

Verified Color Handbook: Using Color Process Control to Operate a Sustainable Printing Business in the New Economy

**Written by:
Jim Raffel**

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Introduction

This eBook was produced by compiling blog posts written over a five year period at JimRaffel.com. I am slowly migrating printing industry relevant content to the Color Conversations blog on the ColorMetrix.com web-site. You may have received this eBook as a thank you for signing up for our ColorMetrix.com email list. First, thank you for trusting us with your personal information. We will never spam you and unsubscribing from the list is easy by following the links at the bottom of every email we send. Second, please enjoy this collection of what I consider the best printing industry relevant posts from JimRaffel.com.

This is a handbook of sorts but you won't find step by step instructions to operate your sustainable printing company in the new economy. You will find a collection of articles that will explain and explore the importance of color verification in achieving a sustainable state.

The first section contains articles about the technical aspects of color and color verification. Sustainability in the printing industry requires that rock solid process controls be in place. Color verification and monitoring is the piece of the sustainability puzzle so many printers overlook. No other form of process control monitors overall process health in the plant and at the same time verifies the quality of the finished product for the customer.

The second section leads off with a piece on printing industry sustainability. The section wraps up with a piece about print not being dead, instead it's just changing. In between are several articles sharing my views and commentary on the printing industry. Most of these have been written in the last year or so.

I can also tell you that the industry stands a much better chance of remaining prosperous and successful if it pulls together with a sense of community. With that in mind ColorMetrix is building a user community where our customers can come and share technical tips and tricks as well as general information about the industry. In addition, we will contribute one seminar each month related to either new software releases or verified color in general. This community will only be available to customers with a valid technical support account.

Jim Raffel (8/23/2010)

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Section 1: Color Verification and Process Control

1. *Jim Raffel's Tone Value Increase(TVI) notebook.*

This chapter was originally written as a five part series for the JimRaffel.com blog. I have rearranged and edited the parts to make what I now perceive as "better sense."

Density is king: TVI(a/k/a Dot Gain) is not measured it is calculated from density which is king. All the other values our modern densitometers display are simply calculated values from the densities the instrument measures. In short, all a densitometer does is transmit a predetermined amount of light and then measure how much comes back to the instrument. This is done through Red, Green and Blue filters so the instrument can tell if the light was stopped by Cyan, Magenta, or Yellow ink.

One reader made a comment at JimRaffel.com that density is also a good indicator of ink film thickness on a printing press. Just remember that two inks with different pigment loads can record the same density and have different ink film thickness.

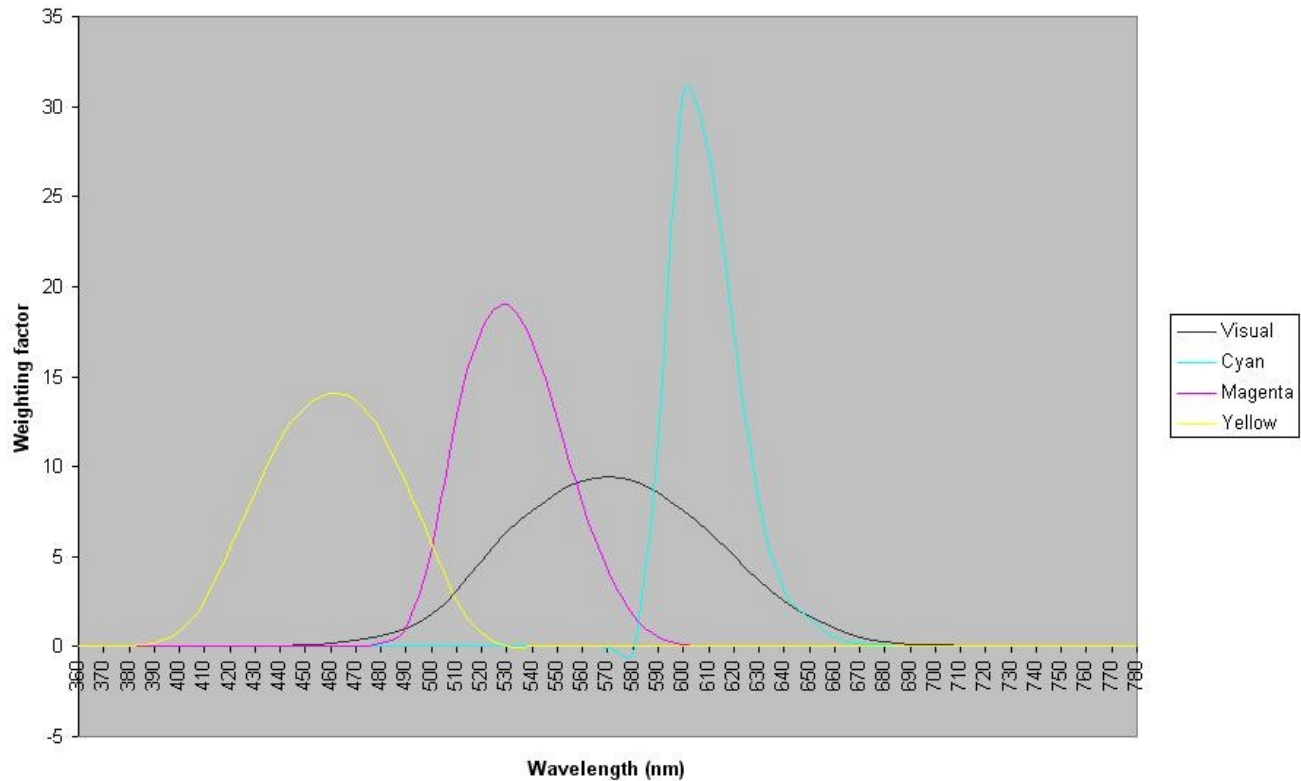
TVI really is a better term than Dot Gain: My short answer for this is that a densitometer (or spectrophotometer acting as a densitometer) does not actually measure dots, so how can we really call it Dot Gain? Add to this the fact that some systems being used for proofing result in continuous tone images with no dots and my position becomes a bit clearer. Those on the SWOP committee that spearheaded the initiative to change this misleading term (which I resisted early on) should be commended. After all, when a 50% patch of a color increases to an apparent 65% patch of that color the tone value has in fact increased regardless of whether that patch is made up of dots or not.

