



Digital Print 101 Workbook

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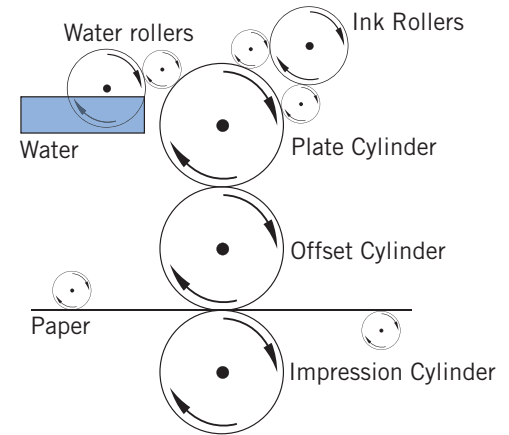
Digital vs. Conventional

Conventional (offset) printing is a widely used printing technique whereby the inked image is transferred (or “offset”) first to a rubber blanket, then to the printing surface. When used in combination with the lithographic process, which is based on the repulsion of oil and water, the offset technique employs a flat image carrier on which the image to be printed obtains ink from ink rollers, while the non-printing area attracts a film of water, keeping the nonprinting areas ink-free.

The advantages of offset printing include:

- Consistent high image quality—sharper and cleaner than letterpress because the rubber blanket conforms to the texture of the printing surface.
- Usability on a wide range of printing surfaces in addition to smooth paper (e.g., wood, cloth, metal, leather, rough paper)

Figure A: Conventional Printing Process



Digital Printing is an imaging method that electrostatically charges ink toner particles, which are attracted to areas of the paper that have been given an electrical charge. The dry toner is then heat fused to the paper, forming an image.

The advantages of digital printing include:

- Quick turnaround times
- Cost Effective at lower quantities
- Variable Data & Personalization

Effective Marketing

Digital Printing allows for:

- true personalization
- target market segmentation
- diversification of the marketing message
- tight turnarounds, quick response
- opportunistic, guerrilla marketing

Prime Example:

In May 2004, the Indiana Political Primary was just around the corner. We had spear-headed the design, marketing and print efforts for a candidate from Greenwood, Indiana. It was late in the race, the polls indicated that the incumbent (our client) was in trouble. Another mailing had to be sent, immediately. In one day—the day before the election—we designed, printed, and mailed 8,000 postcards. Digital Printing made this marketing feat possible.

Variable Data

Digital printing allows for affordable, quick turn, low-quantity print runs. As a result, it is perfect for on-demand printing; and diversified, opportunistic marketing.

On-demand printing can eliminate your inventory of overstocked, obsolete business collateral. It is referred to as on-demand because you can order what you want when you want it—one at a time if you like.

Variable Data is often equated with custom mailing. While automatic mail merges are a practical, time-saving application of this service, it can be used to greater effect. For example, a home builder might segment their mailing list; pairing apartment complexes with their new development in the same zip code. Thus, they could tailor their message and make it relevant for the potential home-buyer, increasing their chances for success—and sales.

Cost Advantages

Postcard: 5.5 x 8.5 in., 4c/4c

qty	Digital	Conventional
50	\$75	\$1,000
100	\$100	\$1,005
1000	\$500	\$1,010
2500	\$1,100	\$1,100
5000	\$2,000	\$1,175
10000	\$4,000	\$1,375

Poster: 11 x 17 in., 4c/0

50	\$100	\$1,000
100	\$150	\$1,010
1000	\$1,100	\$1,100
2500	\$2,500	\$1,300
5000	\$5,250	\$1,650
10000	\$10,500	\$2,350

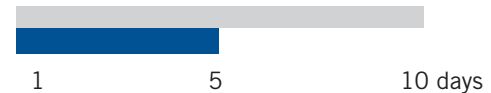
4-pager: 8 1/2 x 11 in., 4c/4c

50	\$225	\$1,000
100	\$275	\$1,010
700	\$1,100	\$1,100
1000	\$1,400	\$1,125
2500	\$3,250	\$1,250
5000	\$6,300	\$1,600
10000	\$12,520	\$2,100

Scheduling

Digital Printing is ideal for fast turnarounds. Conventional printing typically requires 5 to 10 working days. Digital cuts the time considerably— to 1 to 4 working days.

