PROOF OF 9 – THE NEW GENERATION OF PAGE LAYOUT APPLICATIONS AND THE CHALLENGES FOR PRINTING COMPANIES

We tested new applications in practice – such as Canva, Express, Affinity, and Scribus – to evaluate their ability to generate artwork that meets the quality, reliability, and predictability requirements of digital and industrial graphic printing

Nearly 25 years ago, two colleagues – Vitor Vicentini and André Borges Lopes – and I published an extensive article in the now-defunct magazine Publish (issue 54, May/June 2001) in which we analyzed the resources and capabilities of the main vector illustration applications (Macromedia FreeHand 9, CorelDRAW 10, and Adobe Illustrator 9) and page layout/finishing applications (Adobe PageMaker 6.5, Adobe InDesign 1.5, and QuarkXPress 4.1) used at the time by creative and prepress professionals. The test evaluated the output results in photoliths, generated by CTF (computer to film) systems, which were common before the popularization of direct plate engraving by CTP (computer to plate).

The primary objective of that article was to demonstrate the difficulties and problems that creative professionals, prepress bureaus, and printing companies encountered when outputting files that used more advanced features: backgrounds and fills in gradient tones, application of shadows, use of transparencies, typefaces from different origins, and complex vector and bitmap images. The test demonstrated the different capabilities of each software and the necessary precautions in each one to correctly construct these files.

The secondary objective of the tests was to submit identical files to different rasterization equipment (RIPs) available at the time, in order to identify incompatibilities.

Finally, develop and test alternatives to solve the output problems.

A quarter of a century later, the goal of this new article is similar, but with different approaches:

- Identify situations where the resources required for professional graphic work are nonexistent, faulty, or insufficient.
- Evaluate the feasibility of using these new applications to replace traditional desktop publishing programs offered by Adobe, Corel, Quark, etc.
- Analyze how the new applications handle typefaces, images, and illustrations produced with current and older technologies, and files saved in traditional formats that are now obsolete (legacy archives).
- Identify situations where problems are generated by the application, due to lack of resources, or by the user, due to lack of technical knowledge or incompetence.
- Verify if the PDFs generated by these applications are compatible with the RIP systems of pre-press and digital printing equipment for commercial and industrial print runs, most commonly used by graphic companies.

THE "OLD GUARD" AND THE "NEW KIDS ON THE BLOCK"

Unlike the 2001 article, we will focus on two groups of page layout applications.

The **first group** consists of Canva and Express. These applications were created by Canva and Adobe, respectively, to work through a common internet browser. For this reason, they are often called "online layout designers." These applications are mainly aimed at producing content layouts for social networks, such as Facebook, Instagram, and LinkedIn. But they are also used to generate final artwork for printed products, usually in small print runs – such as invitations, business cards, calendars, etc. – produced in quick print shops using digital printers.

Both offer several ready-made layout templates that can be customized with the client's content, a way to produce layouts without needing to master design and layout knowledge. This is why they have become so popular among ordinary users and freelancers who, until then, needed to hire graphic designers, layout artists, final artworkers, etc.

Recently, both applications received Artificial Intelligence features to be able to, for example, produce images and illustrations from text prompts, remove image backgrounds, resize photos, redistribute page elements, and even generate or rewrite text.


FERRAMENTAS

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A Prova dos 9
dos softwares de DTP (Parte II)

Conforme prometido na última edição e atendendo sugestões de vários leitores, a revista Publish traz neste número um extenso comparativo das capacidades de saída em dispositivos high-end dos principais aplicativos utilizados pelos profissionais de design gráfico, comunicação, publicidade, criação e estúdios fotográficos, birôs de serviços e agências.

SOFTWARES DE ILUSTRAÇÃO VETORIAL X PAGINAÇÃO/FINALIZAÇÃO

As sugestões dos leitores, em sua maioria, solicitavam informações mais completas sobre os recursos de ilustração e diagramação. Outras questionavam a qualidade de saída dos recursos de alguns aplicativos, pois muitos usuários têm enfrentado problemas na produção de fotolitos e em outros dispositivos high-end. Alguns destes profissionais perguntavam se outro aplicativo de ilustração ou diagramação, diferente dos já utilizados, possuía recursos semelhantes, mais confiáveis e previsíveis. Existiam aqueles que questionavam a necessidade do uso de um software de paginação/finalização ao invés de fazer tudo em um software de ilustração vetorial.

Para atender a gregos e troianos idealizamos uma matéria especial que engoba todas estas questões e ainda a utilização dos recursos em reais condições de uso.