TVI in and of itself is not a bad thing: Back when TVI was called Dot Gain, I remember going into print shops and having pressman tell me "No, we don't have any dot gain." This was not ignorance (they knew they did), but instead a misconceived notion that TVI was a bad thing. I always countered this by saying that Dot Gain is not bad; however, NOT knowing what you Dot Gain is, is a bad thing. Think of it as trying to get from one city to another in a car without a map. We need to know where we are in order to get where we are going.

(Note: this paragraph was originally written in early 2006) **GRACoL 7 appears to be taking our pressrooms in a direction where TVI will be significantly less importance** in monitoring production run stability. Instead GRACoL 7 is based on maintaining gray balance utilizing density and $L^*a^*b^*$ values. Over all, I feel this is the right direction to go and from what I have heard and seen several test press runs have proven this to date. Even GRACoL 7, however, recommends taking a look at CMYK TVI values when the system does not seem to be working as intended. TVI and TVI variation are still incredibly powerful and simple measures of press stability. I have watched real pressroom experts track down loose blankets and other press problems by first taking a look at TVI numbers, then looking for the actual mechanical problems. (NOTE: If you have not read the GRACoL 7 draft quite frankly you must. This methodology will become a barrier to entry very quickly.)

Measuring TVI on Inkjet proofs is Meaningless: I considered changing this topic, because the title is a bit inflammatory. Understand that my frame of reference is users of our software who rely upon density and TVI as process control measurements for inkjet proof production.

Status T density filter weighting factor



Far too many times I have seen the density and TVI values stay within tolerance, and yet the Delta E shifts can be huge. The graph above shows the spectral response of the Red, Green, Blue, and Visual filters used in graphic arts densitometry. Those filter responses are specifically designed to address the spectral response of process cyan, magenta, yellow and black. One would be wise to compare the spectral response of the inkjet inks your proofs are made with to that of the graphic arts inks being utilized in the pressroom.

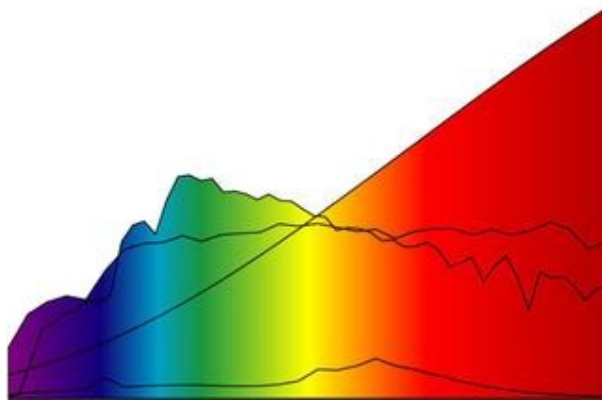
2. Metamerism & Color Management

In response to the blog post “Golden Nugget #15 Which Instrument Should I Use?” on JimRaffel.com, Adam made the following comment:

“This is because some spectrophotometers are built with spectral response every 20 nanometers while others respond every 10 nanometers.”

