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SNIPPETS
FOR THE PAPER INDUSTRY

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DESIGNS ON PAPER

The earliest evidence of the printed script have been those unearthed in the ancient caves and tombs of Egypt, called hieroglyphs. The earliest hieroglyphs were painted on bone, ivory, pottery and clay, till replaced by a new innovation - 'Papyrus'. 'Papyrus', the forerunner of 'Paper' was found to be an ideal media for this pictorial form of communication.

Why did the Egyptians find designing on papyrus a better option / or why is Paper an ideal printing medium ?

Printing inks are transparent in nature and it is the Paper which acts as a light source, and supplies light to the ink. Hence designs printed on paper look brighter and better than on an opaque object like pottery or wood. Brighter the paper, brighter the prints.

'Printability' of paper and board is not restricted to 'text' matter, but is more relevant to designs with 100% coverage areas.

The ease of visual communication through printed pictures in magazines, newspapers, and books gave printed material a wider mass appeal. Today 'Printability' is a major aspect which differentiates between the various brands of 'Paper'.

The printed matter should be 'true', both in 'shade' and 'sharpness' to the original. In this respect printers will continue to challenge the papermaker. Complex print jobs would demand optimized paper properties, which in turn will give rise to new grade innovations; thereby helping to sustain the paper industry.

PrintCity Alliance, a German based organization, attempts to bring together the expertise of different stake holders of the graphic industry : paper makers; ink producers; press manufacturers; packaging converters to form a strategic alliance across the entire printing, packaging & publishing value chain, promoting the **value of print & packaging**.

One of their initiatives was to form a project team called **VAPoN** (*Value added printing of newspapers*) with the specific purpose of developing better paper, better run-of-press (ROP) colour for premium advertising and better readability of newspapers. Industry research indicates that future newspaper opportunities will come from continuous product enhancements- more than half of which are related to Value Added Printing.

Prints on newspaper : Driven by both the competitive advertising market versus the internet and other media, plus increasing interest in higher quality editorial colour to differentiate

versus other newspapers, value added printing of newspapers is highly topical.

According to WAN's "Innovations in Newspapers" the best defence that newspapers have is to bring their own print quality closer to the standards of commercial printers.

While 4-colour 'coldset' on newsprint is now almost standard, it can no longer satisfy all of the evolving production demands. 'Heatset' when used for the colour pages of a German weekly led to the following comment from their management, "they visibly stand out from the competition and this helps sales. Scarcely a single customer opts to move its advertisement back to poorer paper and a single colour".

DIGITAL PRINTING

The use of digital printing applications into traditional print markets is rapidly expanding. Digital is a direct to output device process, thus it does not employ a "pre-press" operation as associated with traditional commercial printing technologies, i.e., screen or lithographic printing. The image is created on the computer and transmitted directly to the output device. Digital printing depends upon inkjet printers as the output devices. These have been developed with a specific ink and ink delivery system in place which is unique to each digital press. Equipment options for digital printing are shaped by substrates and the inks that are used. Liquid ink-jet, wet / dry toner systems, solid ink-jet, thermal-transfer and photographic devices are the primary technologies used today. The relationship between paper and ink drying systems determines the type of papers that can be printed, printing quality and total operating costs.

For the first time interactions between paper, pigment and vehicle are being studied scientifically and instead of reformulating the ink to suit the substrate - paper, the paper is being chemically modified to receive the ink.

Fine art digital inkjet printing is printing from a computer image file directly to an inkjet printer as a final output. It evolved from digital proofing technology from Kodak, 3M and other major manufacturers, with artists and other printers trying to adapt these dedicated prepress proofing machines to fine-art printing.

Experimental artists often add texture or other media to the surface of a final print, or use it as part of a mixed-media work. The process is called "digigraph" and "giclée". Thousands of print shops and digital printmakers now offer services to painters, photographers, and digital artists around the world.

INDUSTRY NEWS

A recent report by **'Standard & Poor's Rating Services'** indicates that Asia, particularly **India & China** will account for more than half of global paper production by 2018.

Digital **laser exposure** on traditional photographic paper is also now possible. Digital images are exposed onto true, light sensitive photographic paper with lasers and processed in photographic developers and fixers. These prints are true photographs and have continuous tone in the image detail. In large format prints, the greatest advantage is that, since no lens is used, there is no vignetting or detail distortion at the corners of the image.

