

# Print Buying -

getting the best out of your print job

*Expert knowledge means success*

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Note: This publication has not been updated since it was last published. Some of the hyperlinks may have changed and may need updating. In addition, some of the information in this publication may be out of date.

## Introduction

Today, even in the fast moving world of electronic communication, paper-based products such as letterheads, business cards and brochures still need to be printed. True, one can use a desktop colour laser printer for short-run printing but when you need a lot of copies quickly there is no alternative but to outsource. You have to find a printing company who can handle your needs and deliver what you want, on the right quality paper, in the right colours and with the sharpness of definition in your graphics you desire. On top of that, your print order must be delivered on time and at the right cost.

Every business of every size needs commercial printing. But the process of buying printing can be highly inefficient:

- Materials are prepared incorrectly for Printers;
- Inappropriate suppliers are selected; and/or
- The wrong printing process is used for corporate printing materials.

This publication is concerned with the steps you need to take when placing a print order with a printing company.

## Different printing processes

There are five different types of commercial printing although some are more popular than others.

### Relief Process

The relief printing process involves using plates with a raised design. This is then inked and pressed onto the surface to be printed. This is the oldest form of printing and is not used a great deal today.

The design can either be raised into wood or metal, called Letterpress, or into a more flexible material such as rubber or plastic called Flexography.

Modern flexography, often called flexo, is a versatile process that uses photo-etched plates. The non-image areas on these plates are etched away, leaving only the printing surface that carries the ink directly to the material on which you are printing (referred to as the substrate).

Flexo is best suited for printing on a rolled substrate other than paper such as box boards, foils, plastics, newsprint and more. Common applications for flexo include labels, tabs, corrugated boxes, cartons and newspapers.

### Intaglio Process

This process is used for magazines, packaging and wallpaper. It is in essence the reverse of the relief process. The design is etched out of the material and the recesses hold the ink. The paper or material to be printed is wrapped onto a metal cylinder and as it rotates, the printing block comes into contact and the ink is transferred.

Printing is done on sheet-fed rotary presses which are capable of printing over 8,000 sheets per hour. Printing plates are covered with ink and then the surface of each plate is wiped clean which allows the ink to remain in the design and letter grooves of the plates. Each sheet is then forced, under extremely heavy pressure (estimated at 20 tons), into the finely recessed lines of the printing plate to pick up the ink. The printing impression is three dimensional in effect and requires the combined handiwork of highly skilled artists, steel engravers, and plate printers. The surface of the note feels slightly raised, while the reverse side feels slightly indented.

Intaglio printing is related to copperplate engraving and etching. Stamps produced with the intaglio method are characterised by very fine lines and well-defined contours of the design. The layman can easily recognise this technique, since the ink relief can be felt on the stamp paper. The heavy ink application is due to the principle behind this technique: paste-like ink is transferred by inking rollers onto the cylinder. Excess ink is wiped off by a paper web running in opposite direction. The ink that remained in the recesses is directly transferred onto the paper under high pressure (6t/cm<sup>2</sup>). The resulting embossing is tactile.

### Key Concepts

The main printing processes are: letterpress (relief printing); intaglio (gravure printing); planography (flat-surface printing); and silk screen.

Printing is more than reproducing words and images on paper. It is the physical experience itself - holding the piece, feeling the paper, the interplay of ink and paper - that printing is concerned with. As such, paper - the vehicle of the message, as well as the biggest cost item in a printing job - is of prime importance. Understanding paper and picking the right sheet for your job can make or break your job.

Papers are defined by grade and basic weight. Understanding these two concepts is the key to specifying the right paper.

## Screen Process

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In this process, ink is expressed through a stretched fabric mesh by a squeegee blade to reproduce the original image onto the substrate below. The non-image areas are blocked so that the ink does not pass through. Screens can be made of a variety of materials including polyester, nylon or metal. This is the only printing process in which the ink passes through the image carrier.

A variety of materials such as paper, plastic, metal, fabric and glass can be screen printed. Common uses include T-shirts, mugs, mouse pads etc.

## Planographic Process

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This is the most commonly used process and also the most complicated. The concept behind lithography is that ink and water do not mix. This type of printing is done on an offset press which means that the image carrier and the printing material do not contact with each other.

This type of printing press can be either sheet fed or web fed. Sheet fed presses send individual sheets through the press while web fed presses use a very large roll of paper.

The first step is to create a plate which is typically made of aluminium, polyester or paper depending on how long the run is and how durable the plate needs to be for archiving. Traditionally, plates are created through a time consuming process that involves creating CMYK colour separations and then developing large film negatives from which the plates are made. Computer To Press (CTP) is a newer method which improves the time and effort involved considerably by using a device that accepts electronic files and then images the plates.