I believe this is referred to as the resolution on the device.

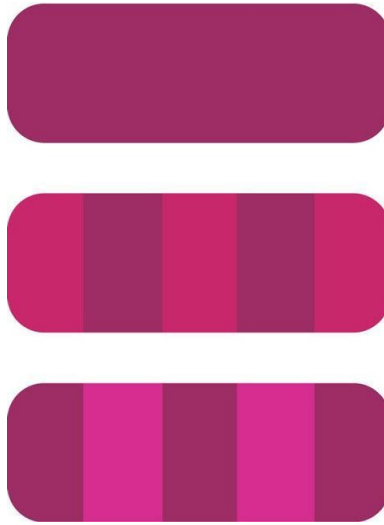
Adam’s comments got me thinking about the visual spectrum in general and all the different ways we work with the spectrum on an everyday basis in our industry.



So, for our discussion Metamerism is...

When two color samples appear to match under a particular light source, and then do not match under a different light source, this is an example of "sample metamerism." One can conclude that the spectral reflectance distributions of the 2 samples differ, and their plotted reflectance curves cross in at least 2 regions.

The next image shows 3 examples of the GATF/RHEM Light Indicator which is printed with two magenta colorants which are a metameric pair. In this case when viewed under proper graphic arts lighting (5000K), the two colorants appear the same color. When viewed under other light sources you can see the two different colorants.



The RHEM indicator is a great tool, because it comes in rolls with self adhesive backing, so one can purchase them from GATF, and attach them to color proofs going out to a customer. If the customer is complaining about color a simple question about the appearance of the indicator will let you know if they are viewing the proof in 5000K lighting.

This brings me to the fun part of this week’s conversation. I happen to know the “Adam” who commented on last week’s Golden Nugget, and he is a graduate student at RIT. Adam and I had an interesting discussion yesterday about Color Management being the solution to the metamerism that exists between ink jet proofing ink and media combinations, and pressroom ink and paper combinations.

Color Management also solves the problem of soft proofing metamerism that exists because of the way displays (CRT or LCD) are illuminated. Without Color Management there would be virtually no way to match ink jet or soft proofing devices to ink on paper printing presses. Because these colorants are metameric it is increasingly important that all viewing of color occur under proper 5000K lighting.

3. Metamerism: Hard copy vs Monitor

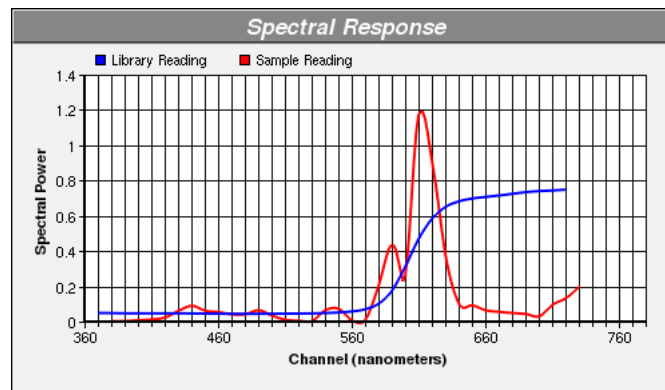
Definitions: First, metamerism requires a pair of objects. The two objects are often referred to as a metameric pair. In order to be considered metameric the pair must; match under at least one combination of illuminant and observer; not match under at least one combination of illuminant and observer; and have different spectral response curves.

Metramerism Tests: The previous chapter shows an example of the GATF REHM indicator used for visual assessment of light sources. This is also an excellent example of a **visual test for metamerism**. The two samples may also be measured by a spectrophotometer, and then an **instrument test** for metamerism can be performed. If the two samples exhibit a small Delta E under one illuminant observer combination, but have different spectral curves that cross at least three (3) times they are metameric.

Our ProofPass.com system was recently used to measure two samples. Below I have provided the L*C*h* values of a 'Red' swatch measured on a hard copy proof and then reproduced and measured on an LCD monitor.

	Hard copy	Monitor
L*	40.56	43.02
C*	60.85	61.31
h*	28.44	27.9

The CMC(2:1) Delta E of the above two samples is 1.34 in a D50/2 degree environment.



Now, take a look at the spectral reflectance and emission curves of the two swatches. (Library Reading = Hard copy and Sample Reading = Monitor)

Again the instrument test for metamerism states that if the spectral curves differ, and cross each other at least three times, then the objects are metameric. The curves look different and I count at least 10 crosses.