Conventional Production Time



Digital Production Time



Design for Digital

What to avoid:

- large floods of color
- heavy coverage on the folds
- specific spot colors
- screens
- vignettes
- layouts larger than 12 x 18 in.

What looks great:

- full color photographs
- rich blacks
- high contrast
- full color and white space combinations

TERMINOLOGY

Graphics File Format

A file format designed specifically for representing graphical images. Graphics file formats can be broadly categorized into bit-mapped formats and vector formats.

TIFF (bit-mapped file format)

Acronym for tagged image file format, one of the most widely supported file formats for storing bit-mapped images on personal computers (both PCs

and Macintosh computers). TIFF graphics vary in resolution, and they can be black and white, gray-scaled, or color.

JPEG (bit-mapped file format)

Short for Joint Photographic Experts Group, and pronounced jay-peg. JPEG is a lossy compression technique for color images. Lossy compression technologies attempt to eliminate redundant or unnecessary information. Most video compression technologies, such as MPEG, use a lossy technique. Although it can reduce files sizes to about 5% of their normal size, some detail is lost in the compression. [For this reason, TIFFs are ideal for printed materials and JPEGs work well on the web.](#)

EPS (vector file format)

Abbreviation of Encapsulated PostScript. Pronounced as separate letters, EPS is the graphics file format used by the PostScript language. Vector-based artwork is ideal for crisp, clean edges, particularly when reproducing a logo. [EPS files should always be provided for cut vinyl signage, promotional product and corporate collateral applications.](#)

PDF

Short for Portable Document Format, a PDF captures formatting information from a variety of desktop publishing applications, making it possible to send formatted documents and have them appear on the recipient's monitor or printer as they were intended. To view a file in PDF format, you need Adobe Reader, a free application distributed by Adobe Systems.

PIXEL

Short for Picture Element, a pixel is a single point in a graphic image. Graphics monitors display pictures by dividing the display screen into thousands (or millions) of pixels, arranged in rows and columns. The pixels are so close together that they appear connected.

DPI

Abbreviation of dots per inch, which indicates the resolution of images. The more dots per inch, the higher the resolution. A common resolution for print is 300 dots per inch. This means 300 dots across and 300 dots down, so there are 90,000 dots per square inch. A common resolution for web and screen is 72 dots per inch.



Figure B:
Image at 300 dpi,
CMYK
TIFF format



Figure C:
Image at 72 dpi,
RGB
JPEG format

CMYK

Short for Cyan-Magenta-Yellow-Black, CMYK is a color model in which all colors are described as a mixture of these four process colors. CMYK is the standard color model used in offset printing for full-color documents. Because such printing uses inks of these four basic colors, it is often called four-color printing.

RGB

Display devices generally use a different color model called RGB, which stands for Red-Green-Blue. One of the most difficult aspects of desktop publishing in color is color matching—properly converting the RGB colors into CMYK colors so that what gets printed looks the same as what appears on the monitor.

File Prep

APPLICATION FILES

If sending Application Files to print, they must be **Collected for Output***. Always include:

- Layout (Quark, Pagemaker or InDesign File)
- Linked and Embedded Images
- Fonts (Screen and Printer)
- Collect Report

* In QuarkXPress, go to the File Menu and Collect for Output. In Adobe InDesign, go to the File Menu, Preflight, then Package.

