

COMMUNICATION COLOR

Redefining the World of Full Color



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Overview

We live in a world full of color.

Research clearly indicates that color has tremendous power to add impact to communications, boosting recall and influencing opinion. Studies done by Pantone, Inc. and the internationally recognized Pantone Color Institute indicate that “consumers are up to 78% more likely to remember a word or phrase printed in color than in black and white... When color is combined with the written word, it impacts consumers with the triple whammy of greater recall, recognition, and attention.”

Other research backs up these findings. A study by CAP Ventures discovered that full-color variable documents also enhanced customer loyalty and retention, generating 34 percent faster response rates, a 48 percent increase in repeat orders, and a 32 percent increase in overall revenues. According to the Institute for Color Research, up to 90 percent of subconscious judgments about a person, environment, or item are based on color alone.

Given these statistics, there is little wonder that, within the domain of copiers and printers, full-color technologies offer significant opportunities for growth. Currently, there are 40,000 full-color hardware placements and 20 billion copies being generated annually according to CAP Ventures, and these numbers are expected to grow significantly over the next two years.

However, the full-color playing field has become crowded with a proliferation of players, prices, and products. This array of choices can make the decision on choosing the most appropriate full-color technology a confusing and challenging assignment.



Segments Within Full Color

At present, there are three major segments for full-color output: Production Color, Graphics Color, and Business Color. Each sector offers a very different set of features and benefits, and satisfies specific criteria in terms of output quality, speed, and cost. Until now, none of the available technologies delivered top performance in all three categories. As a result, all of these considerations had to be prioritized as part of the purchase decision, forcing the customer into making a compromise. This is not to say that these technologies were lacking; it simply means that no single technology was able to deliver an equal measure of speed, economy, and high-quality output at the same time.

Most manufacturers agree that the distinction between these different segments is becoming less clear with the emergence of new technologies. There is also consensus that Graphics and Business Color are the two segments showing the most growth, driven by new technologies and market demand.

As noted above, technologies offering full color can be broken down into three major segments: Production Color, Graphics Color, and Business Color. Before we examine these categories, let us take a closer look at two of their primary distinguishing criteria: speed and cost.

Generally speaking, the speed of the output devices ranges from 5 to 200 pages per minute. Often, speed is measured by the output – velocity for printing letter-size paper with landscape orientation. When different sizes, qualities, and orientations of paper are utilized, the print speeds vary widely. This can sometimes result in loss of productivity, leading many end-users to utilize advanced printing methods to overcome slower print speeds with large paper sizes. For example, 4-up printing allows the end user to print four copies on a single sheet of paper. This dramatically increases the effective printing speed to better suit the needs of the end user.

The second differentiating factor is cost. This category is broken down into two major areas: operating cost and acquisition cost. Operating costs can vary widely and are difficult to measure on a consistent basis. They include such diverse items as the amount of supplies used to produce a print and the price of a service contract for the hardware.

Acquisition cost is the total of all fees required to purchase the hardware; it varies widely according to manufacturer, as well as by the model and technology.

The following section provides more detail on the specific segments of current full-color technologies.



Production Color

This is the high end of color output, offering the greatest speed and the optimum quality. Devices used to generate production color are usually press-based technologies or large high-volume electrostatic technologies. This market segment has been experiencing a decline in new machine sales and an over-abundance of used offset equipment in the past three years.

On the plus side, the advancement of production color technology has helped to make this market segment more operator-friendly and has lowered related barriers to entry. However, while there are numerous applications and needs for the speed of full-color production color devices, cost remains a major obstacle. The majority of the production color technologies cost from \$100,000 to \$3 million+. When this price point is combined with installation and training fees often associated with this technology, the end-result is a limited number of unit placements in the US market.



Graphics Color

Graphics Color fits the need for high-quality prints without large production demands; it is defined by high-quality output and low production speed ranging from 4-50 copies per minute.

The Graphics Color segment has experienced modest growth for the past three years. The simplicity of set-up, operation, and maintenance characteristic of Graphics Color technologies has led to consistent growth. However, this category is also one of the most crowded with options; every major manufacturer of copier- and printer-based technologies offers a product in this category.

Once considered appropriate for only the big budget companies, Graphics Color technology has now found a home in many non-profit organizations, government agencies, and small businesses. One of the major reasons for this development is the acknowledgement that color plays a tremendous role in increasing the impact of printed documents. In fact, the lure of full color is appealing to a wider range of customers than ever before, outweighing the impact it can also have on cost.



Business Color

Business Color is growing the fastest of all three traditional full-color segments. In fact, with advances in traditional copier and printer technology, Business Color is poised to take over black and white output in many segments of many product lines. All the large copier manufacturers are selling a device that will print in black and white for one price, and in full color for another.

The quality of these prints is sufficient for the large majority of the everyday color demands of many customers. However, the sharpness and quality of Business Color is on the low end of the full-color market. This means that Business Color is not the best choice for reproducing high-quality photographs, fine text, or images. This does not mean Business Color is limited by the lack of high-quality output. It simply means that realistic expectations must be set to ensure that Business Color is the right match for the customer's requirements.

