Integrated Converting Technologies for Narrow Web Presses

What Makes Good Business Sense?

By Dennis McGee

Today, integrated converting technologies (ICTs) can be found in all areas of narrow web printing. Many ICTs are classified as value-added decoration processes, such as screening, hot or cold foiling, or embossing. They are available as in-line modules or offline equipment. In some cases, with the flip of a switch, they transform from in-line function to stand-alone machine.

The combining of printing processes—flexo, offset, rotary screen, gravure, even digital—on one press platform, to realize the strengths of each process; as well as basic finishing processes, such as die cutting and sheeting, are also classified as ICTs.

ABCS OF ICTS

- Pick your printing process, or any combination thereof, and marry a multitude of ICTs to the conventional narrow web press line
- Flexo remains as the dominant process
  - Rotary Screen can be dropped into a print unit, or screen units can ride on a overhead travel rack
  - Cold Foil units can be permanently positioned in-line, or be movable on an overhead rail system
  - Hot Foiling specialty applications bring edge definition, sharpness and smoothness
  - Cast and Cure is performed by laminating the casting film to a wet UV or EB coating, which is in contact with the web that the image will transfer to
  - Fixed-in-place, or movable gravure units, offer heavy, consistent lay down of inks and coatings
  - Hot Melt systems combine in-line pressure sensitive adhesive coating with printing, all in a single pass
  - Rotary Die Cutting systems are running wrap-around tooling; laser die cutting has found its way onto conventional printing presses, as has sheeting, plow folding, batching and stacking and in-line laminating
- Explosive growth of digital printing is a prime contributor to the proliferation of ICT printing and finishing systems
- Conventional print can be decorated and finished offline on the same systems being used to produce digitally printed labels and packaging

Trends to be acutely aware of include:

- Explosive growth of digital printing is a prime contributor to the proliferation of ICT printing and finishing systems in our narrow web marketplace
- Servo drives with programmable logic controller (PLC) packages make it possible to marry any and all ICT units into new and/or existing printing or finishing lines
- Narrow web press and finishing systems builders are addressing a wide range of market needs and thereby promoting and furthering the adaption and use of ICTs