As long as the physical sample is viewed in a proper viewing booth, and the monitor continues to be calibrated and also viewed in proper conditions, the metamerism effects of hard copy vs. monitor proofing above should not be a problem. My concerns about this type of metamerism extend to placing a package on a retail shelf which is seldom a D50/2 degree environment.

4. Make Proofs That Match Your Press

It does not matter if you are utilizing a methodology like GRACoL G7, or a more traditional color management approach. In either case you will include a target on each print job with the same color bar swatches that you output on the proof. This will allow you to measure the press OK sheets and compare them to the proofs, thus building even a larger statistical database to call upon.

When utilizing software like ColorMetrix and ProofPass.com products for process control and print certification purposes it does not matter if you are using a methodology like G7 or traditional color management. While there are some new formulas out there to run the collected data through the tried and true colorimetric data ($L^*a^*b^*$ and derivatives along with some version of Delta E), do a great job comparing two similar or dissimilar imaging systems.

Unlike density and dot gain values which must be used with pigment sets designed for 4/color process printing, $L^*a^*b^*$ values allow the comparison of an inkjet proof and an offset press sheet. This is possible because we are looking at the actual colors, not values derived from a formula which assumes a certain pigment set.

Not only will you be comparing the measurements of the proof to the press sheet, but you will be building a history of what is a "normal" print condition of each press and paper combination. Some refer to this as finding the "sweet spot" of the printing press.

Overall, as your volume of collected data grows you will be able to refine the system in small steps by reviewing the proofing and press information both independently and together. Using numeric results, charts, and graphs you will be able to see small differences in color that can be adjusted for over time. No system is stable over time, so continuous monitoring is a must in order to maintain stable color.

5. The difference between satin-gloss & high-gloss

...Everyone has an idea of what the terms "glossy" and "matte" mean. In case of terms like "satin-gloss", "high-gloss" or "satin-matte", however, which are often used in the printing industry, different observers may reach different conclusions... (Source: <http://www.qipglossmeters.com/glossmeters>)

For many years ColorMetrix has quietly developed keyboard wedge software for a line of gloss meters manufactured by Quality Imaging Products. As a result I have had the opportunity to test and work with the Gloss Meters and have also developed a pretty good understanding of why one would want to measure gloss in the printing industry (even though very few of us do).

In the last few weeks I have been assisting clients in understanding why their inkjet proofs do not match press sheets even though they have gone through the entire color management process. The problem in more than one case has been the inkjet paper selection. For sake of argument, we are printing on a semi matte sheet and proofing on a semi-matte inkjet proofing paper. Even if both the inkjet proofing device and the press have been profiled, these two papers are not the same and probably do not have exactly the same gloss. While a paper simulation is nice, it does not adjust for the difference in paper coating which is best quantified by gloss measurement.

Gloss has a great deal to do with how our eye and measuring instruments see images printed on paper. If for some reason you do not believe this, compare an identical advertisement printed in a newspaper versus weekly news magazine.

6. Grey Balance & Printing like a Master

I have written before about the [Printing across borders](#) initiative and late last week made a post to the mail list which I feel generated a very good response. My post shown below was in response to a post questioning the GRACoL MasterPrinter,Ñç program:

It stands to reason that that a printer with tight control over TVI would in fact also be a "better" Master Printer. With conventional 4/color process printing (both offset and flexo) large variation in dot size will cause large shifts in color.

Also, in some testing (unrelated to G7 method) we have found very large delta E shifts in grey balance do not necessarily translate to large or any shift in saturated colors at the outer reaches of the gamut. So, if part of ones work is reproduction of saturated corporate colors G7 process control techniques alone may not be sufficient.

[link](#)(subscription required)

Joseph J. Pasky made the following comments in response to the first paragraph above:

Yes, that is exactly correct...a point that Felix Brunner has been trying to make for more than 30 years. Even small shifts in midtone gray balance are FAR more noticeable than very large changes in SID. He is the one who 'invented' controlling a press with midtone, not only SIDs. From my understanding, he's even got patents on several aspects of this. (GRACoL didn't come up with this 'last week' in a marketing focus group.) Brunner established the order of importance: 1. gray balance, 2. tone reproduction, 3. color. But, he also looks at every aspect of the reproduction curve, from highlights to solids.

[link](#)(subscription required)

Others made some very valid comments also but I decided to pick the one that told me I was "exactly correct." Seriously, the group has generated some good discussions about printing to standards and using new methodologies. I would suggest visiting the web-site and subscribing to the email list.

