

# Revisiting Book-on-demand

**W**ay back in *Blatant Opportunist #1*, we looked at *Book-on-demand* publishing, my revolutionary new way for producing textbooks, novels, trade books, technical manuals and other printed things. With Book-on-demand production, *products are produced one at a time only when and as they are actually ordered*.

Book-on-demand completely eliminates those staggering front end risks and costs of traditional publishing. The time from manuscript to review copies gets measured in minutes, rather than taking months. There are never any remainders, returns, or shopworn volumes. There are no IRS backlist penalties, since you have no inventory to tax. No advance time or money is put into anything that does not go out the door. Author royalties can be sharply higher and can be paid *hourly*. Work is easily customized for each individual buyer, up to and including their name in gold on the cover. Changes and revisions are quickly made at any time for any reason. Books can automatically get longer as new material becomes available. That quaint concept of "getting a manuscript accepted" now becomes totally meaningless.

I've been Book-on-demand publishing a dozen volumes for two years now, and I am about to start doing many more. Along the way, I have been exploring all of the essentials and all the insider secrets to this incredible new opportunity. What I thought I'd do today is summarize where we are and where we seem to be heading today.

The bottom line: Book on demand works now and works well. It is proven. It is good and getting much better. While some problems do remain, most of them are quickly being solved. There is not the least doubt in my mind that Book-on-demand should eventually displace traditional publishing because of its great economics.

## The Bad Stuff

There are several obvious disadvantages here. The greatest is that Book-on-demand does not at all address any distribution or marketing problems.

The second disadvantage is that we are not quite there yet with final quality. Your book probably cannot yet pass the "Turing test" in which you cannot determine on the bookstore shelf whether the volume was done by a large volume press or with Book-on-demand. But we are fast approaching quality parity. And will soon surpass it.

Finally, there is an optimum production level for any technology. If you know you are for sure going to sell lots of books at an acceptable rate, then traditional publishing

may make more sense. I would place the crossover point between choosing the Book-on-demand or a traditional publishing at 2000 to 8000 actual user sales within fifteen months. But note that less than twenty percent of *all* titles ever have managed to sell 8000 retail copies.

The ultimate trick, of course, is to take half and leave half. Use Book-on-demand until you have a proven winner and a strong sales backlog.

## Key Secrets

Book-on-demand production is toner based, rather than ink based. It uses desktop laser printers instead of printing presses. You do all the work yourself rather than paying others to do it for you.

The innermost secret to Book-on-demand publishing is to use the stunning general purpose computer language known as *Adobe PostScript II*. For Book-on-demand work, nothing anywhere even comes remotely close.

Be absolutely certain to use genuine Adobe Level II or higher PostScript. While there are lots of fakes and clones out there, I have yet to find *any* fake that is even so much as capable of correctly printing all my Book-on-demand files. This after months of very heavy testing. In fact, a working definition of "PostScript compatible" is that the prongs on the power cord are roughly the same size and spacing as on a real PostScript printer.

A duplex printer which can automatically print on both sides of your page is pretty near essential for serious Book-on-demand work. Duplex printers very dramatically increase your productivity, improve quality, and reduce your scrap rate. Less hassle all the way around.

It is super important to select a laser printer that has a local SCSI hard disk attached to it to hold your files and fonts for quick access.

It is also *mandatory* that you do your own laser printer maintenance and repair. While laser toner cartridges are intended as "throwaway" items by their manufacturers, the economics in doing so suck. Instead, by *personally* refilling your own cartridges and using improved third party hard drums, you can reduce your operating costs by 20:1 or more, while improving your final print quality.

While not essential, I've found working directly in "raw" PostScript with my Gonzo utilities to give me advantages over the popular illustration and pagemaking programs. Obvious benefits include print speeds and file lengths. I have also found that a special *compiling* process can be used to dramatically shorten all repeat print times.

## Economic Factors

What does Book-on-demand cost? Much less than you would first guess. By shopping around, you should be able to locate a printer for \$3000 that can give you 300,000 copies. A penny per page. You can get high quality and low cost paper from *Paper Plus* or *Paper Direct*. For a routine 60 pound offset, say \$4 a ream or 0.4 cents per page side.

By carefully doing your own toner recharging and using third party hard drums, your per page toner costs should be under 0.2 cents per page. Adding things up gives you 1.6 cents per page side, or around \$3.20 for a 200 page book. Throw in eighty cents for cover, binding, and trimming, and you're looking at an even four bucks a volume.

