



CHRIS HEUSCH



BRIAN JACOB



JACK FULTON



COLLEEN LARKIN TWOMEY



CARL CECIL



JOHN D. LENCIONI



DAVID CALLIF



WILBERT STREEFLAND

GOOD VERSUS GREAT PRINTING

WITH THE 2012 TAPPI CORRPAK COMPETITION IN JUST A FEW MONTHS, WE ASKED SEVERAL CORRUGATED PRINTING AND GRAPHICS SPECIALISTS TO ANSWER TWO QUESTIONS ABOUT HIGH QUALITY CORRUGATED PRINTING.



What are the most important characteristics, qualities or tools necessary to be a high quality corrugated printer today?"

Brian Jacob

Jacob Flexographic Services

"High quality graphics begins with certain key principals. One can liken it to 'flexo by numbers.' Writing down and posting successful formulas and procedures yields more repeatable results. The corrugated flexo press is a machine full of parts that wear. Stretching the appropriate replacement time may save a few dollars in the short term but inevitably affects repeatable high quality and almost always costs more in the long run. Twenty-five years ago I spoke to customers about cleaning their anilox rolls and their plates

and filtering their ink. Twenty five years later I find myself still preaching the same laws of preventative maintenance and cleanliness. In addition, I feel strongly that a high graphics mind set takes into account a recognition that technology has and will continue to play a key role. Those interested in obtaining and/or maintaining the highest level of corrugated graphics must be vigilant in their research of what is new, better and helps them run more efficiently."

Chris Heusch

ARCH Inc.

"Box companies using flexographic direct printing of combined corrugated board should first ensure that their customer expectations and manufacturing capabilities are well matched. It is

not simply good enough to be able to print a certain image, but much rather do so competitively. Downtime and waste must be minimized. Here many tools can help that are typically viewed to be only geared for very high-end graphics. For example, a press that offers very tight registration and excellent print length control, also offers faster setup and more repeatable runs, addressing downtime and waste. But over my consulting practice I see time and again the need to go back to the basics: thin plate undercut of print cylinders, correct anilox roll selection, aggressive ink chemistry, ink control, doctor blade adjustment, and maintenance, maintenance, maintenance..."

Wilbert Streefland

Technology Coaching BvbA

"High quality does not exist. 'Quality' is a pass/fail term. It would be better to talk about a 'top level' printer. The print level can be quantified in terms of: color to color register variation, color variation, edge sharpness (of a dot), mottling and print defects. High level printing starts with a clean, safe, maintained and organized environment, tools and equipment. The substrate determines the print level. It is not possible to print accurately small dots on a rough substrate. The screen roll has to be selected in function of the substrate. The repro settings will be dictated by the substrate and the screen roll. For high level printing the equipment has to be in top mechanical condition, designed and manufactured with narrow tolerances, especially the TIR (Total Indicated Run out) of the cylinders in contact (screen roll, plate cylinder and impression cylinder). Ink needs to be set in function of the process (ink tuning). The local ink technician needs to understand the process. For this you need a clear set of specifications. Color is one of them. And last but not least is training."

David Callif

BCM Inks

"Over the past 25 years we have been fortunate to work alongside several pioneers of direct print corrugated graphics. This has enabled us to develop an extensive checklist for those who aspire to be high quality corrugated printers.

- Conduct a print audit of your current plant and its operation(s).
- Determine the capabilities of your people. Are your sales people knowledgeable in high-graphic corrugated sales? Do your press operators know how to run multi-color jobs on various substrates?
- Train. Train. Train. There are multiple options from universities, technical schools, webinars and suppliers.
- Incorporate color management. Print to the numbers. Visual approval is no longer 'good enough.'
- Have a healthy dissatisfaction with every job and process. Record, analyze and respond to the data presented from each job objectively."



IT IS NOT SIMPLY GOOD ENOUGH TO BE ABLE TO PRINT A CERTAIN IMAGE, BUT MUCH RATHER DO SO COMPETITIVELY," SAYS CHRIS HEUSCH.

