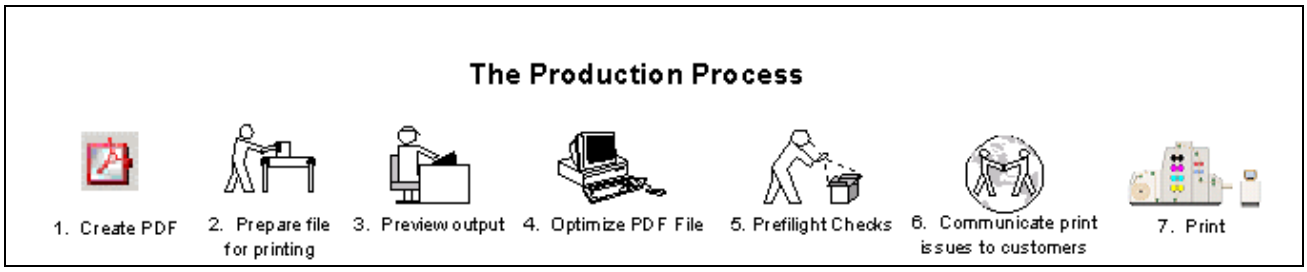
		c. the translation of the initial electronic files into a marketable product.
		d. The process of arranging the individual pages on the sheet of paper so that after they are printed, folded and trimmed, the resulting pages will be in the proper order.
		e. Creation and transmission of a PDF file.
		f. Making sure that the colors the graphical designer has chosen or created are the same colors that are printed. In most cases, several devices can be used to create the final printed document.

4 The Production Process

4.1 Introduction

The production process is used to take the concepts and ideas of your clients and turn them into high-quality documents in a timely and efficient manner. In order to do so, we rely on the use of Acrobat 7.0, solid and established Workflow solutions, and output to industry leading Konica Minolta machines.

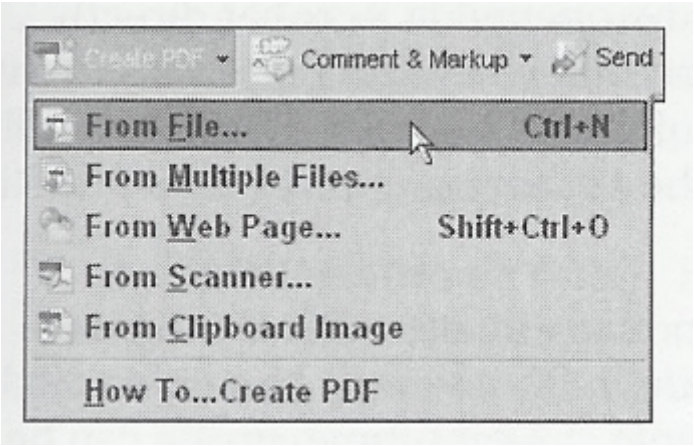
The production process consists of the seven steps depicted in the figure below.



4.2 Steps in the Production Process

4.2.1 Creating an Adobe PDF file

Acrobat 7.0 makes it easy for users to convert files from most common file formats to PDF documents. The simplest way to create a PDF file from an existing file is select the Create PDF tool from the Tasks Toolbar. Users are offered several options when they click on the Create PDF tool Task Button pull-down menu (Figure 4-1).



Either of the first two menu options can be used to convert existing files to PDF files. Although Acrobat 7.0 supports the conversion of most common types of files, it does not convert all file types. Thus, it is useful to know what types of files may be converted.

File Formats Supported by Acrobat		
• Autodesk AutoCAD	• Bitmap (BMP)	• CompuServe GIF
• HTML	• JDF Job Definition	• JPEG
• JPEG2000	• Microsoft Access	• Microsoft Office
• Microsoft Publisher	• Microsoft Visio and Project	• PCX
• PICT (Mac Only)	• PNG	• PostScript/EPS
• Text	• TIFF	

Converted files are opened within Acrobat 7.0 as unnamed files. You will need to name the files prior to exiting, or the conversion will not be saved.

