ALL THINGS RIPPED

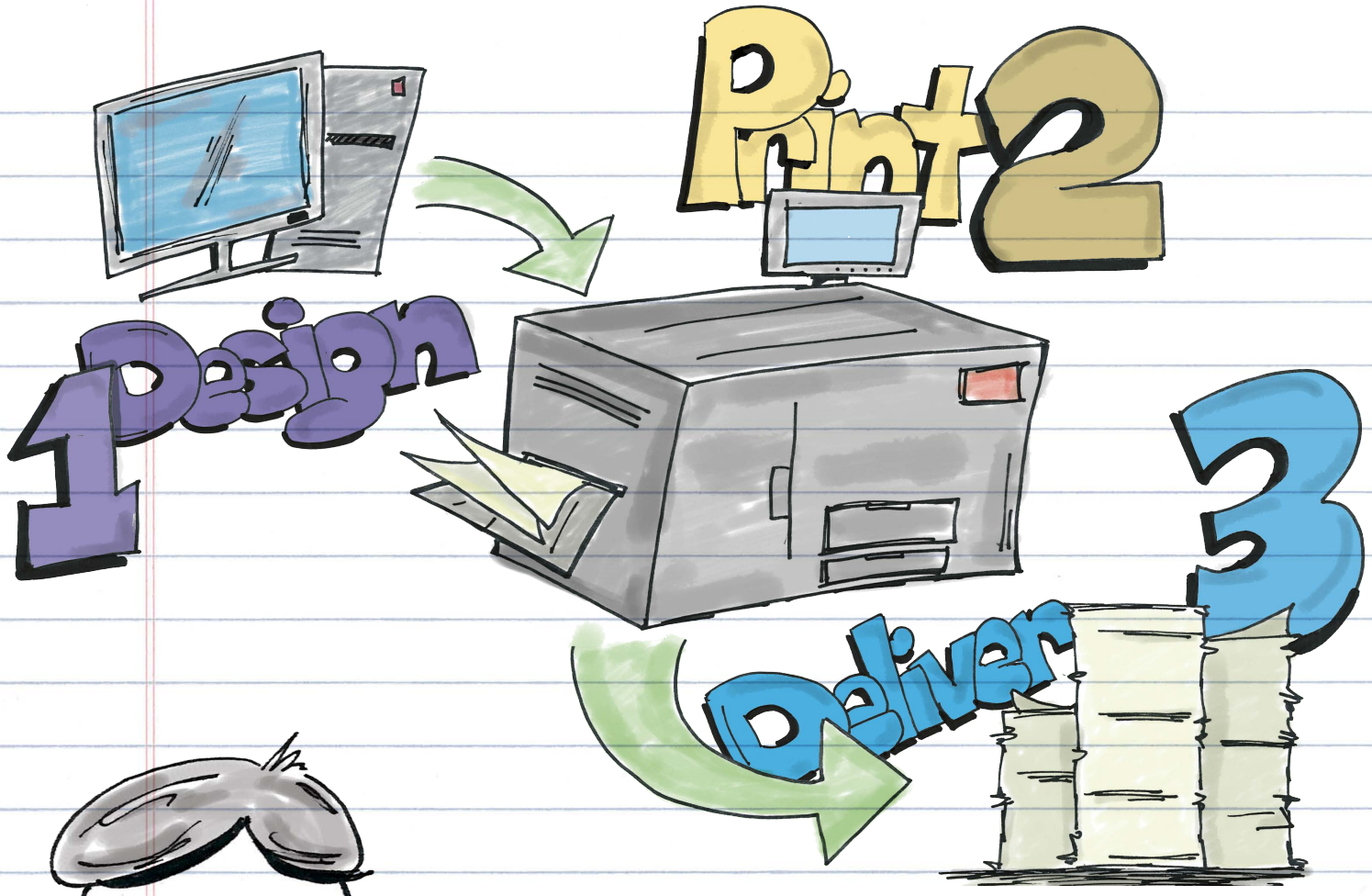
THE WORLD OF DIGITAL FRONT ENDS

When you create the image or document, why doesn't it print the way you intended?