Carl Cecil

Color Resolutions International

"There has been a surge in technological advances over the past several years relating to the graphics side of post-print. Everything from equipment, liner quality, printing plate technology and ink chemistry to name a few. The most important responsibility of the industry now is to educate the people on the production floor on how to incorporate these tools into their everyday process of printing. We now measure things we have not measured before and control variables that in the past were just part of the everyday process of making packaging. Education is a critical part of becoming a great printer."

Jack Fulton

Printron

"In a perfect world you would have a 100% servo driven press, a substrate that was flat and without imperfections, ink that would trap no matter what the liner combination or plant conditions, and plates that had no variation and were mounted in perfect register. Reality sets in and we realize that all of those things have variables. The key is how you control those variables. Quality printing is as much about process control today as it was 20 years ago. Presses today hold tight register and are easy to operate. Clay coated and white top liners are much smoother. Ink systems are constantly improving, and the ability to make ink in the box plant consistently makes repeatability a reality. Prepress and proofing technologies, including the ability to match the printing inks in the proofing process make it easier to prepare files and make proofs that can be matched in the printing process. Digitally imaged printing plates with flat top dots allow you to print cleaner shaper images. The ability to use an entire digital workflow from prepress through plate



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mounting gives you the best opportunity to more accurately reproduce the customer's graphic images. Select the best anilox roll, doctor blade, ink, plate package and substrate to go along with your well maintained press and don't mix and match from job to job."

Colleen Larkin Twomey

California Polytechnic State University

"Consistent procedures are critical. Since essentially all of corrugated post-print is flexo, following the tenets of FIRST (Flexo Image Reproduction, Specifications and Tolerances) is a great way to ensure that a printer (and the whole prepress supply chain for that matter) is following recommendations that have been proven to be successful. Purchase the equipment that is needed to accurately measure color, ink viscosity, TIR, etc. The saying, 'You can't control it if you can't measure it' is very true for corrugated. Tracking color, dot gain

and ink performance is critical, and having tools such as spectrophotometers, viscometers, and calipers can assist with troubleshooting if things go awry on press. Lastly, I recommend that printers stay educated. The elements of corrugated printing have and continue to improve drastically, and it's important for printers to know how to take advantage of new technology. Read trade journals, attend conferences; even present your own findings to the industry."

John Lencioni

Esko

"A lot of the recent quality inroads with corrugated printing have been met with the introduction of digital flexo plates along with modern plate processing systems producing a flat top dot that limits fluting. Because of the greater use of digital plates, color management is becoming a much more critical requirement, particularly for work that replicates brand colors via process color rather than special inks. Corrugated printers that use state of the art prepress tools in their supply chains for fingerprinting their press, and proofing systems with database color management and specialized screening find that they can produce great results. And having a staff with the attitude and experience to get the most out of their plant and do what it takes to make the customer happy is often the key differentiator."

"What is your vision of corrugated graphics in the future?"

Brian Jacob: "My sense for the future is a graphics machine that effectively combines all the best attributes of pre-print, post-print and digital. Borrowing from what already exists in other flexo markets, such as wide web and narrow web flexo, it is not too hard to imagine a

corrugated machine with quick change anilox and plate 'sleeves' for rapid job and color changes. Just like in narrow web and wide web printing, the flexo industry as a whole is seeing a movement to shorter job runs. With this in mind, the engineering focus will be the per job setup time. Significant improvements in the area of corrugated graphics and corrugated profitability will materialize by means of robotics and process management tools which already exist for flexographic printing but which need to be adapted to today's corrugated post-print machine."

