



2004

An all inclusive Desk Reference for the Printing Industry

Glossary of Printing Terms

HEIDELBERG

The Glossary of Printing Terms is a service by Heidelberger Druckmaschinen AG. Copyright © 2003. All rights reserved. Reprinting or electronic distribution with permission from the publisher only.

A

Abbreviation

Abbreviations are the term given in typography to characters that are composed through the fusion of letters. One example of this is the character “&”, which is a combination of the letters ‘e’ and ‘t’ to form ‘et’ (Latin for ‘and’).

Acrobat

(Product Name) A program by Adobe which allows documents that have been created in a variety of software formats to be displayed and printed in the same way on different computers, printers or media such as the Internet. This kind of document can be recognized by the filename extension 'pdf.' (Portable Document Format) and can be viewed using the Acrobat reader, which is available to download on the Internet free of charge.

Adhesive binding

A binding method which uses thread-free adhesives to secure loose leaves into a solid text block.

Additive Colors

Additive colors are produced through the addition of different colored light. In theory, every color can be produced by mixing the primary colors of the visible light spectrum: red, green and blue (RGB). Combining all three primary colors to equal parts produces white. The color vision of the human eye works through red-, green- and blue- sensitive sensory cells. When, for example, red and green rays of light reach the corresponding receptor cells in the eye, we see the mixed color yellow. When all three color receptors are stimulated, the eye sees white. RGB is the usual additive color system and is used predominantly for television screens, computer monitors and scanners. Combining two of the primary colors in equal parts produces the secondary colors cyan, magenta and yellow, which in turn form the basic colors of the subtractive color system (CMYK).

Additive Color Mixing

This is the process of producing color through the addition of different colors of light. Computer and television screens use thousands of red, green, and blue phosphor dots, which are so small and close together that the human eye cannot see them individually. Instead, the eye sees the colors formed by the mixture of light.

Adobe

Adobe Systems Incorporated, headquartered in San Jose/California, is a leading software manufacturer in the field of graphics and image editing. Established in 1982, the company's products include the image editing program "Photoshop", the illustration program "Illustrator" and the desktop publication programs "InDesign" and "Pagemaker". Adobe is also the originator of the page description language "PostScript" and the device - independent data format "PDF" (Portable Document Format).

Altar fold

Also called gatefold or windowfold. This technique involves folding the sheet so that two flaps are formed, which can be opened from either side.

Aniline printing

Aniline printing is an old term for flexographic printing, and takes its name from the aniline-based inks employed. Printing presses using this process employ rubber rollers as letterpress forms and print with quick-drying, low-viscosity inks. The first presses of this type appeared on the market at the beginning of the 20th century. They were mainly used to print packaging material.

Anilox letterpress printing

Anilox letterpress is a form of printing which uses a very simple ink dispensing system borrowed from

gravure printing. An inking roller ("anilox roller") with small recesses arranged in a grid form is inked to excess and a doctor blade is then used to remove the excess ink. This immediately results in a very uniform film of ink, such that no further rollers are needed in the inking unit for ink distribution. The advantages of this process include the simple design of the inking unit and the ease with which ink feed can be controlled.

Application server

An application server is a network server in which a group of programs are collectively integrated into a Web server's environment. Instead of having individually installed programs, the network's users have access to the server program. These applications are connected to an Application Program Interface (API) which allows higher-level tasks to be performed remotely. Another advantage of these applications is that licensing requirements can be more easily met, as the users do not usually have their own hard drive, which prevents the installation of so-called pirate copies. It is also possible to install the latest software available on all computers in the network with a single update on the server. This kind of server enables a user at a Web page to perform sophisticated interactions, such as querying a database or running other programs loaded on the server.

Areometer

The areometer (aka scale areometer, hydrometer, spindle), a device for determining the density of liquids, is used in printing technology to measure the concentration of alcohol in water-containing process liquids. The device consists of a sealed glass tube filled with air with a weight at one end. Once the areometer is placed in the liquid being tested, it floats either higher or lower, depending on the density of the liquid. The density can then be read off using a scale. This scale is graduated in special units (Bé after Baumé or Brix), or in the case of specialist areometers directly in the concentration being measured (alcohol concentration in the case of alcometers, sugar concentration with saccharimeters, etc.) Because the density of liquids changes with temperature, the scale of an areometer is always relative to a specific temperature. To make correct measurements easier to obtain, some areometers also feature a thermometer.

Art printing paper

A premium-grade stock coated on both sides (C2S), preferable for the high-quality reproduction of color prints. Art printing papers usually have a very smooth, glossy surface, though some have a matte or semi-matte finish. They allow illustrations to be reproduced by offset or letterpress in much finer halftone screens.

Ash content

The ash content of a paper stock refers to the quantity of anorganic substances in it, which that converts to ash when burned.

ASCII

The American Standard Code for Information Interchange, or ASCII for short, was standardized in the USA and is used to encode letters and numbers in digital form for electronic storage and processing. This was originally done using binary numbers with seven digits (seven bits), making it possible to represent a total of 128 characters. The use of 8-bit numbers was later introduced, increasing the total to 256 characters. Unicode notation based on 16-bit numbers has been gaining increasing acceptance in recent years. It can be used to represent 65,536 different characters.

Asphalt coating

Asphalt coating is the term given to a dark brown – black mixture made of wax, resin and asphalt. It is easy to melt and can be dissolved in organic solvents such as gasoline, petroleum or turpentine. Thanks to its resistance to acids, asphalt coating serves a covering layer in the etching processes used for manufacturing printing forms.

AT

"Advanced Technology" was introduced by IBM in 1984. The AT Computer, descendant of the XT

computer was built on a 80286-Processor from Intel. Today, every PC that works with 16-or 32-Bit processor is called an AT computer.

Attachment or attached file

This is the name given to data that is included (or "attached") either Uuencoded or MIME-Standard as part of an e-mail message. You can attach almost any kind of file, through most popular e-mail programs. Attachments are usually archived, especially when the files are large. Attachments carry the greatest danger of transferring computer viruses.

Autograph

The word originally comes from the Greek ("self-written") and means a document written, or at least signed, by the author's own hand. There have been collections of the autographs of famous persons, and a corresponding trade in these documents, since the end of the 16th century.

B

Balanced Score Card

Provides an enterprise view of an organization's overall performance by integrating financial measures with other key performance indicators around customer perspectives, internal business processes, and organizational growth, learning, and innovation. The multidimensional concept was introduced by Prof. Robert Kaplan and Dr. David Norton in 1992.

Bandwidth

Refers to the amount of data that can pass through a transmission channel while transmitting data from one computer to another in a given period of time. The normal metric for the bandwidth is "bits per second" (bps), it is also known as the maximum data transfer rate.

Banner

In Internet terminology, a banner is a rectangular window on a web page with text and graphics used for promotional purposes. A distinguishing feature of banners is that they invite users to interact. By clicking the mouse, the user is usually taken to the web site of the advertiser, where more detailed information is available. Banners have been in widespread use since the mid-1990s. In recent times, they have often been animated to attract the attention of the user.

Barcode

The barcode is used to display characters in such a way that they can be read easily by machine. The code consists of a system of narrow and wide, dark and light strips. One of the most common applications for barcode markings is the EAN code for identifying all types of goods. The EAN code also defines the barcode's representation of the individual figures. Other code systems are also available, including those for representing letters and numbers.

Basle II

Regulation initiated by the Basle-based Bank for International Settlement coming into force worldwide in 2005. It ties bank lending to credit risk: The more risky a transaction, the more capital the bank must advance, resulting in higher interest for enterprises.

Bindexpert

The Bindexpert from Heidelberger Druckmaschinen AG is used for finishing print products. The device functions as an adhesive binder and features two exchangeable glue pans for dispersion adhesive or hot-melt glue. Formats from A6+ to A3+ and all sizes in between can be processed. The Bindexpert is designed to process a maximum binding length of 43 centimeters with a book thickness of 4 cm. The unit also features a spine-processing station that can be used to notch or rout the spine of a book. The Bindexpert has been designed to process many different types of paper, including coated, uncoated and laminated stock.

Bit

The bit (shorthand for binary digit) is the smallest possible unit of information. A bit can only assume two states (1/0, yes/no, on/off etc.) and serves as the basis for the binary system used in all computers. The bit is thus the basic unit for information technology and communication.

Bit depth

The term "bit depth" refers to the number of bits used by a graphic input or output device to display the color value of a pixel. Graphic cards in computers work with bit depths of up to 24 bit, for example. They thus have 8 bits available for coding each of the three color components - red, green and blue - in the RGB mode and can thus display 2²⁴ or roughly 16.7 million colors. Modern scanners often have bit depths of 30 bits or more.

Bitmap

The simplest format for graphics, where the pixels within a two-dimensional coordinate system are described by an x,y value (position of the pixel) and a color value.

Black generation

Black generation is a term which describes how the color black is used in a set for four-color printing. In theory, black is not required in the CMYK color system for representing various hues of an image. In practice, however, it is used whenever contrast and detail need to be enhanced in dark areas. The term short black or skeleton black is applied if the color is only used for this purpose (for which only a small amount of black is required). Black can also be used in color mixes to replace equal components of the three chromatic colors cyan, magenta and yellow (Under Color Reduction), thereby reducing the total volume of ink actually required in the print. This is known as 'long black'.

Blanket cylinder

The blanket clamped around a cylinder is the core element of offset printing. It transfers the printed image from the printing form to the paper. The process of depositing the ink on the blanket also gave rise to the term "offset printing". Blankets enable consistent printing over large areas and are ideal for rough or grained papers. The blanket on the cylinder is usually 1.65 or 1.95 mm thick and consists of two, three or four fabric interleaves in addition to the actual covering layer. A distinction is usually made between the conventional blankets, which can be deformed but not compressed, and the compressible, air-cushioned blankets. Standard DIN 16621 sets out the requirements for "blankets for indirect lithographic printing (offset printing)".

Blind embossing

Blind embossing is a paper processing stage in the print process where male and female dies are used to generate an impression in the paper under high pressure. Embossing with raised motifs is known as high embossing and embossing with sunken motifs as deep embossing. There are also multi-stage embossing procedures where the motif has different levels, and relief embossing which creates a spatial effect with three-dimensional profiles. High embossing can also be simulated by applying and melting special powder materials.

Blueprint

In printing, blueprint was the term used for monochrome prints of finished printing copy, owing to their faint blue color. Today, even corresponding, simple black-and-white prints are generally referred to as blueprints. They serve as proofs for checking the completeness, position and content of the

individual graphic elements (texts, images, etc.).

Bogus paper

Bogus paper is a very simple type of paper that is made exclusively from unsorted waste paper. It usually has a gray, or sometimes brownish tint, and a weight of 80 g/m² or more. Bogus paper is primarily used as a starting material for corrugated board.

Book face

A book face is another term for the bread-and-butter face used as a font for the standard mass composition of a print product.

Books on demand

Books on demand are not printed in a production run with a fixed length, but rather are produced and shipped individually on the basis of orders. This method, which is made possible by digital printing, can cut the cost of fairly small run lengths because the expense of storage and unsold copies is eliminated. On the other hand, it is also possible to compile customized books from pre-defined sections.

Book Paper

A bulkier paper used for bound books. Made both with and without woodpulp.

Book printing

Book printing is a general term used for the printing of books and brochures that consist mainly of text and only a few pictures.

Brace

In typography, curly brackets “{ }” are known as a brace.

Bread-and-butter type

Bread-and-butter type (or body type) is the term used for the type used for the running text of a printed product. The term is said to originate from the days of lead composition when compositors were paid by piecework and earned the majority of their pay with texts in this type.

Bristol board

Bristol board is paperboard comprising three or more layers, where the outermost layers are wood-free, while the inner material may contain wood. Bristol board is not coated and is therefore a natural paperboard. It is durable and produces good results in offset printing and finishing. Typical fields of application include postcards, envelopes and packaging materials.

Brochure

A brochure consists of a cover stuck or stitched directly to the spine of a single-layer or multi-layer block. The cover generally has the same format as the book block and is made either of material similar to the interior of the brochure or of card. The brochure was originally a temporary form of binding used until the purchaser of a book had opted for a high-quality book cover, which was often very expensive. Nowadays, this binding technique is used as a low-cost mechanical production method of producing the finished print product.

Browser

A program used to view, download, upload, surf, or otherwise access documents (for example, Web pages) on the Internet.

B2B

A business operation in e-commerce through which businesses can offer and market their products and services.

B2C

E-commerce business process where consumers can buy goods and services electronically over the Internet. Thousands of companies already sell their products and services to consumers on the Internet. Customers are increasingly using the Web to select business partners and buy goods and services because they can benefit from 24x7 availability as well as price and feature transparency.

Byte

The byte is the smallest addressable unit of memory in a computer. A byte consists of eight bits and can thus assume either 28 or 256 different values. Thus the character sets of most languages can be encoded in single byte. The encoding of character sets using two bytes per character (Unicode) is now also playing an increasingly significant role. When combined, two bytes can assume a total of 65,536 (2¹⁶) different values, enough for all the characters in all of the world's major languages. The capacity of storage media is expressed in multiples of 2¹⁰ or 1024 bytes: 1 Kbyte = 1024 byte, 1 Mbyte = 1024 Kbyte, 1 Gbyte = 1024 Mbyte etc.

Bulky Paper

A soft, elastic, extremely thick stock. Also known as thick printing paper.

C

Calendering

Calendering, the last operation on the paper machine, takes place on a special machine calender. The paper is drawn between a series of rolls of varying hardness and composition. The sheets are in effect "ironed out", giving them added smoothness and gloss.

Calibration

In a general sense calibration refers to the task of coordinating devices to ensure correct operation. At the prepress stage, input and output devices – monitors, scanners, imagesetters and so on – are generally calibrated to test how colors are depicted and to take corrective action if necessary.

Calligraphy

Calligraphy (from the Greek: kalos = beautiful, grafein = writing) is the art of handwriting.

Cameron

The Cameron Book Production System from Prosystem Inc., Somerset/New Jersey, is a system for complete book production in a single run from the paper reel to the bound book. The system (now no longer in production) uses letterpress printing. A polymer printing plate is created for each page of the book. All plates are attached to a large chain formed into a ring. The length of this chain depends on the number of pages in the book. The machine prints a complete book with every cycle. The subsequent binding stage produces finished paperbacks or book blocks for hardcover books. Since Cameron systems deliver relatively poor print quality, it was followed by the Cameron offset press (also known as the Book-O-Matic). This unit positions all the pages in the book on an impression cylinder with a circumference of approximately 3 m and a width of 1.5 m.

Capstan imagesetter

As the name suggests, capstan imagesetters operate using a capstan roller, which moves the film

material for imaging. The film material is stored on a roll. A laser beam is used for imaging, and its movement is set in line with the film transport so that the imaging process takes place line by line. The use of roll material means that the length of the output film format is theoretically unlimited. This is an important feature of this type of imagesetter.

Cartography

Cartography is the science of producing maps. The special problems of cartography include the correct determination of ground elevations (topography) and the most realistic possible rendering of the curved surface of the earth on plane map material. By nature, only compromises are possible in this connection. Aerial views taken from airplanes, and satellite photos in more recent times, have today largely replaced the originally very complex and arduous methods of terrestrial surveying for the production of maps.

Cast-coated

Cast-coated paper and board has a particularly high gloss. This is obtained not by calendering, but by rolling the moist (or specially moistened) printing material with a chrome-plated drying cylinder polished to high gloss.

CeBIT

Centrum für Büro und Informations-Technik (center for Office and Information Technology). The largest Trade Fair for the Information and Telecommunications Industry in the world, which takes place every spring in Hannover.

Cellulose

In chemical terms, cellulose is a chain molecule consisting of glucose elements (polysaccharides). Being the main constituent of the vegetable material, it is responsible for its mechanical stability. As the most important constituent of paper, cellulose provides strength, either in the form of wood or plant fibers, or chemical pulp consisting of pure cellulose fibers. Cellulose is used not only in paper production, but also as a base material for plastics and fibers - in natural form as cotton or chemically processed in the form of man-made fibers, such as viscose or acetate fibers.

Cellulose wrapping paper

Cellulose wrapping paper is a stock that comprises at least 65% primary pulp (sulfite and groundwood pulp) and a maximum of 30% wastepaper.

Character set

The term "character set" refers to the range of letters, numbers and other characters that a font contains or that an input or output device can process.

China grass

China grass is a fibrous material which is obtained from the subtropic nettle plant "ramie". Its high purity and strength make it ideal in the production of banknote paper. (See also Ramie)

Chromo paper

Chromo paper includes woodpulp or woodfree stocks coated on one side. The coating is always waterproof and is designed for maximum embossing, varnishing, and bronzing performance in offset environments. Chromo paper is used mainly to make labels, wrappings, and cover paper.

Chromolux board

Chromolux is a brand name for a high-gloss, cast-coated board that is white on one side.