OPPORTUNITY FITS OPERATION

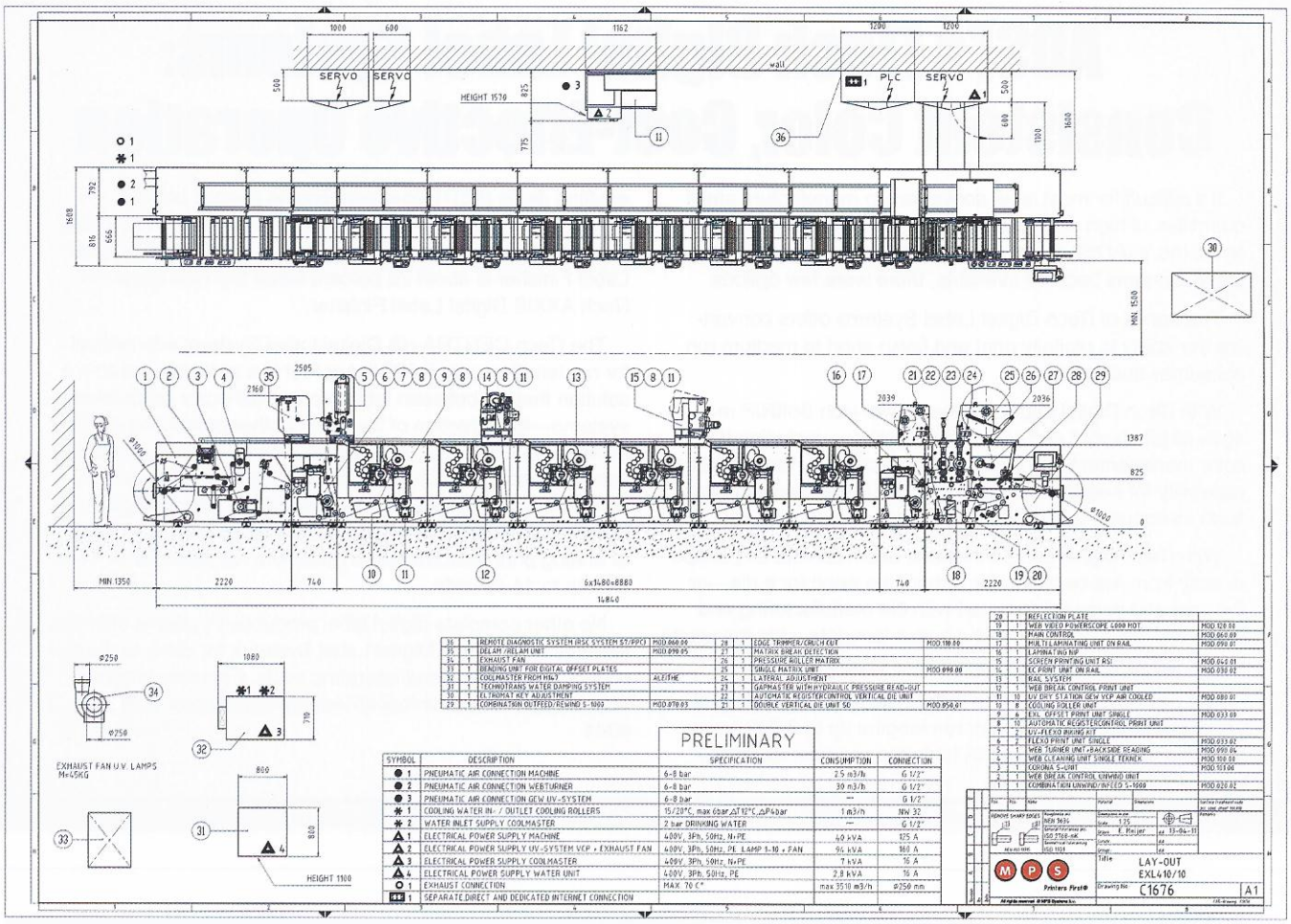
A great percentage of today's digital printers are using offline analog printing and finishing systems. Digital laser die cutting has also grown in acceptance. Decisions on what ITCs are required to support digital printing systems may be based on the type of digital in use.

For example: 3- or 4-color process printing may dictate a "keep it simple approach," consisting of an offline flexo coating deck with die cutting. On the other hand, a digital system employing six or seven colors, may cry out for a more value-added ICT approach where screen, foiling, embossing and die cutting are available. Please recognize this fact: digital printing equipment providers are putting ICTs inline!

Another decision point for the digital printer comes in answering the question, "What makes sense, a full-rotary approach, or a semi-rotary system?" The simple answer may be rooted in the system being invested in. If movement from frame-to-frame within the digital engine needs to be addressed, then the semi-rotary approach should be a serious consideration. When the cost of tooling, plates, screens, etc., enters the equation, the flat semi-rotary process again can offer a cost-effective approach.

More and more printers now target a decorating and finishing line that runs either full rotary or semi rotary at the flip of a switch. Some choose to place their offline decorating and finishing system inline with their digital press; others prefer offline—it comes down to what makes good business sense for the work you need to produce.

As has happened over the years in printing, benefits to one area of your business can also be a plus for another. This has proven very true for those narrow web shops that have both digital and conventional printing systems at their disposal. Conventional printing can now be decorated and finished offline—on the same systems being used to produce digitally



printed labels and packaging. When this happens, it reduces and even eliminates the need for duplicate decorating methods, affording the plant the opportunity to actually expand its capabilities and cut its costs.

Again, when analyzing the right strategy for the operation, it comes down to what makes good production sense for the job, as well as what the customer is willing to pay for.