Why do you need to know what a RIP is and why is it important to you?

What are Colorspaces and what is a Profile? How do they intersect with this thing we call a RIP?

Are you, the designer, responsible for knowing what happens after you've completed the designing and is it part of the design process?



Isn't it as simple as 1, 2 , 3? Design, print and deliver? Shouldn't it be? Can it be?

And that's the question to ask and if you are willing to understand what a RIP does and somewhat why it does what it does with the files sent its way. If you are willing, you can find that your workflow can be as simple as 1, 2, 3!

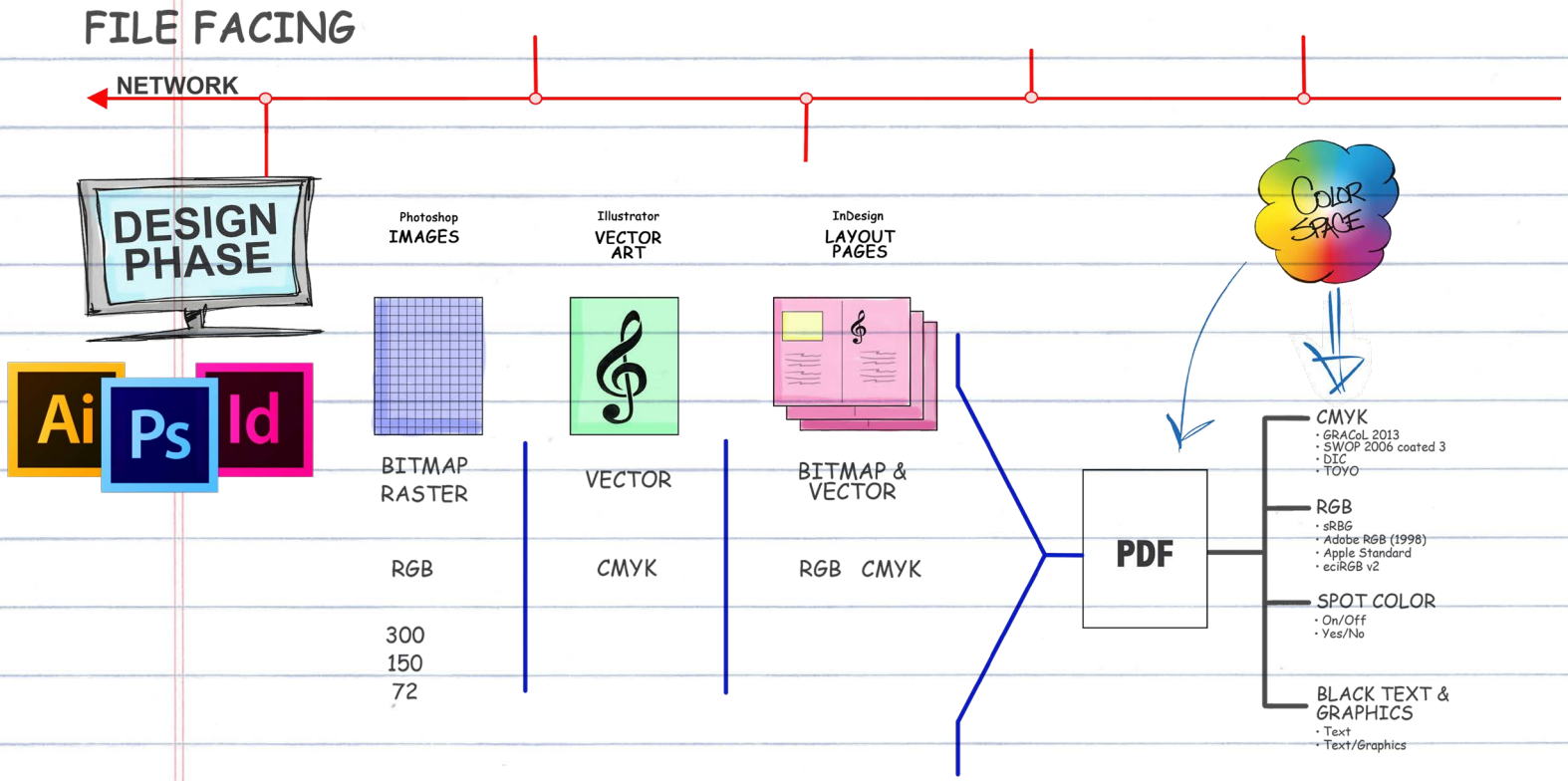
So here's saying, YES! Yes with a little work and understanding the workflow you have can be pretty close to 1, 2 and 3; design, print and deliver.