7. Proper Press Fingerprinting takes Commitment

A reader named Dale once asked this question:

In fingerprinting our presses, we've run up against the dreaded "Hurry up and do it, but don't put too much work into it." What are your recommendations for impressing upon the higher ups that doing color balancing and working out the calibrations takes time?

I would suggest you have your management read JimRaffel.com. The reality, however, is that the culture required for completing successful fingerprints starts at the top and does not get worked up from the bottom. I spent the better part of the first ten years of my career trying like heck to change the culture of a printing company (now out of business I might add) from the echelons of lower and middle management. While I hesitate to use the words "can't be don" (and not because my Mom the English teacher told me to never use contractions), I believe this is one place where this expression applies.

I have been very fortunate in my career. At 21 years of age before I had even graduated from [RIT](#) I was able to observe one of the press runs used to set the early [SWOP](#) press standards. A lot of very smart people participated in this run and the scientific procedure was impressive. Then, not a year later I was the guy doing all the print quality measurements on a brand new [Baker-Perkins G14](#) that cost about 9 million dollars back in 1986. While I was just one member of a very large team, the owner of the company made it quite clear that he was not making his first lease payment until we had a press that was printing correctly.

Over the next 3 years I had the same responsibility as 2 more new presses started up in that facility. In both cases, the purchase contract was very clear that we did not make lease payments until the press met our print quality standards. While the company in general had an difficult culture, in the case of all three of these press start-ups the message from the very top of the organization was "Do whatever it takes to get a solid press fingerprint." The reason was simple, without a solid benchmark at start-up how could we ever know what condition the press was in later?

Dale, it takes a great deal of time, money and a great team to perform a successful and meaningful press fingerprint. During the press start-ups above, the fingerprinting process could go on for a week or more. The press was fully crewed and lots of paper was run during this time. All the support staff had to be available from pre-press, plating, maintenance, materials handling, and more. I don't think it's an understatement to say that these fingerprint cost \$100,000 or more.

Now, not all fingerprints need to cost that much. I took part in a very successful fingerprint within the last 30-days that probably cost no more than about \$10,000 including our software and professional services time. It is, however, a matter of scale. The client for the 10K fingerprint was simply making the first investment in end-to-end color process control. All the key players in this organization participated in the meetings and remained on-site during the 2 (14 plus hour) days required to complete the fingerprint.

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The results on the second day (and in follow-up calls the last three weeks) continue to be impressive. In the case above the press is not brand new but instead a fairly old and well worn pieces of iron which is now printing at an impressive level.

My conclusion is simple. If senior management of a PRINTING company is not willing to invest the time money and effort necessary to perform a proper PRESS fingerprint, one must really question the value of performing the fingerprint.

Section 2: Printing Industry Sustainability and Business Issues

8. Sustainable Green Printing

What is this new and latest buzzword [sustainability](#)? If I have offended you by calling it a buzzword I am not apologizing. Please do not misunderstand me; I think sustainability is a good thing. Smart printing businesses have been engaging in most if not all of the components of sustainability for years. The reason is quite simple - PROFIT.

Recycling is a key component to a sustainability program. Has anyone reading this been around long enough to remember the late Roger Dickeson's War on Waste (WoW) waged by web printers back in the 70's, 80's and early 90's? Did they do this to be "green" or "sustainable?" Personally I think not - they did it to MAKE MORE MONEY!

Did the web printer I worked for in the 80's and 90's commit more resources to better segregation of waste paper streams, including office paper, to be green or sustainable? Did we find ways to recycle even the cores from our rolls of web paper to be more sustainable? No, we did these things to reduce the cost of waste disposal and increase the revenue received for recyclable product. The net result of course was that we became more sustainable and green.

I suspect the sustainability 'consultants' out there are screaming right now that he does not get it! While you may be right, I do understand that there are other components to a complete sustainability program including a social responsibility component. I am sure even the social responsibility component of sustainability, when properly executed, can and will result in more of that dirty word - PROFIT.

What caught my interest about sustainability is that improvement must be measurable. Then I got to thinking - if the sustainability movement repackaged WoW, what else have they repackaged and re-labeled? Deming's Statistical Process Control (SPC) that's what. The past twelve years of selling and servicing ColorMetrix color verification and process control software has provided me with a good knowledge-base in this area. I have also written quite a bit about the [topic on this blog](#).