Users can also further define conversion settings for files originating in any acceptable format. The available settings depend on the type of file being converted.

4.2.2 Preparing the File for Printing

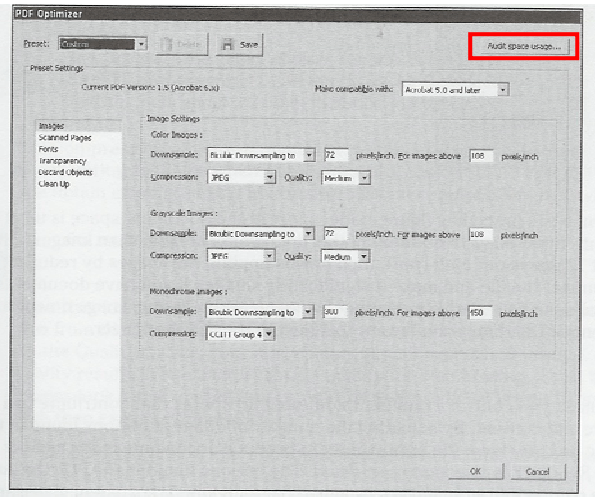
This is the point in the production process that it becomes vitally important to fully understand the requirements of the customer so that they can be integrated into the document. At this point in the production process several key document attributes are determined, including:

- Layout
- Fonts
- Image quality

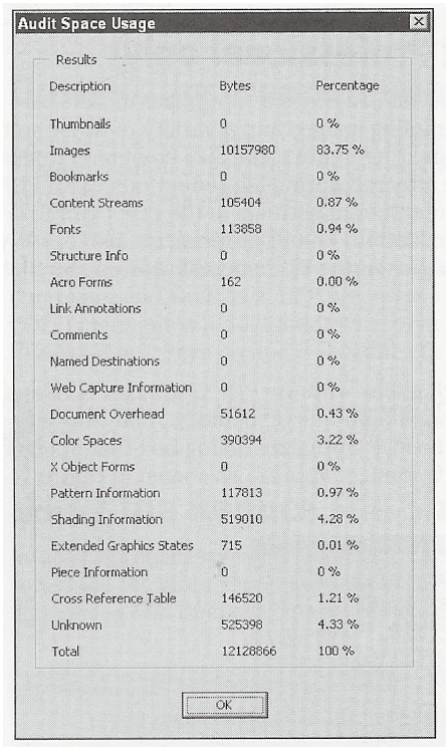
4.2.3 Optimizing PDF Files

File Analysis

The first step in the file optimization process is the analysis of the file to determine what content occupies the largest amount of memory. The PDF Optimizer offers users the option of automatically analyzing a file to determine what part(s) of the PDF document occupy higher percentages of memory. Users may select this option by clicking on the Audit Space Usage button on the PDF Optimizer Screen.

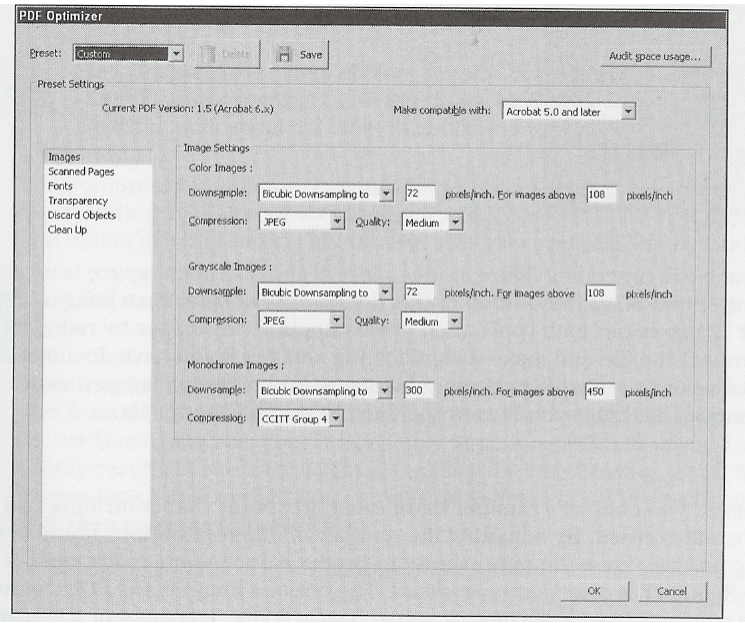


Once the analysis has been completed, Acrobat will display the Audit Space Usage dialogue box.