Think of the RIP, in very simple terms, as a translator of sorts. It takes the document or file and translates it into an electronic format that the printer can understand.

Glossary

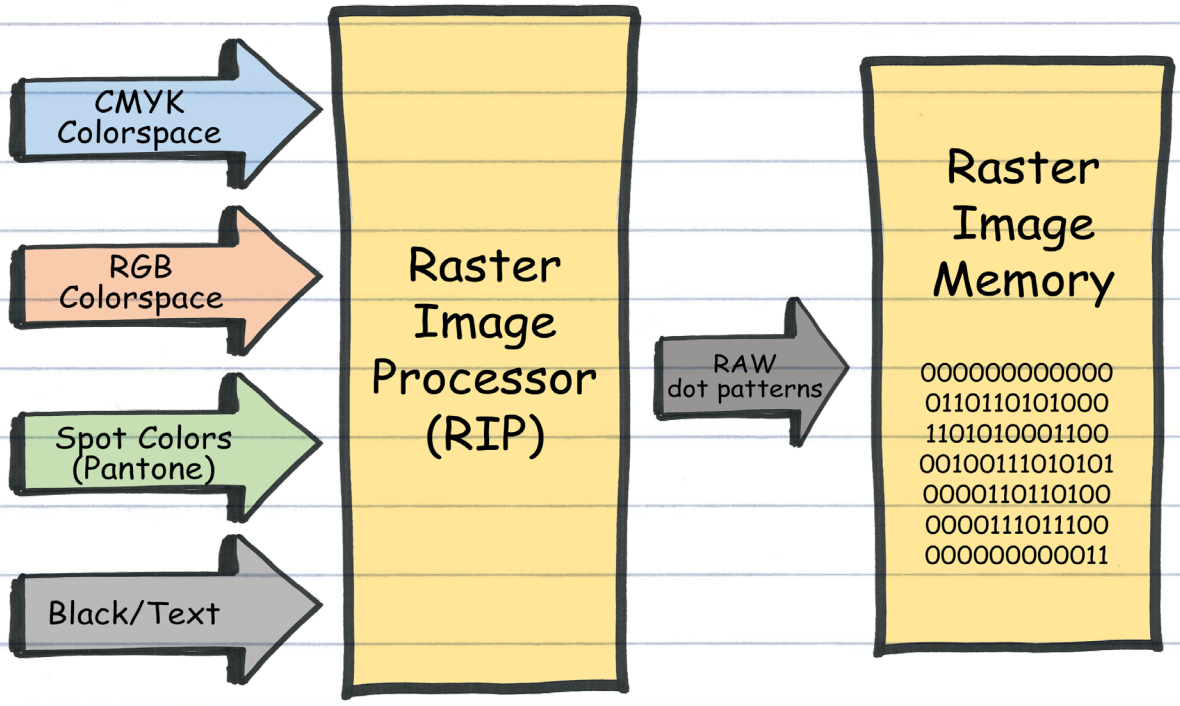
- **Raster image processor (RIP)**
  - A hardware-software combination that interprets digital data into an array of dots (a bitmap), which can be output through an imagesetter marking engine.
- **Rasterization**
  - The process of converting mathematical and digital information into a series of dots by an imagesetter or a platesetter for the production of film or plates.

Here's the definition of what the RIP is doing and a bit more in depth as to what Rasterization is. While this is good to know, most will not see why knowing that definition is important. So let's look at it another way to maybe see why the design plays a big part of the whole workflow and why the designer has a lot to do with what the RIP will do to the file.