The pressure on Production Color may be attributable to savvy marketing rather than advances in technology. Currently, the fastest output device in this segment produces 60 pages per minute. While the output quality approaches that of Graphics Color, the speed is hardly in line with the 100+ cpm characteristic of many Production Color devices.

The main attraction of Business Color is that it adds more flair to documents without dramatically increasing cost. If the customer's need is for low cost, while production speed and quality are not a concern, then Business Color is probably a satisfactory choice.



Communication Color: A New Opportunity for Full Color

While the three traditional segments cover a wide range of technologies and satisfy a number of needs for full color, they represent just the tip of the iceberg in terms of the opportunity for full color. Using this analogy, the largest part of the market for full-color technology lies beneath the surface, enormous in size yet untapped and hidden away. Because today's technologies have not adequately addressed the need for speed and low cost, customers have opted for monochrome solutions – a great irony and a tremendous compromise in a world of color.

With this in mind, RISO has created a new full-color technology, ComColor®, which delivers all three benefits – speed, low cost, and quality output – for everyday applications. We believe that this development has created a fourth and potentially enormous segment in full color – what we have termed Communication Color.

With its unprecedented union of high-speed output, quality prints, and economical printing (Figure 1), Communication Color will allow the market to fulfill the demands and expectations of full color in more documents than ever before, for everyday use in a wide range of applications or communications. However, we believe that the real power of Communication Color technology lies beyond its use for existing color applications. Communication Color provides end users with full-color options where, today, the only choice is black and white.

Full-Color Market Technologies

	Production	Graphics	Business	Communication
Speed	150+ cpm	15-40 cpm	10-50 cpm	150 cpm
Operating Cost	Low	High	Low	Low
Quality	High	High	Low	Medium
Target Market	Large PFP	DTP or PFP	All Markets	All Markets
Key Benefit	Large production capabilities	High-quality proof copy capabilities for DTP market	Low entry and lower operating cost to allow more flexibility for usage	Combines many benefits of all three traditional segments

Figure 1



ComColor Technology

Since its founding, RISO's mission has been to provide customers with productive, versatile and cost-effective products. RISO's ComColor series printers deliver this value proposition to the customer with breakthrough technology, creating new opportunities for full-color digital printing in everyday communications through the ability to provide high-quality full-color prints at unprecedented speed and at an extremely affordable price. RISO ComColor provides customers, for the first time, with fast and affordable full-color printing for everyday communications. ComColor prints at speeds up to 150 pages per minute and at sizes up to 11"x17" - making it the fastest sheet-fed ink jet printer on the market today - with low running costs of \$.03 per page in full color.

ComColor harnesses two proprietary technology platforms from RISO - FORCEJET® and the ComColor Color Management System. FORCEJET technology is the engine that drives the ComColor, combining a powerful print engine, line ink jet system and high-speed paper feeding system. The FORCEJET platform features a Piezo Drop on Demand ink jet system that can reproduce up to 8 gradations per drop. This 8-grayscale capability results in more vivid images and a depth of color that is not available with laser prints.

Created specifically for ComColor series printers, the ComColor Color Management System ensures the best quality reproduction of color images. ComColor guarantees outstanding color reproduction while reducing ink usage, resulting in lower operating costs, and is designed to maximize speed and quality.

RISO has incorporated a powerful Adobe® PostScript® Level 3™ controller into the ComColor that delivers speed and functionality to further expand the capabilities of the unit. A 160GB hard drive and powerful 1.86 GHZ processor guarantee that all jobs, from simple to complex, are handled with ease.

ComColor delivers productive, versatile, and cost- saving benefits for a wide variety of customers with volumes as low as 15,000 copies per month. Engineered to run monthly volumes as high as 500,000 per month, ComColor provides a quick return on investment, whether in a facilities management site, in a central reproduction department, or as a departmental or networked office printer.

RISO ComColor offers the lowest total cost of ownership among full color technologies in North America (Fig. 3).



Summary

Riso has created a new segment in full color printing with the introduction of ComColor technology. This new classification - Communication Color - opens the door to leverage the power of color in everyday applications, migrating to the world of color many jobs now relegated to monochrome because of concerns over cost and speed.

For more information about RISO, Communication Color, and ComColor high-speed, full-color printers, visit <http://us.riso.com>.

Total Cost of Ownership Analysis

	Equipment Cost	Service Cost	Supply Cost	Operating Cost	TCO** at 25,000 copies	TCO** at 50,000 copies
Production Color	\$200,000	\$0.01	\$0.002	\$.012	\$218,000	\$236,000
Graphics Color	\$65,000	\$0.040	\$0.070	\$.11	\$230,000	\$395,000
Business Color	\$17,995	\$0.010	\$0.040	\$.05	\$92,995	\$167,995
Communication Color*	\$39,995	\$0.006	\$0.025	\$.031	\$86,495	\$132,995

Fig. 3

Assumptions:

Equipment Cost is estimated retail price for mid-range hardware per segment.

Equipment CPC is based on 5 years of usage with no change in cost.

Service CPC is based on estimated retail price of service contract, excluding print heads.

Supply CPC is based on estimated retail price of supplies at 5% coverage per color on letter paper.

TCO based on 60-month ownership and operation at average monthly volume.



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