Once the plate is created, it is wrapped around the plate cylinder and water is applied to the non-image areas and ink is applied to the image areas. The plate cylinder then comes into contact with the blanket cylinder and the image is transferred to it. The blanket cylinder has a rubber blanket wrapped around it that picks up the image from the plate cylinder. The material to be printed passes between the blanket cylinder and the impression cylinder where the image is passed to the paper. Commercial presses are very fast and have very high quality output.

## Digital Process

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Unlike traditional (offset) printing presses, digital presses are made to produce short-run (1 to 5000 copies) quick-turnaround, full colour jobs such as reports, newsletters, books, brochures and so on.

In traditional printing, your job goes from your desktop to a digital proof, to an imagesetter (for making film), to another proof, to a platemaker, to the printing press. But in digital printing your job goes from your desktop to a proof to plates to the press - or even directly from desktop to press.

Limitations of digital printing include limited paper size and quality of 4-colour reproduction. In addition, not every Printer offers digital printing options.

Digital printing has some distinct advantages over the other printing processes. The other processes are incapable of producing variable data which is the ability to create sections of a job that vary from page to page. For example you may want to personalise your print job to include your clients' names. Many digital printers can pull this information from a database and incorporate it into a job. This is possible because unlike the other processes there are no plates. Digital printing is very quick to set up and can be edited easily. The downside to digital printing is its comparative lack of speed, poor resolution and colour reproduction; however, technological advances are improving these factors all the time.

Digital printing uses a positive electric charge on the image areas of a drum while non-image areas possess a negative charge. The drum is passed by negatively charged toner particles that are attracted to the positively charged areas of the drum. The paper passes across the drum and the toner is transferred. From here, the paper passes through a fusing unit that uses heat and pressure to bond the toner to the paper.

## Which process is best?

This is a difficult question to answer as it depends entirely on what the requirements of the job are. The table opposite provides some clues to help in your decision making.

## Different kinds of paper

There are various different types of paper on which to print, the main difference being weight, or thickness. The standard paper that runs through your average desktop printer is 80gsm.

When you assess paper cost, it is important to remember that paper price is only one factor in determining overall paper cost. Your printed image represents you and your business. Inappropriate or bargain-priced paper can produce poor-quality printing that can detract from your business image and even lead to loss of sales.

Consider what you'll be printing. Black-and-white documents are different from colour presentations and photography. Unless you're specifically printing photographs that must last for a long time, most digital printing is done on a good multipurpose paper that will produce crisp blacks and strong colours.

Most business paper is 20- to 24-pound (lb) bond. Card stocks are at the heavier end of the scale, usually in the range of 60- to 65-lb when intended for laser or inkjet printers. Metric equivalents are expressed in grams per square meter, abbreviated as g/m<sup>2</sup>.

### Thickness

Thickness is most often expressed as a unit of measure called a "mil." Generally, thicker media will be stiffer and will resist creases and tears. Different printers and digital copiers will have different limits on the thickness of paper that they can use.

Thicker stocks must sometimes be scored to provide a clean fold.

Process	Image Carrier	Image Transfer	Printing Material Versatility	Run Length	Cost
Letterpress	Lead	Direct	Low	Short	High
Flexography	Rubber	Direct	High	Long	Moderate
Intaglio	Copper Plates	Direct	Moderate	Very Long	Very High
Screen Printing	Polyester, nylon or metal	Direct (through the image carrier)	High	Short to Long	Low
Lithography	Polyester, paper or metal	Indirect	High	Short to Long	Low to Moderate
Digital	Photo-receptor	Direct	Low	Short	Very Low

### Brightness

A higher brightness value means that more light is reflected from the surface of the paper, providing crisper text with better contrast and a brighter background for colour and images.

### Whiteness

Whiter papers produce sharper, more vibrant colours for photos or presentations, but you must also consider the printing process. The toner in laser printers is opaque and fused to the upper surface of the paper. Ink is translucent. Light passes through ink and bounces back from the paper stock, passing back through the ink to the eye. The colour and reflective qualities of the paper stock will change the way you perceive the colour of an ink.

## Opacity

Opacity describes how well the paper blocks the passage of light through it. Highly opaque media prevents print from showing through to the other side and are considered good for printing on both sides for example for brochures, newsletters, manuals, calendars and other applications where "show-through" is undesirable.

## Finish

Finishes for laser and inkjet papers are becoming increasingly sophisticated, with numerous choices for a variety of applications. They range from matte to glossy, with lessening degrees of glossiness, sometimes described as semi-gloss, soft-gloss or satin-gloss. Many people prefer the mirror-like finish of high-gloss media for colour photographs, and smooth matte finishes for black-and-white photographs and business documents.

Take care - extremely smooth, shiny or coated papers that aren't specifically designed for certain kinds of printers can cause jams, repel ink or the coating can even melt inside your printer!