We will start from the most common place for designers, the Adobe Suite of products. However, many will use products from Microsoft such as Publisher and there are many other softwares available for designing documents and files that will end up being printed. Affinty, Quark Xpress, and on and on the list goes. The software isn't as big a deal as how you are working within that software. Or maybe, where are you working.

All printers, from simple desktop ink jets to the big production digital presses use a RIP. And as the definition states the RIP can be a combination of software and hardware. The bigger the print system the bigger and more sophisticated the RIP system will be. When you look at the home/office desktop printer, you will not have an additional piece of hardware as your RIP, you will have only a software RIP and you will not have much control

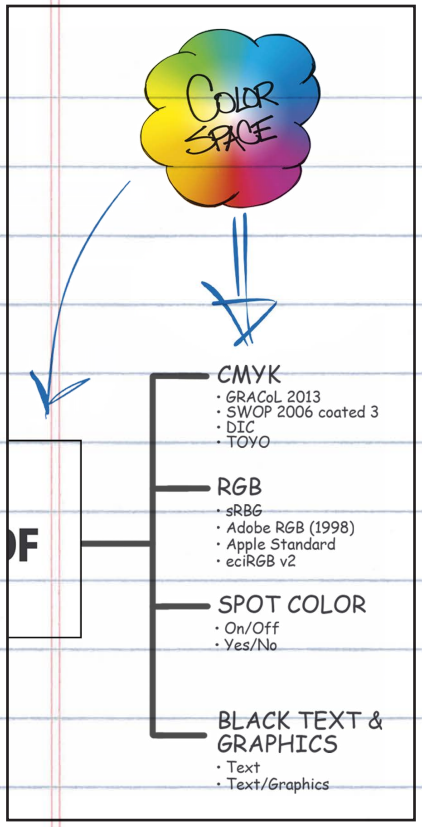


over what the RIP will do for you. There will be limitations in what the RIP can provide you but in the bigger systems the RIP plays an important part in what happens to your document when it works its way through the workflow.

The first question you need to answer is, "What Colorspaces are you designing in?"

If you know that, then your document or file can run through the printing system with those Colorspaces being honored and the end results will be more pleasing.

Don't worry too much if that question throws you off, it's not the top thing most people think about. But, you should know that each program has default color settings and within that are the default Colorspaces the program starts in. And, the Colorspaces can be changed. If they are not honored throughout the printing workflow, disastrous things can happen to your files.



If you look at the diagram to the left you will see the 4 main categories of color stuff we run into when discussing RIPs in the digital printing world.

The 4 main categories are , CMYK, RGB, Spot and Black/Text. In each of those there are almost an endless subset of places you can go.

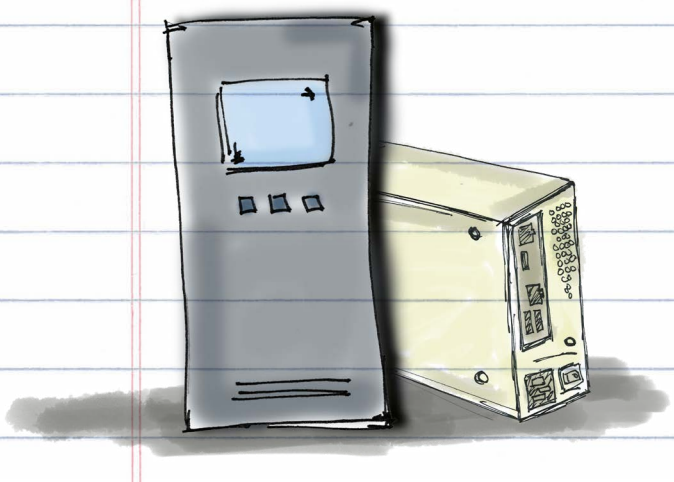
The more "powerful" RIPs can be set to match what Colorspaces you are designing in and that will honor the color in your file.

Trouble starts when you mix the Colorspaces which will lead to disappointment in the final print.

The RIP will perform the color separations on color files as well as keep your black true in the text and graphics files and if you are using a Spot color, not only will it match that color for you but when it seems the printer isn't printing that color just right the RIP software many times can help an operator tweak the Spot color in.

