POSITION PAPER
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Print Predictability Paper Taskforce

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IDEAlliance Policy 2002-8: Antitrust Statement
As associations of competitors, trade associations must be vigilant to ensure that state and federal antitrust laws are respected. The general improvement of the industry benefits the public. This is why Congress granted the privilege of tax-exempt status to trade associations. Our focus must be the general improvement of our industry. We must refrain from actions, which either may suppress competition among members or give members a competitive advantage over non-members.

IDEAlliance has formed a Print Predictability Paper Taskforce working with its Print Properties and Print Media Supply Chain Committees to develop, deploy, and adopt processes and methodologies *for the content and print creator (i.e., art director, designer, and product manager) and buyer* that supports and enables color management technologies to be used for print predictability across the supply chain.

Scope

Select and drive adoption of techniques, tools and methodologies enabling an advertiser, print creator or buyer, and printer to accurately evaluate print and proofing processes that reflect print predictability. The intent of this initiative is **NOT** to change paper categories, characterization, or measurement or the way this information is currently communicated.

Purpose

The printing process has advanced in recent years, controlling input variables and delivering more consistent product to print buyers. CTP, closed loop ink systems and on line measurements are a few examples. Color management and unified work flows are current technological advances. Input variables must be measured and controlled for new technologies to succeed.

The purpose of this effort is to create a methodology, process or technique that is based on paper performance in the printing system and paper's ability to reproduce imagery so that paper purchasers can evaluate their choices based on both optical and physical factors. Paper buyers, content creators and printers do not know how a paper will perform on press nor duplicate color prior to printing. Current paper classification is based on Brightness, a measurement never intended to be a predictor of paper quality. Brightness does not correlate with critical performance properties. Further, the globalization of the

paper industry clouds categorization because non U.S. manufacturers categorize their papers using different paper attributes and/or properties.

This initiative, by its very nature, will evolve, as needed, processes for benchmarking and measurement which are defined and developed by the project team. The result will be a methodology for use by all partners within the workflow on the interaction between papers, ink, chemical processes, and press operations. The end goal is process and product predictability as it relates to the use of paper as a substrate for high-volume printing technology (e.g., lithography, gravure, and flexo).

Discussion

Paper in the U.S. is optically categorized by Brightness, a measure of light reflectance at a single wavelength. It is categorized by fiber type in the EU. Paper is a global raw material but the categories do not correlate.

Further, market demands for bluer, crisper papers at competitive prices have driven paper manufacturers to add optical brighteners to their products. Papers with optical brighteners are difficult to characterize across a range of instruments with today's illuminant technology. Matching proofs- which are often on optically brightened papers- to litho papers requires careful control of lighting conditions. Unfortunately, lighting conditions are also in need of further characterization and standardization. The drive to "print to the numbers" is hindered by the inability to represent paper numerically in a meaningful way.

Printers are unaware of the Total Area Coverage a paper will support. Prepress is unaware of curves necessary to achieve color on different papers. Color gamut volume has always been influenced by paper but color management is driving towards predicting color by measurement, either on paper or monitors, and a paper measurement is lacking.

Three related facts are: (1) the printing industry has done a pretty good job of standardizing most aspects related to images and image quality; but (2) there are essentially no meaningful standards about paper's contribution to image quality and, as a result, print buyers are purchasing unique, different, or changing paper qualities; while (3), as the old dictum goes, the paper contributes all the color there is in the printed image as compared to the rest of the process which just subtracts out parts of these colors. Together these three statements define a major problem for our industry. We are trying to hit a moving target, which is threatening to move faster every day and which is probably the most important part of the process. This position paper is an attempt to give some perspective to this problem and to review some of the efforts that are underway to address it. Historically, the industry has constantly tried to define different types of papers. Paper manufacturers historically define paper by its brightness, basis weight and finish. In the U.S. Paper is divided as a function of TAPPI Brightness into five grades plus newsprint. Paper companies have recently improved the Brightness of their products so many brands have moved into a higher grade category. Print buyers are confused by the rapid product changes.

In addition, each industry segment tries to specify the papers they use. The industry organizations like SNAP for newspapers, SWOP® for publications, and GRACoL® for commercial printing all specify their standard papers, usually by brightness and basis weight and finish. But, in the ever-changing marketplace, papers change more rapidly than the standards so the selected papers no longer conform to the standards' characterization. For example, SWOP, has recently decided to include a Grade 3 paper specification in addition to their classic Grade 5. The Grade 5 paper selected for the last version of the standard is no longer produced. SWOP expected that the new papers chosen as examples of these two (Grades 3 and 5) new references would both be somewhat brighter. However, the Grade 5 reference paper moved into the Grade 4 category and the Grade 3 reference paper moved into the Grade 2 category according to the Brightness definition, not the paper manufacturers' characterization. A system is needed to characterize paper that relates to the performance characteristics of the product in the printing system that more accurately reflects today's market demands. The inclusion of optical brighteners in papers increases the challenge of matching appearance of images because the viewing conditions must be carefully controlled.

How paper performs in its intended printing process and how paper portrays imagery are key factors in choosing paper. A process, methodology, or technique that captures quantified attributes and physical properties that effect color reproduction and press efficiency (including waste) should be developed. This Taskforce is formed to accomplish this task and, most importantly, translate technical developments into language that content and print creator and buyer can understand.

Considerations

The Taskforce will work cooperatively with working groups in this arena including, ICC Graphic Arts Properties Committee, and international standardization initiatives, to align its efforts and support their initiatives to:

a. Identify the specific attributes and properties that effect color reproduction and resultant efficiencies on press;

b. Publish a quantified methodology that predicts how specific attributes and properties effect color reproduction and resultant efficiencies on press; and

c. Identify other initiatives to be defined or developed.

The intent of this initiative is to support a global initiative by becoming the forum in North America for the print supply chain and propose research and development.

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