## Surface

Glossier papers provide better reproduction of crisp lines and intense colours, but the glossiest papers are very susceptible to fingerprints. It is often recommended to use matte papers for materials such as presentations and brochures that will be handled often.

## Paper sizes

There are three main categories of paper size. It is worth learning about them to avoid wasting paper on print jobs.

### A Sizes

This is the most common size used for general printing. It's the most common size for stationary and documents. There is a direct relation between each of the sizes as shown in the diagram opposite.

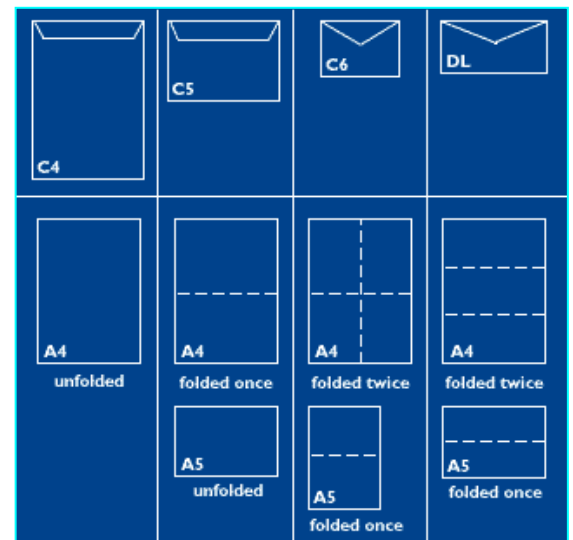
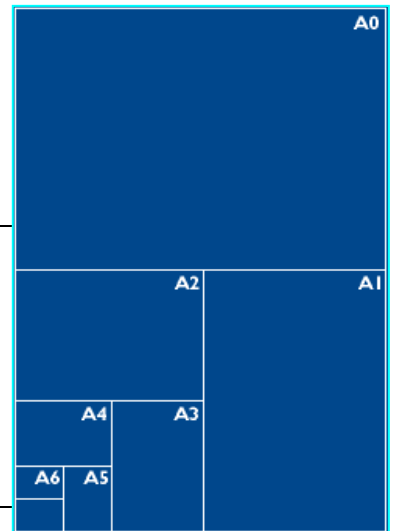
A4 is the most commonly used size.

### B Sizes

The B series is mainly used for larger jobs such as wall charts and posters.

### C Sizes

C Sizes are for envelopes designed to take A size paper.



Old English paper and book sizes	
Emperor	72 ins x 48 ins
Antiquarian	53 ins x 31 ins
Grand Eagle	42 ins x 28.75 ins
Colombier	34.5 ins x 23.5 ins
Atlas	34 ins x 26 ins
Imperial	30 ins x 22 ins
Pinched Post	28.5 ins x 14.75 ins
Elephant	28 ins x 23 ins
Princess	28 ins x 21.5 ins
Cartridge	26 ins x 21 ins
Royal	25 ins x 20 ins
Sheet and 1/2 Post	23.5 ins x 19.5 ins
Medium	23 ins x 18 ins
Demy	22.5 ins x 17.5 ins
Large Post	21 ins x 16.5 ins
Copy Draught	20 ins x 16 ins
Small Demy	20 ins x 15.5 ins
Crown	20 ins x 15 ins
Post	19.25 ins x 15.5 ins
Foolscap	17 ins x 13.5 ins
Brief	16 ins x 13.5 ins
Small Foolscap	16.5 ins x 13.25 ins
Pott	15 ins x 12.5 ins

US Paper sizes		
Letter	8.5 ins x 11 ins	Also in double, half or quarter size
Legal	8.5 ins x 14 ins	
Ledger	11 ins x 17 ins	Also called tabloid
Broadsheet	17 ins x 22 ins	As used in newsprint
Old (untrimmed) paper size	12 ins x 9 ins	
"Dollar bill"	7 ins x 3 ins	Used for origami - larger than a modern dollar bill

Metric sizes	
A0 = 1189 mm	x 841 mm
A1 = 841 mm	x 594 mm
A2 = 594 mm	x 420 mm
A3 = 420 mm	x 297 mm
A4 = 297 mm	x 210 mm
A5 = 210 mm	x 148 mm
A6 = 148 mm	x 105 mm

## Print finishes

After a job has been printed different finishes can be applied to create a different look or to protect the document. Below are some of the different styles you can select.

### Glossy Finish

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Glossy describes a finish that has a mirror-like shine to it.

### Pearl Finish

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Pearl describes a lustre-finish that is somewhere between a matte and a gloss. The surface tends to sparkle.

### Matte Finish

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Matte describes a dull-finished paper that does not reflect glare.

There are many types of speciality varnishes and coatings for certain projects. There is everything from varnishes with a gold tint to films with glitter in them! It all depends on your requirements for the job which should be thoroughly discussed with your Printer.