Chris Heusch: "Flexo post-print will prevail for many years. Digital inkjet printing has not broken the speed / cost / quality paradigm yet and digital offset is still limited in format size. I am very impressed with the developments in large format lithography, which will continue to play a role in label and singleface lamination packaging. Changing printing plates on the fly and automation of front end and color control make large format lithography



MY SENSE FOR THE FUTURE IS A GRAPHICS MACHINE THAT EFFECTIVELY COMBINES ALL THE BEST ATTRIBUTES OF PREPRINT, POST-PRINT AND DIGITAL," SAYS BRIAN JACOB



ANALOG (FLEXO) AND DIGITAL PRINTING ARE COMPLEMENTARY PROCESSES." SAYS WILBERT STREEFLAND.

quite competitive in shorter run display markets. In the packaging market segment, inline box machines offer ever increasing product quality compliance and efficiency — hard to beat."

Wilbert Streefland: "Analog (flexo) and digital printing are complementary processes. It is the order run length that determines what process is best to use. The prepress will need to focus on how artwork is created so that customers have the same perception of the same product produced by both processes. In the future the run length breakeven point will move which is good for all parties involved. Digital printing equipment producers will target increasing the order run length that will allow producing against low cost. Analog printing equipment suppliers will focus on showing that short orders can run efficiently. These developments will result in a more environmentally responsible print process with less waste. A hybrid print process using analog and digital printing already exists. Think of marking during production. It might all become more sophisticated resulting in a more efficient process with less waste."

David Callif: "I envision a market where

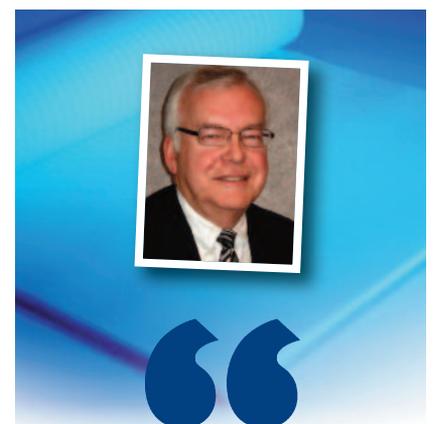
flexo post-print, preprint, and digital print converge to produce product for every need. This means converters will add equipment such as digital printers to enhance their product offerings. I don't see flexo presses becoming obsolete. Instead, I envision a day when a flexo press incorporates a digital printer. Digital print on demand will become a more important part of the corrugated graphics mix for the following reasons: Consumer products companies want to connect more with their end-user with customized/personalized promotions; time to market will become shorter, necessitating an alternative to the current print process; customers will demand smaller print quantities due to personalized promotions and concern about obsolescence; and traditional flexo post-print machinery manufacturers will enter the market."

Jack Fulton: "Digital printing will be a larger part of the corrugated market in the future, but I am hoping (since we are in the printing plate business) that the future is a ways off. I am also encouraged by the number of servo driven post-print presses installed in the last few years. The ability to print higher line screens is directly proportionate to the press's ability to hold close register. I think this market will continue to grow. The area that I believe will have the most growth in the future is preprint. Presses are being built with the ability to quickly change from print job to print job. That will allow shorter run production orders that will compete with post-print without the issues in printing on combined board."

Colleen Larkin Twomey: "I have always believed that digital is complementary to flexo in corrugated post-print. There is no doubt that run lengths are getting shorter and more personalization (regionalization) in packaging is becoming common. The

advantage that digital has for short runs and variable data is wonderful for new product launches or test marketing. However, flexo delivers high quality at higher volumes — when that test market shows success, the jobs move to traditional print at a reasonable cost. One of the challenges I still see with digital is the print-to-diecut speeds. This is where flexo has an advantage."

John Lencioni: "Cost-effective printing will depend upon multiple presses and processes for some time to come. Surely, advances in digital plate technology, with focused prepress techniques for calibrated proofs, plates and presses are taking share from other print processes. Digital printing has been getting faster almost exponentially — and more affordable. Thus, the tipping point for economical digital print order quantities is going higher. As corrugated buyers understand — and get creative with — the potential of variable data and personalization, a digital component of corrugated printing will become commonplace."



DIGITAL PRINTING WILL BE A LARGER PART OF THE CORRUGATED MARKET IN THE FUTURE." SAYS JACK FULTON.