Since you can read all the past posts, I will keep my explanation of using process control in a sustainability campaign short and sweet. Following is a simplified ink jet proofing example:

1. Establish a baseline of 'bad' proofs as a percentage of the total produced.
2. Utilize color verification and process control tools like ColorMetrix and ProofPass.com to verify color quality of all proofs produced.
3. Review process control charts and other data to establish when and why variation/drift is occurring.
4. Fix/Improve the causes which can be fixed and improved, and learn to ignore the special causes.
5. Return to step one and compare current results with the baseline.

SPC works and Quality is NOT free, it is instead an investment with a return.

9. Five Ways Color Process Control Impacts A Sustainability Initiative

Recently I was reading the 2009 PRIMIR/NPES "[Sustainable Print in a Dynamic Global Market: What Going Green Means](#)," Executive Synopsis and it reminded me that back in February 2007 I tackled this topic in [#68: Sustainable Green Printing](#). Among other conclusions the PRIMIR study agreed with my #68 post that sustainability is good business. So, knowing that a lot of my readers are looking for ways to make more money with less business these days here are a five tips to utilize color process control in a sustainability initiative that if properly run will result in a more profitable company.

- 1. Hard Copy Proofing** - Fewer proofs in the trash equates to the use of less media, ink and electricity. Electricity you ask? Yes, even electricity. I am sure there are sustainability consultants that have quantified this part of the equation. Ongoing measurement and review of color quality will uncover workflow and mechanical problems before any or a large quantity of bad proofs are produced.
- 2. Virtual Proofs** - Verifying and monitoring the display panel color fidelity insures that the device is used right up until it is no longer capable of displaying color accurately for proofing purposes. The device can then re-purposed limiting and delaying disposal of hazardous materials.
- 3. Plating** - Gary Briney at [Hennegan](#) successfully uses [ColorMetrix](#) software to monitor and control printing plate production and saves thousands of dollars each year in raw materials and the electricity to produce "bad" plates. The PRIMIR report also makes reference to a company in Washington State saving \$5,000 to \$7,000 by recycling printing plates. So, even when a "bad" plate is made this company (and many I am sure) makes sure the metal and hazardous materials are properly recycled and disposed of.
- 4. Pressroom** - With paper making up 26% of landfills the pressroom is an obvious area that any sustainability initiative must focus upon. Fortunately, the cost of paper, shorter cut-off presses and initiatives like the War On Waste begun in the 70's have combined to make most pressrooms in this country fairly efficient from a paper waste point of view. Evaluation of color process control records will provide information necessary to continuously reduce makeready time and to identify when the press is not running at optimum levels and in its sweet spot.
- 5. Cross-media Control** - Late last year I wrote about [the fidelity of brand colors across the various mediums and substrates utilized in today's POP displays](#). Imagine the environmental impact of a critical brand color not properly matching on multiple pieces of an in-store POP display. With proper color verification techniques the need to scrap and reproduce individual components of the entire display is virtually eliminated.

If you are not sure how to start a color verification and process control program to support your sustainability initiative take some time and review the achieves of [JimRaffel.com](#).

10. Stop Printing and Start Communicating!

I recently attended an evening TweetUp and the next morning a supplier focus group for a regional industry support and training center. At the supplier focus group there was a great deal of discussion about the printing industry since several of the attendees manufacture equipment like printing presses and bindery equipment. As we sat in a building named for [Harry Quadracci](#) I was reminded he once said that, we are not a printing company we are a communications company. We do not compete with other printing companies we compete with other communication options. so, my thought is stop printing and start communicating.

Having come from the TweetUp the evening before I began to wonder why you still refer to yourselves as printers working in the printing industry. Sure you still print, but the growth area of the industry is variable data, cross-media, digital campaigns. In such a campaign digital print will represent maybe 10% of the total campaign cost. Do you really want to be the printing company in that equation? No, stop printing and start communicating.

Instead I would follow the path out of print and into communications like my visionary friend Rick Littrell has done. [Rick's company Magicomm](#) puts together kick butt cross-media marketing campaigns for some really big companies. I have seen his offices and while one of the tangible parts of most campaigns is a printed piece you will find no printing press at Magicomm. You will find experts in social media like Twitter, Facebook, PURLs, variable data video, and all sorts of other cool new communications technology. No need to tell Rick to stop printing he figured it out all on his own.

So how does a guy like Rick who spent most of his career working for a manufacturer of consumables to support the print industry end up being a communications superstar with no real ties to print anymore? (Other than writing the check for 10% of the campaign value to his printer) He does what you all have to do, think outside the box. If my company, ColorMetrix, was still trying to survive on sales of our ColorMetrix Classic product line I have news for you, I would be looking for a job today. Do I still sell that product? – Sure but I have also looked out at the color verification and process control landscape and found niches that other large players could not or would not fill. I have gone after and won that business to keep ColorMetrix a growing and viable company.