A princípio, a idéia era testar os principais recursos dos softwares de ilustração vetorial. Depois acabamos ampliando os testes para os softwares de paginação/finalização, pois muitos designers utilizam estes programas para finalizar seus layouts. Neste caso, não pretendemos testar seus recursos de paginação e de diagramação, mas verificar até que ponto a sua utilização auxilia ou compromete a qualidade dos arquivos de ilustração vetorial e imagens bitmap importados para sua páginas.

A partir de um layout padrão, produzimos duas versões de test form para poder comparar os resultados impressos de recursos idênticos dos aplicativos Macromedia FreeHand 9, CorelDRAW 10 e Adobe Illustrator 9.

A partir de pesquisa feita em alguns birôs, constatamos que os recursos mais problemáticos são as imagens bitmaps, transparências, degradês, sombras difusas, textos, conversão de textos em curvas, texturas, importação de PDFs e misturas (das mais simples até as mais complexas).

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34

www.publish.com.br

The original 2001 article is available for download at https://www.bytestypes.com.br/blog/

There are other applications that compete in this group – such as Microsoft Designer and Figma – that could not be tested. They do not meet the test criteria, for reasons such as insufficient resolution for printing, lack of support for the units of measurement used in the graphic segment, and absence of the minimum resources necessary to design the basic layout.

The **second group** of applications competes directly with Adobe programs. Therefore, they present a distinct proposal and offer more complete and professional layout and artwork features.

Affinity was developed by Serif and was originally a suite of three products: an image retoucher (Photo), a page layout editor (Publisher), and a vector illustrator (Designer). The package was sold for US$99, under a perpetual license model. In early 2024, Canva acquired Serif and, in mid-October 2025, unified the three products into the Affinity application. Furthermore, it shocked the graphic design market and even affected the value of Adobe's shares by announcing that the product would become free.

Scribus is not a newcomer to the graphic design segment: it has been on the market since 2003. Its initial project already contemplated free use, as it was born with open source code and, over the years, has become a multiplatform solution (Linux, Windows and Mac OS).

Both offer, to a greater or lesser degree, a modern and sophisticated appearance, reminiscent of the Adobe InDesign interface. The modus operandi is also very similar to that of traditional tools. The highlight is Affinity, which offers the user three independent tabs with distinct environments for the vector illustrator, bitmap image retoucher and page layout/final artwork functions. Both applications offer the ability to convert and open InDesign files, but they only save documents in their native formats (AF and SLA). However, they provide several document export options, such as EPS, AI, JPEG, TIFF, PDF, PSD, among others.

We used the applications in the versions available in the first quarter of 2026. Possibly their manufacturers will make implementations and corrections in the future.

Criteria

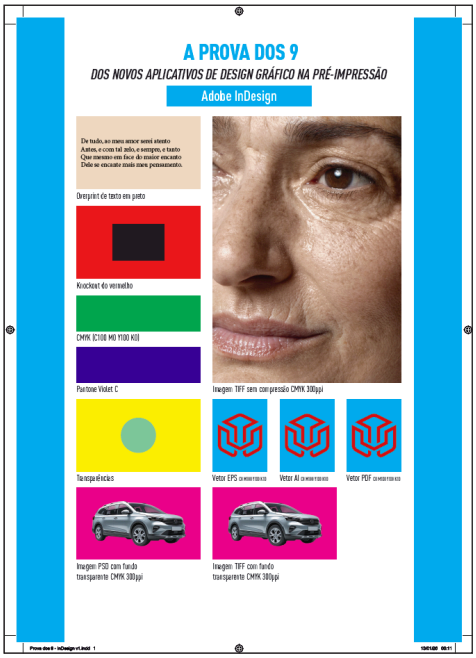
There are heated discussions today about whether these applications are suitable and offer professional text formatting and page layout features, and also about how they are affecting the job market for professional layout artists and designers – especially due to the availability of templates.

The objective of this article is to evaluate the fundamental artwork preparation features available in each of these new generation applications, verifying whether the documents produced in them can pass the scrutiny of prepress departments and whether they offer the quality and reliability necessary for print production. When applicable, we also analyze any adjustments and adaptations that need to be made to solve problems.

The fact is that they are already used by many people who have never worked with traditional applications, or who have abandoned them in the face of these new options. There are many conversations about this in technical discussion forums (such as Reddit, Quora, Discord), in social media groups (Facebook, LinkedIn and Instagram) and also on dedicated graphic portals, such as prepressure.com, printplanet.com and b4print.com. It is noted that professionals in the graphic arts segment (mainly from Pre-Press departments) complain and point out several problems and deficiencies in client files that were created with these new applications. However, they also point out numerous problems in files created with traditional applications. And, in these cases, most of the problems are related to users' lack of knowledge of the requirements of graphic production and, specifically, its various limitations. A fair analysis should isolate the responsibilities of the applications from incorrect use by users.