## Print binding

Once you have had your project printed how do you ensure that it stays together in the right order and looks professional?

Binding is the easiest way to do it but as with everything there are several choices as outlined below.

For some types of binding it might simply be a matter of ensuring that the margins are wide enough to accommodate the holes for a three ring binder or spiral binding. For saddle-stitching, you may need to compensate for creep. Some bindings are more durable, others allow your book to lay flat when open. You'll also want to weigh the cost of special equipment if you want to do-it-yourself rather than using a local copy shop or Printer.

### Ring Binding

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This is where the document has a number of holes punched into the left hand side which are then threaded onto metal rings in a folder. Three rings are common but other numbers of rings are also possible. For small projects you may choose to use a simple hole punch to do your own binding. For extremely large quantities it may be more efficient to have

the Printer or copy shop drill the holes or print to pre-punched paper.

This is a good binding option for some types of manuals where page revisions may need to be inserted periodically.

### Comb or Wire Binding

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Plastic comb binding is a piece of plastic with "teeth" that fit into rectangular holes in the paper. You can purchase kits if you're the do-it-yourself sort. It allows your documents to lay flat when opened. It's an inexpensive but professional looking option.

Wire binding is where a spiral coil of metal is passed through holes in the paper. A sturdier alternative to the single wire spirals or the plastic comb is a double loop of wire. The wire forms teeth or double loops that fit into rectangular holes in the paper. The loops are crimped to hold the wire in place. Like comb and coil bindings, these allow the book to lay flat when open.

### Thermal Binding

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Thermal binding is where heat is used to fuse the pages into a glue or cloth strip. Another form of thermal binding is to sit the pages in a folder with a strip of glue along the spine. The glue is then heated and the pages sink into the glue. When this has cooled the pages are automatically sealed into the binder.

### Stitched Binding

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This is where the pages are stapled together either from the middle or along the side. The amount of pages depends on which type you use. This is ideal for small brochures and looks very professional.

## Choosing the right Printer

So how do you go about choosing the right Printer for the right job? One Printer cannot do every type of print job. They specialise in certain areas. One might focus on four colour jobs while another does particular well in long runs.

There may well be several different processes to go through with one job. For example if you wanted to print a logo and have part of it foil blocked in a silver or gold, the job may well have to be split between two Printers which will add considerably to the turnaround time.

A quick glance on the internet or through the Yellow Pages will tell you that there are thousands of printing companies around. So how do you ensure your choice is more than an educated guess?

### Quality

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Ask for samples of work they have produced in the past. If the job you are doing has specific requirements such as foil blocking or a certain finish, ensure that the samples you receive reflect their competency in those areas.

### Consistency of print

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Another thing to check in the samples they send is the consistency of the quality and colour definition. Does the colour remain the same throughout the brochure? Does the paper quality feel the same?

### Reliability

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Is it possible to talk to previous customers? Can you gauge the company's reliability on its size or how long it has been established? Read their mission statement to find out where its principles lie.

### Product Innovation

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Does the company seem to be constantly striving to better its performance and service to customers? Are they looking into new technology and new ways of doing things? You can check out the news section on their website for this or talk to an employee if possible.

### Price

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Obviously, there is a lot more to it than price but it certainly should be a deciding factor. Ask for quotes from a number of different Printers and compare them. Remember though, the cheapest isn't necessarily the best.

### Service

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Do they offer anything extra above and beyond what you would expect from a printing company?

### Other factors

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Make sure you read the quotes they have provided thoroughly. Have they actually quoted for what you have asked them to? Are there any hidden costs you haven't discussed with them?

## Checklists:

### Printer Brief Checklist

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Printer briefs must be consistent to ensure that you can compare alternative quotes and they must also be specific. The following checklist will help you with your print specification.

- Quantity - Have you specified how many pieces you want produced (and included an acceptable number of extra copies)?
- Type/Weight of Material - Have you specified what type and weight of material you want the job printed on?
- Colours - Is it a single, two or four colour job? Is it to be printed both sides?
- Flat Size - What is the flat size of the piece before and after trimming?
- Folds/Finished Size - Have you specified how the job should be folded? How many folds and the sequence? How many pages will the finished item have and what is the finished size?
- Special Instructions - Have you included clear details of any coding required? Any special finishing instructions: stitching, perforating, gluing, laminating etc?
- Reproduction - Are you supplying "trannies" or colour "negs"? If so, what size and how many? Will tint-laying be required?

- Proofs - Do you want to see proofs? If so, is a pre-press proof (running sheet) adequate?
- Timing - Have you agreed a schedule with the Printer stating:
  - when artwork will be available?
  - when proofs are required?
  - final delivery date?
- Delivery Instructions - Have you included clear packing (codes, quantities) and delivery (addresses, contacts) instructions?