WORKING TOGETHER

The future of digital printings is very promising. Recognising this fact, two global players have joined forces. **Heidelberg**, the major provider and partner for the global printing industry and **Fujifilm** the leading manufacturer of computer-to-plate (CTP) are forming a broad alliance. This alliance has a special focus on bringing next generation products to the attractive digital printing market and gives both companies access to advanced technologies, they possess individually in the prepress area.

GETTING IT RIGHT WITH THE COLOURS

RGB (Red-Green-Blue) is the color scheme that is associated with electronic displays, such as CRT, LCD monitors, digital cameras and scanners. It is an additive type of color mode, that combines the primary colors, *red, green and blue*, in various degrees to create a variety of different colors. Software such as photo editing programs use the RGB color mode because it offers the widest range of colors.

However, printers print color onto paper using the **CMYK** (Cyan-Magenta-Yellow-Black) color mode only. This is a four color mode that utilizes the colors *cyan, magenta, yellow and*

black in various amounts to create all of the necessary colors when printing images. It is a subtractive process, which means that each additional unique color means more light is removed, or absorbed, to create colors.



Why RGB colors need to be converted ?

The RGB scheme has a greater range of colors than CMYK and can produce colors that are more vivid and vibrant. These colors are beyond the range of CMYK to reproduce and will come out darker and more dull in print than what is seen on the monitor or display. To accurately print the document or image, it must be converted from its original RGB format to CMYK during the layout design phase. It is possible to do this by using software such as **Adobe Photoshop** or **Adobe Illustrator**.

CONCLUSION

The printing press brought a vast rise in literacy, simply through the great expansion of 'written culture' at the expense of 'oral culture'.

"**Print culture**" (PC) refers to the cultural products of the printing transformation. PC embodies all forms of printed text and other printed forms of visual communication. PC is the conglomeration of effects on human society that is created by making printed forms of communication. PC encompasses many stages as it has evolved in response to technological advances. The era of physical print has had a lasting effect on human culture, but with the advent of digital printing and on-demand printing, immense new possibilities open up. Even the electronic media, including the World Wide Web, are perceived to be an outgrowth of 'print culture'.

QUOTABLE QUOTE	<i>"We learn something from everyone who passes through our lives. Some lessons are painful, some are painless, but, all are priceless."</i> - Unknown	
SCRABBLE	Rearrange the letters to form two new words relating to the paper industry. (Hint : Manufacturing equipments) APES PINCH MARE First correct answer will win a Parker Vector Roller Pen (Maximum two prizes for one person in a year). Email your answers to snippets@wirefabrik.com by 20 th December, 2013.	
WINNER NOV'13	Mr. Manjunatha N., Technical & Product Development Manager, ABB India Limited, Raman Boards, Mysore-Ooty Road, Thandavapura, Mysore District, Karnataka-571302 Answer : H L B : HYDROPHILLIC LIPOHILLIC BALANCE	
?QUIZ	What is 'metamerism' with regard to coloured paper ? Email your answers to snippets@wirefabrik.com by 20 th December, 2013.	
WINNER NOV'13	Mr. Suma M. Kumar, Projects Department, ITC Limited-PSPD, 106, Sardar Patel Road, Secunderabad, A.P.-500003 Quiz : Give the full names of the following organizations involved in "R&D" for forestry, pulp and paper products. a) VTT b) PTS c) ICFR d) CPBIS e) KCL Answer : a) VTT - Valtion Teknillinen Tutkimuskeskus (State Tech. Research Center Finland) b) PTS - Papier Technische Stiftung (Germany) c) ICFR - The institute for Commercial Forestry Research (South Africa) d) CPBIS - Center for Paper Business and Industry Studies (affiliated with Georgia Tech., USA) e) KCL - Keskuslaboratorio - Centrallaboratorium (The Finnish Pulp and Paper Research Inst.)	
 Prizes	1. Best / first correct answer received will win one-year subscription to IPPTA Journal (Maximum one prize for one person in a year). 2. Best of the 12 monthly winners in a year, will win one-year subscription to Paper 360^o Magazine, USA.	
 Health is wealth	Wife to Husband : While you were away, I had a health check-up. The doctor advised me to spend sometime in a pollution free environment like Europe or Australia. So where should we go ? Husband : To the next doctor.	
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