If you naively waltzed into your local jiffy printer and asked for a thousand books, they would want around seven dollars a volume for the same job. But wait. That seven dollars is cash up front. What if you only sell 333 of your thousand books? Which is quite likely to happen. Your cost skyrockets to *twenty-one* dollars per book sold!

In this example, traditional publishing ends up over *five times* as expensive as Book-on demand.

Naturally, this is a simplified analysis that overlooks labor and the time value of money. But, as you can clearly observe, Book-on-demand can easily become ridiculously cheaper than traditional publishing. Especially when the risk factors and stupendous front end costs are factored in.

Be sure to resist the temptation to try and use a copier for your repeat Book-on-demand orders. There is no way that an analog second generation optical reproduction can even remotely compare with a laser digitally mastered original. Especially for fine grays and halftones.

## Selecting A Printer

Sadly, any acceptable PostScript printer for use with Book-on-demand production printing does not yet exist. Yes, *Apple*, *QMS*, or *Hewlett-Packard* will all be more than willing to sell you *eighty percent* of a decent printer. Even though nothing new is needed to do the job right, nobody yet offers a total solution.

What is really required? First and foremost, genuine Adobe PostScript level II or higher. It is totally unthinkable to use anything else for serious Book-on-demand work.

A *Canon* engine is the obvious choice. They have around 85 percent of the market, being the standard used by *Apple*, *HP*, and *QMS*. They are reliable and proven. At 0.2 cents per page recycled toner costs, the recharging economics are outstanding. Especially when combined with a third party hard drum. Excellent (but overpriced) tech manuals are available from *HP* that should work just fine on all their competing machines. Replacement parts and service training are available from *Don Thompson*. And refilling supplies are found at *Statoc Control Products* or from any of the many advertisers in *Recharger* magazine.

A local SCSI hard disk for your printer is absolutely essential. You want *all* of your fonts and files instantly accessible without long comm times or host supervision.

*Duplexing*, or the ability to print both sides of a page is also mandatory for serious Book-on-demand work. Duplex printers usually print one side of a page, automatically yank the page back through a *switchback* assembly, flip it over and then print the other side. I cannot even begin to

express how intrinsically wonderful duplex printing can be. Your employee morale skyrockets and your scrap rate nosedives. Errors are fewer; those that happen impact a single page, rather than trashing an entire book.

But duplex printers are rare, owing to the industry not waking up to how incredibly user-friendly they are. Older stand-alone duplex printers include the klutzy *HP IID* and the slightly better *IIID*. But the latest *Canon* engine used in the new *IIIsi* printer now includes a low cost *bolt-on* duplexer. At a \$600 list, \$400 street price. Clearly, bolt-on duplexers are the best possible method to expand the duplexing market. This is a major step forward that should greatly improve Book-on-demand productivity..

Certain resolution improvements beyond 300 DPI are needed. Although you can pull several tricks (like using the secret grays found in dozens of files in the *GENie* PSRT library and working with the media, rather than fighting it) to actually make 300 DPI look *better* than low end jiffy printing. The real need for more resolution, though, lies in the ability to show photos and halftones. At 300 DPI your halftone choices are poor and are severely limited. Say 10 grays at 100 lines per inch. With some care, at 600 DPI, you can easily output medium to higher quality photos.

*Apple* and *HP* have elected to "enhance" their 300 DPI outputs. *HP* uses an edge smoothing algorithm. The *Apple Photogray* found on the *LaserWriter F* and *G* is especially impressive. *Photogray* works by changing the dot sizes. *QMS* bypasses the stunts and gives you an honest 600 x 600 DPI in the *815MR* and *825MR*. But not yet level II.

Sadly, as you go beyond 600 DPI, you tend to get into machines that I find totally unacceptable. Note that a 1200 DPI printer usually takes *sixteen* times the memory and *sixteen* times longer for your page makeup. The higher resolution printers tend to use fake PostScript and seem to have the world's most obnoxious salesmen attached to them. Special papers and toners also may be needed.

The killer machine would be to start with a high speed 17 PPM *Hewlett-Packard IIIsi* with its bolt-on duplexer and *Canon* recharging economics. Then change it to 600x600 DPI, add genuine Adobe PostScript level II, and a local hard disk. In its present form, though, the *IIIsi* is totally useless for serious Book-on-demand work.