## Tips for Better Print Buying

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- You can't be involved too early. By sitting in on preliminary meetings you'll** have more time to critically assess the print requirements and may even prevent wasted effort on any unworkable scheme.
- Keep a whole range of samples – formats, paper samples, special finishes. Get on **Printers' lists to stay** up-to-date with the latest developments. Also keep notes of as many prices as you can get.
- As far as possible work with standard **sheet sizes, eg "A" sizes**. This reduces wastage. If you must use non-standard sizes, use waste to print additional items at very little extra cost.
- Your production schedule is king. Draw up a detailed schedule for every component in your campaign or mailshot and then stick to it.
- Watch the weight of the paper you choose and at an early stage make up a **"dummy" of each item in a campaign** using the actual materials being proposed. You will then be able to ensure that your pack is within Royal Mail allowances.
- Make sure you use the right printing company for the right job. The machinery they use will dictate what they **can and can't do cost-efficiently**, so pick the Printer who has the most suitable machinery.
- Keep tabs on your Printers. Maintain details of the machines and samples produced by them. Make sure you visit them to check that they can offer all the services you require.

- Having agreed the specification and the price with the Printer, make sure you clarify terms of payment, ownership of materials (eg separated film) and the storage of the printed material.
- Always insist on proofs and make sure you cut, fold and paste them to ensure everything works as it should. Make sure all relevant people agree and clear the proofs.
- If your job is printed both sides with one side of the sheet being exposed to the other by way of folds, cut-outs etc, if budget allows, have backed-up proofs. Sticking two sheets together can have a wayward effect when checking positioning.
- Consider different finishing processes. For example, an alternative fold may mean the difference between machine inserting and hand inserting into envelopes, resulting in considerable cost savings.
- Check if your Printer charges for overs. If so, consider changing your print supplier.

## Layout/Stationery

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**A photocopy of the artwork will hopefully answer a lot of questions, but these points are given here as an indication of what to look for:**

- Is copy artwork available in advance showing laser position, toner exclusion area, perforations, peel-off stamps, cutouts etc?
- What is the width and drop of each page of stationery?
- Will text be rotated?
- To ensure the lasered name and address fits into the window position, samples of the envelope should be provided.
- Is the job one-up or more than one record per page?
- Is there more than one stationery type for this job?
- What type of stationery will be used?
- Do you require samples?
- Is bursting/trimming required?
- What is to be done with excess stationery?



## Text Processing

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- Is the Printer required to set text for laser printing? Will proofs for pre-print be required?
- Does the text contain imbeds? How should these be shown on a plain paper proof?
- What character style is required? Choice of style requires knowing if the job will be rotated, which in turn necessitates which rotation is required – 90 or 270 (ie which edge of stationery will feed through first).
- Will all the text be in the same style?
- How should punctuation be handled (eg double or single spaces after full stops etc)?
- Is page shaping required?
- How many blank lines between paragraphs? (Norm = 1)

## Resources

Today, there are several software programs available to help print buyers. Some of these are:

- **P3Expeditor**  
Designed specifically for print buyers, the P3Expeditor system is a database for your print project job details, combined with an automated communication system. The result is a system that saves you time, saves you money and gives you peace of mind knowing there's a place for every detail and every detail is in its place.  
<http://p3software.com/products.php>
- **PageDNA**  
This software automates the ordering, typesetting, customer service, payment processing, inventory control, invoicing, and fulfilment for printed products such as corporate identity (business cards and stationery), direct mail, forms and product literature, promotional materials, and more.  
<http://www.pagedna.com/>

- **PrintJob**  
PrintJob is a tried and tested solution that brings real business benefits for printers, print brokers and corporate users. PrintJob takes on the job of knowing everything about your print suppliers and provides an in-house "expert". This guarantees the right jobs go to the most cost-effective supplier every time, that everybody has their own 'ordering permissions', and that there is a single source of statistics of who's done what, when, and how much it cost.  
<http://www.printjob.com>
- **Claritum**  
Claritum's on demand software connects print purchasing, managers and suppliers to deliver significant, measurable and sustainable cost reduction and efficiencies to corporate and not-for-profit purchasing, print management and print groups. The solution streamlines print workflow and communications with customers and suppliers through an end-to-end secure trading platform for marketing print, point of sale, direct mail and personalised print.  
<http://www.claritum.com/>
- **'Optima' Print Management**  
'Optima' Print Management Software (Heritage Systems) has been designed and developed over the past 10 years to meet the demands of Print Management, Print Buying and Print Broker organisations.  
[www.printmanagementsoftware.com/](http://www.printmanagementsoftware.com/)

## Trade Organisations

There are many organisations associated with the printing industry, all of which play a vital part in the life of a high-tech sector in which people are its most important asset.

