

Ink vs. Toner Costs and Benefits for Longer Digital Runs

*Michael Chadwick
Presstek
Hudson, New Hampshire*

I was with service providers and was asked, “How much work will I need to break even on a Direct Imaging Press?”

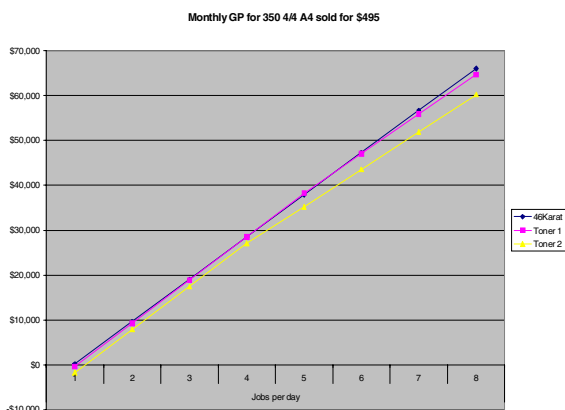
I put together the following analysis that I found very interesting:

I took a couple short run jobs and computed the profit they would generate if a printer did one through eight jobs per day. Here is the cost for doing one job per day on three digital presses:

	350 4/4 Letter			500 4/4 11/17		
	Flybi	Toner 1	Toner 2	Flybi	Toner 1	Toner 2
Paper	\$5.25	\$5.25	\$5.25	\$15.00	\$15.00	\$15.00
Plates	\$38.00			\$76.00		
Toner/Ink	\$3.50	\$27.30	\$32.20	\$10.00	\$78.00	\$92.00
Machine Lease/day	\$390.48	\$171.43	\$183.76	\$390.48	\$171.43	\$183.76
Service/day	\$47.62	\$304.76	\$357.14	\$47.62	\$304.76	\$357.14
Labor @ \$20/Hour	\$4.00	\$4.00	\$7.00	\$6.66	\$11.00	\$20.00
Total Cost	\$488.85	\$512.74	\$585.35	\$545.76	\$580.19	\$667.90
Selling Price	\$495.00	\$495.00	\$495.00	\$550.00	\$550.00	\$550.00
Gross Margin	\$6.15	-\$17.74	-\$90.35	\$4.24	-\$30.19	-\$117.90

The daily lease and service costs are non-variable and get spread over the number of jobs per day.

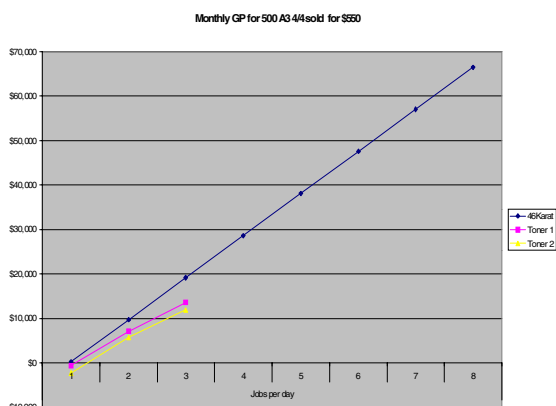
Here a graph representing the Gross Profit generated by running 1-8 of the 350 copies of a 4/4 letter-size job.



As you can see, one job per day pays for the DI press and the profit ratios are actually pretty close. We have a quality advantage, and the toner-based devices have a convenience advantage.

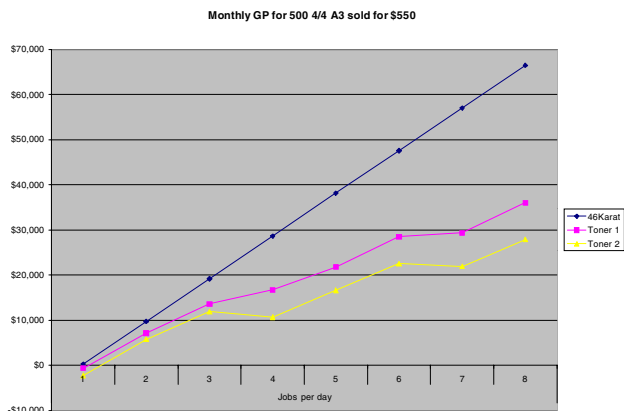
Then, I decided to increase the run size a bit. We looked at an 11 x 17 4/4 newsletter. We wanted to produce 500. (The costs are in the table above.)