CIE

The Commission Internationale de l'Eclairage (CIE) is an international Organisation, which has developed and defined a number of generally used Color definitions. The best known of these is the CIE Lab color space, which was defined in 1976.

CIELab color space

The CIELab color space was defined by the Commission Internationale de l'Eclairage (CIE) in 1976 and represents a three-dimensional, rectangular coordinate system. The vertical coordinate L specifies the lightness of a color, the 2 horizontal coordinates a and b represent the hue and the saturation on red/green and blue/yellow axes respectively. The CIELab color space is also ideal for representing color differences, since geometric distances in the color space more or less approximate the intuitive color differences.

CIP3

The manufacturers' association CIP3 (International Cooperation for Integration in Prepress, Press and Postpress) was established in 1995 in order to promote the non-proprietary digital integration of the printing process covering all stages from prepress to press and finishing. Its most important achievement was in defining the Print Production Format, a data format for recording all information relevant for this process. In 1999, CIP3 was incorporated into CIP4 which covers a broader sweep of themes.

CIP4

Created in the middle of 2000 from the manufacturers' association CIP3, the manufacturers' and users' organization CIP4 (International Cooperation for the Integration of Processes in Prepress, Press and Postpress), headquartered in Zurich, had the goal of providing the basis for the computer-based integration of the entire process involved in the production of print products, from preliminary costing and quotations to delivery and billing. One of the first results has been the agreement of the Job Definition Format (JDF) as a common standard. This was achieved in conjunction with Heidelberger Druckmaschinen AG, Adobe Systems, MAN Roland, Agfa and the Fraunhofer Institut für grafische Datenverarbeitung (IGD).

Clean proof

A page without any misprints.

Cleartype

As a further development of the methods used by the font software TrueType and Adobe Type 1, Cleartype serves to generate the clearest possible typeface on computer screens. This is primarily achieved by "anti-aliasing" to smoothed lines and edges that have a staircase-like appearance due to the pixels of the monitor. Developed by Microsoft, Cleartype is specifically intended to improve the legibility of fairly small fonts on color LCDs, such as those used or envisaged for laptop computers and electronic books (e-books).

Client/server

A relationship in which one computer program (the client) requests information from another computer program (the server), whereby the server responds in fulfilling the request. In terms of "client/server architecture," it is the design model for applications running on a network. The bulk of the back end processing, such as performing a physical search of a database, takes place on a server. In terms of a "client/server network," LAN resources are allocated so that computing power is distributed among the computers in the network, but some shared resources are centralized in a file server. With the advent of powerful individual workstations, most computers can act as both client and server in different situations; this is often described as "n-tier computing," where "n" refers to the multiple levels of clients and servers that exist. For security reasons, the client/server model requires user authentication.

CMYK

CMYK (an acronym for Cyan, Magenta, Yellow, Black) designates the color model usually employed in printing technology which uses the basic colors cyan, magenta and yellow. The fourth "color" is black, which is used to ensure a visually satisfying black tone.

Coated paper

Papers are coated to improve surface gloss, lustre, whiteness and printability. The coatings consist of natural pigments, a binder, and various process materials. The procedure is carried out on special coating machines in the paper mill. Coating can have many different effects, giving the paper a surface that ranges in appearance from very shiny (gloss enamel) to somewhat muted (satin velvet) to dull (matte). Cast-coated papers have a shiny mirrored surface achieved through drying on a hot, highly polished cylinder. Paper used to be coated right on the paper machine, which is why the umbrella term "machine-coated paper" is still used to mean coated offset, gravure, and letterpress stocks.

Cockling

When the relative humidity is lower in the environment than in the paper, the edges of stacked sheets can dry out and contract (tight edges), causing the paper to buckle in the middle.

Collaborative filters

The term collaborative filter is the term used in the field of Internet marketing for personalizing customer approaches based on information obtained from customer dialog. The stored information about interests and preferences are used to provide the customer – often automatically – with only those offers that are presumed to be of interest to him.

Collating mark

The collating mark is the name given in book printing to a short line which is printed in a staggered position in the gutter between the first and last page of each sheet. Once the sheets have been folded and collated, the lines appear on the spine of the book block, enabling the sequence of the individual sheets to be checked based on the position of these lines.

Color density

The term color density describes the optical density of areas printed in color. This value is important when monitoring quality in printing processes and can be measured using special instruments (reflected light densitometers). However, it is only ever possible to compare the color densities of an individual hue with each other.

Color depth

The term color depth (or bit depth) refers to the number of bits used to store the color information of a pixel in the pixel format.

Color management

Color management refers to the control of color reproduction in a digital graphic production process. The various input and output devices from the scanner to the printing press support different color spaces, depending on the device. In order to standardize the way colors appear throughout the production process, color profiles are generated for the devices and processes involved in the process. The combination of these color profiles makes it possible to calculate the coefficients necessary for data conversion. Those colors in a given color space that cannot be displayed in another are approximated as closely as possible.

Color profile

The color profile of an image input or output device (scanner, monitor, printer, printing press, etc.) is an element of color management which indicates how the color information supplied by the device behaves with respect to a superordinate, device-neutral color system (e.g. the CIELAB color space). Manufacturers supply color profiles with professional devices. To ensure high-quality results, profiles need to be created individually using special measuring instruments. This procedure may need to be repeated at regular intervals.

Color proof

A color proof is used for a binding, advance check of the colors of a printed product. It entails much less effort than a press proof on the press itself and can also be produced away from the printing site.

In addition, there has recently been a major drop in the price of printers that reliably produce high-quality color prints. The prerequisite for an accurate color proof is, however, the reliable control of the (electronic) preprint process with a color management system that also includes the press and the paper used.

Color separation

A color separation is the color component of a digital print original which corresponds to a color in multicolor printing. The most popular four-color printing process is the CMYK color model which requires four separations in the colors cyan, magenta, yellow and black for producing the corresponding printing plates. The color separations which together form a complete color original is known as a color set.

Color space

A color space is the set of all colors which can be portrayed by a single color system. Well-known color systems are CIE Lab by the CIE, Kodak's PhotoYCC, RGB used in PCs and CMYK used for printing. CIE Lab and PhotoYCC are suitable for processing and storing images. The color spaces of the RGB and CMYK systems on the other hand are noticeably smaller. In addition CMYK data is only ever useful for a given printing process and cannot be used again in other output media.

Column

In common speech, the term "column" (from the Latin "columna") refers to the vertical sections in a newspaper or magazine, or also to a brief, regularly published opinion article in this format. In technical printing terminology, a column is the text designed for a page of a printed product. The titles at the top edge of a page are called "heads". In this context, a distinction is made between running heads and folios. The former vary according to the content of the respective page. The latter do not change and contain, for example, fixed section titles or page numbers.

Computer-to-film

Computer-to-film refers to the process of creating films for printing plate production which uses electronic sheet assembly. To this end data are gathered from various sources and transferred to a filmsetter. A more recent version of this, suitable for linework or contone originals, is desktop computer-to-film. Here the film used for producing the printing plate is not processed photographically, but instead is printed. This requires the printer in question (laser, inkjet printer) to be capable of true-to-size printing on the foil.

Computer-to-plate

In the computer-to-plate process, data from the computer is imaged directly onto the printing plate, without using film as a transference medium. This reduces costs, but the printing foils used in this process wear out faster than conventional printing plates and may need to be replaced on a periodic basis. What is more, depending on the process, the foils cannot always be stored once they have been printed. Recently, new materials, which use thermal energy instead of visible light for imaging purposes, have made it possible to process film in daylight conditions and to develop film without using chemicals.

Computer-to-print

The term Computer-to-Print covers all printing processes which do not require physical printing plates. Using processes derived from computer technology – e.g. laser printing – appropriately equipped presses can print directly from suitably processed data. Computer-to-Print is ideal for short runs, and in particular personalized printing.

Concertina fold

A concertina fold is the continuous parallel folding of brochures and similar printed products in the manner of an accordion, where the fold is alternatively made to the front and back.

Content

The textual and graphical information contained in a Web site, as well as the structure and design in which the information is presented. Writers and companies who create this information are known as content providers. Content is one of the three big C's (content, commerce, and community), and Web sites often get judged and rated on the quality, quantity, and navigational flow of this information.

Contone original

Contone originals are generally print originals with more than one lightness level for the colors. Because printing technology can only recognize full colors, contone originals must be screened before reproduction, i.e. broken down into dot systems. By varying the size or frequency of the screen dots, the impression of different shades is created in the printed image.

Cookies

A funny name for a small piece of information about you (about your computer, actually). It is a small file that a Web server automatically sends to your PC when you browse certain Web sites. Cookies are stored as text files on your hard drive so servers can access them when you return to Web sites you've visited before. Cookies contain information that identifies each user, for example: login or username, passwords, shopping cart information, preferences, and so on. When a user revisits a Web site, his or her computer automatically "serves up" the cookie, which establishes the user's identity, thus eliminating the need for the customer to reenter the information. Basically, the server needs to know this information in order for the Web site to work correctly, and the information is nothing more than a string of letters and numbers. Cookies are commonly "handed out" when you, as a user, login to a Web site where you've registered a username and password. The server finds the cookie information on your computer, checks with its own information, and if they match, retrieves your file. You then have either a personalized version of a portal, or easy access to your online shopping account, for example.

Corrugated board

Corrugated board is a packaging material which, in its simplest form, consists of a corrugated sheet of paper which is produced using two intermeshing, grooved rollers with the application of pressure and heat, with flat paper sheets glued to either one or both sides. Corrugated board was invented in the USA in 1871 and, thanks to its excellent packaging characteristics (high strength and low weight) quickly grew in popularity. 1.2 million tons of the product are currently produced in Germany each year.

Copper gravure

As the most popular rotogravure process today, copper gravure (also known as halftone gravure) uses copper-coated impression cylinders onto which the motif (text and image) is transferred directly using a screening process throughout. This is done either using chemicals (etching) or by engraving recesses using a stylus or other means. Copper gravure is ideal for long runs. High setup costs are offset by long print runs that can be increased to several million copies by chrome-plating the prepared press roller. What is more, the use of low viscosity, fast drying inks allows high printing speeds. One of the special features of this printing process is the high print quality of images that can even be achieved with low grade papers, though fine type suffers from the screening which is used throughout. Copper gravure presses also offer greater flexibility in print formats than is possible with rotary offset presses, since impression cylinders of different circumferences can be used in a single press. This printing process can also print foils, packagings, wallpaper, etc. Gravure printing was invented by the Czech painter and graphic artist Karel Klic (* 1841 in Arnau/Ostböhmen, † 1926 in Vienna). In 1904, the Elsässische Maschinengesellschaft in Mülhausen built the first rotogravure press.

Corporate design

Corporate design is part of corporate identity and refers to a company projecting a consistent, identifiable corporate image through its communication media, such as brochures, catalogs or packaging. This includes graphic elements, such as a distinctive company logo, the company's 'house colors' or a particular typeface. In many cases corporate design also encompasses product design and can even extend to include the architecture of the company building.

Correction marks

The print industry uses special characters and rules for correcting texts, and these have also been made into a binding standard embodied in DIN 16 511. In Eastern Germany, the TGL 0-16511 standard was used, which contained some different or additional correction marks that are still in use today.

Couching

The term "couching" is used in papermaking to refer to the dehydration of the paper by means of pressing, where the fibers combine to form the paper structure. This process is also the basis of an old printer's custom, where typesetters and printers admit new colleagues, who have just finished their apprenticeship, into their group in a humorous ceremony: the candidates are dunked in a vat filled with water or deposited on an enormous, wet sponge.

Crossmedia

Crossmedia is a term used to describe the common processing of content for different media. By way of example, texts and images saved in a database can be used to produce printed catalogs, but also corresponding data media (CD-ROM) and electronic catalogs which can be accessed via the Internet. One important benefit of this procedure lies in the fact that changes to the content only need to be performed once for all three media jointly.

Cyan overhang

In contrast to the theory, in most cases in four-color printing you don't need equal quantities of the three basic colors cyan, magenta and yellow to create a neutral gray. Instead, you generally need a significantly higher quantity of cyan. The extra cyan is known as the cyan overhang.

Cyrillic text

The Cyrillic alphabet (named after the Slav apostle Kyrillos, who lived from 826/27 to 869) originated from the Greek uppercase alphabet which was intended originally for church use and was adapted to the phonetic peculiarities of the Slav languages. The alphabet today is used in a simplified form in Russia, in several states of the former Soviet Union as well as in Bulgaria, Serbia and Mongolia.

Cut size paper

Cut size paper is, in contrast to roll paper, and as the name suggests, cut to a certain format.

D

Dampening system

The dampening system of offset presses has the task of drawing a thin film of dampening solution – water with a component of isopropyl alcohol and other additives – over the non-printing areas of the form. We can distinguish between, on the one hand, vibrator-type dampening systems and dampening systems where direct contact exists between the dampening solution holder and a vibrator cylinder and, on the other hand, centrifugal, turbo or brush-type dampening systems which do not have this direct contact. With indirect systems, the dampening system feeds the dampening solution to an inking form roller which in turn feeds ink and dampening solution in dispersion form to the printing plate.

Data compression

In computer engineering, "compression" is the term used for the reduction of the memory space

required for data by optimizing the binary notation of the information. Depending on the nature of the original data and their coding, compression ratios of 1 : 100 and more can be achieved in this way, thus saving memory space and/or transfer time. A distinction is made between compression methods that involve a (more or less acceptable) loss of information and "non-lossy" methods. Typical "lossy" methods are JPEG for images and MP3 for music. Methods for compressing numerical data, such as MNP5 and V.42bis for data transmission, and also compression methods for files (zip, lha, rar, etc.), are of the non-lossy type for obvious reasons.

Data mining

The term data mining embraces a range of processes that are used to glean information which is not immediately obvious from databases. Data mining involves statistical and artificial intelligence methods, and can reveal information about the typical behavior of groups of people based on characteristics that at first glance do not seem to be linked. Data mining is a favorite tool of banks and insurance companies, for example, who collect huge quantities of data on their customers.

Database

A Database is an electronic filing system; An organized collection of information, characterized by the use of data fields, it provides a foundation for procedures such as retrieving information, drawing conclusions, and making decisions. Traditional, computerized databases are organized by fields, records, and files. A field is a single piece of information; a record is a complete set of fields; and a file is a collection of records.

Data Xceed

The Data Xceed software package, a product of Heidelberger Druckmaschinen AG, allows the Digimaster 9110 digital printing press to be connected to a local network and incorporated into mainframe applications. Data Xceed supports common data formats and is simple to operate. It offers a range of functions for managing the data used.

Default

A computer software setting or preference that states what will automatically happen in the event that the user has not stated another preference. For example, your computer may have a default setting to launch or start Netscape whenever a GIF is opened; if you prefer to use Photoshop whenever you need to view a GIF, you can change the default setting.

Deinking

A treatment to remove the printing ink from wastepaper so that the secondary fibers can be reprocessed. The deinking process makes it possible for higher-grade stocks to be manufactured from recycled content. The reprocessed pulp that results is known as DIP, or deinked pulp.

DFTA

The Deutschsprachige Flexodruck Fachgruppe e.V. (DFTA) came into being in fall 1979 and was modeled on the FTA (Flexographic Technical Association). The association is headquartered in Stuttgart and currently has more than 400 members made up of flexographic printshops, their suppliers and scientific establishments. The association's goals include the technical advancement of flexographic printing, basic and advanced training and the exchange of expertise and experience. The DFTA does this through a technology center at the Media College of Stuttgart Technical University.

Dialog marketing

The term dialog marketing includes all company activities aimed at addressing potential customers directly in order to obtain a direct response. One typical tool of dialog marketing is mailshots (personalized communications) containing various response options. Many advertising professionals regard the Internet as the customer dialog medium of the future.

Digimaster 9110

The Digimaster 9110 is a digital black-and-white printing system from Heidelberger Druckmaschinen

AG. It combines functions from the prepress, press and postpress stages and allows production of everything from individual prints to large production runs. The features of the press include a printing speed of 110 A4 pages per minute and six paper containers, each storing up to 8000 sheets and suitable for grammages of between 60 and 200 gsm. Up to 17 different paper formats are supported, and duplex printing is also possible. The system processes standard data formats such as Postscript, PDF, TIFF and PCL, which means that data conversion is often not necessary. The system can produce booklets, brochures and prospectuses, which are folded, bound and stacked to the desired height and direction.

Digital printing

In a general sense, digital printing refers to printing processes in which the information is transferred from the computer directly onto the paper, without need for film and printing plates. It links color printing technology with the printing press' mechanical system. Digital printing cannot achieve the same level of quality as conventional printing processes, but it is faster and more cost-effective for small print runs and allows special techniques such as personalized printing or printing-on-demand.

Digital photography

As an alternative to conventional processes which use film imaging and film development, digital photography uses cameras which capture images directly in digital form. The image data is transferred by means of special storage media or a data interface to a computer for further processing.