The time is now to learn about all the communications mediums you are complaining are taking away your business. Remember you still have the customer. Before the social media entrepreneurs steal him from you perhaps you should figure out how to sell him a cross-media campaign. There are a whole lot of social media consultants (and people who pretend to be!) out there you can hire to make it work. Instead of getting 10% of the campaign from the campaign owner, pay someone 10% and own the campaign!

11. Color & The State of Printing Industry 2010

It never ceases to amaze me how integral color knowledge is to the [graphic arts](#) industry at large, yet how few people in the industry really understand the topic. The problem is that color, like the game of chess, is very easy to learn and almost impossible to master. I believe this is because true color knowledge requires solid math skills. [Color Science](#), after all, is applied physics.

In 2010 and beyond, the printing companies that thrive (profit leaders) will be leaders in color knowledge and implementation. For example, the [GRACoL G7](#) methodology is the practical application of color science to achieve a more consistent and predictable print result regardless of where the digital files are converted to ink on substrate. Gee, sounds like a [Real, Authentic & Sustainable](#) way to reduce waste and increase productivity.

A significant advantage ink on substrate has over other information delivery methods is color vibrancy and consistency. Sure my iPod Touch, my Blackberry, my computer screen, and my TV screen can all deliver amazing and eye catching visual messages, but how consistent is the color fidelity of the same message delivered to multiple devices? (It was a rhetorical question, but the answer is awful).

On the other hand, you can produce a corporate color like "Coke Red" on just about any substrate anywhere in the world if you choose to do so, and I wrote about it [here](#). The printing industry also has the capability to create amazing color messages by utilizing interesting combinations of unique spot colors. The key again is you can control the color and consistency of these colors like no other medium that is delivered to the general public.

The color challenge I issue for 2010 is twofold. First, invest the resources necessary to become a high level practitioner of color science, or provide the means for someone in your organization to do so. Second, keep your eyes open for projects that benefit from the delivery of a high level of color fidelity and color consistency to the general public. Go after these projects with a vengeance selling the benefits that you as a printer can provide over any other message delivery method!

12. Feature Post: Printing (on paper) vs. Google

Authors Note: If you do not work in the printing industry, read this post from the perspective of accepting change in your industry and recognizing who your real competitors are.

Your competition is not the printer down the street. Your competition is [Google](#). Right now, they are kicking your butt.

The Situation - The last decade has not been an easy one for the Graphic Communications (we used to call it [Printing Industry](#)). Many organizations failed to accept that changes in information delivery are permanent and ever increasing. Others were slow to adapt and now are scrambling for their very existence. For those companies with a real, authentic and sustainable business model built to sniff out change and hustle to adapt - good times are ahead.

For large segments of the population electronic communication is overwhelming. Use of [email](#), and social media tools like [Facebook](#) and [Twitter](#) will increase, but the noise that must be overcome for your advertising signal to be heard make these mediums less than ideal for advertising and promotional dollars. On the internet you get about 2-3 seconds to capture the prospects mind so they commit to look further at your message.

The Opportunity - How many emails do you delete each day without even opening them? That is after [spam filters](#) have captured a large percentage of the noise for you. Now, take a look at your postal mailbox. If your pile of mail is like mine it is about 1/4 to 1/3 the size it used to be. There's so little junk mail I actually look at the pieces now. All of them.

Some of the junk mail I receive is beautiful printing. Extended gamut, die cut, spot coated, hyper-personalized so that the piece speaks to my needs and solves my problem. Occasionally pieces are so impressed I hang onto them and show my wife. Yes, that matters - a marketing touch is a marketing touch. Do that with an email I deleted.

Direct marketing merchants are still printing catalogs, lots of them. Each catalog may have fewer pages and mail to fewer recipients but that just means there are more targeted higher quality versions of the catalog. The direct merchants know that a printed catalog increases the likely hood you will visit their web-site and continue to browse and ultimately purchase. Their catalog is no different than a pay per click ad, designed to drive traffic to the point of action where you can spend your dollars.

The Plan - I have worked with the leaders, the followers and the "now out of business." I have watched, listened and learned in my almost three decades in this industry. If you have a sales staff that can sell and do the things listed below together we can be successful, very successful.

1. The golden age of printing is ahead of us not behind us, so you can stop whining and complaining now.
2. Stop watching re-runs on TV and read one business book a week instead. Yes, one a week, it's a cake walk when you turn the TV off.
3. Learn what your competition is doing - not the printer down the street, Google, Facebook, Twitter, [Foursquare](#), etc. (Hint: If you don't have accounts on all four of those - do it right now. You don't have to love them, but you have to understand them before they eat your lunch.)

