



# Optimizing Wide-Format Workflows

*Identifying and overcoming hidden production obstacles.*

As the wide-format print industry adopts fully automated workflows more widely, color management software has a key role to play in guaranteeing color consistency across devices and enabling print shops to fully reap the efficiency benefits of Industry 4.0, also known as the “internet of things.” This article will address often hidden obstacles to optimizing wide-format workflows and how forward-thinking print service providers (PSPs) can overcome these common issues in pursuit of a smarter way of working.

All print shops understand the value of color management for ensuring consistency, quality and print buyer satisfaction. Yet very few operators actually rely on their RIP software of choice — or even a single platform — to ensure output consistency across devices. This is because most print shops rely on the technology that comes with their printer, and as a result, multiple platforms could be inadvertently creating inefficiencies by default.

PrintFactory, a software provider, did some rudimentary research about how acceptance of the status quo could be impacting the entire workflow. Although limited, the research sample gave some indication of the most common problems that seem to be stalling the potential for greater productivity and profitability gains across the digital print sector in general and wide-format in particular.

### Setup Inconsistency Impacting Output

The research revealed 63% of large-format printers (LFPs) are running two or more RIPs in their shops. Most run off PCs (60%), a few rely solely on Macs (3%), and a significant portion are working with both operating systems (37%). It also showed that color management remains the most challenging workflow bottleneck for 21% of LFPs.

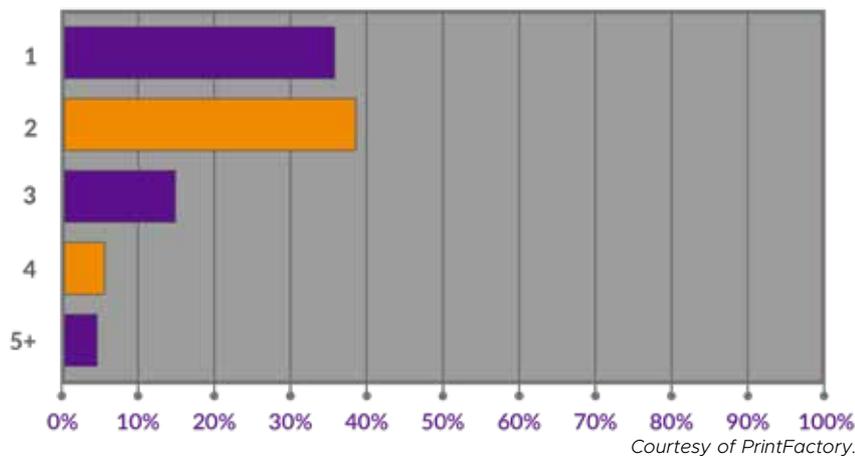
So how could these inconsistencies across print shop setups be interfering

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By Erik Strik, CEO, PrintFactory

## How many types of RIP software do you run in your print shop?



with production schedules and damaging the bottom line? And what steps can PSPs take to break through the bottleneck and ensure maximum productivity through rich, consistent color reproduction across all manner of substrates and devices?

### The Color Management Challenge

With so many factors contributing to taking a color from screen to substrate, it's not difficult to understand why print operators struggle with consistency and accuracy. For example:

- **Not all printers are created equal.** Each machine comes with its own color profile and gamut, which can cause complications for print shops aiming to produce a single job across different machines.
- **Using multiple types of RIP software** can exacerbate these issues, leading to inefficiencies through added testing and troubleshooting on each device.
- **Different substrates** have their own unique properties, such as variable white points and coatings.
- **Canned ICC profiles** do not account for these wide-ranging variables, creating more of a challenge for PSPs. Furthermore, as there is no common standard, there is no like-for-like comparison between ICCs. So, while they're intended to be generic, there really is no such thing.
- **Environmental factors** can compromise accurate color reproduction. Lighting conditions affect color perception in the pressroom, while dust, humidity and degrading printheads all impact device performance. A job reproduced with the same profile six months later may not match the original.

These points only touch the surface of the many parameters that play a part in color management. Taking a more practical view, the focus is instead on supporting LFPs in rethinking workflow and stripping out some of the unnecessary — and sometimes overlooked — layers that could be compounding the inconsistency problem.

For instance, the PrintFactory survey shows that while 75% of respondents would invest in new software as one of their first options for resolving workflow issues, 51% would also consider buying a new printer as a solution. The problem is, that while committing significant investment in a new machine may solve problems in the short term, long-term inefficiencies caused by inconsistencies in either the RIP and/or workflow — meaning profiling and conversion issues — will still remain.