Digital holography

Digital or synthetic holography is the term used for generating holograms, i.e. illustrations in the form of interference patterns, through computer calculations instead of light interference. Future applications for digital holography include high-capacity, long-term data storage devices based on plastic foil and ultra-small, forgery-proof markings for packaging, etc.

Digital signatures

A digital signature is a type of "seal", which is created using a chip card and is based on encryption software (mathematical processes). Digital signatures are used in electronic communication to provide a legal alternative to the handwritten signature. These are ideal, for example, for electronic tax returns, home banking and electronic transactions (e-commerce).

Digital camera

Instead of conventional light-sensitive film, digital cameras use highly-integrated components (CCD chips), which convert the image captured by the lens into digital data. This circumvents the use of film imaging, film development and scanning. In print and non-print media production, this saves time while also offering greater flexibility. There are digital cameras available for a whole range of applications, from recreational use to use in a professional capacity. As a rule studio cameras use separate digital units instead of traditional film cassettes.

Dimensional stability

Dimensional stability measures how much a paper's dimensions change when its moisture is altered. This is a key criterion affecting a stock's suitability for multicolor offset printing.

DIN sizes

These standard metric sheet sizes are widely used outside the United States. The most important ones belong to the A series, in which the next-smaller size has a length corresponding to half that of the next-larger size. They include A4 (210 x 297 mm) and A3 (297 x 410 mm).

Direct imaging

Direct imaging refers to a new technology which uses PostScript data from the prepress stage to simultaneously image all the printing forms of a printing press with complete register accuracy. To do this, the screen data supplied by a RIP (raster image processor) controls 64 infrared laser diodes,

creating small recesses on a special printing foil with an ink-repellent surface, thus revealing an inking layer. The result is a printing foil which can be used for water-free offset printing.

Document paper

Document paper is one of the highest grades of paper and bears a real watermark. The grade is generally used for official documents and certificates, and features special properties to that end.

Dot gain

Dot gain is a term used to describe the growth in the size of screen dots during the prepress and press stages. This can have very different causes depending on the process stage in question. The effect is most marked in areas of medium image brightness and should be taken into account when performing settings in order to prevent color shifts during print.

Double

A double is the term given to a word that has been typeset twice in error in the text.

DTP

This concept - the abbreviation stands for desktop publishing - refers to the combined processes of text creation, page makeup and image assembly as an integrated activity performed on the computer. As a result, DTP delivers data in the form of pages which are then further processed at the sheet assembly stage – either in the form of films or in electronic form (computer-to-film / computer-to-plate). DTP data uses the PostScript page description language. In electronic printing this data is used directly to produce print copies or for printing.

Dummy

Sample of a print product which is designed to demonstrate the production features of a product such as format, page count, paper grade, finishing and binding. The pages remain unprinted.

Dummy text

Dummy text is the term used for meaningless text whose purpose is to communicate the intended typographic impression of layout pages or to reserve a space. Dummy text should be instantly recognizable as such - otherwise, as has occasionally happened, it may erroneously end up being left as valid text and printed.

Duplex images

Duplex images are used to enlarge the tonal value range of a grayscale image in print. A black/white reproduction, for example, can contain up to 256 grayscales. The technical limitations of the print process mean that only around 50 levels, for example, can be depicted. To increase the number of grayscales, the entire brightness spectrum of duplex images is divided into two ranges which are represented by two different colors. In the simplest case, black ink is used for the dark hues, while gray is used for the brighter ones. However, a hue is often used for the bright areas. This gives the image a certain color toning which also enhances the level of contrast.

E

EAN code

The EAN (European Article Numbering) code was defined to assist in the universal identification of all types of goods by means of an internationally-standardized article number. Two different versions exist of this code, one containing 13 figures and the other 8 figures (EAN-13 and EAN-8). An EAN code generally includes the country of origin, the manufacturer and the product's article number. For books, the purchase price and currency can also be specified in a further code comprising 5 figures (EAN-5 add-on). For magazines, there is also a two-figure code (EAN-2 add-on) for the issue number. The EAN figures are displayed by means of a machine-readable barcode, which consists of a system of dark and light stripes. It is therefore possible to represent the individual figures in different ways. In the USA and Canada, the five-figure UPC (Universal Product Code) numbers are used for product identification.

E-book

An electronic book or e-book is a portable computer used to display stored texts on its monitor for reading. As an alternative to the production and distribution channels of conventional books, texts of this kind can - usually for a fee - be downloaded from the Internet and read. To this end, the e-books available to date all have a flat, more or less book-like format.

E-commerce

Describes doing business – primarily buying and selling of goods and services – on the Web.

EB inks

EB inks are printing inks that are dried by electron beams. Similar to UV inks, which are cured by ultraviolet light, EB inks are cured by means of polymerization. This is brought about by the direct effect of the electrons on polymerizable substances. Unlike UV inks, special initiators are not required for EB inks. As a result, EB inks are, among other things, better in storage. Their special advantage is considered to be the option of processing them in thick layers, because the electron beams penetrate deeply. However, curing must be carried out in an oxygen-free environment (under a gas blanket) in order to avoid oxidation of the ink and the printing material caused by the high-energy electrons.

Editor

A software program used to write and edit HTML code.

Effect coating

In the printing technology sector, effect coatings are coatings that are used to achieve special effects. Generally speaking, these are pigmented coatings that vary greatly, according to the pigments in the ink, the shape and the size of the particles. In screen printing, for example, layers can be printed so thickly that you can actually feel the printed structures. These applications can be used, for example for wallpaper printing, since they enable relief effects to be achieved without any need for embossing tools. Effects can also be created using 'scratch-and-sniff' coatings. These contain aromatic materials that are either released by scratching or give off their smell continuously.

Electronic signature

See digital signature.

Electron beam colors

These are printing inks that are dried using electronic beams. Similar to UV - colors, which dry through ultraviolet light, ES inks solidify by polymerization. This occurs through the direct exposure of the electrons on substances that can be polymerised; unlike the UV colors, special initiator are not required. As a result, ES-Colors can be more superposable . Their special advantage is the possibility

of applying them in thick layers, as the electronic beams permeate deep. Drying must however take place in exclusion of oxygen (under cover gas), to prevent an oxidation of color and print substrate caused by the electrons which are full of energy.

Electronic paper

In an attempt to combine the electronic activation of a monitor with the superior legibility of printed paper, Massachusetts Institute of Technology (MIT) and various manufacturers are working on what is known as electronic paper. In one version, the paper contains tiny spheres with different colors on different sides, which rotate when exposed to electric fields and thus present different colors. Another type of electronic paper contains small, transparent capsules filled with dye and white particles. When an electrical field is applied, these particles float to the top, making the surface of the paper look white. Otherwise, the effect of the dye is dominant.

E-payment systems

An e-payment system is a system whereby purchases and payments are handled electronically via the Internet for customers and retailers. A system of this kind often uses trust centers and digital signatures to safeguard business transactions (against misuse by third parties). Electronic payment requires a complex IT infrastructure to provide the necessary data protection, accessibility, usability, acceptance and cost efficiency.

E-procurement

The business-to-business purchase and sale of supplies and services over the Internet, in other words, Web-enabled electronic purchasing. It automates the traditional manual and paper-based procurement process, and thus results in reduced maverick buying, lower transaction costs, lower cycle times, and increased efficiency.

EPS

Encapsulated Postscript. A standard file format for importing and exporting. Postscript language files among applications in a variety of heterogeneous environments. Pure EPS-Format can not be presented on the monitor and therefore provides a preview picture in TIF-Format. EPS graphics can be enlarged without loss of quality.

ERA

The European Rotogravure Association (ERA) e.V. headquartered in Munich was founded in 1956 and is an association of European gravure printshops with manufacturers from the industry as associate members.

Esthetic program

As a function of a layout program, an esthetic program ensures that the text flows with visual appeal, in accordance with typographic rules. The features of such a program include the individual adjustment of the spaces between certain letter combinations (known as 'kerning'), and corrections to the positions of line starts (e.g. a line beginning with an 'A' must be moved very slightly outwards).

Esparto paper

A soft, bulky printing paper made from esparto grass, this stock is extremely opaque and, thanks to its low moisture pickup, features relatively high dimensional stability.

EUPRIMA

Established in the middle of 2000, EUPRIMA (European Print Management System Association) is an association for suppliers of management information systems. Its primary task is to promote the electronic exchange of data between manufacturers, customers and suppliers in the print industry using the Job Definition Format (JDF). EUPRIMA works closely with CIP4 in advancing development work.

Euro scale

The Euro scale is a color scale for the CMYK four-color model which is standardized in Europe in accordance with DIN 16 539 for offset printing and DIN 16 538 for letterpress printing. This defines the printing colors yellow, magenta, cyan and black according to hue, saturation and print sequence and enables them to be checked under standardized conditions.

F

Faber und Faber Verlag

Faber und Faber Verlag, founded in 1990 in Leipzig, has – according to information from the company – produced the world’s smallest book ever to have been manufactured in a production run. Measuring just 2.4 x 2.9 mm, the copies were bound in leather by hand. The volume is entitled “Bilder ABC” (“Picture ABC”) and contains images of letters by Josua Reichert.

Facsimile

Facsimile (Latin: fac simile – to make similar) is the term generally used to describe the most natural possible reproduction of an original (image, handwriting, book) complete with all its characteristics including dirty marks, damage or traces of use. This is the highest degree of similarity which a reproduction can achieve in comparison to the original, and nothing is added, left out or improved. Copyists in the Middle Ages were already trying to achieve reproductions of texts and books which were true to the originals by writing them out and illustrating them by hand. The first full facsimiles date from the early 17th century, and were engraved in copper. Facsimiles were also produced using the wood engraving method. The invention of lithography in the late 18th Century and collotype in the mid 19th Century made facsimiles as we understand them today possible. Collotype is still an ideal method of reproducing color originals, but it is very expensive.

Felt side

The side of the paper not in contact with the wire of the paper machine. Especially in lower-quality grades, this side offers much better performance characteristics than the reverse, called the wire side. The wire side bears a slight imprint from the metal mesh and contains fewer fillers due to the flow of water.

Ferro-gallic ink

Ferro-gallic ink is a very durable type of ink that consists of gallic acid (also known as tannin - 3,4,5-trihydroxybenzoic acid, chemical formula: $C_6H_2(OH)_3COOH$), iron sulfate and possibly a binder (gum arabic). Ferro-gallic ink has been known since antiquity. It got its name from the oak galls used as a source of tannin. The ink was used for documents of all kinds until the advent of chemical dyes in the very recent past. When fresh, pure ferro-gallic ink has only a pale color. Only after being applied to paper and exposed to atmospheric oxygen does it form a strongly coloring, black pigment. It is insoluble in water and thus very difficult to remove. After extended periods of time, ferro-gallic ink attacks paper and parchment, causing what is known as ink corrosion.

FGD

The Forschungsgesellschaft Druckmaschinen e.V. (FGD -Printing Press Research Association) headquartered in Frankfurt was founded in 1955 by leading German printing press manufacturers as a non-profit organization. It acts as a coordinating office between the printing press industry and the research activities in the field of printing presses and printing processes. In particular, it works

together with the Institut für Druckmaschinen und Druckverfahren (IDD -Institute for Printing Presses and Printing Processes) at Darmstadt University of Technology.

Fillers

Fillers are additives used in paper manufacture that fill the gaps between the paper fibers and enhance opacity, whiteness, and smoothness. The most common fillers are mineral compounds such as kaolin or calcium carbonate; they are generally added to the liquid pulp mass. In finished papers, the filler content can be as high as 35%.

Fine Paper

Fine paper is the general term used to describe paper of superior quality. In production, particular attention is given to the stability of the surface as well as good, even transparency (also with watermarks) and of course good printability.

Finishing

In printing, the term "finishing" is used to cover the operations that take place after the actual print run and lead to the finished printed product. Depending on the type of product, this includes folding, collating and trimming of the printed sheets, as well as binding and possibly also packing.

FireWire

The name FireWire was coined by computer manufacturer Apple and refers to a serial interface with a high transfer rate that complies with US standard IEEE 1394. Up to now, this standard specifies transfer rates up to a maximum of 400 Mbit/s. Even higher rates have already been proposed for standardization. FireWire interfaces are becoming more and more common in workplace computers and are today mainly used for connecting video cameras and similar products to computers, although they are also increasingly being used for mass storage devices, scanners and other peripherals.

Flatbed scanner

See Scanner.

Flash

Developed by Macromedia Inc., Flash is the popular modern method of adding graphic animations to Internet pages. Macromedia offers various software tools for creating Flash animations. To make these animations visible, a web browser needs the Flash Player plug-in, which is available free of charge.

Flexographic printing

Flexographic printing, a letterpress process, uses photopolymer wash-off printing plates (letterpress plates) or variations of these (rubber printing plates) as printing forms. Using low-viscosity ink it is possible to print on very different materials with screen rulings of up to 54 l/cm. Flexographic printing is a very fast, uncomplicated printing process suitable for packaging printing and multi-color newspaper printing.

Fluorescent printing inks

Fluorescent printing inks are stimulated into shining, thus changing color, when exposed to ultraviolet (UV) light. There are various types that react to UV light of different wavelengths. Fluorescent printing inks are used for protection and to identify documents at risk of being forged.

FOGRA

The Forschungsgesellschaft Druck e.V., Munich, (FOGRA) was set up to promote printing technology. The association has its own institute with over 50 employees. The duties which the organization has set itself include research into orders, development work focussing in particular on quality control tools, knowledge transfer through the use of brochures and printed materials, lectures, advice, seminars, symposia, a literature database, cooperation in standardization bodies and the provision of expert reports in the case of conflicts.

Fold

In bookbinding a sharp break or bend in the papers. By folding either a product with consecutively numbered pages or simply a smaller format is produced. Folding is generally done by special folding machines. A distinction is made between right angle and parallel folds. In right angle folding the next fold is always at a right angle to the previous one. In parallel folding, always parallel to the first.

Folding machines

A distinction is made between two main types of folding machine. First the knife folder, where a blunt edged knife presses the paper between two continuously moving rollers. The paper is caught between the rollers and carried away, a fold being made where the knife made contact. The buckle or plate folder feeds the paper end first between a pair of continuously revolving rollers. Both methods of folding can be combined in one machine - the combination folder.

Font

Font is the word for a type face. A font usually has several styles in various weights and versions.

Four-em quad

A four-em quad is a typographical unit of measurement corresponding to 36 points.

Fraktur

Fraktur is a black-letter typeface created in 1517 that was the most common typeface in Germany right up to the 20th century. Fraktur was also widespread at times in countries neighboring Germany to the east and southeast. Its name (Latin for "broken") is based on the broken strokes in which it was originally written by hand. Precursors to Fraktur are considered to be the Gothic typeface, which Johannes Gutenberg used to typeset his 42-line bible of 1455, and the Schwabacher typeface, which has been used since roughly 1570 and which the first Lutheran bibles were printed.

Frame

A Technology introduced in Netscape Navigator 2 In computer-speak, a frame is a rectangular area absolutely positioned on the display screen. In the online world, a frame refers to a single section of a Web page that's been coded to display "frames." In computer-speak, a frame is a rectangular area absolutely positioned on the display screen. In the online world, a frame refers to a single section of a Web page that's been coded to display "frames."

Front matter

The term front matter (or prelims) is used for all the pages of a book that appear before the actual text. These can consist of the bastard title, full title, imprint, dedication, contents page, foreword and unprinted pages.

Full ink coverage

The full ink coverage is the smallest quantity of ink that can completely cover the surface of a particular printing stock so that no gaps are visible. In offset printing, the full ink coverage for smooth coated art papers is 1.5 to 2 gsm, and for uncoated papers is in the region of 3 gsm.

G

GATF

GATF (Graphic Arts Technical Foundation) is a technical association for the printing industry which is based in Sewickley, Pennsylvania, USA. The organization joined forces with the Printing Industries of America (PIA) at the start of 1999 and has some 14,000 members in 60 different countries.

Gatherer-stitcher

The gatherer-stitcher (also known as a gang-stitcher) is a device for stitching printed products and creating issues – magazines, brochures, etc. – from printed and folded sheets. The print sheets and the jacket are put together in the correct order, aligned and then stitched using wire staples. Finally, the volume is cut on three sides. This separates the sheet folds that do not lie on the spine edge, and thus the issue takes on its familiar shape.

GCA

The Graphic Communications Association is the former name of the International Digital Enterprise Alliance (IDE Alliance).

Ghosting

Ghosting is an error which can occur with indirect printing processes such as offset printing. This is produced when screen dots have double or multiple contours and can occur in single-color printing, but more often in multi-color printing. Faulty printing of this type increases the screen tonal value and leads to dot gain. This slight shift in the position of the printing elements is caused by register fluctuations during printing, which may themselves be caused by the paper or the press.