So that's it? That's what the RIPs do? They translate the document or file into the information the printer needs to print that document or file on the correct substrate or paper we want it to.

Yes, that's the main job of a RIP, but, many of the more professional grade RIPs, shall we say, come with a host of software goodies that enhance things in ways most people never knew you could.



There's Preflight and Postflight software that helps an operator check your file before printing and even after it has been ripped and sent to the printer. Preflight can check for things like missing Fonts, Hairlines that are too thin for a printer to print correctly. It can check the document for Spot Colors, Image Resolution, Overprint, PostScript and

in some cases VDP (variable data) Resources.

You can change or edit the color curves within the file which gives an operator the ability to add or subtract the total amount of toner being applied. Playing with curves isn't for the faint of heart though.

Often a RIP can offer Imposition and Document Composition software. Giving the operator the ability to manipulate files to create the end result desired.

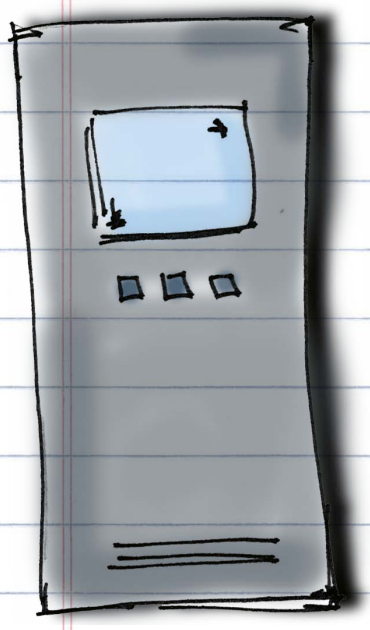
Imposition can take a single file, like a business card and duplicate that single card into a page full of them or it can take a multiple page document and paginate that document so the printer can print a finished booklet.

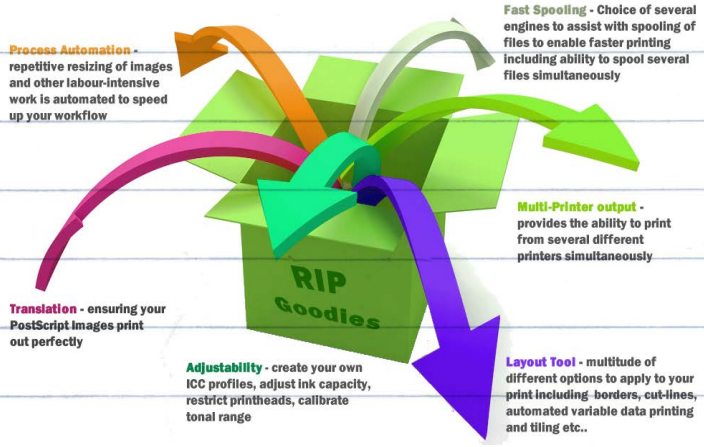
Composition software allows you to make changes to the document. What kind of paper will be used. Maybe adding different colored paper to different pages or adding covers to the front and back of a document as well as rearranging the pages if necessary.