The British Printing Industries Federation (BPIF) is the premier trade association representing Britain's commercial print, publishing and graphic communications sectors. Celebrating its centenary this year, the BPIF combines a wealth of experience with its comprehensive industry knowledge to promote the industry and provide a range of support services covering all disciplines involved in managing a modern printing company.  
[www.bpif.org.uk/](http://www.bpif.org.uk/)

## Glossary of Terms

### A sizes

Most common paper size used for general printing, stationery and publications.

### Art Paper

Paper which has received a special coating to give it a smooth gloss finish. Its meaning is often confused but it is more easily termed as a gloss coated paper.

### Artwork

Finished layout of typesetting, drawings and photographs, made up in a form which is ready for the printer to print from.

### Author's Corrections

Corrections made by the author on page proofs that alter the original copy. The costs of making such alterations are charged by the printer, in contrast to printer's errors or house corrections.

### B sizes

Less common paper sizes which are used mainly for bigger jobs. e.g. Posters, wall charts etc.

### Bleed

Printing where the colour continues right up to the edge of the paper.

### Board

While there is no internationally agreed rule, paper exceeding 170g/m is usually referred to as board.

### Bromide

A high quality black and white proof.

### C sizes

Paper sizes used for envelopes, designed to take A size paper.

### Camera ready

Finished artwork that is ready, without further artwork preparation, to be photographed.

### CMYK

Letters which stand for Cyan, Magenta, Yellow and Black (K). K is used for black to eliminate confusion with blue. Full colour printed images are made up of these component colours.

### Coated Paper

A term used to describe plain paper which has received a special coating to give an enhanced surface for detail and colour reproduction.

### Coater

Part of a printing press which applies coatings to printed literature.

### Coating

A special water based coating which is applied to printed matter to protect literature from ink smudging or finger marking or to enhance appearance. The main types are sealer, gloss, matt and silk. Coatings are commonly used on matt or silk

coated paper as these types are more prone to smudging than gloss coated paper. The main difference between a varnish and a coating is that coatings are faster drying and therefore jobs can be turned around quicker. They tend to be more scuff resistant than varnishes and there is also less risk of yellowing paper. However, oil based varnishes are better if specific areas of a document need to be coated. (spot varnish).

### Colour mark up

Specifications on a piece of artwork to a printer, showing the required colours for the item to be printed.

### Contact Frame

Equipment which converts film to printing plates.

### Cromalin

A photographic colour proof which allows you to check on colour and content before plates are made.

### Die - Cut

A shaped cut out leaflet or brochure.

### Desktop Publishing (DTP)

The creation of artwork and print from your computer. Requires special software and a fairly powerful PC or Apple Macintosh.

### DL Envelope

A standard envelope size measuring 110mm x 220mm. They take A4 sheets, folded into three.

### Dummy

A sample of a proposed job made up with the actual materials and cut to size to show bulk etc

### Embossing

The process of raising letters or designs on card or tough paper already printed.

### Finishing

All operations after printing.

### Folio

Page numbers

### Font

A set of letters, numbers and symbols that share a unified design. The design is called a typeface.

### Four Colour Process

Full colour printing using four constituent colours: Cyan, Yellow, Magenta and Black.

### GSM

Grams per square metre. Standard measure of paper weight.

### Gloss Coating

A coating applied to printed matter which is quick drying and protects literature from ink smudging and finger marking and gives a gloss finish. Please refer to coating to see the

difference between varnishes and coatings.

### Gloss Coated Paper

See Art Paper.

### Gloss Varnish

A varnish applied to printed matter to protect against smudging and finger marking and gives a gloss finish. Please refer to coating to see the difference between varnishes and coatings.

### Image

The inked areas on a printing plate.

### Imagesetter

A high speed image processor which is used to output film.

### Imposition

Plans for the arrangement of the pages of a job so that they will follow in the correct sequence when folded.

### International Paper Sizes

The standard range of metric paper sizes as per definition of the International Standards Organisation (ISO) and British Standards Institute.

### Laminating

A thin plastic film used on the covers of printed literature to give protection. This can be gloss or matt.

### Laser Proof

Low quality proofs which can be colour or black and white. They are used mainly for checking layout and text but not colour. For enhanced laser proofs, it is advisable to use digital colour proofs which give sharper text and images but again unsuitable for colour representation.

### Lithographic (Litho) Printing

See Offset Litho

### Matt Coated Paper

Plain paper which has received a special coating to give a smooth, matt finish.

### Matt Coating

A coating applied to printed matter which is quick drying and protects literature from ink smudging and finger marking and gives a matt finish. Please refer to coating to see the key differences between varnishes and coatings.

### Matt Varnishes

A varnish applied to printed literature to protect against smudging and finger marking and gives a matt finish. Please refer to coating to see the key differences between varnishes and coatings.