As a reference for comparative tests, we created a basic layout in A4 format (210 x 297 mm) in the renowned Adobe InDesign. Nothing too complex: basically a graphic design project with page elements that include images and illustrations in traditional formats, texts with fonts that can be embedded, elements bleed outside the trim lines, primary and secondary

CMYK colors, in addition to the application of a special color (spot color) from the Pantone scale. In other words, elements common in editorial, promotional and advertising projects.



In the next step, we sought to reproduce the exact same base layout in the new applications. Finally, PDF files were generated or exported from all applications, which were then submitted to different RIP systems commonly used in graphic prepress.

Other additional criteria used in evaluating the applications:

Free availability

In most cases, the difference between the free and paid versions was the availability of a smaller or larger number of templates, Artificial Intelligence features, and cloud storage space for projects. It is worth noting that the Express and Canva applications only unlock more advanced PDF generation features – such as the inclusion of crop marks and conversion to CMYK color mode – in their paid versions.

Online use or locally installable

We gave preference to versions that could be installed on a Macbook computer running Mac OS. Only Adobe Express does not offer this possibility, which forces users to work in the version accessed through a browser.

Use of locally installed fonts

In the case of reusing layouts that were originally created in traditional applications (such as Adobe InDesign or CorelDRAW) and migrated to the new applications, it is almost mandatory to use the same typographic fonts from the original document. This requirement may also be mandatory in the case of a brand's or advertiser's visual identity.

If the fonts in use are part of the Adobe Fonts package (which are available to Adobe Creative Cloud subscribers), this facility is extended to users of the paid version of Adobe Express, which also provides access to the font package online.

For users of other applications, the alternative is to install the fonts on the operating system and use the programs locally on their computer, which will give access to all local fonts. An option that users of the free version of Adobe Express, for example, do not have.

Embedding fonts in PDF files

The option to embed or "embed" typographic fonts in PDF files allows, in short, RIPs to access the information necessary to correctly position and draw the text on printing devices, even if these fonts are not installed locally.

Embedding is a good practice in any situation, as it minimizes the chance of various problems in printing texts, such as font substitutions (usually with Courier) or the incorrect drawing of symbols, accented letters, and other special characters. Therefore, this inclusion is required in all ISO standards for generating PDF/X files.

Users often ignore or forget to enable embedding options in the PDF export dialog boxes. In addition, some fonts have blocks that prevent their embedding. It is important that the application alerts the user or cancels the export if this block is detected.

Bleeds

Since the emergence of Desktop Publishing systems in the 1980s, one of the most common problems in files delivered by clients to printing companies is the absence of bleeds (the extension of a few millimeters beyond the trim mark) in elements that will be printed to the edge of the pages. The main culprits are the designers themselves who – due to ignorance or distraction – do not apply bleeds or apply them with insufficient extension. Secondly, there are errors in the PDF file generation procedures when selecting options that remove bleeds. And, in some cases, the application itself does not offer this option. In our tests, each of the generated PDFs should have bleeds of at least 3 mm in length.

Bitmap Images and Vector Illustrations

The page elements applied in the base layout aim to evaluate how new applications handle bitmap images and vector illustrations produced in traditional or even obsolete formats. Many of these formats are still used in the market due to their quality and ability to meet the requirements of prepress equipment: traditional RIPs, plate makers (CTPs), and industrial production digital printers.

There is a huge amount of old collections of these page elements on the market, and creative professionals often need to reuse elements from previous projects. The ability of new applications to handle these files properly (or to convert them automatically) reduces the need for manual conversions to more modern formats, resulting in significant time savings. The test also seeks to evaluate any conversions between different modes and color spaces, as well as the maintenance of characteristics such as transparency and resolution.

This is the function of the face image (in TIFF format, uncompressed, CMYK mode and 300 ppi resolution) and the car images (in PSD and TIFF formats, both with transparent areas that mask the background). As for the vector illustrations in EPS, AI and PDF formats, the challenges were format recognition, preservation of vector characteristics (without conversion to bitmap) and maintenance of the backgrounds of the elements, naturally without fill.

Black text overprinting

A fundamental item is the application's ability to ensure that solid black (K 100%) vector texts and lines are printed in an overprinted manner when applied over a lighter background of another color. The purpose of this feature is to prevent the appearance of white lines between text and background caused by possible variations in registration in industrial printing. If this feature is not included, an adjustment will have to be applied in the pre-press department.

Black Element Knockout

In certain situations (large elements and text larger than 20 points), it is important that solid black be printed with a knockout effect on the background colors to avoid visible variations in the black tone due to the background colors (due to the natural transparency of offset inks). If the application does not allow this adjustment, it will have to be applied manually in the prepress department.