PRINTABLE PDF'S

When exporting as a PDF for print, be sure to select the following options:

- Pages: All
- Spreads: Unchecked
- Print Blank Pages: Checked
- Print Guides: Unchecked
- Paper Size: Custom
- Width: Auto

- Height: Auto
- Orientation: Portrait
- Scale: 100%
- Constrain Properties: Checked
- Scale To Fit: Unchecked
- Page Position: Centered
- Tile: Unchecked
- Crop Marks: Checked
- Registration Marks: Checked
- Color Bars: Unchecked
- Page Information: Checked
- Bleed: 0.125 in (at least)
- Offset: 0.0833 in
- Color: Leave Color Unchanged
- Simulate Overprint: Unchecked
- Fonts: Embed all
- Images: Send all
- Compression: None
- Downsample Image: Do Not Downsample
- OPI: Unchecked
- Transparency: High Resolution

Sending Files

After collecting for output or creating a printable PDF, files are typically sent to a print vendor. There are two popular methods, e-mail and FTP. It's important to note when sending collected application files they should be stuffed (Mac) or zipped (PC) to prevent file corruption.

E-MAIL

If the file size of a ZIP, SIT, or PDF file is less than 2MB, it should be sent via e-mail—usually to a print vendor's artwork e-mail address.

FTP

If the file size of a ZIP, SIT, or PDF file is greater than 2MB, it should be sent via FTP (or provided on CD).

Sending A File via Print Resources FTP site:

1. Go to www.printindy.com
2. Click Send A File (left-hand side of page)
3. Enter information in fields on the form
(be sure to select file type—Mac or PC)
4. Browse for your File
5. Click Send File

Digital Proofing

PDF Proofs

- PDF Proof vs. Contract Proof (cost, time)
- PDF proofs are meant for content not color
- screen calibration vs. print calibration
- screen quality PDF for proofing purposes
- PDF proofs are fast, easy, and free

A PDF Proof will:

1. Expedite the proofing and editing process
2. Reduce job costs
3. Provide an accurate representation of content

A PDF Proof will not:

1. Provide an accurate representation of color
2. Match colors on the printed piece

Sticky Note Editing Function

(A time-saving feature of Adobe Acrobat)

To utilize:

1. Go to the View Menu in Adobe Acrobat
2. Select Toolbars >
3. Select Commenting Toolbar
4. Click on Sticky Note Tool
5. Use sticky notes to indicate edits
6. Save and send

Paper

	DIGITAL	CONVENTIONAL
Size	12.5" x 19 max	unlimited
Finish	smooth	wide variety
Basis Weight	100# cover	unlimited
Specialty	limited	unlimited

Inks

	DIGITAL	CONVENTIONAL
	toner cmyk only	ink cmyk + PMS

Large Format

	DIGITAL	CONVENTIONAL
Size (w)	unlimited	78"
Size (h)	unlimited	56"

Available Materials

- vinyl
- canvas
- fine art paper
- window cling
- backlit paper
- photo gloss paper

Applications

- trade show
- event and directional signage
- convention graphics
- window clings
- point of purchase displays
- storefront signage
- backlit posters
- art reproductions
- presentation displays

Bindery

- lamination, foam core, sew and grommet, etc.

Project Checklist

Ask yourself the following questions before you begin your next print project.

General

- Who will receive the piece?
- How will it be used?

Quantity

- How many do you need now?
- Will the piece change soon?
- How much room do you have to store the extras?

Size

- Does the piece need to be a specific size (to fit in an envelope or brochure rack)?
- Can you be flexible on size in order to save money?
- Will it be mailing?

Color

- How important is color match to existing pieces?
- Is an exact PMS color match important?
- Are there large blocks of solid color or neutral screens?

Paper

- Is the paper an important part of the design (whiteness, texture, etc.)?
- Will someone need to write on the piece?
- Will it need to run through a printer or fax machine?

Binding

- Does it need to lay open (like a cook book)?
- Do you need printing on the backbone?
- Will pages be added or removed after binding?

Mailing

- Do you need a mailing list?
- How much will the postage be?
- How fast do you want it to get there?
- Do you need the undeliverable addresses returned to you?
- Do you want it delivered to an address even if your addressee has moved?
- Do you want the list deduped by household?
- What should happen to the overs after mailing?

Shipping

- Who is paying for shipping?
- When do you own the product (FOB our dock vs. your dock)?

Thank you

We hope you enjoyed Digital Print 101.

Please consider Print Resources for your marketing needs including, but not limited to, brand development services, design, printing and promotional products.