GIF

GIF stands for Graphics Interchange Format, and describes a data format for space-saving storage of images and graphics. It works using lossy compression, and allows 256 colors to be displayed from any pallet. The data format was introduced by the Compuserve online service in 1987, which makes it one of the oldest of its type. GIF remains one of the most widely-used formats for online publication, and also allows animated images to be displayed in a modified form (“animated GIF”).

Gigabyte

abbreviated as G -or- GB

A unit of measurement approximately equal to 1 billion bytes. A gigabyte is used to quantify memory or disk capacity. One gigabyte equals 1,000MB (actually 1,024 megabytes). One thousand megabytes or one billion bytes.

Glassine

Glassine is a highly greaseproof, but not wet-resistant paper grade made of finely ground pulp. It is highly supercalendered and therefore relatively transparent.

Glyph

A glyph is a symbol carved in stone. In typography, a glyph is a letter which a character set contains in several forms. The letter “s”, for example, has this property in both the German and Greek alphabets.

Goffering

Goffering is a process for shaping the surface of paper into a pattern, usually of fine grooves.

Gradation

The gradation (or gamma value) of a picture –such as a photograph or an electronic image stored on a computer –indicates the steps in which the gray values of the original are rendered. With a flat gradation, there are many steps between white and black, while a steep gradation has fewer steps or

even just pure black-and-white. This is also referred to as a "soft" to "hard" rendition.

Grain long, grain short

These two terms are used to indicate whether the paper web should travel through the paper machine lengthwise or widthwise. This is generally indicated by marking whether the width or length of the paper should correspond with the machine's reel width. The fibers (and thus the grain) lie parallel to the edge not indicated.

Grammage

The standard international unit of measurement for paper weight, expressed in grams per square meter, or gsm. Grammages range from 7 to approx. 225 g/m² for paper, and approx. 150 to 600 gsm for board. The system differs in the U.S., where the term "basis weight" is used, i.e. the weight in pounds of a ream (500 sheets) in the basic size for a grade of paper.

Gravure printing

This printing process is used in high-output rotary presses. Here the printing elements take the form of small cells on the surface of the gravure form cylinder. The print image is generally transferred onto the cylinder by means of electromechanical engraving using a diamond stylus. During the course of the printing process, the printing cylinder is entirely coated in ink. A doctor blade then removes the excess ink from the surface and the only ink remaining is the ink in the cells. Then a rubber roller presses the paper web against the printing cylinder and the ink remaining in the cells is applied to the paper.

Gravure printing paper

An especially soft, absorbent grade of paper. Includes handmade papers from Japan (Japanese vellum) because the long, silky Japanese fibers these contain are specially suited to capturing the nuances of handpressed copperplate prints. In four-color printing, gray balance refers to the color components (measured as a percentage of the particular full color) with which neutral gray can be achieved. Depending on the lightness required, these components generally deviate considerably from the equal components expected from theory. In many cases, a higher cyan component, known as the cyan overhang, is required.

Griffo, Francesco

The Venetian diecutter Francesco Griffo (1450-1518) is known as the inventor of italic type. In February 1496, the letterpress printer Aldus Manutius published an essay by the Italian scholar Pietro Bembo. The italic type "Bembo", which was developed by Griffo from an official papal font, quickly gained in popularity and played a highly influential role in font design in later years.

Grippers

Grippers are the mechanical clamps used to transport the sheets of paper in sheetfed presses. Grippers grip the individual sheets and feed them into the printing unit. The printing unit's rollers are equipped with further grippers, which fix the sheets in place for the various stages of the print process. The printed sheets are output in a similar way at the end of the printing process.

Grotesque face

The term "grotesque face" covers fonts whose letters have constant weights and no serifs. Commonly used examples of sans-serif fonts of this kind are Futura, Helvetica, Arial, Optima, Univers, Franklin Gothic and Frutiger. Grotesque faces are generally regarded as functional and modern, and are mainly used for graphic reasons. From the point of view of legibility, they are less suitable for running text than serif typefaces.

Guilloches

Guilloche (from the French guilloche - graver) is the term used for fine, interwoven geometric patterns of lines or ornaments. They are printed on banknotes, securities, certificates, etc., in order to make forgery more difficult. Guilloches are also often used as screen lines for illustrations. Metal works of art are not seldom decorated with guilloches engraved either by hand or by machine.

Gutenberg

Johannes Gutenberg, real name Johann Gensfleisch, (* around 1397, † 1468 in Mainz) was the son of Mainz patrician Friele Gensfleisch zur Laden. During the period 1440 to 1450, Gutenberg invented “printing with moving letters” – i.e. letterpress printing – in either Mainz or Strasbourg. His invention was based on cast type, a corresponding manual casting instrument, a suitable metal alloy and a printing press. Gutenberg’s invention, which is today considered the trigger for one of the greatest revolutions in human history, spread throughout the whole of the then known world within a matter of years.

H

Halftone

Halftone is the term used to designate a contone image which has been prepared for printing using screening technology. This is a pure black/white or full-tone original which uses screening to simulate contones. The inventor of halftone technology is considered to be Georg Meisenbach (1841-1912), from Nuremberg, who in 1882 patented a screen that he had produced (DRP 22244).

Halftone color synthesis

Halftone color synthesis designates the way in which a color impression is generated when printing screened color images. The individual screen dots – in the CMYK basic colors when using four-color printing – are printed either next to each other or on top of each other. Both additive and subtractive color synthesis is encountered. Even unprinted portions of an image – which are generally white – contribute to the color impression.

Handfolding

Folding a sheet by hand using a "folder", a flat, smooth piece of plastic about 15 cm long. Only special versions in limited editions are still folded by hand.

Hard proof

The term "hard proof", as opposed to "soft proof", covers the processes for simulating or checking printed results that produce a material result, generally a hardcopy print. Depending on the characteristics to be checked, a distinction can be made between blueprint, imposition proof (layout proof), color proof, screen proof and press proof (also known as a machine proof).

Heat-set

Heat-set inks are printing inks that are essentially dried after the printing process by means of brief heating. This is achieved using hot air at temperatures between 120 and 150 °C. Heat-set inks are used in rotary offset printing.

Helio engraving

Unveiled by the Czech painter and graphic artist Karel Václav Klíč in 1878, helio engraving (also known as heliogravure – from the Greek ‘helios’ meaning ‘sun’) or photo engraving is a photochemical process for creating gravure plates. The first stage with this method is to copy a positive image onto pigmented paper. Its gelatine coating hardens in the presence of light. A fine layer of asphalt powder is then melted on to the polished copper plate which serves as the printing plate. The gelatine layer from the pigmented paper is then applied to the plate by pressure. The carrier paper

is then washed off. The unhardened gelatine also washes away, creating a relief effect of the original. In the subsequent etching process, which involves multiple stages and uses iron chloride solutions, the acid removes various thicknesses of copper, depending on the thickness of the gelatine layer. This only takes place in areas that lie between the asphalt particles, however. The result is a system of tiny pockets of different depths in the copper material. In the gravure process, these pockets take up appropriate volumes of ink and thus reproduce the contours of the print original. Helio engraving was particularly popular between 1890 and 1910 for creating monochrome illustrations in high-quality books.

Hermann

Caspar Hermann (b. March 9, 1871 in Königsberg near Cheb/Eger, d. November 6, 1934 in Mainz) was one of the pioneers of offset printing. After Ira Washington Rubel came out with the first offset printing press in 1904, Hermann converted bookprinting rotary presses into offset printing presses for the first time in 1904/5 for the Harris Automation Press Company in Niles/Ohio. The first German offset printing presses emerged the same way starting in 1907. Hermann also designed the world's first rotary offset printing press, which was patented in Germany in the same year, and the so-called satellite printing system in 1922, in which several printing units are grouped around a common impression cylinder and print several colors in a single cycle.

HKS inks

HKS is a hybrid system for inks which comprises 84 different color tones. It is jointly published by the three ink manufacturers Horstmann-Steinberg, Kast + Ehinger and H. Schminke & Co. It is structured on nine basic colors plus black and white. Ink series are available for sheetfed offset on coated and uncoated papers, newsprint and continuous paper.

Hologram

A hologram is a three-dimensional image created by holography. It is not obtained by focusing light on an image converter (photographic film, optical sensor) through a lens. Rather, the interference image which results from interaction of the light reflected from the object to be imaged with a reference beam of the light source is recorded. This method demands extremely coherent light (i.e. synchronously oscillating light), such as that generated by a laser. Strictly speaking, viewing also requires coherent light on which the hologram superimposes the same interference image that it was produced with. If you make concessions as regards the accuracy of detail, holograms can also be viewed in normal light, in which case direct light produces better results than indirect light.

Host

A computer that functions as the beginning and end point of data transfers. It is most commonly thought of as the place where your Web site resides. An Internet host has a unique Internet address (IP address) and a unique domain name or host name. A host can also refer to a Web hosting company.

House typeface

In the area of corporate design it is not uncommon for companies to choose a distinctive typeface for projecting their company's image. Similarly some publishing houses select a standard typeface for their publications in order to make these products more identifiable. In both cases it is customary to speak of a house typeface of a given company.

HPGL

Originally, HPGL (Hewlett-Packard Graphic Language) was a command language for driving plotters developed by the American manufacturer Hewlett-Packard. Today, many printers can also print out HPGL-encoded graphics.

HSB

The HSB color model describes colors in the same way as the human eye perceives them, using hue, saturation (also known as chroma) and brightness (or luminance). The hue is defined by its position in a color circle and is specified by an angle lying between 0 and 360°. The saturation corresponds to the amount of gray in the color mixture and has values of between 0 percent for gray and 100 percent for

pure color. The values for brightness also range from 0 percent for black and 100 percent for white.

HTML

The page description language HTML (Hypertext Markup Language) is used for formatting documents for the World Wide Web on the Internet. HTML makes it possible to create links between pages in different parts of the Internet and allows you to present multimedia material. With the help of a web browser, HTML documents can be read in the same way by any computer with a popular operating system. A distinctive feature of these pages is that they do not have a fixed typography. The reader determines the typeface and font size on his own computer.

HTTP

Acronym for “Hypertext Transfer Protocol“, a data request protocol used in the World Wide Web. HTTP is based on the TCP/IP network protocol and is used to organize communication between the Internet server and the user’s browser. HTTP sets up a new connection to the server every time a browser requests data. When data is requested, HTTP informs the web server about the hardware and software used by the client (screen display, browser, HTTP version, etc.) and transfers a “response form”. The WWW server completes and returns the form and transfers the file information (e.g. file size, response code, type and creation date of the data). This somewhat laborious procedure enables data to be exchanged – within certain limits – between communication partners which are unknown to each other and thereby enables the World Wide Web to function.

Hue

Hue, defined within the context of a color space, is a term used to identify a (white) paper's exact shade. Not to be confused with whiteness, which is a different property of paper.

Hyperlink

a.k.a. link -or- a link

The text or graphics on a Web site that can be clicked on with a mouse to take you to another Web page or a different area of the same Web page.

Hypertext

Hypertext is a function which is used to connect electronic documents by means of links. A link can be connected to any object of a document (text, image, etc.) and ties in with the content of this object. By clicking the mouse on the screen the user will jump automatically to the associated document. Here, he may find explanations or additional information on the content in question. Originally, hypertext systems were housed on individual computers or in local networks. Thanks to the World Wide Web which makes substantial use of hypertext, this technology is now used worldwide.

I

ICC

The International Color Consortium (ICC) brings together manufacturers of prepress products in order to promote color management, in other words device-independent processing of color. Fogra (Deutsche Forschungsgemeinschaft für Druck- und Reproduktionstechnik e. V., München) is in overall charge.

I code

The I code is the name which electronics manufacturer Philips gives to its products to identify goods using transponders which respond to radio waves. The transponders, which are used with Smart Labels, are less than 0.5 mm thick and, depending on the type, can be applied in stickers measuring up to 2 x 2 cm. The transponders can store up to 512 bits of data and use the scanner's radio waves to obtain the energy they need to function.

IDE Alliance

The International Digital Enterprise Alliance (IDE Alliance) was founded in 1966 as the Graphic Communications Association (GCA). It promotes the development of IT standards in the publishing industry. This non-profit-making organization currently has more than 300 members.

Ifra

The Ifra is based in Darmstadt and is an international association which currently has more than 2000 members from the publishing industry. Its goal is to promote the exchange of technical information and experience. To this end, it arranges research projects, workgroups, symposia and seminars. The Ifra Expo exhibition devoted to newspaper production is held in October each year. The name Ifra derives from "INCA-FIEJ Research Association". INCA is the acronym for "International Newspaper Colour Association" and FIEJ stands for "Fédération Internationale des Editeurs de Journaux".

Illustration printing paper

Illustration printing paper is made from chemical pulp and may have a slight woodpulp content. This is a coated stock that is often calendered as well. It offers opacity similar to that of woodpulp paper, features excellent nonaging properties, and does not yellow.

Image Control

The Image Control component of the Prinect workflow concept from Heidelberger Druckmaschinen AG is the world's only quality assurance system in the print process that measures complete print sheets using spectrophotometric technology. After a comparison of the measuring results with the values of the OK sheet, the color deviations that have been identified are fed online to the press in order to adjust the ink zone settings. This method processes a thousand times more information than is possible using print control strips.

Imposition proof

Like the blueprint, the imposition proof (or layout proof) is mainly intended for checking the content and completeness of the elements of printing copy. In contrast to a blueprint, this proof is in color, although the colors are not binding. Large-format inkjet printers are mainly used for printing imposition proofs of this kind today.

Imprimatur

(lat. let it be printed) is the official approval of submission by the client. The phrases "good to print" or "ready for press" are also used.

Imprint

The imprint is the information required by German publishing law which stipulates that the name of the publisher and printer of printed goods must be stated. In recent times, this has also extended to Internet publications. As a rule, the imprint also contains further details, some of which are required by law, such as the name of the editor responsible, the editorial address, information on how to advertise in the publication and on sales, and also a copyright notice.

Incubator

This word comes from the Latin, and in conventional usage is the name for a device used to care for premature babies. Since the advent of the new economy, the term has also come to be used to describe various methods of supporting new companies (start-ups) and enabling them to become established with the assistance of professionals. Professionals providing these services are usually paid in the form of shares in the new company.

Incunabulum (plural incunabula)

Incunabula are letterpress printing works made using movable letters and produced before the end of the year 1500. The term comes from the Latin (incunabula, meaning something in an early stage of development). It is estimated that between 27,000 and 40,000 such works were produced during the 15th Century. Incunabula do not usually have a title page, and there is often no reference to the printer or place and year of printing. Since it is assumed that the early printers also produced their own type, the origin of incunabula can be determined by methods such as comparing the type used. The formal cut-off data for this type of printing work is December 31, 1500.

InDesign

The InDesign software package from Adobe is a more recent program for computer layouting and typesetting, comparable to the familiar QuarkXPress. InDesign is available for both Windows and Macintosh computers. The special features of the software stated by the manufacturer are the extensive options for graphic design, such as texts on paths, nested text and graphics frames, surfaces and contours with color gradations, the scaling and bending of text and graphics, as well as paths in the form of Bezier curves (Curved lines defined by end-points and control points. Named after the french mathematician Pierre Bezier).

Initial

The initial is a letter placed at the beginning of text or paragraph, which is emphasised . It is larger than the body text, so that it spans two or three lines. In old handwritten material, initials are characterised by special color and decoration. The first initial can be found in the Greek and Copt scripts of the 4th century.

Inkfountain

The inkfountain in a printing machine has the task of supplying the block with the designated amount of printing ink. To do so it uses several components, such as ink storage containers, transport mechanism as well as transfer inking rollers.

Inkjet printing

Inkjet printing is a printing process where minute drops of ink are applied to the surface to be printed by means of a jet. The jet is applied using either piezoelectric or thermal technology. Color inkjet printers now work with up to six colors and well over a hundred individual jets. Nowadays, depending on the process, they are capable of achieving the same standard as high-quality four-color printing.

Inkjet paper

A surface-finished grade of paper designed to quickly absorb the tiny droplets of ink that an inkjet printer sprays in quick succession. It includes properties that prevent ink from running or smearing. Brown-colored paper (also called sulfate paper) consisting at least 90% of virgin, generally unbleached sulfate pulp. Known for its outstanding strength and durability.

Inline processing

In the print industry, inline processing is the term used if the process takes place directly on the press or the modules required for that particular stage of production are linked firmly to the press. These can include coating, folding, stitching or quality control devices.

Intaglio process

Unlike rotogravure which uses rotary presses, this gravure process uses printing plates into which the print motif is engraved in the form of lines and dots. It is employed primarily for high-quality publications, securities and banknotes. It also allows ink to be applied in thicknesses of up to 0.1 mm, such that the print can be felt in relief form. Relief printing can be used in banknotes to protect against counterfeiting.