### Machine Fold

The process of mechanically folding printed paper.

## Machine Varnish

A general varnish applied to printed literature to protect or seal against smudging or finger marking.

## Origination

All the items needed to put together and print the job. e.g. Artwork, photography, typesetting etc

## Offset Litho(graphy)

A printing process by which the inked image to be printed is transferred (offset) first to a rubber layer before coming into contact with the paper which takes up the inked areas.

## Overs

The extra printed products delivered to a customer over and above the net amount ordered.

## Ozalid Proof

A low quality black and white proof which is often used for books to check pagination.

## Pantone Reference

International system of colour specification for printing.

## Perfect Binding

Pages of a book which are glued together to give a square spine.

## Perfecting

A printing press which prints on both sides of a sheet of paper in one operation.

## Printing Plate

A metal plate which has the inked images involved in the offset lithography printing process. It is important to realise that each colour in a printing job requires a separate plate. In order to keep costs down, it is advisable not to have too many special colours.

## Process Colours

The colours which make up full colour printing. Cyan, magenta, yellow and black

## Progressive Proof

A proof which shows the impression from each individual colour plate and how they progressively build up the full colour piece.

## Proof

A printed sample of work to be checked for errors in text, positioning or quality of colour reproduction. There are six types - laser, cromalin, bromide, ozalid, progressive and wet proofs.

## Resolution

Refers to the degree of detail of an image. It is usually measured in dots per inch (dpi) or lines per inch (lpi). A high resolution gives a high quality image and vice versa.

## Saddle Stitch

When the pages of a printed document e.g. leaflet, brochures are bound together using metal staples.

## Scanner

The equipment which converts colour transparencies or colour artwork into images on an Apple Mac computer in preparation for film output.

## Scans

The name given to colour transparencies or colour artwork which have been converted to images on an Apple Mac computer.

## Sealer

This is an alternative name for a coater.

## Sealer Coating

A coating applied to printed matter which is quick drying and protects literature from ink smudging and finger marking and gives a neutral finish. Please refer to coating to see the difference between varnishes and coatings.

## Sealer Varnish

A varnish applied to printed literature to protect against finger marking and smudging and gives a neutral finish. Please refer to coating to see the difference between varnishes and coatings.

## Set Off

During the printing process, this is the unintentional transfer of wet ink to another sheet.

## Sheet Fed Press

Printing presses which are fed by separate sheets of paper. They are suitable for all types of commercial printing, particularly high quality work.

## Silk Coating

A coating applied to printed matter which is quick drying and protects literature from ink smudging and finger marking and gives a silk finish. Please refer to coating to see the difference between varnishes and coatings.

## Silk Varnish

A varnish applied to printed literature to protect against finger marking and smudging and gives a silk finish. Please refer to coating to see the difference between varnishes and coatings.

## Shrink Wrapping

Method of packing printed products etc, by surrounding them by plastic, then shrinking by heat.

## Special Colour

A colour which cannot be made up of the four component colours - CMYK. They are listed in a pantone colour swatch book. For example, if a corporate logo contains a special blue and is included in a brochure with photographs and text: this is termed a five colour job. (CMYK (pictures+text) + special blue = 5 colours)

## Tint

Percentage shade of a colour.

## Typesetting

The assembly of text and pictures on a PC by keyboard or other digital means.

## Typo

Short for 'typographical error' - a mistake in the copy.

## Uncoated Paper

Plain paper which is not coated.

## UV Varnish

A special varnish which has undergone an accelerated drying process using ultra violet is applied to printed matter to enhance its appearance. A gloss UV Varnish is commonly used and this gives a very shiny effect.

## Varnishes

Special varnishes applied to printed matter to protect literature from ink smudging or finger marking or to enhance appearance. There are five main types - sealer, gloss, matt and silk and UV. Varnishes are commonly used on matt or silk coated paper as these types are more prone to smudging than gloss coated paper. Varnish applied to a specific area of a document is known as Spot varnish and when it is applied to the whole document it is termed as an Overall varnish (or less commonly as a Flood varnish). The difference between a varnish and a coating is that varnishes take longer to dry but are better when applied to a specific area of a document.

## Visual

A preliminary layout, indicating the general design, and the position of the various elements.

## Web Fed Press

Presses which are fed by paper from a reel as distinct from separate sheets. They are normally used for low quality high run work.

## Wet Proof

A wet proof is a proof that is made using the screens, stencils, ink, substrate etc to produce a limited run to be checked by the customer as an exact sample of the final print.

## Printing and paper timeline in History

We are so accustomed to using paper and reading printed material that we may be forgiven for not knowing where paper and printing came from... here's a timeline.