The following are five key considerations for wide-format printers seeking to fully optimize the workflow process, starting by “going back to basics” and re-evaluating their existing setup.

### 1. Mac vs. PC

To ensure consistency in the workflow and retain the flexibility of changing ways of working in print, we must ask the age-old question: Mac or PC?

Although the gap between Windows and macOS usage has been closing over the last few years, there are still workflow technologies that do not run efficiently across the two operating systems. But the problem doesn't just come down to technological preference — it also stems from the traditional print shop setup.

The simple truth is that operating teams do not have all the tools on-hand they need at each stage of the workflow. This is

because the production tools are part of the RIP and inaccessible from a job preparation desk, away from the shop floor. Problems typically circle back to differences in:

- **Platform:** The prepress teams tend to work with Adobe Suite and prefer Macs. The production tools, however, are ‘bolted’ onto the RIP, which predominantly run off Windows or Linux.
- **Location:** You'll usually find prepress in the office while all production takes place on the shop floor.

In this day and age, purchasing a new computer to support workflow software is no longer necessary. A workflow solution should support a print shop's preferred operating system, rather than vice versa, all the while providing identical functionality that ensures smooth running across both operating systems.

### 2. An Integrated RIP

Rather than wasting time switching between RIPs and revisiting job preparation, a single, cloud-managed RIP supports printers and cutters “out of the box.” Using a centralized RIP moves all the tools away from different stations and gives operators the freedom to work from any location.

A centralized RIP should also integrate with the same PDF engine as the prepress application. This gives both the prepress department and operators a true “what you see is what you get (WYSIWYG)” view of the job, presenting a clear picture of the output that will be produced on the press and highlighting any errors before a job goes to print.

### 3. An End-to-End Solution

Once a single RIP is integrated into the workflow, it's time to streamline the rest of the workflow to reduce errors in setting up jobs and increase consistency across devices.

Where print shops have moved toward maximizing their productivity and profitability by deploying cloud-based tools, there is a tendency to ‘cherry pick’ the processes they entrust to the cloud.

Management information systems (MIS) and enterprise resource planning (ERP) modules don't always integrate with RIPs or sit seamlessly alongside workflow technologies. This can actually create greater inefficiencies through disjointed file processing and delivery.

The most sophisticated systems now offer powerful linking tools to integrate

MIS, ERPs and RIPs into the workflow system, delivering end-to-end file processing and serving up real-time production data to ensure maximum efficiency from MIS to print.

#### 4. Breaking Color Convention

There is little doubt that the greatest contributor to inefficiency by default in print shops is color management.

While ICC profiles are the accepted standard across the printing industry, they come with a number of inherent issues, and can lead to additional bottlenecks and complexities in the workflow due to:

- Indiscriminate gamut compression
- Limited control over conversion of the black channel
- Regularly regenerating profiles to account for environmental changes
- ICC not taking into account the gamut rendering intents of a job — whether it is stand-alone or a reproduction — and rather focusing on the properties of the printer during the profiling process

One way PSPs could revolutionize their workflow to achieve clean conversions, consistent color, ink savings and accurate recalibration across devices is to embrace the switch from traditional ICC to ICC DeviceLink profiling.

#### 5. Embracing a New Approach

Simply put, DeviceLink profiles allow for standardized printing (ISO, GraCOL), or creating a custom common appearance, by directly converting from

one color space to another. This bypasses the need for an interim color space, where many conversion issues occur and files are most at risk of “breaking.”

By normalizing to one common appearance and converting directly from CMYK to CMYK, DeviceLink adjusts all devices to fit the same color space and improve color production and reproduction — no matter which printer is used.

Once a DeviceLink profile is created, the result is “frozen” in what is called a “golden state,” so tuneups will not affect future color conversions. This process allows print operations to produce the same quality across multiple printers, saving time and resources while ensuring optimal color quality.