CONVENTIONAL WISDOM

Enough on digital printing and those ICTs that are part of it, this purveyor of conventional combination printing equipment wants to speak out on ICTs as they are being used today on narrow web flexo presses and/or combination printing presses. Let's go through and explore what is available today for the use on the conventional narrow web press.

Today you can pick your printing process or any combination thereof and you can marry a multitude of ICTs to your conventional line. For narrow web printers, flexo remains the dominant printing process. Other options are out there.

For example: Variable repeat narrow web offset presses have created a small yet growing niche for the press builder. The ability to change over offset presses with sleeves vs. the hard cassette designs of old, combined with the quality levels possible with offset, can make it a choice today. It was not 10 years ago. Offset affords reduced plate costs.

Narrow web gravure presses have been focused on long-run applications, where cost of the gravure cylinder can more easily be justified by infrequent graphic changes.

Today, given the costs associated with the new narrow web servo press technology, a narrow web printer needs to take the time to work through options when evaluating presses and ICTs. More expensive solutions, may in the long run, be the least expensive way to market.

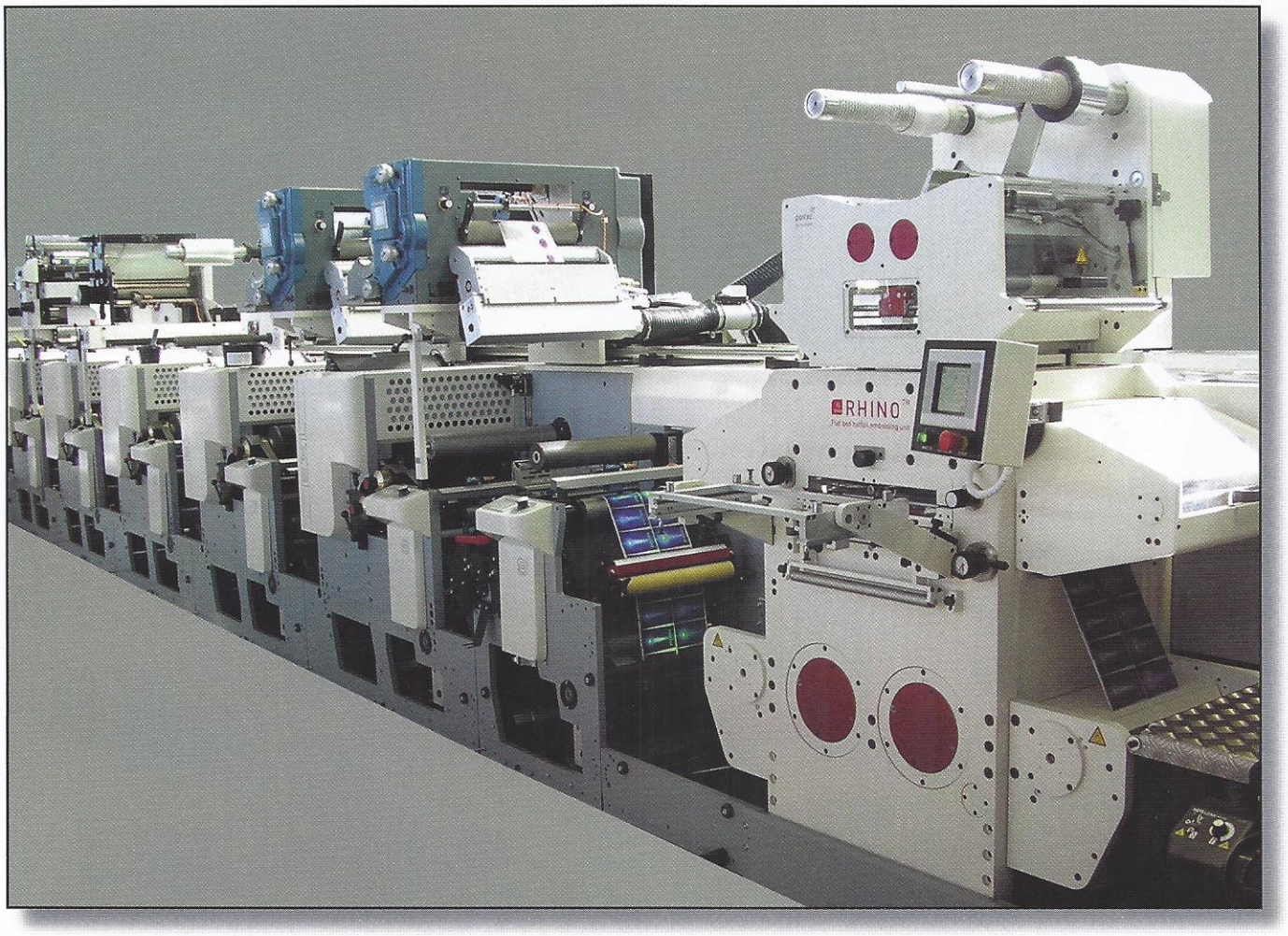
ICTs for conventional printing presses follow:

Rotary Screen is available as an add-on process that can be dropped into a print unit, or screen units can ride on an overhead travel rack, allowing for easy repositioning. When employed on a rail, the printer does not lose a flexo deck to the screen process.

Cold Foiling has grown in popularity, as has the availability of foil materials. Cold foil units can be permanently positioned on press, or remain movable on an overhead rail system.

Hot Foiling remains a favorite for specialty applications where edge definition, sharpness and smoothness of lay, are a key.

Cast and Cure, one of the newest members of the ICT family, is a process, patented by Breit Technologies LLC, that can be added to any narrow web press and requires an unwind, rewind and a curing source. The process entails laminating casting film to a wet UV or EB coating that is in contact with



the web that the image will transfer to. Nothing stays in the casting film, so it can be rewound and reused.

Gravure, long resisted in the narrow web print world, is beginning to find the door opening. Fixed-in-place or movable gravure stations offer heavy and consistent lay down of inks and coatings.

Hot Melt Systems can be used for localized or overall application of adhesive coats. Printers have moved to combine in-line pressure sensitive adhesive coating with a valued-added decoration process–all in a single pass machine.

Finishing Systems include traditional rotary die cutting systems that are running wrap-around tooling, as well as laser die cutting, which has found its way onto conventional printing presses. The same holds for sheeting, plow folding, batching and stacking and in-line laminating.

We see semi-rotary conventional printing presses, old and new, in our market today, utilizing any combination of offset, letterpress, screen, and flexo. These systems were the forerunners to the digital decorating and finishing systems in use by digital printers today.

FORWARD THINKING

It is important for the narrow web printer to keep and eye on the environment. One recent example of this is the new thinner face sheets and thin liner available that can reduce the waste stream. These new materials may need new equipment and process approaches to make ICTs effective.

Today's servo drives and control systems allow ICTs to be integrated into older existing narrow web presses. The opportunity to extend the useful life of the existing asset base can be a real plus for your business.

ICTs on today's narrow web presses are there to satisfy end-customer's requirements. Label and packaging print buyers have seconds to captivate the buying consumer, so he/she continues to get more creative in his/her request for innovative and eye-catching product decoration. Narrow web printers, by their nature, have always been classified as a group of adventurous entrepreneurs; risk taking comes naturally to them. In the end, this benefits all of us and will help keep the narrow web industry vibrant for years to come. ■

About the Author: *Dennis "Denny" McGee is president of MPS LLC, Brookfield, WI. He served on FTA's Board of Directors and FFTA's Board of Trustees for six years and was inducted into FTA's Hall of Fame in 2005. His experience in flexography, notably the narrow web business segment, dates back four decades. McGee has been a frequent contributor to* **FLEXO** *Magazine, as well as a recurring speaker at FTA's Annual Forum.*