When?	What	Detail
<b>BC</b>		
-3500	SUMERIAN CLAY TABLETS	Sumerians use cuneiform alphabet, pressed in clay with a triangular stylus. Clay tablets (or books?) were dried and/or fired for longevity. Some even had clay envelopes, which were also inscribed.
-2500	WESTERN ASIAN SCROLLS	Animal skins are used for scrolls in Western Asia.
-2400	PAPYRUS	Date of the earliest surviving papyrus scroll with writing.
-1800	BOOK OF DEAD	Book of the Dead, Egypt
-1500	PHAISTOS DISC	The 'Phaistos disc', found on the island of Crete in 1908, was produced by pressing relief-carved symbols into the soft clay, then baking it - it's unique and contains the germ of the idea of printing.
-800	PHOENECIAN WRITING	Moabite stone is created with one of the finest specimens of Phoenician writing. The letters resemble Greek.
-600	WRITING SYSTEM DEVELOPED	6th C. BC General agreement among Mediterranean cultures on left-to-right writing and reading. Before that, there was L-R, R-L, top-to-bottom, and boustrophedonic (back-and-forth). The Hebrews kept R-L.
-200	WAX TABLETS CODEX	Both Greeks and Romans used wax tablets, framed and backed with wood, for note taking, orders, correspondence, and other temporary information. At times, two or more tablets were joined with thongs or cords, similar to a 3-ringed binder. The Latin name for this was "codex", from the word for wood. Single wax tablets had been used earlier than this in Mesopotamia, Greece, and Etruria.
-197	PERGAMUM	197-159 BC In the Middle East, near Pergamum, large herds of cattle are raised for skins to be made into what is now called 'parchment.'
-196	ROSETTA STONE	The 'Rosetta' stone is cut. It contains the same text in Egyptian hieroglyphic, Egyptian demotic and Greek writing. It was discovered in 1799 near the mouth of the Nile and served to break the code for deciphering ancient Egyptian works.
-150	PAPER	The first paper is made in China from macerated hemp fibres in water suspension.
-150	DEAD SEA SCROLLS	150 BC - 40 AD Approximate dates of the Hebrew and Aramaic documents, Biblical and non-biblical, found as scrolls sealed in ceramic pots in caves near the Dead Sea in 1957. Some are written on thin, whitish leather similar but not identical to parchment
-100	PAPER	Nash Papyrus, oldest known biblical fragment, containing the Hebrew text of the ten commandments.
-100	CODICES/CODEX	1st C. BC - 1st C. AD The Romans substituted skin or membrane for the wood panels in codices. It is unclear just when this was done and whether membrane was similar to Medieval parchment or to the thin leather of the Dead Sea Scrolls, but it is known that there are no examples or records of this substitution prior to the Romans. Later, Romans used codices to record laws and rules of order, lending the name codes or codicils to such documents. By the end of this century, the form of the book had largely changed from the scroll to the codex.
<b>AD</b>		
104 or 105	TS'AI LOUEN	Papermaking discovered in China by Ts'ai Louen (name also written as: Ts'ai Lun) - material used: plant bark, discarded cotton and old fishnets.
750	PAPER	Paper making reached Samarkand before 750, Baghdad in 793, Damascus and Cairo in approximately 950. Through the Arab conquest of North Africa and Southern Spain, the invention first reached the Moorish parts of Spain in the 11th century
800	MARBLING	Marbling in Japan, first Turkish marbled paper 1586, first Dutch 1598
868	WOODBLOCK	China, oldest known woodblock printing (method was in use much earlier)
868	PAPER	The first book printed on paper in China, in block printed Buddhist scripts.
1041	MOVABLE TYPE	In 1403 the earliest known book was printed from movable type in Korea, a process which had been used by the Chinese as early as 1041. In 1456 Gutenberg printed his 42-line Bible in Mainz on a quality of handmade paper which remains unsurpassed to this day. 26 Years later William Caxton brought the art of printing to England, and in 1486 the first English coloured illustrated book was printed in St. Albans.
1085	PAPER	Papermaking in Jativa Spain.
1250	BLOCK PRINTING	First record of block printing in Egypt.
1276	WATERMARK	The important invention of watermarking was made at one of the Fabriano Mills in Tuscany during the second half of the 13th century.
1456	BIBLE, GUTENBERG	Gutenberg. 42-line bible by Gutenberg.
1457	COLOUR PRINTING	Colour printing, earliest example in Mainz Psalter.

## Further Information

A useful white paper on this subject is available at:

[www.mtivity.com/downloads/whitepapers/corp\\_printmgt\\_marketer.pdf](http://www.mtivity.com/downloads/whitepapers/corp_printmgt_marketer.pdf)

This guide is for general interest - it is always essential to take advice on specific issues.

We believe that the facts are correct as at the date of publication, but there may be certain errors and omissions for which we cannot be responsible.

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Publication issued or updated on:  
19 January 2012

Ref: 645