CMYK Colors

Most of the new applications tested were not designed to produce layouts for industrial printing. They are basically intended for generating content that will be displayed on screen (such as social media posts) and, eventually, for generating physical products printed on digital equipment. Therefore, the color modes offered are almost always RGB and/or hexadecimal (hex) codes.

In the test layout created in Adobe InDesign, we used elements with primary CMYK colors (Cyan, Magenta, and Yellow) and secondary colors (Red, Blue, and Green). We asked InDesign to provide us with the equivalent color values in RGB mode and in Hex codes – which were used in the reproduction of the layout in the new applications. In some of the new applications, conversion to CMYK is not even offered. In others, it is only done when generating the PDF.

In the first case, the conversion from RGB to CMYK will have to be done by the printing company's prepress team. In the second case, our test evaluated the reconversion of colors to CMYK in the print output, which should be

close to the original values. One of the biggest challenges is converting elements from pure black in RGB (R0 G0 B0) to pure black in CMYK (C0 M0 Y0 K100). The conversion results almost always deliver a CMYK with composite blacks in all four colors, which is not a serious inconvenience in digital printers (due to their greater mechanical precision in registrations), but a serious problem in industrial processes such as offset printing.

We tried to apply simple colors with known percentages such as red (M100 Y100), pure cyan (C100), pure yellow (Y100), green (C100 Y100), capture the percentages in the RGB color space and hope that, after reconversion, they would return to the original CMYK values or, at least, be reasonably close. But (spoiler alert), that's not what happened.

Pantone Spot Colors

In industrial printing, the use of spot colors is fundamental in certain graphic projects, whether used alone or in combination with CMYK four-color process inks. In Brazil, spot colors are usually specified by Pantone scales. However, most of the new applications tested do not even support these spot colors, let alone Pantone scales. In InDesign and Illustrator, for example, since versions 2024, they are no longer present. To use them, the extra payment of Pantone Connect is required.

Transparencies

Another quite challenging feature is transparency. When applied to vector elements, most applications convert these elements to bitmap (rasterization) during PDF generation. Other applications perform the conversion in accordance with PDF/X standards. When kept in vector form, PDFs require more modern RIPs with greater capacity to avoid quality loss problems, which can become evident in industrial printing.

Ripping Possibilities

The PDFs generated by the new applications and the reference PDF (generated by Adobe InDesign) were ripped using the same equipment.

Page Dimensions

All applications used a standard A4 page (210 x 297 mm). The PDFs will be evaluated for accurate maintenance of these dimensions.

Page Boxes

Best practice dictates that PDF file pages have at least three page boxes:

- The Trim Box, which defines the final page trim area (in this case, 210 x 297 mm).
- The Bleed Box, which defines an area that includes the 3 mm bleed on each of the four sides (in this case, 216 x 303 mm).
- The Media Box, which defines an even larger area, encompassing the trim and registration marks, as well as any information such as file name, date, time, etc.

Crop and registration marks

Although not mandatory, they are fundamental items in industrial printing. If they are missing, they must be manually inserted into the PDF by the prepress department.

PDF Generation

Despite the diversity of settings in each application, we sought to ensure that the PDFs intended for testing were generated with at least the minimum attributes, in accordance with best practices and the processing possibilities in various RIPs.

PDF Complexity

It is common that, to circumvent restrictions on special effects such as shadows, transparencies, and masking, PDF generation mechanisms "slice" bitmap images and vector illustrations, distributing these elements in layers. Alternatively, they may apply reasonably complex masking. The use of these resources usually results in "heavy" PDFs, either due to the size of the files or the greater complexity of processing in the RIPs.

Analysis of PDF Files

All PDFs were evaluated using Acrobat Pro and PitStop Pro.

PDF File Ripping

All PDFs were ripped using RIPs from a plate maker, a digital toner printer, and a digital inkjet printer. The latter two are for industrial printing.

COMPLEMENTARY ARTICLES WITH RESULTS

Each application has its own characteristics and, therefore, they tend to generate different results when dealing with PDFs used in printing companies and commercial and industrial printing equipment. They may also present different results in ripping.

As the task of compiling information, characteristics, and results was quite complex and generated a very lengthy article, we decided to divide them into parts for each of the applications, which will be published sequentially in separate and complementary articles.

They will be available both here on LinkedIn and in PDF format on the Bytes & Types website (www.bytestypes.com.br)

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He is the founder of the companies Bytes & Types, LEARNi, and Plubi.

The PDFs of the test forms used in these articles are available for download at https://www.bytestypes.com.br/blog/