4. Embrace the G7 methodology and learn what GRACoL is all about. (have you read all the FREE documents [here](#)?) There will be plenty of commodity jobs to fill the presses that require GRACoL and G7. With the first four steps you just became a break-even printer.
5. In order to achieve and maintain the GRACoL master printer status you will need a top notch continuous improvement and process control program in place. Without a such a program in place the next step is out of your reach so don't even bother.
6. To print stand out pieces extended gamut, die cutting, spot coating and hyper-personalization are the future. Do you understand the technology and consumables you will need to get there? (Hint: The future is now and you are already behind if you don't have the a plan.)
7. Pick your suppliers and outside experts carefully. Ask yourself if they have skin in the game. If they are drawing a paycheck as opposed to holding an equity stake in the business the answer is no. Your local dealer rep (working for a mega dealer) scrambling to meet his sales goals and sell you more of the consumable you already use (that are less than ideal for your environment) seldom has the time or motivation to help you with the six steps above.

So, there you have it seven steps to create you own golden age of printing. If you decide to join me steps 1-3 can be completed by the end of the day and you can be well on your way to step 4 by this time tomorrow. The hard work will not even seem like hard work when you start to see the results.

Comments are open on this and all posts at JimRaffel.com. Join the conversation and let me know what you think about the above post and how implementing the steps is working out for you.

13. Printing is Not Dead or Even Dying

If printing is on the verge of death, then why when I searched Twitter for "[Is Print Dead](#)" did I find over 20 tweets in the past 4 hours? For something dead or dying, printing sure generates a lot of conversation in the Twitter community.

The blogosphere also has plenty to say about printing being or not being dead.

The seed for this post was planted when I read Debbie Kipp's [If Print Were Really Dead...](#) post. It's not so much the post as the 20 comments (and responses by Debbie) that the post generated. For those of you that don't write a blog, getting 20 responses on any post is amazing - getting 20 comments on your third ever blog post is the stuff dreams are made of. This is clearly a topic that gets people thinking.

Over on Samir Husni's blog I found his post [Start spreading the news: Print is NOT dead...](#) This is a very thought provoking post with an embedded video from some very unlikely bedfellows - five titans of the magazine industry. They got together to tell us in video that printing magazines is not dead and it ended up embedded in a blog post - huh?

When [Six Pixels of Separation](#) author Mitch Joel jumped in with [Print is Not Dead](#) I knew it was time to join the conversation. While Mitch is a great blogger it's important to remember that his primary job in life is running his 100+ person creative agency TwistImage. So, when Mitch Joel says print is not dead, trust me folks, print is not dead.

I shared some of my own thoughts on the subject in a recent post [Printing \(on paper\) vs. Google](#). The print industry is definitely changing. Some sectors like packaging and digital print are hot. Others like traditional magazine and insert printing on web presses - let's just say not so hot.

A stronger sense of community and less cut throat competition is what all industries need. Before you try and decimate your competitor take a second to understand who your real competitor is - the alternative technology. While I talked about Google being a bigger threat to printers than other printers what I didn't go into in that post is the good stuff. I and others in the print industry have been using the internet and associated technologies to build communities where we can work together for the betterment of our industry.

What print communities are you an active participant in? Are they on-line, off-line, or best of all a blend of both? Share with us where we can find you on-line. I'll be keeping my eyes on the comments and I'm looking forward to finding some new print communities to jump into.

About ColorMetrix and Jim Raffel

ColorMetrix Technologies, LLC

ColorMetrix is a leader in the verified color industry. The company has been providing color verification and process control solutions worldwide for more than fifteen years. For more information use the contact points below:

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Jim Raffel is the CEO at ColorMetrix Technologies, LLC a company he co-founded in 1996. Jim earned a B.S. degree in Printing Management at Rochester Institute of Technology in 1986. After graduation he worked as a quality control manager assisting in the start-up of two 8/9 unit web presses. Jim then went onto two years of independent consulting while developing an early version of the ColorMetrix software. The consulting assignments were diverse and took Jim to places as far away as New Zealand. He next accepted a position as a special projects manager with a large web printer. Jim worked on and managed projects related to quality and productivity enhancement through the use of technology. One project alone added over two million dollars to the company bottom line. During this period Jim also earned an MBA from Keller Graduate School of Management in 1994. In 1996 Jim started ColorMetrix Technologies, LLC. For more information please utilize the contact points listed below:

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