Intaglio rainbow printing

Intaglio is the term used for artistic engraving. In art printing, it is used as a general term for the drawing techniques that result in gravure plates: copperplate engraving, steel-plate engraving,

engraving, etc. Rainbow printing - also known as iris printing - is a form of multicolor printing from a single printing plate that is inked in different colors in different areas for this purpose. This printing technique originates from art printing, where it was developed and applied in conjunction with intaglio techniques.

Integrated publishing

The digital linkup of all production stages in the print process - including electronic job input, prepress, press, postpress and preparation for dispatch – is known as integrated publishing. The International Cooperation for Integration of Processes in Prepress, Press and Postpress (CIP4), which involves more than 100 companies, strives to promote the integration of such computer-assisted processes within the graphic arts industry.

Integration

Allows data to flow freely from one corporate area to another without having to pass through time-consuming and trouble-prone interfaces. Integration also permits companies to maintain the same data from various sites.

Interface

The actual connection between two applications or two hardware devices, which facilitates the exchange of data. This can include hardware, software and can take place using similar or different categories of data "To interface" is to make an appropriate physical connection between two pieces of hardware so that the equipment can communicate or work together effectively. This can be the plug or cable that links the PC to the modem or software that connects text with Tables or even the keyboard, which acts as an interface between computer and user.

Internet

The Internet is a global computer network to which several million fixed computer (node computers) are connected in approximately 30,000 individual data networks. Several million users today are connected to the Internet via PC and remote data links (modem, ISDN etc.). Important services on the Internet include the multimedia World Wide Web, e-mail, newsgroups for exchanging information and opinions, and relay chat for spontaneous communication. Access to the Internet is made by means of a service provider against a fee. Online services such as America Online (AOL), Compuserve and T-Online also provide access to the Internet. It is today seen as an important future area of commerce for private consumers, but particularly for companies trading with other companies.

Interpolation

In mathematics, interpolation is used to find intermediate values within regularly structured series of numbers. Numerous different methods are used for this purpose, depending on the nature of the series. In image editing, pixels are interpolated, i.e. additional pixels calculated from the values of surrounding pixels, in an attempt to increase the resolution beyond the physical capacity of an input device (scanner, etc.).

IQ paper

IQ paper from X-ident GmbH of Düren is a type of sticker used to identify products. The labels are made of paper or plastic foil and, depending on the type, contain a transponder from the I-code series from Philips or the Tag-It series from Texas Instruments. The size of the labels varies from between 5.5 x 10.5 cm to 10 x 15 cm. The stickers are available on rolls and can be printed using a special printer, which can also apply data for their later use.

ISBN

The ISBN number is an international, ten-digit standard numerization for books which indicates the language, publisher, internal publishing title number as well as a check digit. The ISBN system was started in England in the mid 1960's. It was adopted in Germany in 1969.

ISDN

ISDN (Integrated Services Digital Network) is a method for the uniform digital transmission of voice and data in the local telephone network, users also having more functions at their disposal than with a conventional, analog connection. In Europe, a normal ISDN connection has two data channels with a transmission capacity of 64 kbit/s each and a control channel with 16 kbit/s. If required, more channels can be connected and also bundled to obtain higher transmission capacities. Control is standardized throughout Europe and uses the Euro-ISDN protocol. There are ISDN systems with different technical characteristics outside Europe - e.g. in the USA.

ISO

Abbreviation for the International Standardization Organization headquartered in Geneva. Germany is represented by the Deutsches Institut für Normung (German Standardization Institute, DIN). The ISO has the task of developing or harmonizing standards in all areas of technology, with the exception of electrical technology.

IT

Information technologies.

J

Japanese papers

Japanese papers are types of paper made in Japan using the fibers of indigenous plants. Real Japanese paper, known in Japanese as washi (wa = Japan and shi = paper), should be made of the plants kozo, mitsumata, gampi and kuwakawa (mulberry tree). Manual production features the particular art of dipping the sieve, which is usually made of bamboo, several times into the paper pulp using a particular rhythm. Papers made of pure fibers have a particularly attractive gloss which increases as the paper ages. The technique of paper-making reached Japan from China via Korea in the 7th Century.

Java

Java is an object-oriented programming language developed by computer manufacturer Sun Microsystems specifically for Internet applications. So that programs written in Java can be executed on every computer, they are not translated into "machine language" for execution, but into a computer-independent code. In a second step during execution, it is then converted into a code that the computer in question "understands". Every computer that is to execute Java programs needs a program module called a "Java Virtual Machine" for this purpose. This module is available for all common operating systems and is also included in the standard Internet browsers.

JavaScript

JavaScript is a so-called script language for Internet sites, i.e. a language for programs which are directly integrated into Internet sites and executed by the browser when loading these sites. It can be used to trigger processes that are impossible with the HTML formatting language. JavaScript was developed by software producer Netscape and has similarities to the Java programming language in relation to the language elements.

Job Definition Format

The Job Definition Format (JDF) grew out of an initiative by Heidelberger Druckmaschinen AG, Adobe Systems, MAN Roland and Agfa which is now supported by CIP4. It forms the basis for the

non-proprietary integration of print processes. JDF is based on the XML formatting language and embraces a definition for describing print jobs (job tickets), a message format and an associated transfer protocol. The new standard succeeds the Postscript-based Print Production Format supported by CIP3 until mid-2000 and in future will also embrace business management aspects of the print process (from costing and quotation to billing).

Job printing

Job printing is the term used to describe printing in smaller volumes for example for private individuals businesses etc. Printing newspapers, magazines and written works is not job printing. Probably the oldest example of job printing is the letter of indulgence from the Roman Church which dates back to the 15th century.

Job ticket

The job ticket is a digital 'job folder' at the prepress stage of the production process. It is used to store instructions relating to imposition operations, trapping and OPI, as well as output parameters and printing and finishing information.

JPEG

JPEG is a common method, developed by the Joint Photographic Experts Group, for compressing image files in RGB mode. It can reduce the file size by up to 95 percent. It involves a loss of image information, although the degree of compression can be selected such that these losses remain within acceptable limits. JPEG requires no license and is internationally standardized (ISO 10918). It uses the "Discrete Cosine Transformation" (DCT) method, where image sections of 64 pixels each are processed. A new compression method, known as JPEG 2000, is currently being developed. It uses what are known as "wavelets" and is said to be able to compress images by 20 percent more than JPEG. The image quality also suffers less at high compression rates, as the image is processed as a whole. Moreover, JPEG 2000 is also to support non-lossy compression, as well as other color modes (such as CMYK) and color management. The new standard is scheduled for presentation to the public in the fall of this year.

JPG

On Windows computers, JPG is the customary file name extension of files containing images compressed by the JPEG method.

Just-in-time

The term "just-in-time" is used in industrial production to describe a process where suppliers deliver their goods at the precise moment they are required in the production flow. This obviates any need for goods to be stored at the production location. Just-in-time production requires efficient production management, particularly if there are several varieties of the products in question (e.g. inks), and an effective logistics system that guarantees timely delivery. For just-in-time production to work efficiently it is vital that a data link exists between the suppliers and manufacturer.

K

Kerning

In typography, kerning is the reduction in the spacing between two letters (uppercase and lowercase letters) for esthetic reasons so that the squares they occupy overlap. Typical letter pairs for this are

“To” or “Va”.

Keyword

On a search engine, Alta Vista, Lycos or Yahoo! for example, it's the term or phrase you type in order to begin an online search.

Koenig

Johann Friedrich Gottlob Koenig (* 17 April 1774 in Eisleben, † 17 January 1833 in Würzburg) is the inventor of the flatbed cylinder press, the first major development in printing technology since the times of Gutenberg. At the end of 1806, Koenig moved to London where he developed the flatbed cylinder press over the years 1811 and 1812. Koenig achieved a considerable further increase in speed in 1813 by using two impression cylinders. This meant that the carriage holding the printing form could be used in both directions. This machine was used for the first time in 1814 at the Times printshop in London. In 1814, Koenig also patented a perfecting press capable of printing both sides of a sheet in a single operation. In 1817, Koenig joined forces with Andreas Friedrich Bauer to found Druckmaschinenfabrik Koenig & Bauer at the Oberzell monastery near Würzburg. Koenig's son Friedrich Koenig jr. started the construction of rotary presses here in 1876. The company today is considered the international cradle of web press construction.

Klíc, Karel

The Czech painter and graphic artist Karel Václav Klíc (also known as Karl Klietsch - born April 30, 1841 in Arnau/Ostböhmen – died November 16, 1926 in Vienna) was the inventor of helio engraving and copper gravure or rotogravure. After many years' development, Klíc unveiled helio engraving in 1878 in Vienna. Helio engraving is a method used for photochemically producing etched copper printing plates based on photographs. Klíc also worked successfully as a painter, caricaturist and photographer, and lived partly in Hungary and partly in England. It was in Lancaster that he co-founded the Rembrandt Intaglio Printing Company in 1895, the first company to use the copper gravure method. Klíc finally settled in Vienna in 1897.

Kurzweil, Raymond

Raymond Kurzweil, born in New York on February 12, 1948, studied computer engineering and literature at the Massachusetts Institute of Technology (MIT) in Cambridge, in the US state of Massachusetts, and has been an entrepreneur, scientist and developer over the course of his career. His creativity has given rise to a range of inventions, including electronic musical instruments (synthesizers), reading machines for the blind, voice-recognition systems and a machine that translates instantly from English into German during telephone conversations. Kurzweil also provided food for thought during the 1990s with his books devoted to futurology. In his most famous book, “The Age of Spiritual Machines. When Computers Exceed Human Intelligence”, he expounds the theory that the lines between human and artificial intelligence will blur. Mankind will lose his central position in the world, and his intelligence will grow based on technological evolution – equating to the end of biological evolution and ultimately of man himself.

L

Laminating

Laminating refers to the general process of covering or coating one type of material with another, creating a firm bond between the two materials. In the postpress stage, laminating is one of the

finishing methods used to give the product protection and/or a more attractive appearance. To do this, films containing photographic or other print motifs are applied under pressure to the material being finished. If a transparent polyester film is applied, this is known as film laminating. Laminated materials are often found on drinks and food menus. For packaging liquids, the industry generally uses films that also protect the product's aroma.

LAN

LAN is a computer network that normally spans an area of no more than 10 km.

Laser

Light Amplification by Stimulated Emission of Radiation.

Laser printers

This common type of printer works using a rotating drum, the surface of which conducts electricity when it comes into contact with light. The surface of the drum is first electrically charged. A beam of laser light then records the printing information on the drum line by line by means of a rotating mirror wheel. When light comes into contact with the surface of the drum, it is discharged. The toner which is then applied only adheres to the places that are not illuminated. When transferred onto the paper and fixed in place using heat, the toner produces the print image required.

LDAP

LDAP is a relatively new standard that is used to standardize the query of address directories on the Internet.

Letterset

Letterset is the term for indirect letterpress printing. In this printing method, the ink is transferred from the printing form onto the printing stock via a blanket cylinder without dampening. It is also erroneously referred to as dry offset, which causes confusion with waterless offset printing. Applications of the letterset process include continuous forms and packaging printing.

Letterpress printing

In letterpress printing the elevated sections of a printing form are inked up and, in the printing process, deposit some of the ink on the material to be printed. There are three forms of letterpress printing. In the case of a platen press, one surface presses against another surface; a cylinder press involves a cylinder pressing against a surface; and in rotary printing two cylinders roll against one another. Letterpress printing, the oldest industrial printing process, is used in sheetfed printing for small print runs and special assignments (punching, stamping, perforating, numbering etc.) and also for printing newspapers, although this is now becoming less common. Letterpress printing, in the form of flexographic printing, has been able to hold its own against offset and gravure printing in the area of packaging printing.

Light-fastness

The light-fastness of inks –specifically also of printing inks –refers to their resistance to the influence of the spectrum of natural light. According to the German standard DI 54003/4, the "wool scale" defines eight levels from "very low" to "excellent". Level 3 – moderately light-fast –means that the ink can be exposed to sunlight for 4 to 8 days in summer and 2 to 4 weeks in winter without the occurrence of any noticeable fading. At the highest level of light-fastness, the ink can withstand exposure to summer sun for more than 18 months.

Line engraving

Line engraving refers to a printing plate (generally for letterpress printing) which is created by etching on the basis of a line original.

Line original

Single- or multi-colored original in which each color is present in a single tonal value. Generally speaking, line originals are used for black/white illustrations, e.g. drawings.

Link

In hypertext systems, especially on the World Wide Web, references to other pages or sites are referred to as links. Text segments, or also images and other graphic elements, have links of this kind, which can be followed by clicking on them with the mouse. In texts, links are generally indicated by a special type format. Otherwise, a link can be recognized by the fact that the cursor changes (usually into a pointing hand) when positioned on it. In modern word processing programs, it is also possible to define links in normal texts that refer to other, locally available files or Internet sites.

Linotype

The Linotype patented by Ottmar Mergenthaler in 1882 was the first fully functional – and even today unequalled – line composing machine and revolutionized the entire printing industry, in particular newspaper production. Used for the first time by the New York Tribune newspaper in 1886, the Linotype remained basically unchanged in its basic functions – despite numerous improvements – until it was replaced by electronic typesetting procedures. Using a keyboard similar to a typewriter, it assembles the metal matrices of letters and other characters and the interlying spaces to form lines of print which are automatically cast using a lead alloy. Lines of print created in this way can then be compiled into text columns. One of the Linotype's major innovations was the fact that the matrices could be reused, the machine automatically sorting and assigning these to their stock positions using a mechanical coding system.

Linux

Open source operating system based on UNIX System V and BSD UNIX.

Lithography

Invented by Alois Senefelder in 1789, lithography (Greek "writing on stone") is a method for producing printing forms for stone printing. Using special ink or chalk, the printing copy is transferred directly onto a smooth-ground block of carbonate of lime (calcium carbonate - CaCO_3). The stone block is moistened before being inked up with oil-based printing ink. The printing areas then take up the oil-based ink, while the unchanged limestone repels it. The word lithographs ("lithos" for short) is also used colloquially for copy for offset printing (screened images, line engravings).

Lithographic printing

The term lithographic printing covers all printing processes where the printing areas of the printing plate lie on the same or virtually the same plane as the non-printing parts. This technology uses the fact that it is possible to create both oleophilic (oil-friendly) and hydrophilic (water-friendly) areas on the printing surface. When the plate is inked, only the oleophilic areas retain the ink. These are used to produce the print image. The first lithographic process was stone printing, invented by Alois Senefelder in 1796. Offset printing, so prevalent today, is based on this technology.

Logging

the recording of computer activity used for statistical purposes as well as backup and recovery. Log files are created for such purposes as storing incoming text dialog, error and status messages and transaction detail.

Log on

Signing on to a computer system. (Also Login or log in.)

The act of connecting to or accessing a remote computer system, network, server, or Web site. To login, you must provide a username and a password. An exception to this rule is a test visit in a Mailbox, where "guest" is sufficient or a visit to an anonymous FTP-Server.

The "Lumbeck system"

Polyvinyl acetate adhesive binding system used for brochures, books etc. The ends of a pile of sheets are fanned out. After clamping, the leaves are fanned out in one direction and coated with glue. This process is repeated on the other side. The process is named after the bookbinder Emil Lumbeck. (1886-1979).

Lumen

As the unit of luminous flux, 1 lumen (lm - Latin for "light") is the amount of light emitted by a light source with a luminous intensity of 1 candela (cd) into the spheridian unit of 1 steradian (sr - quotient of the superficial content of a segment of a spherical surface and the square of the associated radius of the sphere). Today, the lumen unit is mainly used in a form defined by the American National Standards Institute (the "ANSI lumen"). To this end, the average of the brightness values measured at nine points on an illuminated surface is taken and the luminous flux determined on the basis of a table published by the Institute.

LWC, MWC etc.

Standard international acronyms for weights and grades of papers used in rotary offset and letterpress printing. Coated stock can be termed HWC (heavy-weight coated), MWC (medium-weight coated), LWC (lightweight coated), or ULWC (ultra-lightweight coated). All are woodpulp-based, but available in an array of varieties, including calendered. MFC (machine-finished coated) paper is made primarily from groundwood pulp, has a grammage of 48 to 80 gsm, and may be high volume. LWC paper is particularly lightweight stock for use on rotary offset machines. SC (super-calendered) paper is an uncoated woodpulp stock based mainly on groundwood and recycled content. It features an additional finish applied by a separate supercalender.

M

Machine-finished paper

Machine-finished stock is given its characteristic surface gloss while still inside the paper machine, a process known as calendering. Additional smoothness can be obtained with supercalendering.

Machine proof

The machine proof - also known as a press proof - is used to check the printed result as the outcome of the entire printing process. It is the most complex control tool in the printing process. Its greatest advantage is that it provides a realistic impression of the printed result, independently of the preceding preprint process. Machine proofs come closest to the subsequent printed result when produced on the original paper that is later to be used for the print run.