File Optimization

The PDF Optimizer is used to reduce file sizes by downsampling images and through a variety of other settings that offer options for eliminating unnecessary data. With the PDF Optimizer the user makes choices from a number of different settings in the PDF Optimizer dialogue box.



The options found in the PDF Optimizer include the following:

Option	Description	Default Value(s)
Preset	Allows users to save the current set of selections as a pre-determined menu option.	None
Make Compatible With	Allows user to create a PDF that is compatible with the current version (7) or an earlier version (4, 5, or 6) of Acrobat.	Acrobat 5 (Other settings are automatically changed when Acrobat 6 or 7 are selected.)
Images	Allows users to make choices for downsampling color, grayscale, or bitmap images by typing values into field boxes for the sampling amounts desired. These settings instruct Acrobat to locate any images above the set level and downsample the file to the selected level.	See settings in Diagram above.
Scanned Pages	The settings in this pane are intended to handle legacy documents where similar settings were not included in the Create PDF from Scanner option.	None.

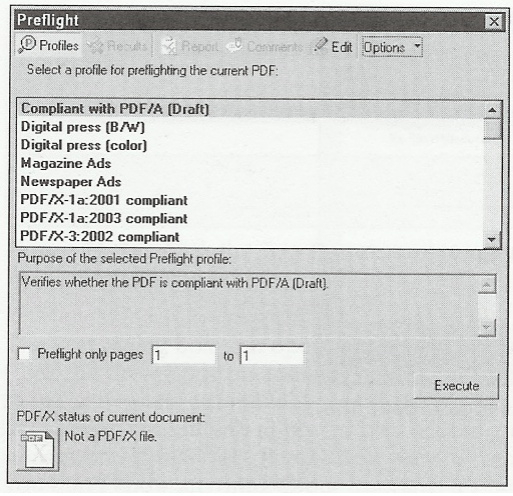
Fonts	Allows users to unembed any eligible fonts that may be originally embedded in the file.	Blank (if no eligible fonts are found).
Transparency	Allows users to flatten transparent images and objects.	
Discard Objects	Allows users to discard items such as actions, JavaScript actions, notes, cross-references and thumbnails from the PDF document. Discarding these objects also removes any interactivity associated with the discarded items.	
Clean Up	Presents users with a menu of options that can be safely removed with no affect on the functionality of the document, resulting is reduced file size.	

4.2.4 Preflight Checks

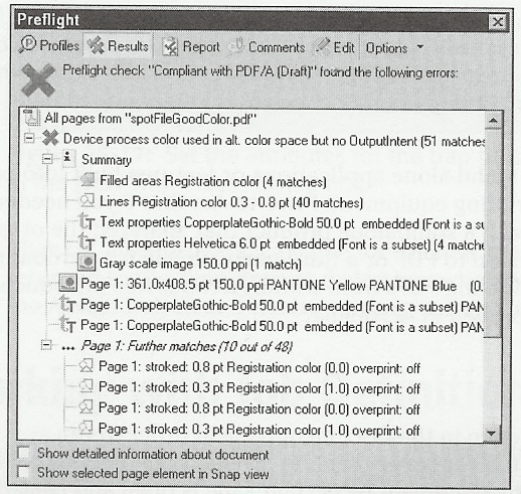
Preflighting is a term used by creative professionals and service technicians to describe the analysis of a file to determine its suitability for printing. Acrobat 7.0 introduced an option for preflighting PDFs from within the tool.

Preflighting a PDF File

In order to preflight a PDF file, it must be open in the Document pane. Users begin the preflight process by clicking on the Preflight tool in the Print Production Toolbar, thereby opening the Preflight Dialogue Box.