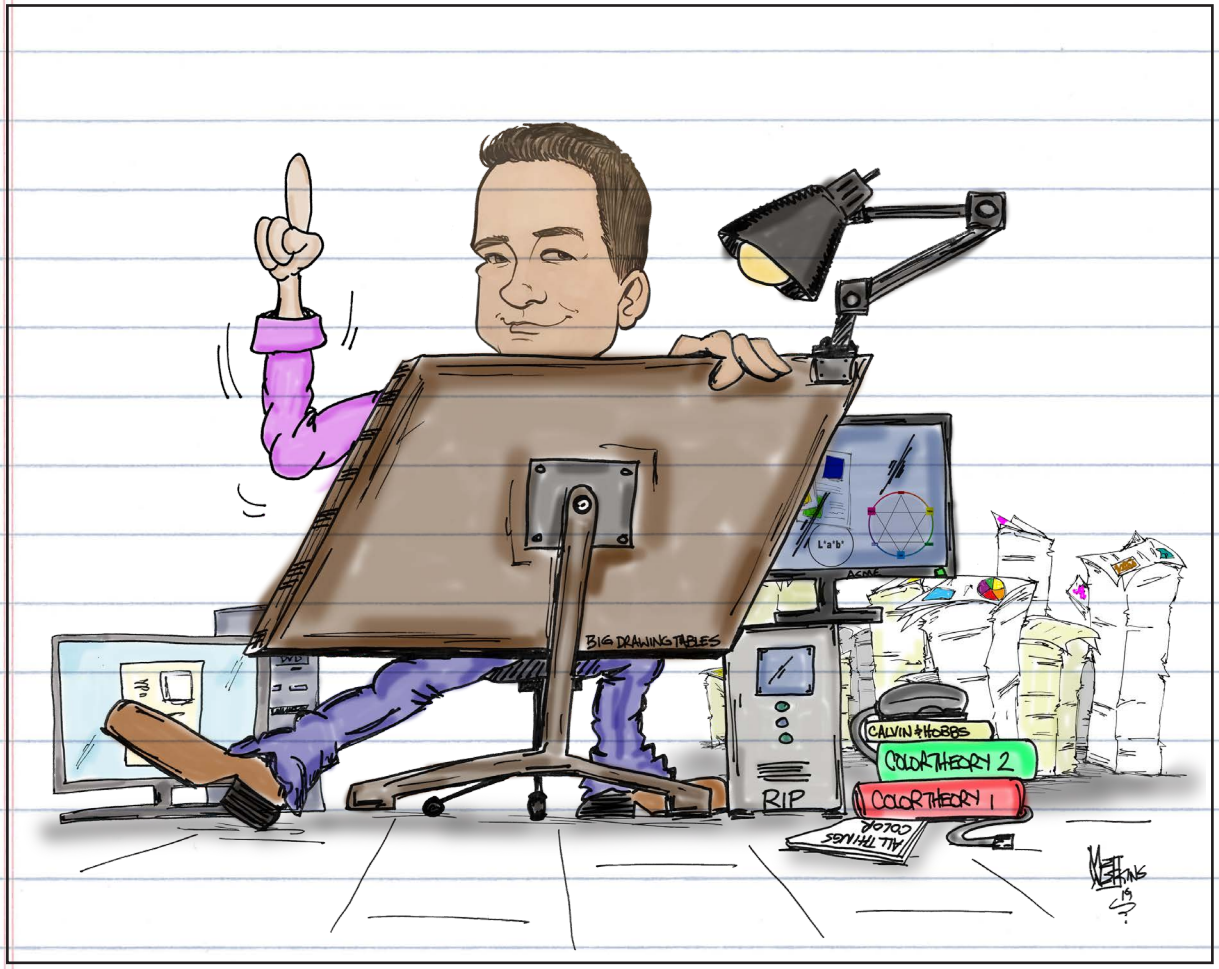
Many times the designer would like to have Tabs inserted at the start of each section or chapter. Composition software can do that.

All of that is the bonus to having a high end RIP available but the most important thing a RIP performs is the translation of the file into the language of the printer.

The designer still has the main role in everything for as the saying goes, "Garbage in, garbage out." That holds true in documents. Create the document correctly and the RIP will honor your hard work.







By day, Matthew Watkins is a Color Analyst in the Digital Printing world and at night or on the weekends you can find him behind his drawing table or behind on of several types of cameras and then possible in front of his computer either editing files like this one or video or maybe a photo or two.
He holds multiple industry certificates, some Microsoft certifications and other things that say he might actually know something about something.
For the most part he is a self proclaimed color nerd/geek and loves nothing more than to learn all he can about the wonderful fun filled universe that is all things color.
He is also a certified trainer and enjoys giving as much of his knowledge away as others will let him.
"Sharing is the best part of knowing something!"
He is married to the best wife in the whole wide world and has four of the best kids you could come across.
He resides in the state of confusion and Illinois, which some might say are one in the same.
On a hot summer day you might find him lounging in the back yard pool or in front of a TV if the Cubs are playing. If, of course, he has the day off!

Should you like to reach him, he can be found at his Linkedin page:
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