Magazine paper

Also called illustration printing paper, magazine paper is uncoated, generally woodpulp-based, calendered stock containing fillers. It is specially suited to the reproduction of graphics and is primarily used to produce magazines using the photogravure process. A stock featuring excellent dimensional stability.

Magnapak

Magnapak is the term given by Heidelberger Druckmaschinen AG to a device used for inserting supplements into newspapers and magazines. The unit can process up to 30,000 copies an hour and can be scaled up to 80 magazine deliveries, i.e. it can insert up to 80 different products. The Magnapak can insert and sort either in sequence or simultaneously, and has been designed without shafts for simple operation and minimal maintenance.

Magnetic printing inks

Magnetic printing inks react to magnetic fields. With the help of suitable sensors, they can be used, for example, for machine-based identification of labels.

Majuscule

Majuscule is the historical terms for capital or upper-case letters.

Manutius, Aldus

Aldus Manutius (born Aldo Manutio in 1449 in Bassiano, died in 1515 in Venice), is one of the most prominent letterpress printers of the Italian Renaissance. In 1493, Manutius founded a printshop in Venice and subsequently published a series of compact, cheap but nevertheless highly scientific works from classical Greek, Latin and Italian writers. Around 1,000 copies of these 'Aldines', as they were known, were produced, and thanks to their small format – compared to the common, unwieldy incunabula of the day – were conveniently portable. In addition to the classic roman type, Manutius was the first to use the italic type developed by diecutter Francesco Griffo. All in all, Manutius published more than 1200 books. The trademark of these publications was also to become famous – an anchor with a dolphin curled around it. According to popular opinion, this is a symbol of the Manutius' motto "Festina lente" (Latin for 'more haste less speed').

Map paper

Map paper is paper with particularly good dimensional stability.

Margins

In the design of a printed page, the free strips between the type area and the page edges are known as margins. According to the position on the page, it is possible to distinguish between the head, foot and side margins and the central gutter. When measuring the margin widths, ratios are often used in typography. The gutter has a value of 2 and the other margin widths in the sequence head – side – foot – are then assigned values in relation to this. For the margin widths, only their ratio to each other is specified – e.g. "2 : 3 : 3 : 4".

McLuhan, Marshall

The Canadian literature scholar and communications theorist Herbert Marshall McLuhan (born July 21, 1911 in Edmonton / Canada, died December 12, 1980 in Toronto) specialized in how society is changed by the mass media. McLuhan achieved fame with his book, entitled "Understanding Media: The Extensions of Man", which was published in 1964. The German translation appeared in 1968. The first chapter of his book starts with the much-quoted line, "The medium is the message". In his book, McLuhan expounded the theory that modern electronic media would ultimately turn human awareness and knowledge into an entity shared by all of society, just as electrotechnology has turned the human nervous system into a global network. In 1962, McLuhan brought out his book entitled "The Gutenberg Galaxy: The Making of Typographic Man". In this book, he discussed the sociological and social changes triggered by the invention of moveable type by Johannes Gutenberg. Letterpress, says McLuhan, was the first invention to put visual communication before the spoken word, strengthened the then growing trend towards homogeneity and reproducibility and ultimately made the national states as we now know them possible. McLuhan taught at various universities throughout Canada and the USA, and received many academic and non-academic accolades over his career. He also coined the term "the global village", which refers to the way the entire global community can be brought together by means of electronic communication.

Media mix

Media mix is a term used to describe combinations of different media such as television, radio, Internet, newspapers and magazines which are used for marketing and promotional purposes. The right mix is the one which best reaches the target audience.

Megabyte

A unit of measurement equal to 1,024 kilobytes, or 1,048,576 bytes.

Mergenthaler

Ottmar Mergenthaler (* 11 May 1854 Hachtel, † 28 October 1899 Baltimore) is the inventor of the “Linotype” mechanical composition machine which supplied complete lines of text cast in lead for letterpress printing. Following an apprenticeship as a watchmaker, Mergenthaler emigrated to the USA in 1872 where, following many years of experimentation, he patented the Linotype as the first fully functional line composing machine, which was soon to replace slow and laborious hand composition.

Microprint

Microprint is extremely small print that only becomes legible when magnified greatly. It is used as a security element on banknotes and other documents at risk of forgery. The image resolution of color copiers, for example, is insufficient to reproduce the microprint.

Mini-book

Mini-books today are generally defined as having covers that are no higher and wider than 7.6 cm (3”) (other definitions relate to the page size or the type area). One of the earliest known printed mini-books from the post-incunabula era is the book of hours produced by Lucantonio Giunta on May 4, 1506 in Venice. The book was entitled “Officium Beatae Mariae Virginis secundum consuetudine romane curie”. It measures just 7.2 x 5.1 cm, is printed on parchment and contains illuminated, full-page woodcuts.

Minuscule

Minuscule is the historical term for small or lower-case letters.

Multimedia

Multimedia is an umbrella term used to describe media products and services which are saved, transmitted and depicted electronically. Important features of multimedia include the shared use of different static (text and image) and dynamic (audio, animation and video) types of media and in the possibility it allows the recipient to use the content interactively. In order to use multimedia, it must be possible to transmit data between the content location and the user in both directions. The video component of multimedia offerings involves large quantities of data which require correspondingly high rates of transmission. Consequently, data storage, transmission and compression technologies play a key role in the development and introduction of multimedia systems. Typical multimedia applications in the private sector include encyclopedia, learning programs and games, primarily in conjunction with CD-ROMs. Popular applications in the commercial sector include teleconference technology and cooperation in technical design work using online links.

N

Network

A collection of two or more computers and associated devices that are linked together with communications equipment. Once connected, each part of the network can share the software, hardware, and information contained in the other parts.

Newsprint

Newsprint has a high woodpulp content and is sometimes calendered for web-fed printing (letterpress or offset). Its grammage generally ranges from 40 to 57 gsm. The primary raw materials are wastepaper and wood fibers as well as chemical pulp. Newsprint is extremely opaque, but yellows

relatively quickly.

NexPress 2100

The Nexpress 2100 is a digital color printing press from Heidelberg Druckmaschinen AG. It can handle a wide range of printing materials with weights of 80 to 300 gsm. As with offset printing, the ink is applied to the paper via a blanket cylinder. A multiple feeder allows up to three different paper grades to be used. At full speed, the press can print 4200 A4 pages per hour. It uses DryInk technology, and therefore does not require any drying process. This means that the printed sheets can be finished immediately. The largest printable sheet size is 350 x 470 mm and the smallest is 210 x 279 mm.

Non-impact printer

The category of non-impact printers includes all printers which do not exert pressure on the material to be printed. Typical non-impact printers are laser, inkjet and thermal printers.

O

Oblique

Oblique is the term used for types that slope forwards. This usually serves as a substitute for a non-existent italic version of the typeface in question.

OEB

The abbreviation OEB stands for Open E-Book and represents an initiative group that aims to promote electronic books (e-books) by defining a standard for the data format for the texts visualized by them for reading. Under the name Open E-Book Publication Structure, the group of manufacturers known as the Open E-Book Authoring Group published the first standard of this kind in September 1999. It is designed to enable publishers to put their publications into a form in which they can be presented for reading by all the different types of e-book. The technical basis for the specification is the HTML and XML formatting languages.

Offset gravure conversion

Offset gravure conversion is a process using screened offset films as originals for the production of gravure printing forms. The particular advantage of this method is that proofs can be made using offset films rather than employing a high-outlay preparation process on a gravure printing press. The fact that the tonal value reproduction of the offset originals corresponds with that of the gravure product makes this possible.

Offset paper

This is a broad term for stock suited to offset printing, covering both uncoated woodfree and woodpulp papers as well as uncoated recycled papers that have been calendered or machine-finished.

Offset printing

The commonly used offset printing method, a lithographic printing process, is based on the different wetting characteristics of the printing and non-printing areas of the printing form. When printing, the lipophile ('oil-friendly') image areas absorb the oil-like printing ink and the blank hydrophile areas repel it. Offset printing works in an indirect way: The printing form transfers the printing image onto a blanket cylinder, which in turn prints onto the paper or other material. There is a distinction between

sheetfed offset and web (or rotary) offset printing. The former prints onto paper sheets and the latter onto a paper web.

Ogilvy, David

US entrepreneur David Mackenzie Ogilvy (born June 23, 1911 in West Horsley, England, died July 27, 1999 at Touffou Castle, France) was known in his later years as the “Great Old Man” of advertising. He was sometimes also referred to as a “genius of the advertising industry”. His book, “Confessions of an Advertising Man” in 1963 is one of the industry’s classics and was crowned the “Advertiser’s Bible”. Before moving into advertising in 1936, Ogilvy left Oxford University without a degree and worked as a social worker, assistant to a head chef and as a representative. In 1938, Ogilvy emigrated to the USA and founded the Hewitt, Ogilvy, Benson & Mather (HOB&M) advertising agency in 1948 in New York. Today, the company - known now as Ogilvy & Mather following a takeover by a new owner – is represented in over 70 countries.

One-to-one marketing

One-to-one marketing is a term describing activities in the areas of market research, advertising and sales which are directed at individual customers and take account of their individual wishes and preferences. Internet technology, which allows direct interaction with consumers, has made one-to-one marketing possible in markets with large numbers of customers who could only be contacted on a general rather than personal basis in the past. Online dealers can use software which automatically evaluates the behavior of visitors to their web site, and then respond with targeted individual offers.

Onionskin paper

Onionskin is a glazed, woodfree, show-through paper with a grammage of 30 to 39 gsm. White or coloured stocks with grammages of 25.30 or 40 gsm are erroneously termed onionskin.

Opacity

The degree of a paper's resistance to light. Paper printed on both sides must have optimum opacity, a property enhanced by a higher wood content as well as fillers such as kaolin, talcum and titanium dioxide.

Open source software

Open source software is essentially free of charge and is therefore an alternative to conventional commercial models where software manufacturers develop computer programs and allow them to be used in return for a fee. Open source software can be used and disseminated at will. What is more, the source code is open and can be changed as required. The only condition is that the user must make such changes known and pass on this information to others. Open source software thus becomes the shared intellectual property of all developers and users and, thanks to the joint development work, achieves a higher level of quality than software produced using conventional means. The best known example of open source software is the Linux operating system.

Ozalid copy

For a long time, copies produced on dyeline paper, blueprints or ozalid copies (named after the brand name of the paper) were used as proofs for checking the completeness, position and content of printing copy. The basis for this was the diazotype process patented in 1917 by the Benedictine father Gustav Kögel (* 1882 in Munich, † 1945 in Karlsruhe).

P

Pad printing

Pad printing is an indirect gravure process where a flexible (often semi-spherical) pad of silicon rubber is used as a medium for transferring the ink from the plate to the surface to be printed. This method can be used to print a great diversity of irregularly shaped objects.

Page View

a.k.a. page requests -or- page impression. The number of times a Web page is requested from a server. This is the preferred counting method for traffic measurement (instead of hits) because it only counts documents, not individual files. A single HTML page is counted as one page impression.

Pagina

Page numbering.

Pantone colors

Pantone colors are based on a system of standard colors used worldwide which Pantone, Inc., Carlstadt/New Jersey, originally a printshop, introduced for the graphic arts industry in 1963. The system is based on 512 reference color tones which are mixed from eight basic colors, black and white and are printed on coated and uncoated paper. Today, there are over 1,100 Pantone colors available on a broad range of papers. Pantone has also published color systems for textiles, plastics, paints and film/video.

Paperboard

Paperboard has a grammage higher than paper, but lower than cardboard. A distinction is made between single-layer and multilayer board. In the U.S., often called cover paper.

Papyrus

Papyrus is a writing material in roll, sheet or book form, which is made from a giant sedge, *Cyperus papyrus*. The pith is sliced into strips that are laid out in a row with the edges slightly overlapping. Another row is laid crosswise on top of the first. Next, the two layers are moistened with water and pounded into a sheet of writing material, smoothed and then dried. Papyrus was used as a writing material by the Egyptians since the beginning of the third century B.C. Papyrus was produced in Egypt in large quantities and was transported throughout the ancient world to the Greeks and Romans since the 2nd century A.D. Papyrus was largely replaced by parchment and from the 10th century onwards paper began to take over. The papal offices however continued to use Papyrus till the 11th Century. Papyrus is very durable.

PARC

Established in 1970, the Palo Alto Research Center –or PARC for short –run by the Xerox Corporation in California has had a decisive influence on the development of computer technology right up to today. Among other things, this research institute developed the graphic user interface used on Macintosh and Windows computers, the first commercially available computer mouse, the Ethernet network technology, the client server architecture, object-oriented programming and the laser printer.

PCL

PCL is an abbreviation of Printer Command Language, and is the language used to control computer printers. Introduced in the 1980s by computer manufacturers Hewlett-Packard and under constant development ever since, PCL allows application programs to control the functions of different printers in a standardized, efficient manner. PCL commands are embedded in the data flow of the print job. Compared to the Postscript page description language developed by Adobe, PCL is usually faster and requires less memory. However, the functionality of this language is less general in scope, which means that it is not suitable for all output devices.

PDF

PDF is the abbreviation for what is known as the Portable Document Format. Developed by software manufacturer Adobe Systems Inc. in the USA, this data format is used for exchanging and processing electronically stored, formatted documents with text and images, independently of the hardware and software used. One of the special features is that texts and graphics are stored in vector form, meaning that the resolution of their representation is dependently solely on the output device (monitor, printer). PDF files can generally be recognized by the ".pdf" file name suffix. They can be created using the Adobe Acrobat program. The Acrobat Reader is available free for displaying and printing PDF files.

Perfecting machine

A perfecting machine generally takes the form of a sheetfed press which prints the sheets on both sides in a single run (recto and verso).

Personalize or personalization

To customize your computer screen or a Web site so that it reflects something about your individual tastes.

Perfect Binder

Perfect Binder is the name given to a series of automatic book-binding machines from C.P. Bourg S.A., from Ottignies, Belgium. They are also intended to augment digital printing systems, and can be used in conjunction with e.g. the Digimaster 9110 from Heidelberg AG. The maximum throughput for these book-binding machines ranges from 200 to 2000 books per hour. The minimum and maximum dimensions for book covers and book blocks vary depending on the machine type. The maximum book thickness varies between 45 and 60 mm.

Personalized printing

Personalized printing refers to processes where to a certain degree the individual copies in a print run have distinctive imprints. A minimum requirement for personalized printing is a digital printing process for the individual imprints, which allows the printing data to vary from copy to copy. One common application of this process is the inclusion of the name and/or address of the recipient on the printed product.

Photocomposition

The first fundamentally new typesetting technology since the invention of letterpress printing by Johannes Gutenberg, photocomposition does not use solid forms for depicting the characters. Instead, the set text is created on photographic film. Older machines did this by imaging the characters visually with a flashlight from a negative original (which was generally rotating) or from a very bright screen (cathode ray tube) onto the film. The move to computer setting is marked by the lasersetter which, like the laser printer, uses a laser beam to write the text – but also images and other design elements – directly onto the film or a printing plate.

Photoshop

Photoshop, from Adobe Systems Inc., is the leading software package for digital image manipulation in DTP applications. It is available for Macintosh computers and Windows PCs.

Pica

A type size used in the Anglo-Saxon world and corresponds to 12 points.

Picking resistance

Also known as sizing strength. Picking resistance refers to the amount of force necessary to separate particles from the surface of the paper as it moves vertically. Picking resistance is a key criterion for offset-printing applications.

Pixel

A pixel – an abbreviation for picture element – is the computer term for an image dot, i.e. the smallest

unit of a digitally displayed image. The memory required by an image consisting of pixels is determined by the size of the image, its resolution, i.e. the number of pixels per unit of area, and the number of colors to be displayed.

Pixel format

The format for storing image data where, for a given resolution, every pixel in the image is represented by the appropriate data. Image processing programs such as Photoshop use the pixel format, the most common being TIFF (Tagged Image File Format). The pixel format is most suitable for real images, but, depending on the quality of the image, this requires a very large amount of memory.

Polaroid

As a method of producing finished photographs inside the camera itself, the Polaroid process was the first major development in photography since the genre was invented. It works on the basis of developer substances in paste form, which are distributed over the imaged film after a photograph has been taken and act on the film by diffusion. The Polaroid method was invented by Edwin Herbert Land (b. May 7, 1909, Bridgeport, Connecticut; d. March 1, 1991, Cambridge, Massachusetts). He founded the Polaroid Corporation in 1937, and launched the first Polaroid Land camera, the model 95, in 1947. This camera produced a black-and-white paper image measuring 83 x 108 mm around one minute after the photograph had been taken. The millionth instant camera was sold in 1956. The first Polaroid color camera was launched in 1963. Digital cameras have now taken the place of the Polaroid camera, whose manufacturer declared bankruptcy at the end of 2001.

