

DIGITAL CUTTING – CAN YOU AFFORD NOT TO INVEST IN IT?

Lars Bendixen outlines the benefits to printers and their customers of the correct use of a digital cutting system

DOES ANY PART OF the following sound like it could be your print shop?

“Finishing our digital prints is a manual process. It often uses more than one person using rulers and knives, and when we are busy we very often outsource this aspect of the job. Human error sometimes creeps in and jobs have to be re-printed, which in turn can jeopardise delivery deadlines. As our volume of digital printing is increasing we find that cutting and trimming is becoming our bottleneck. We keep a large stock of different sized pre-cut sheets to meet different jobs and often need to trim larger sheets down, as our inventory is never correct. We never mix different jobs on one print run or print full width with multiple copies of the same job. We try to cut to size before printing.”

If so, then read on.

If you are running your digital press(es) at a reasonable capacity level, how do you measure this? Do you look at the percentage of production hours in a day or do you actually calculate the area printed versus the potential if the full width of the bed is used? You should be doing the latter. It is very difficult to get an efficient loading of your press if you print one job at a time and do not nest compatible jobs together on large sheets using the full width of the press.

BENEFITS OF DIGITAL CUTTING

Prepare-it and RIP software from companies such as Caldera, Ergosoft and Colorgate is available to help you maximise the use of your printer. Studies show that digital cutting, as the above process is known, will give an opportunity to print an extra 46% (see Figure 1), which reflects only printing time, not loading and unloading. However this is not the only gain – it will also allow longer print runs which minimise operator interventions (see Figure 2).

Once you have increased your press efficiency by improved production planning and better material use by nesting jobs together on one sheet, you will find that manual cutting becomes a significant bottleneck. This becomes even more of an issue as deadlines become shorter, volumes increase and employees working under pressure make more mistakes, increasing costs due to the need for re-prints. You then have to outsource the cutting, and by doing this you lose control. Relying on outside vendors ultimately creates more problems

Late stage digital cutting

Example of increased printer productivity

- reflect only printing time (not loading and unloading)
- apply to mounted prints as well as direct printed

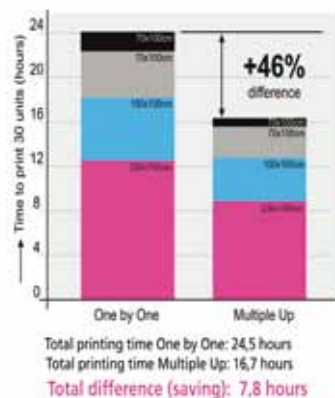


Figure 1



Zund's Cut Center uses data from a rip to cut workflow, enabling Zund's G3 cutter to automatically cut printed graphics

and gives away a great profit-making opportunity.

The more work is moved around, the greater the chances of the sheet being damaged and the longer the job will take. Outsourcing takes longer than doing the work in-house and means having to quote longer delivery times, making you less competitive. You will also be giving away a chance to make excellent margins on the finishing work – many printers outsource the finishing as often as possible, but many shops have embraced the latest technology to allow them to run at maximum efficiency and to take the high margins associated with finishing into their own businesses.

Late stage digital cutting

Example of labour reduction

- Longer print runs minimise operator interventions
- Example require only 10 interventions in stead of 30

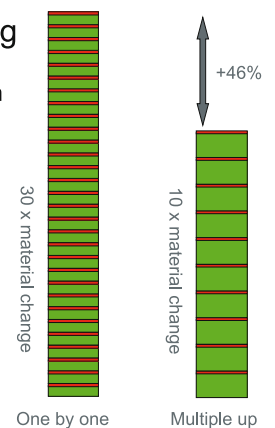


Figure 2

CUTTING SYSTEMS

Proper finishing starts before the job is printed; planning software and a digital cutting system are necessary to meet the need. Systems such as Zünd's digital cutting system with its new Cut Center front-end software will close the finishing gap. As printers are capable of printing onto a wider range of materials in both rolls and sheets, the digital cutting system needs a variety of different cutting tools and material handling options. These systems undertake simple tasks such as trimming a square banner and contour cutting 50 mm foam boards.

Although trimming prints to squares and rectangles is where the largest decrease in manual labour occurs, offerings to customers will be significantly increased with contour cut prints, which market research suggests can be extremely powerful compared to rectangular display boards. Adhesive labels / decals can be printed in large rolls or sheets that are then face cut and die cut into smaller sheets that are ready for use.

Initially most printers choose a cutting system that is big enough and has only the cutting tools needed for their normal workload; they often overlook how the cutter's software will integrate into their workflow and may need to expand the system as demand grows. The advice is to buy larger than you think you need – if there is spare capacity in the early days, sell it by offering a service to other printers. You should also select a system which can have additional cutting tools and material-handling devices added to it. A typical cutting system lifespan will usually exceed 15 years, so think ahead.

RIP TO CUT WORKFLOW

Digital cutting does not need to be a complicated process with the proper system. The artwork being printed, which was probably designed in software such as Photoshop, Illustrator, InDesign or Quark Express, can be used to create a simple 'print and cut' workflow, where the print file and die file are manually created in pre-press.

This can be further optimised when the production planning software communicates with the cutting system's front-end software, which is generally referred to as the 'rip to cut' workflow. This is where a job is submitted to the RIP with or without predefined cut paths. The RIP will look for embedded cut paths and / or create one from the bounding box of the image, and will then nest or group together multiple copies of a job or other jobs waiting to be printed together to make the best possible use of the material.

Registration marks and barcodes are then added to the new layout and print data is sent to the printer. The cutting data is saved to the network as the die file, which is later retrieved by reading the barcode at the cutting system. The die file can include other job details such as priority, due date and the material printed onto. These job details are then used by Zünd's Cut Center to completely automate how Zünd's cutting system will finish the job.

A successful implementation of digital cutting starts with a full range of training and support to integrate the cutting system into existing workflows. Remote and on-site services are available to solve problems and answer questions that may arise. Zünd's technical support group offers system maintenance and service and a spare parts

exchange programme covering all models that they have ever sold – 98% of Zünd's cutting systems are still in use in over 50 countries.

IN SUMMARY

Digital cutting has the following benefits:

- Additional capabilities and new applications such as contour cutting
- Consistent high quality, leading to better products
- Faster turnaround times
- Overall higher efficiency: ~46% more output with 33% less labour (increase production without increasing labour costs)
- Labour reduction for manual cutting, printing and mounting
- Reduced waste due to human error and poor material use (nesting)
- Reduced printing time (no need for re-prints)
- Less need for outsourcing, and other shops can outsource to you
- A flexible work-flow, pre / post cutting and easy template creation.

A German customer who moved to digital cutting and automated workflow found that his waste was reduced from approximately 10% to <1% while jobs previously handled by two persons now only require one, and trimming is completed five times faster. ■

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