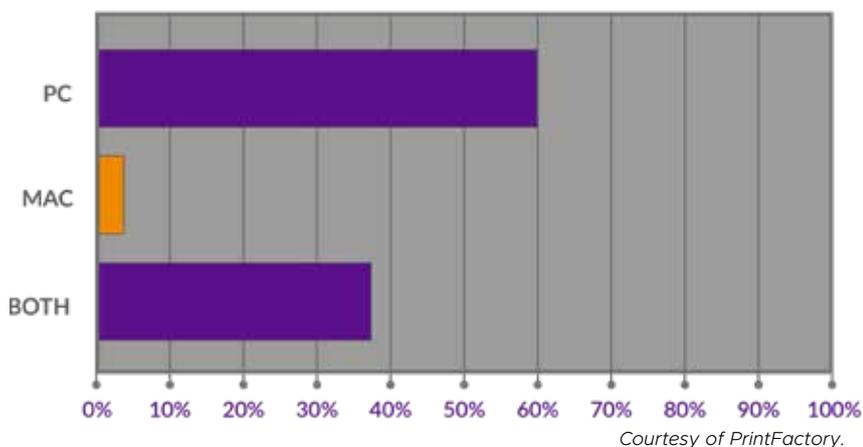
While DeviceLink technology lies at the heart of the most advanced color engines, it’s important to remember that resolving color management issues and eliminating bottlenecks is not so much an issue of staying ahead of the printing technology curve, but rather having the foresight to question the norm.

#### Setting a New Status Quo for Wide-Format?

Effective color management is the foundation to achieving the best possible output the first time, every time. But the first step to achieving high-quality color that meets brand standards and secures repeat business is ensuring that the right systems and processes are in place from the print shop floor up.

As long as PSPs continue to rely on conventional color management systems,

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it remains difficult for these print businesses to reap the full benefits of automation. Without a solid foundation of consistent color across devices, any efficiencies created by an automated workflow are lost through time spent tweaking color issues on jobs.

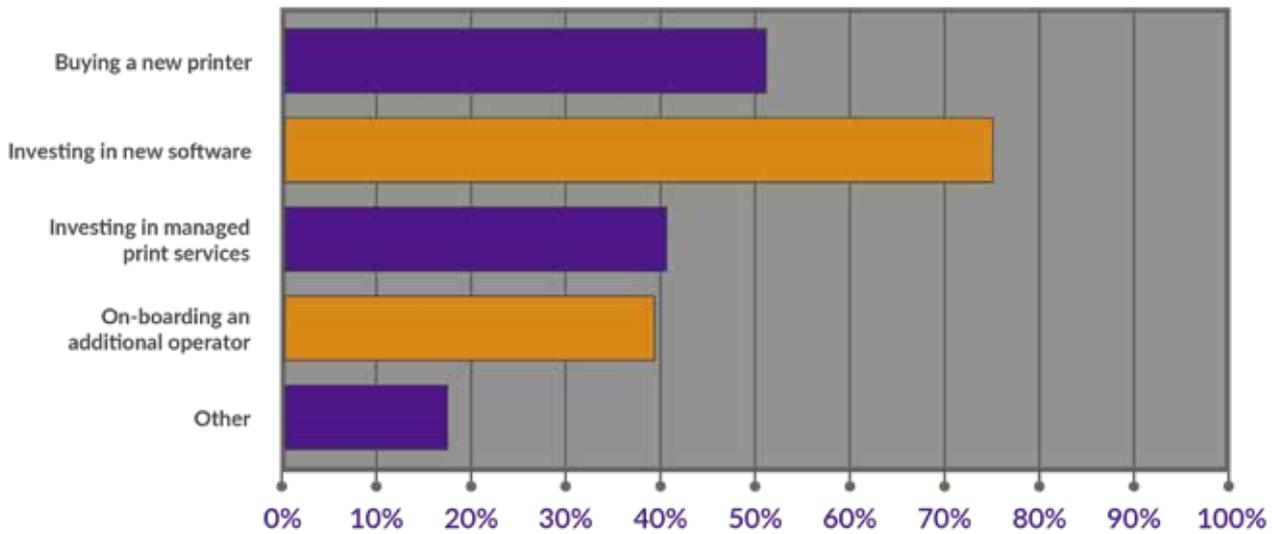
**Color Management No Longer Has to Be a Dark Art**

The technology to eliminate bottlenecks and deliver identical output across devices already exists. LFPs need only take a small leap of faith to embrace new advances in color technology that optimize their

workflow for maximum productivity and profitability — all the while paving the transition to print Industry 4.0 territory.

*After many years working with some of the industry's leading print pioneers, Erik Strik is committed to solving one of wide-format's biggest problems: inconsistency. Today, Erik is achieving his ambition as Founder and CEO of software company PrintFactory, having completely re-engineered the wide-format workflow to equip PSPs with an intuitive and future-proofed platform that readies them for the industry 4.0 era.*

**If you had a problem with your workflow, which two of these solutions would you consider first?**



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