Pop-up advertising

Pop-up advertisements are a method of Internet advertising. They are windows which appear directly on the computer screen. The advertisement is loaded into a new browser window which opens automatically when a web page is called up. It may hide part of the content of the web page. The Internet user can close the window by clicking the mouse. Pop-up windows can be created in various sizes and can use different formats.

Pop-up Window

A new window that suddenly appears on your computer screen is referred to as a "pop-up window." You'll see one, for example, when you open a new program, when you switch from program to program and when you use a drop-down menu. Likewise, a Web browser may launch a second browser that pops-up in the form of a mini-window on your computer screen and is used mainly for advertising.

Poster paper

Poster paper is uncoated and features special properties that allow it to soften before being posted, facilitate gluing, and add weather resistance. This woodfree, water-resistant, heavily sized stock can remain folded in water for a limited amount of time without loss of print integrity.

Postpress

Umbrella term for all processing operations performed on the printed product after the actual printing process, e.g. folding, binding, trimming, packaging.

Postprint

The word "postprint" is an alternative term for "finishing" and encompasses the operations that take place after the print run and result in the finished printed product.

PostScript

PostScript is a page description language developed by the software manufacturer Adobe Systems Inc. which has become a quasi-standard in the digital prepress stage. It describes documents largely independently of the device used, so that for instance the resolution of an image is not defined until the output device. The more recent PostScript 2 offers, among other things, improved colorimetric facilities, since the reference color space is integrated in accordance with the CIE standard. The latest version, PostScript 3, also improves the way in which colors and three-dimensional objects are

displayed and supports trapping of graphic objects.

Preprint

The word "preprint" is an alternative to "prepress" and covers all the working steps that take place before the actual print run and lead from the starting material to be printed - texts, images, etc. - to the ready printing copy.

Primary pulps

The raw materials for paper manufacture, removed from virgin forest products by mechanical means (woodpulp) or a chemical process (chemical pulp).

Primary colors

Primary colors are the basic colors of a color system, which are used to mix all other renderable color tones. The primary colors are cyan, magenta and yellow (black functions only as an auxiliary color for the technical aspects of printing) in the CMYK system, and red, green and blue in the RGB system.

Printability

Printability covers a range of paper properties affecting print results: gloss, smoothness, whiteness, opacity, etc.

Printing on demand

This term denotes a work process where instead of producing a large print run of a specific product, smaller partial print runs are printed on demand, sometimes only a few copies. Printing on demand has been made possible thanks to digital printing, which allows you to print directly from the prepress data, without having to produce printing forms or set up printing presses.

Program paper

A flabby, generally woodfree paper made from chemical pulp derived from the soft leaves of hardwood trees. Allows noiseless page-turning.

Progressive proofs

When using a proof to check quality, progressive proofs are used to assess the colors on the printing stock. In 4c printing, the four process colors cyan, magenta, yellow and black are printed both alone and in various combinations on a small area.

Proof

A proof is a single print of an original which serves as a definitive means of verifying the layout and color for subsequent printing. In analog proof procedures (Dry-Match, Press-Match etc.) the proof is created from ready imaged films; this largely corresponds to the subsequent printing result. In digital proofing, the page composed on the computer is output on a color printer. This proof is more cost-effective, as it does not require the use of film. However in this case the imaging procedure remains untested.

Pulp

Paper pulp consists of cellulose fibers extracted chemically from plant materials-mainly wood, though annuals as used as well.

PUR binding

The PUR method of binding books and brochures uses polyurethane adhesive. It is processed hot and hardens by cooling. The bond is then impervious to heat. PUR adhesive binding is a particularly high-quality method that is ideal for high-use products such as trade show catalogs and for difficult types of paper.

Q

QuarkXPress

The Quark XPress program is the unchallenged market leader in DTP software for the professional market. The software is available for Macintosh computers and Windows PCs.

Quickmaster DI 46-4

The Quickmaster DI 46-4 from Heidelberger Druckmaschinen AG is designed for printing four-color, short job runs in formats of up to 34 x 46 centimeters. The press uses the Direct Imaging principle, where the print form is created and/or the printing plate is imaged directly in the press. The maximum printing speed is 10,000 sheets per hour. The stock of plate material in the press can support up to 35 successive print jobs. Compact operation is ensured thanks to the Quickmaster's satellite construction with central impression cylinder and four inking units, which use conventional waterless offset inks. With a print resolution of 1270 dpi (dots per inch), the press supports up to 80 l/cm screens.

R

RAL colors

RAL colors are standard colors based on a series of color collections for industry which are published by the Deutsches Institut für Gütesicherung und Kennzeichnung, Sankt Augustin (originally "Reichsausschuss für Lieferbedingungen"). All in all, there are over 2,000 RAL colors. The RAL Design System, a color system which takes in the entire color space, contains 1688 color tones. All RAL colors in the RAL Design System and the RAL 840-HR classical color collection are also defined digitally and can be used with all popular graphic arts programs running under Windows and Macintosh and can be used with more than 20 output variants i.e. with different screens and printers.

Raw text

Raw text is a type of text design in which the lines are not made to be of uniform length by correspondingly enlarging the spaces between words. Nevertheless, the available space is put to maximum use by means of word splits. In contrast, deliberately varying line lengths as a creative technique is referred to as ragged setting.

Ream

A unit of measurement for sheets of paper. A ream used to be 480 sheets; in the U.S. the term now refers to 500 sheets or, in the case of a printer's ream, 516 sheets. (The German "new" ream refers to 1,000 sheets of paper.) The word can be traced back to the Arabic rizma ("bundle")—a memento of the path travelled by the art of papermaking to reach the Western world.

Recycled paper

Recycled paper is paper which has been produced from 100% used paper. Used paper fibers (also known as secondary fibers) can be used three to five times in this manner. If the recycled paper needs to be pure white, de-inking chemicals have to be used to remove the inks from the used paper, and the fibers also have to undergo a bleaching process. The de-inking process is not used in the production of environmentally-friendly papers, but unprinted white paper has to be used as a raw material in order to

achieve a whiteness grade of 40-50%. However, these gray papers have not so far been well accepted by the public.

Redigitization

When print originals in the form of film material are converted back into digital data using scanners and software, the process is termed redigitization. The data can be stored in common file formats and can then undergo further processing using appropriate applications. This method allows a printshop or prepress company to use the scanned films in a digital workflow. Redigitization is often carried out when processing advertisements where the customer has supplied films rather than data as print originals. Three redigitization techniques have become established: Copydot (exact digital copy of the screened original), Descreening and Mixed Mode (a combination of the other two methods). The nature and quality of the original determine which method is the most suitable.

Reel spool

The take-up roll around which the paper web is wound after reaching the end of its journey through the paper machine.

Relaunch

This is when an already existing website goes online with a new face, usually a new navigation structure, new design and increased content for the first time.

Rendering

Rendering is the term used for the realistic representation of three-dimensional models by a computer - on the monitor or in a print. In this context, the object is given the most realistic surface possible, illuminated by a fictitious light source and embedded in an equally three-dimensional environment with light, shadows, reflections, etc.

Resolution

In an optical context, the resolution is a measure of the ability of input and output devices, or of photographic films, to visualize two adjacent dots separately from one another. The resolution depends on the physical properties of the visualizing or recording device or material and is usually limited by the wavelength of the light used. The resolution is usually stated in dots per inch (dpi) or in lines per millimeter.

RFID

The abbreviation RFID (Radio Frequency Identification) refers to systems used to identify objects (industrial products, animals, etc.) that work with radio signals for data transmission in the production, transportation and storage sectors. Instead of barcodes and optical scanning devices, RFID systems use transponders as markers on the objects being monitored. These units receive radio signals from the relevant interrogation devices and transmit their information back. Some of the key advantages of this technology over barcode methods include the fact that larger volumes of data can be stored in the transponders, the link between the transponder and the interrogation device is reliable without a direct line of sight, the data is interrogated more quickly and the data can be generally be changed. The manufacturers of RFID systems are grouped together in the AIM Association (Automatic Identification Manufacturers).

RGB

RGB is the usual additive color model for the primary colors red, green and blue and is used for self-illuminating output devices such as monitors, but also for electronic recording equipment such as scanners and video cameras. There are a number of different variants of RGB. Hewlett-Packard and Microsoft proposed a new, more uniform standard in 1998 in the form of sRGB.

RIP

The abbreviation RIP stands for Raster Image Processor, which prepares data from the prepress stage for the production of the printing plates. Its most important function is to create screens for printing images and other graphic elements. As a rule, an RIP is a separate computer, but it can also come in

the form of software.

Rollover

A graphic or image that changes when the cursor is moved over it.

Roman face

Roman face is the term used for fonts whose letters have small end-strokes (serifs) at the ends. The basic form of Roman face stems directly from the antique Capitalis style of the Romans: the upper-case letters are borrowed from the Roman script, while the lower-case letters come from the Caroline minuscule. In addition to serifs, varying weights are another common feature of Roman faces. They are especially easy to read in running texts. Famous examples include Times (as the classical model), Bodoni and Garamond.

RTF

The abbreviation RTF stands for Rich Text Format. It is a data format for texts that contains not only the text itself, but also information on the font, font size and formatting. The Rich Text Format was specified by Microsoft as a software-independent format for formatted texts.

Rubel

Ira Washington Rubel is considered to be the inventor of the offset printing process. Rubel, the owner of a small print shop in the state of New Jersey, USA, accidentally discovered in 1903 that he could obtain better results with indirect printing using a blanket cylinder than with direct printing. He had covered the impression cylinder of a printing press with a rubber blanket and paper sheets were then fed incorrectly several times during a printing run. As a result, the impression from the printing forme ended up on the rubber blanket and from there on the back of the next sheet each time. Rubel discovered that these misprints were of a better quality than the regular prints, and consequently went on to develop the first offset printing press, which was also named by him.

Rub-off

What happens when pressure on stacked sheets causes the ink on one surface to rub off on the next. This "carbon-copy effect" can occur due to the pressure of the clamp in trimming machines.

Running directions

The running direction of paper is the direction it passes through the paper machine, generally the same as the grain direction (direction in which fibers lie). Paper is stiffer and has greater dimensional stability with the grain. The running direction is often indicated by an arrow on sheet packages.

S

Satellite principle

An offset printing press works according to the satellite principle, where several complete printing units, including plate cylinder, blanket, inking unit and damping unit, are arranged around a central impression cylinder. In this way, all the colors are printed in a single, wet-on-wet process.

Scanner

The scanner is a device for capturing image data which works by optically scanning the original. Light-sensitive sensors convert the information relating to the image brightness and colors into

electrical values. The two major types of scanner are the drum scanner and the flatbed scanner. In the case of the former the originals are attached to a transparent drum, and scanning takes place line by line by means of a rotating fine beam of light from the inside of the drum outwards. In the case of the flatbed scanner, the original is placed on a flat glass plate and is scanned from underneath by an array of light-sensitive CCD elements which move across the scanning field.

Screen angle

When screens are regular, the screen angle indicates the angle of the screen from the vertical. When only single colors are used, the screen is generally positioned diagonally (45 or 135 degrees). In multicolor printing, different screen angles should be used for the different colors in order to prevent overlay effects (moiré). DIN 16547 lays down angles of 0, 15, 75 and 45 degrees for the four colors yellow, magenta, cyan and black.

Screen

In image reproduction terminology, a screen is an area made up of small geometric forms of either regular or random arrangement (e.g. round, square or other shaped dots, lines). The screen is used to convert contone images into a black/white or full-color representation which is suitable for printing. This is done by varying either the size or the frequency of the elements to reflect the brightness of the image.

Screen proof

A screen proof is used for advance checking not only of the layout and color information, but also of the screen structures of a print. In this way, faults occurring in this respect, such as moiré and rosette effects, can be detected in good time. As the printing data contain no screen information before screening of the images in the RIP (Raster Image Processor), screening must be performed before printing a screen proof. In order to rule out errors, the proof printer is often controlled by the same RIP that supplies the filmsetter or platesetter with data.

Screen ruling

Screen ruling refers to the number of dots per unit length. Common specifications are l/cm (lines per cm) and lpi (lines per inch). '60 screen' means 60 l/cm and corresponds to approx. 150 lpi.

Secondary pulp

Secondary paper pulp consists of raw materials reclaimed from wastepaper. The term can imply chemical pulp, woodpulp or a mixture of the two.

See-through register

A see-through register is a print element on banknotes that is used to protect against counterfeiting. Parts of a symbol are printed on both sides of the note and only appear as a complete character (letter, number etc.) when the note is held up to the light.

Selective binding

The term "selective binding" describes the personalized production of bound print products from a selection of components. Selective binding can be used, for example, to produce different versions of catalogs where the content is geared to the needs of different customer groups. Selective binding can also be used, for example, when different advertising motifs are required for different issues of magazines.

Semi - fine

Semi-fine stock is paper with a mechanical woodpulp content of more than 5%. The term is usually reserved for uncoated papers; coated stock is more often designated "slightly mechanical".

Senefelder, Alois

Alois Senefelder (born 6 November 1771 in Prague, died 26 February 1834 in Munich), the inventor of lithography and stone printing. In 1796, he discovered that, by using a greasy substance to write on polished Solnhofen limestone which was then lightly etched with an acidic gum arabic solution, ink

only adheres to the areas which have been written on. In 1818, Senefelder published his “Vollständiges Lehrbuch der Steindruckerei“ (Complete Textbook of Stone Printing), in which he outlined how his discovery had come about.

Serif

A serif is a small stroke on the end of the strokes of letters. This design feature is typical of so-called Roman faces, which can be traced back to ancient Rome. Serifs cater to the perception mechanism of the human eye and thus make type faces easier to read.

Serigraphy

Silk screen printing.

Server

Servers are computers or software packages which provide certain services within a network as part of a client/server system. In the prepress sector, high-performance computers are used as data servers to store centrally large amounts of data relating to texts and images in high resolution. Communications servers, which offer data transfer services on the network, play an important role in this field.

Set form

This is a text layout in which the length of the lines varies according, for example, to the placement of an optional image or graphic element.

SGML

The Standard(ized) Generalized Mark-up Language is a standardized language (ISO 8879) which is used to depict structured texts. SGML is very versatile, but is also difficult to use due to its size. Of greater significance than SGML is XML, a slimmed-down version of SGML, which has been designed specifically for exchanging structured data on the Internet.

Sheetfed offset press

Offset printing is the most popular form of lithographic printing used today and consists of the two variations – sheetfed offset and web offset. Sheetfed offset presses print individual, cut sheets. These presses are subdivided into the following format classes, indicating the maximum format of sheet that can be used:

Format class Format

0 500 mm x 700 mm

I 560 mm x 830 mm

II 610 mm x 860 mm

III 650 mm x 965 mm

III b 720 mm x 1020 mm

IV 780 mm x 1120 mm

V 890 mm x 1260 mm

VI 1000 mm x 1400 mm

VII 1100 mm x 1600 mm

X 1400 mm x 2000 mm.

Sizing

The addition of size gives paper ink receptivity as well as other special characteristics. It is usually added to the furnish (the pulp mass) before processing; this is called pulp sizing. Special grades may also be subsequently surfaced-sized on the dry end of the paper machine.

Small caps

"Small caps" is the term used for upper-case letters with a size equal to the basic height of lower-case letters of the type size currently being used. Small caps are used to emphasize individual words in the text.

Smartcard

A credit card with a built-in microprocessor and memory used for identification or financial transactions. When inserted into a reader, it transfers data to and from a central computer. As a financial transaction card, it can be loaded with digital money.

Smart labels

Smart labels are labels that are used for identifying objects and contain transponders as components of radio-based wireless identification systems (RFID – Radio Frequency Identification). These devices can be designed so small and light that they can be accommodated easily in normal-sized stickers.

SMS

"Short Message Service": A standard regulating the transmission of text-messages up to 160 Lines to mobile phones.

Speedmaster CD 102 Duo

The Speedmaster CD 102 Duo from Heidelberg Druckmaschinen AG is a special press that handles offset and flexographic printing. Heidelberg has developed this press for high-quality inline production, for example applying opaque white onto metallic foils, or high-quality gold or silver inks that can be overprinted inline with offset inks. Flexographic units can be used upstream or downstream of the press's six offset printing units. Printers can combine conventional inks, water-based coatings, UV inks and UV coatings at will. A special chambered blade system known as the FlexoKit is available for gold and silver coatings that consist of large, ultra-thin aluminum pigments.

Spot Color

Spot Color is another term used to describe Special colors.

Stitcher

The stitcher is the name given to the device used for stitching printed products with wire staples. The term is more generally used for gatherer-stitchers, which perform all the processes involved with the manufacture of wire-stitched magazines and brochures, i.e. feeding, gathering, stitching and cutting. Heidelberg Druckmaschinen AG markets stitchers under the name Stitchmaster.

Stone printing

Stone printing is a form of lithographic printing which uses Solnhofen limestone from the Franconia region of Germany for the printing form. Invented by Alois Senefelder in 1796, the technology was particularly popular in the 19th Century and early 20th Century. Today, stone printing is generally only used for graphics work.