Select the appropriate profile from the options provided and click the Execute button to begin the preflight analysis. If the file you preflight contains errors, a report is displayed in the Preflight window at the end of the analysis. Clicking on the icon to the left of each category can expand the list.



4.2.5 Communicating Print Issues to Customers

When planning a project, you must realize who the customer is and who their target customer is. You also need to understand the budget considerations that the customer must follow. Being aware of your customer's expectations and budget is important to keep in mind when planning for the type of paper, number of colors, size of the project, and so on.

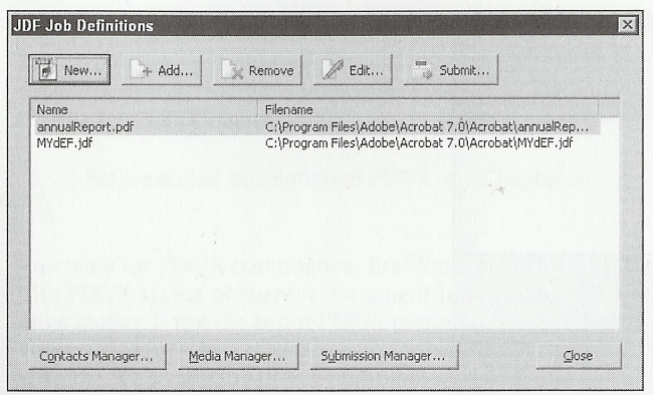
Sometimes, it may be necessary to consult your client to discuss options that may arise during the preflight process. These conversations are much easier if you have a good understanding of their needs as a result of the up-front planning process.

4.2.6 Working with PDF/X Files

For further information about PDF/x files refer to the PDF/x training module.

4.2.7 JDF Files in Acrobat 7.0

Job Definition Files (JDF) are used in production workflows to include information required for a production process and information related to the PDF creation. Information is entered into the JDF file through a series of dialogue boxes that are accessed by clicking on the JDF Job Definitions tool at the far right side of the Print Production toolbar. The JDF Job Definitions dialogue box (Page 28) allows users the ability to create a new definition or apply a definition from another file saved to your hard disk.

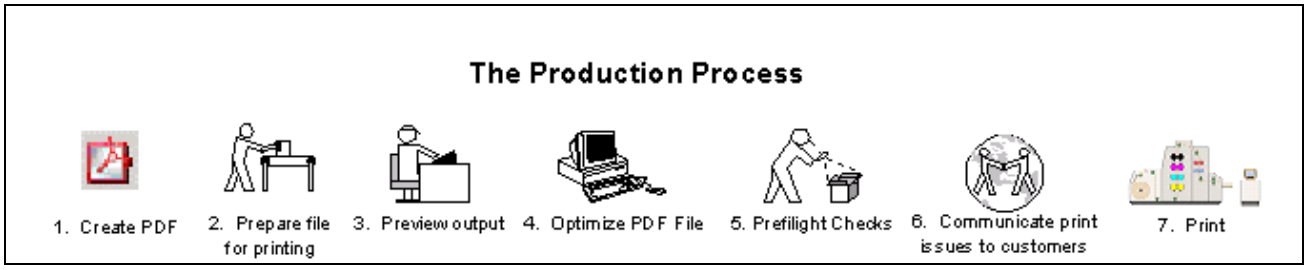


More detailed information about using the creation and use of JDF files can be found in the Help document installed with Acrobat.

4.3 Knowledge Check

4.3.1 The Production Process

Match each statement to the step in the production process that it describes.



Step Number	Description
	At this point in the production process several key document attributes are determined, including: • Layout • Fonts • Image quality
	The PDF Optimizer is used to reduce file sizes by downsampling images and through a variety of other settings that offer options for eliminating unnecessary data.
	Sometimes, it may be necessary to consult your client to discuss options that may arise during the preflight process.
	A term used by creative professionals and service technicians to describe the analysis of a file to determine its suitability for printing.
	Acrobat 7.0 makes it easy for users to convert files from most common file formats to PDF documents.
	Print the final documents according to the specifications provided by the client.
	Review the output to ensure that quality standards are met.