The chart looked like this:



You probably noticed that the DI is more profitable and that the toner based devices and the stop toner stops at 3 jobs per day. That’s because 3 jobs per day x 21 days per month x 2000 letter-size toner impressions comes to 126,000 “clicks” and the duty cycle of the two toner devices is 100,000 per month. Additional machines would have to be purchased.

If additional machines were added to keep up with the DI, the chart would look like this:



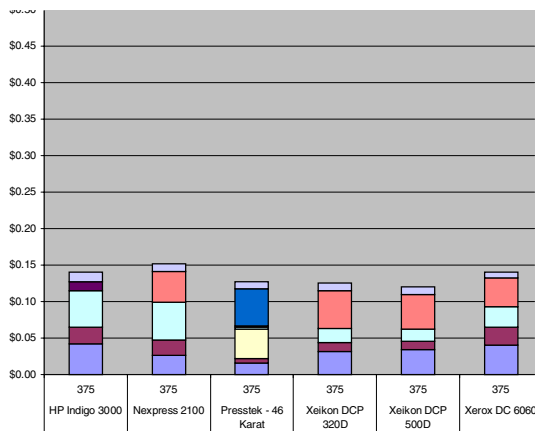
The “dips” you see at four and six jobs per day are where additional devices were added.

My original plan was to demonstrate that one job per day would pay for the machine as a printer enters the short run color market and builds his volume. I think this also illustrates the capacity that a DI press offers vs. toner-based digital presses.

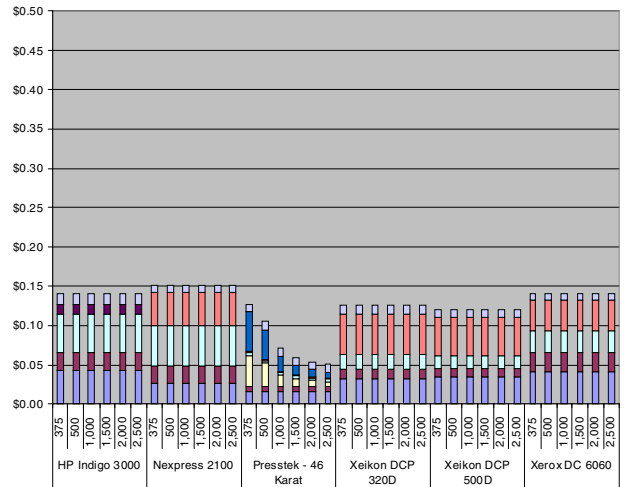
Keep in mind that the 4/4 tabloid newsletter would take 20 minutes to image (front and back) and 10 minutes of press time. Eight jobs could comfortably be done in an eight-hour shift. That's 24 jobs in a three-shift operation or NINE toner devices.

CAP-V Analysis

A recent CAP-V analysis showed the advantages of toner-based vs. DI at a relatively short run of 375 impressions:



But the DI Press cost per page dropped as the run length increased, while the toner-based devices remained constant.



Conclusions

Every craftsman has to have a number of tools in his bag. A document services provider is no different. Toner-based devices are appropriate for one-to-one campaigns as well as for runs of under 400.

As runs get greater than 400, cost-per-page, engine speed and machine duty cycle can make toner-based printer prohibitive. A DI press, which puts ink-on-paper has speed and cost advantages that bridge the gap effectively between toner-based devices and traditional offset printing equipment.