Subtractive color synthesis

Subtractive color synthesis creates a color impression by filtering out individual frequency ranges – i.e. colors – from the overall spectrum of visible light. In the case of color printing, this is done by overprinting the inks – generally the basic colors cyan, magenta and yellow, which can be used to create all color tones of the relevant color space.

T

TAGA

The Technical Association Of The Graphic Arts (TAGA) was founded in 1948 and is an international technical association for professionals in the graphic arts industry. Its some 900 members consist of scientists and engineers from publishing houses, printshops and other graphic arts businesses and suppliers in the industry.

Tag-It

Tag-It, from Texas Instruments, is an umbrella term for products used for identifying objects via the exchange of data over radio waves. The less than 0.5 mm-thick transponder units used for creating the stickers – known as smart labels – can store up to 2048 bits of information, depending on their type. The electrical energy required for these transponders comes from the scanner's radio waves.

Tamper-evident adhesive labels

"Tamper-evident" is the term used for adhesive labels that indicate any manipulation. A simple example of labels of this kind are the familiar price labels in grocery stores: they are made up of individual parts and cannot be removed in one piece. Special tamper-evident labels are used, for example, to protect the integrity of packagings.

Template

A guide for positioning pages or parts of pages consisting of a series of lines to indicate final trim size, bleed, head margin, back margin, type page size, or other elements.

Terahertz waves

Terahertz waves are the electromagnetic waves found in the spectrum between microwaves and infrared light, and have a frequency of approx. 300 GHz to 10 Terahertz (wavelengths of 1 mm to 30 μm). In addition to fast data communication and measuring applications in atmospheric research and astrophysics, new imaging methods are just one of the future areas of application for this segment of the spectrum. Scientists are working on a method of making the content of books visible without having to open them. This work is intended to make it possible to look at manuscripts that are already so damaged that opening them would destroy them completely. Researchers see other areas of application in the field of organic chemistry. Here, chemical reactions can be seen with compounds whose molecules vibrate with frequencies in the Terahertz range and therefore vibrate in resonance with corresponding electromagnetic waves. Special lasers have been developed recently to generate Terahertz waves.

TeX

TeX (pronounced "tech", as these are the Greek letters tau, epsilon and chi), is a typesetting program developed by the American computer scientist Donald E. Knuth in the late 1970s specifically for scientific texts. Unlike today's standard layouting software, such as Quark Xpress or Indesign, TeX is not based on a graphic user interface, but processes texts containing formatting instructions. The software is available for numerous computer types and uses its own fonts that are developed using the Metafont program. The output it supplies consists of device-independent files that have to be converted into Postscript, for example, for practical use. TeX is free of charge, and numerous plug-ins are now available, most of which are also free.

Textured inks

Textured inks create their color impression not (or not only) by means of dyes (pigments), but (also) by their physical structure. They contain special structures - such as thin, transparent flakes - that selectively reflect light of a certain wavelength with the aid of interference effects. Textured inks create shimmering color effects that can vary, depending on the viewing angle. This kind of color generation has its model in nature, where it is found in insects and some species of birds. It cannot be

reproduced by conventional means, which is why textured inks are often used for documents that need to be protected against forgery.

Thermochromic printing inks

Thermochromic printing inks change color in line with temperature changes. Depending on the type of ink in question, the color can either change or disappear completely. Some thermochromic inks even react to body heat when touched only briefly. This makes it possible to protect documents against forgery in a readily verifiable manner. Inks that change color at appropriate temperatures are used as temperature indicators for drinks and medicines, or also for monitoring heating and cooling units. Most of the color changes are reversible, although there are also thermochromic printing inks that change color permanently at a certain temperature. When applied to heat-sensitive products, they can indicate potential damage.

Thixotropy

The term "thixotropic" is used to describe viscous substances that become less viscous through mechanical action (stirring) and return to their original highly viscous form when left unagitated. Thixotropy is used in offset printing inks to enhance the quality of multi-color printing the lower viscosity inks in the inking unit solidify to a certain degree on the printing stock before drying, so that further printing processes turn out better.

Three-blade automatic cutting machine

A cutting machine equipped with three blades for products that have to be cut on three sides. There are two stages in the cutting process: first the top & bottom edges are trimmed; then the third blade trims the front edge.

TIFF

TIFF (Tagged Image File Format) is a commonly used file format for images. It was defined by a computer industry committee in 1986. It is a so-called screen format that contains information on the brightness and hue of every pixel. The TIFF format supports various color systems, from black-and-white to full-color RGB images. TIFF files can be compressed by a variety of methods.

Tissue paper

Tissue paper is the term used for various different grades with a grammage of up to 30 gsm.

Tracking system

In logistics, tracking systems are used to provide information on the current status or a query or order, a product in the manufacturing process or a delivery. Very often, these systems form part of an electronic trading system of the type collectively referred to by the term e-commerce. A tracking system, for example, allows a printshop to let its customers follow the progress of their print job via the Internet – from job acceptance to dispatch.

Trim

Trim is the name given to the edge of the page of a printed product that actually extends beyond the planned dimensions of the final product. This trim enables all the pages of a book or magazine to be cut to the same size in the final stage of processing.

Trimming

Trimming a book, brochure or magazine smooths the edges. Normally three unbound sides are trimmed. In the adhesive binding process, all four sides are trimmed. Trimming also separates the individual pages, so that the book or brochure can be flipped open.

Trust Centers

Security on the Internet requires each user to prove his identity for specific services or persons. This is why trust centers have been set up. A trust center is an organization which creates digital certificates and takes on the role of a neutral, trustworthy authority. The correct allocation of a digital certificate to an individual is guaranteed via a certification server, a type of registration authority, which is part of

the trust center.

Type 1 and TrueType

Software manufacturer Adobe uses the term Type 1 for a technology it has developed for displaying fonts on monitors and other output devices. The character shapes are defined mathematically (irrespective of size) as curves using cubic Bézier polynomials. A program known as a rasterizer generates the characters as screen images in the required size and suitable for the resolution of the output device. Hints are used to compensate for shortcomings in the display resulting from the limited resolution of the output device. The system also forms part of the Postscript system for defining the graphical form of documents and is therefore prevalent in the prepress industry. TrueType is a similar process that is used for Macintosh computers and the Windows operating system. This technology uses simpler quadratic B-splines for defining the characters. The hints are more detailed than for Type 1. The relevant manufacturers have recently been trying to converge Type 1 and TrueType. As a result, Version 3 of the Postscript system now also supports TrueType technology.

Typography

Typography is the study of the design and use of type. Its objective is to make text as legible and visually attractive as possible, by choosing appropriate typefaces, font sizes and attributes, but also by means of page layout. The rules of typography for type on paper are so well developed that further improvements scarcely seem likely. However, this is not yet the case for other media such as the screen.

Typographical system of units

The typographical system of units was originally developed by the Parisian typesetter Pierre Simon Fournier in 1737. The basic unit is the typographical point (abbreviated p), where $1 \text{ m} = 2660 \text{ p}$ or $1 \text{ p} = 0.3759 \text{ mm}$. Other units are nonpareil = 6 points, brevier = 8 points, cicero (c) = 12 points and canon = 48 points. These designations stem from type sizes which originally had their own names. The restructuring of the measuring system officially brought an end to this typographical system of units in Germany at the end of 1977. In practice, however, it continues to be used, the units being rounded to $5/100 \text{ mm}$. The system in place today is therefore as follows: $1 \text{ p} = 0.375 \text{ mm}$ and $1 \text{ c} = 4.5 \text{ mm}$. The point system is used in the Anglo-Saxon area and is derived from the inch. With this system $1 \text{ point (pt)} = 0.351 \text{ mm}$, $1 \text{ pica} = 12 \text{ pt}$, $1 \text{ inch} = 6 \text{ pica}$. Also worthy of note is the DTP point where $1 \text{ pt} = 0.352 \text{ mm}$.

Typesetting

Typesetting involves assembling characters into formatted text for the purpose of producing print originals. Before typesetting machines were invented, text was set by hand using individual letters of type. The first major changeover in the typesetting world came in 1882 when Ottmar Mergenthaler patented the Linotype line composing machine. In the second half of the 20th Century, typesetting moved increasingly towards photocomposition. Today, typesetting and page make-up are largely computerized in the form of "Desktop Publishing".

U

Uncoated paper

Paper without an additional protective coating; "untreated" paper. The application of a colorless coat of glossy or matte varnish as final printing step, either as an overprint varnish applied on-press or a water-based preparation applied by a separate coating machine. Varnishes enhance the appearance of print products and, especially on matte-finished stock, improve the rub resistance of printing inks.

Under Color Addition

Under Color Addition (UCA) is a variation of achromatic synthesis used for 4c color sets. Equal components of the three chromatic colors cyan, magenta and yellow in the CMYK color system replace part of the neutral color component generated here with black. Under Color Addition is a good means for improving print quality vis-à-vis pure achromatic synthesis.

Unicode

Unicode is a method for coding characters for electronic processing and uses 16-digit binary numbers (16-bit numbers). Unlike ASCII and other codes, which work with 8-bit numbers, Unicode is capable of representing 65,536 different characters. This covers all the characters in every commonly used script in the world. Unicode is already in widespread use today.

Universal Mobile Telecommunications System

Universal Mobile Telecommunications System - to be introduced by 2003/4 to replace existing GSM/GPRS mobile telephone networks; the maximum data transmission speed is 2 megabits per second.

Upstream

All information and data sent from PC to Internet.

UV coating

UV coatings (UV stands for ultra-violet) are coating systems based on unsaturated polyesters or polyacrylates, or a combination of the two. For both, ultra-violet light triggers the drying process. This high-energy light breaks chemical bonds in the coating material's molecules. These then link up to form long, highly-branched chains, causing the material to solidify. The drying process takes only seconds, which means that UV coatings can be worked quickly. These coatings contain no volatile substances either, making the layer thickness of the liquid coating similar to that when it is dry. They can also be applied inline, i.e. in the press, in very high layer thicknesses (up to 8 µm). UV coatings achieve excellent gloss and can be barely distinguished from laminated products (film-lamination). UV coatings, however, are not entirely odor-free.

UV inks

UV inks are printing inks that are cured with ultraviolet (UV) light. For this purpose, these inks do not contain any volatile substances. Rather, in addition to color pigments, they contain individual molecules and short molecular chains that can link to form polymers and so-called photo-initiators. The latter decompose when exposed to UV light and form highly reactive fragments. These radicals trigger a polymerization process in which stable, three-dimensional network structures are formed. UV inks are primarily used to print non-absorbent materials, such as metal (sheet metal) and plastic, but also high-quality paper boards and labels.

V

Varnish

Varnish or print varnish is a clear coating that can be processed like an ink in (offset) presses. It has a similar composition to ink, but lacks any color pigment.

Virtual Community

a.k.a. online community

Primarily, these are areas on the Internet that cater to people's common interests. Commercial web-sites aim to build an online community with the aim of better customer contact. Online communities provide a framework in which to exchange ideas and information. Commercial web-sites try to create online communities of users and subscribers to attract more customers, build loyalty with their audience, and grow a database of contacts for marketing. Virtual Communities facilitate the exchange of information between consumers as well as advice and price-transparency.

W

WAN

WAN is a computer network that spans distant areas in contrast to the LANs.

WAP

Wireless Application Protocol: A standard allowing access to world wide web with mobile devices like mobile telephone.

Waste

Waste consists first and foremost of pages that are incorrectly printed. But it also applies to all waste paper generated in printshops. For example, damaged paper, trial runs when setting up presses, packaging materials and innumerable print products and book returns.

Water-based coating

As their name suggests, water-based coatings – also known as dispersion coatings – are based on water. They dry relatively quickly through the evaporation of the water, are odor-free and do not yellow. Water-based coatings are mainly applied using coating units. In some cases, they are also applied using the press's inking unit. The layer thickness of the coating can be up to 3 µm. Water-based coatings are not as glossy as UV coatings.

Watermark

Watermarks designs on sheets of paper created by varying paper thickness have been around since the dawn of papermaking. A real watermark occurs when the dandy roll displaces (light watermark) or concentrates (shaded watermark) the pulp mass in the wire section of the paper machine. Facsimile, or impressed, watermarks are made in the paper web after it has left the wire section. Imitation watermarks are added off machine by means of a transparent varnish or embossing process.

WebDAV

WebDAV (Web-based Distributed Authoring and Versioning) is the abbreviated name for draft standard RFC 2518, “HTTP Extensions for Distributed Authoring”, produced by the IETF (Internet Engineering Task Force). WebDAV extends the HTTP (Hypertext Transfer Protocol) Internet protocol in such a way that the content of documents can be accessed directly via the Internet to allow a team to work on the content and structure of a document. For example, the WebDAV technique allows partners in the printing and media industry to access a PDF document simultaneously and apply correction instructions to it.

Web master / developer

The title for a person who architecturally builds or structures a Web site from a technical standpoint.

Website

The term website describes a complete set of screen pages which a person or organization makes available on the Internet – possibly also with files which can be downloaded and with audio and video offerings.

Wet on dry printing

Multi colored print process, in which the first Print color is dried before the next colour is printed e.g. color printing on a single color press.

Wet-on-wet printing

Printing in color printing-press with two or more colors. Further colors are printed over before the previous colours have dried.

Whiteness

Whiteness describes the intensity of white in a paper stock.

Woodcut

The woodcut is the oldest method of producing printing forms. The base material is a block of hard wood. Various cutting tools are used to cut out those parts of a pre-sketched image which are to appear clear (i.e. uninked) in the print. The parts which remain produce the image on the print. The earliest known woodcuts for reproduction on paper date from 6th Century AD China. The Buxheim Christopherus of 1423 is the oldest dated woodcut in Europe. It is believed that playing cards were printed using woodcuts in 14th Century Europe. Prior to Gutenberg’s invention of letterpress printing, “block books” were used with one woodcut for each page. Woodcuts were later used to illustrate hot metal composition texts. Most of the images were colored in after printing, although colored woodcuts were used from the late 15th Century onwards. This method involved printing different colors one after the other using several printing plates. Woodcut reached its artistic peak during the Renaissance with artists like Albrecht Dürer.

Workflow

Workflow is a computer-aided process for organizing work sequences, which consists in systematically moving documents from one stage of the operation to the next. This can only take place if documents are transported within a network or if they are kept in a central location and the individual operations are given access to them at the relevant point in time. Workflow software is able to monitor the work and can, for example, issue an alarm if a deadline is not met.

World Wide Web

The World Wide Web (WWW) is an Internet service which is used for transmitting and displaying texts and images, but also audio and video sequences, using what are known as browsers featuring graphics-based operation. An important feature of the WWW is its use of hypertext. This can be used to connect a document by means of links to any other object (text, image, etc.) and any other document throughout the Internet. The World Wide Web thus forms a huge network of several million interconnected documents. It today also forms the basis for the rapidly expanding commercial use of the Internet

World Wide Web Consortium

A joint initiative of companies, education and research institutions; their common goal is to ensure the interoperability of the web and to promote its evolution.

Writing papers

Writing papers come in white or in color and may be wood based or woodfree. They may also have a wastepaper content and include a surface-sizing treatment.

Wysiwyg

"What you see is what you get". This is a computer programme functionality that is dispensable for working with desktop-publishing systems.

X

Xerography

Xerography, invented in 1937 by the American patent lawyer Chester F. Carlson, is a printing method originally developed for copiers but is now also used with laser printers and digital printing systems. The technology is based on a drum coated with a photo semiconductor which is charged up and then partially discharged by a motif projected onto it. Dark areas retain their charge and toner applied to these areas remains in place. The image created in this way is then transferred to paper and fixed with heat.

XML

XML (Extensible Markup Language) is a symbol language which is used to describe the structure of documents. Externally, XML is similar to HTML (Hypertext Markup Language) used throughout the Internet. The most important difference lies in the fact that the symbols ("tags") used in XML can be selected with a great degree of freedom, while they are fixed in HTML. This allows special forms of XML to be generated for virtually any type of application. XML is essentially a slimmed-down form of the SGML (Standard Generalized Markup Language) document description language defined in ISO 8879 and was created for transmitting richly structured documents via the World Wide Web. The International World Wide Web Consortium is responsible for standardization of XML.

Y

Currently no definition available.

Z

Currently no definition available.

Heidelberg USA

Heidelberg USA, Inc.
1000 Gutenberg Drive NW
Kennesaw, GA 30144-7028
Phone: 888.472.9655
www.heidelberg.com

Trademarks

Heidelberg, Heidelberg Gothic and Heidelberg Antiqua are registered trademarks of the Heidelberger Druckmaschinen Aktiengesellschaft. Adobe and Postscript are trademarks of Adobe Systems Incorporated and registered in certain countries.

Subject to construction modifications and other changes.

