GWG Brings Intelligence to Workflows and the Industry

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The Ghent Workgroup (GWG) is an international organization made up of graphic arts associations (including PRINTING United Alliance), experts, users, hardware and software vendors, as well as educational members building best practices for print and packaging workflows. Founded in 2002, it is perhaps the fastest-growing, global best practice organization for the graphic arts. The initial idea for the GWG took hold among a group of professionals representing Belgium, France, the Netherlands, and Switzerland, who at that time were working toward consensus on PDF creation and preflight settings. The process was complex, and it became clear that a more coordinated global approach was needed then and for the future. While the group was founded in Western Europe, its membership grew to include North American, Eastern European, Latin American, and Asian representation.

The Journey

Since GWG's founding, a lot of work has been done. In the beginning, the Workgroup had a strong focus on the creation of preflight and process support tools and best practices for publishing and print advertising workflows. As the print and packaging industry and its requirements evolved to include more digital and digitalized processes, the group has expanded its scope to include commercial print, digital print, sign-and-display and packaging workflows, and textile print and production with the ultimate goal of facilitating best practice workflows for each of those industries.

This is all done in partnership with member industry experts, print service providers (PSPs), and software and hardware manufacturers, along with other industry associations and standards bodies. The goal today is the same as it was at inception: to ensure the global blind exchange of PDF/X files and processing data to enable consumers and PSPs meet expectations. This ultimately facilitates consistency and higher quality output, as well as process automation, and the goals of Industry 4.0 and 5.0.

As we started the process, we found that each PSP had its own requirements for preparing a print file — confounding creatives and causing client tension. In an era when web-to-print was taking hold, this lack of standardization created confusion and lots of extra unpaid fixes at the PSP, since most would take on work no matter how it was produced. With the proliferation of digital and inkjet printing devices, the

GWG has been working on solutions to address the special needs of digital print production workflows by developing best practice workflows primarily, but not exclusively, based around the use of the PDF file format. Some of this work has been brought to the market as PDF/X-Plus specifications and application setup files tailored to application-based PDF creation and preflight.

Taking on the Packaging Process

Many new digital label and packaging presses have recently been released — with more to come. The GWG has been diligently working to support this need. One hurdle to digital adoption is how fast print manufacturers can help CPGs approve the transition to new print processes for each and every material/packaging application. Nearly 85% agree that when moving from traditional methods of printing to digital, re-approval of all packaging will be required.

While production processes for packaging, even through the use of PDF files, showed some early promise, it was only with proprietary workflows from each vendor. So, in 2003, the GWG began working on the use of PDF and the surrounding best practices required for packaging production. These included special color handling; support for multiple versions, languages, and roles; and specifications for an extensive range of finishing requirements. The goal of this work focused on creating a single "exchangeable standard" PDF file that could be used for the communication of design, regulatory, and production information in one file for all types of packaging print production, including gravure, flexographic, offset, and digital print.

When the GWG started looking at color in packaging production, it ran into one of the first limitations of the PDF format. How do you communicate these special colors in a way that would meet the exchangeable standard designation and support all of these variables? It was determined that the best way to define color was spectrally. This would allow for the differentiation and adaptation across substrates and processes.

In 2009, the GWG started looking at CxF (Color Exchange Format), an XML-based technology framework initially developed by X-Rite (now Pantone) in 2002 to exchange device color information. It was investigated and determined that there could be a way for CxF data to be embedded and referenced in a PDF file. In CxF, the spectral color information, in addition to other information about color matching and viewing conditions, etc., could be communicated. The GWG enlisted the support of the ICC (International Color Consortium) and the appropriate ISO TC130 working groups to help push this concept into a set of eventual standards. As a result, ISO 17972 (Parts 1-4) was developed to support the use of CxF in production color data exchange from capture/definition through exchange.

Processing Steps; Beyond Print Content

Another area that presented a challenge in packaging and labels addresses what you see on the label or package, because it is usually more than just print. In most cases, there is at least some varnish and perhaps a die outline. However, once you look deeper into the entire process, you begin to realize how much more needs to be identified and managed. Underlay colors such as opaque white on foil or other flexible media; structural information beyond the die outline; and scoring, stamping, folding, and gluing are all important process functions. Historically, designers used different colors and randomly named layers to communicate this information, but as in the case of versioning, there were no standards or best practices to support this. Therefore, the existing workflow processes do not support ease of use, interoperability, or automation.

The GWG has worked with many vendors, users, and standards bodies to create a common structure to support the identification of these various layers, and to create a structure that allows for a more organized way to support user roles and interaction with the layers. Technically this is done through the use of a couple of PDF features: OCG (Optional Content Group) and OCCD (Optional Content Configuration Dictionary). These are very powerful features available in PDF, and the GWG has harnessed them to add structure to the processes. This structure, combined with the ubiquitous nature of PDF and the availability of PDF-based workflow tools, offers the potential for much more interoperable, automated, and secure workflows.

This also supports areas that extend beyond print content. They include global accessibility requirements for packaging, which are becoming more stringent. Braille, which is increasingly being mandated on certain types of packaging, is one example. Additionally, as the complexity of requirements for packaging and non-packaging print processes increases with the use of security features and interactivity tools such as holograms, NFC, etc., the number of inherent variables will only increase and become a more important part of packaging design and print production processes. The work the GWG has done has found its way into Processing Steps, which is now represented as ISO 19593-1. This important and growing concept is designed to standardize the use of metadata to instruct the placement of "non-printing" objects such as finishing and converting steps, Braille, embellishment, information panels, etc., within PDF files.

Validating Workflows

To promote and ensure that the best practices developed by the GWG were successfully utilized, the Ghent Output Suite was developed. Currently in v5 (GOS5), this workflow test suite has been evolving for almost 15 years. During that time, PSPs have increasingly used GOS to troubleshoot and identify problems in output configurations. Many hardware and software developers have also used it to tune and validate their product offerings. Users can achieve GOS certification and be acknowledged through a certification process. The goal is to expand the conformance certification globally to further ensure the consistency and quality of output.

Engaging and Educating Tomorrow's Print and Packaging Workforce

For the most part, print and packaging service providers are busy again. However, they both share the same problem: recruiting, engaging, and training the next generation of business and plant personnel. It's going to take more than a new press to fix staffing issues. The biggest issues are "branding" and education, and in some cases they are the same. Somewhere along the way, probably beginning with the introduction of online media and e-commerce, the luster of the print brand was lost. Concurrently, during this period, printing technology and processes changed along with newly required skill sets.

The GWG has developed a large selection of educational white papers, presentations, instructional videos, and webinars that are freely available on its website. However, in an effort to expand the reach of the educational platform and offerings, the GWG felt that the work needed to be translated into content and deliverables suited to the younger and upcoming future generations. As a result, it is working with educational member universities to develop targeted messaging for the creative communities as well as the industries' student populations.

One of the benefits of having the students/new hires communicate to their peers is that they share a common language. In fact, the GWG has recently started a program that uses college students to translate our existing technical and instructional documentation into the language of their peers. In an effort to expand the reach of the educational platform and offerings, the GWG is working with educational member universities including the University of Ljubljana led by Dr. Raša Urbas and Dr. Živko Pavlović from the University of Novi Sad to develop targeted messaging for the creative communities as well as the industries' student populations. The GWG is also developing training and testing materials around design and prepress production.

Next Steps

The GWG's work around these areas is not only timely but also critical to support the requirements of digital packaging and print production in the future. To learn more and to get involved, visit: gwg.org. ∎

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