A bolt-on duplex option added to a *LaserWriter G* could also get you a decent and acceptable machine. And probably cheaper. *Apple's Photogray* provides a medium quality alternative to true 600 DPI that does let you print decent (but not stunning) photos and halftones.

At present, I use an *Apple LaserWriter G* and an older *QMS PS turbo 820* for single sided production. And an unbearably klunky and cranky old *HP IID* for double sided work. But the *IID* runs nearly 24 hours a day. Sigh.

One good place to tune into new printer developments is *TypeWorld*. Other useful sources include *InfoWorld*, *U&Ic*, *Computer Retailing*, *PC Week*, and *MacWeek*.

## Speed Issues

PostScript runs ridiculously faster than most people suspect. If you are careful and know what you are doing, you can *completely eliminate* the long page makeup times that most users wrongly assume are required. My typical fully-formatted 6000 character, three column, two figure Book-on-demand pages appear to make up in *zero* time.

## BOOK-ON-DEMAND RESOURCES

**Adobe Systems**  
1585 Charleston Road  
Mountain View, CA 94039  
(415) 961-4400

**ClannelBind**  
3 Townline Circle  
Rochester, NY 14623  
(800) 562-7188

**Dantech**  
PO Box 1856  
Benson, AZ 85602  
(520) 586-7050

**Gane Brothers**  
1400 Greenleaf Avenue  
Elk Grove VII IL 60648  
(800) 323-0596

**HDS Systems**  
PO Box 42767  
Tucson, AZ 85733  
(520) 881-2632

**HorseTrader**  
PO Box 11712  
Santa Ana, CA 92711  
(714) 921-3120

**Kroy Color**  
14555 N Hayden Road  
Scottsdale, AZ 85260  
(602) 951-1593

**PaperDirect**  
57 Romanelli Avenue  
S Hackensack, NJ 07606  
(800) 272-7377

**Paper Plus**  
300 Oceangate #800  
Long Beach, CA 90802  
(213) 436-8291

**Planax North America**  
15 E 26th Street #1908  
New York, NY 10010  
(212) 532-1988

**Printers Shopper**  
PO Drawer 1056  
Chula Vista, CA 92012  
(800) 854-2911

**Recharger**  
3870 La Sierra Ave S266  
Riverside, CA 92505  
(714) 359-8570

**Special Editions**  
PO Box 345  
Thatcher, AZ 85552  
(520) 428-7871

**Static Control Comps**  
3115 H Siler Drive  
Sanford NC 28331  
(800) 488-2424

**Synergetics**  
P.O. Box 809  
Thatcher, AZ 85552  
(520) 428-4073

**Don Thompson**  
6 Morgan #112  
Irvine CA 92718  
(714) 855-3838

**Unibind/Pelsaer**  
4125 Prospect Drive  
Carmichael, CA 95608  
(916) 967-6401

**VeloBind**  
650 Almanor Avenue  
Sunnyvale, CA 94086  
(800) 538-1798

Actually, they use the two seconds or so of paper feeding time to create the illusion of a zero makeready.

The speedup secrets we are about to look at let you print most Book-on-demand material at the full mechanical speed of your printer. On an eight page-per-minute printer, this translates to printing a 200 page book in 25 minutes. At a \$25 retail selling price, this production rate provides as much as half a million dollars of product per PostScript printer per year. Or a cool million at 17 PPM.

First, you will want to use the latest genuine Adobe Level II PostScript, which is now much faster.

Second, you will want to use a "turbo" or otherwise enhanced machine that uses a high end microprocessor, co-processing, or a RISC based engine.

Third, you *must* use a local printer SCSI hard disk. SCSI disk access is very much faster than *any* other PostScript comm. Yes, Ethernet included. You simply cannot afford to wait around for files to be passed back and forth. Another major advantage of a local hard disk is that you can largely run unattended without tying up a host computer or operator intervention. You just download a short file that says "print these pages," and away you go.

These three speed tricks may be all you need. But there is lots more you can do for maximum speed on repeat work. The additional tricks can go by the name of *distilling* or *compiling*. To compile a file, you ask the question "What is

the absolute minimum amount of PostScript code needed later on to generate a repeat image of the current page? Then you save *only* that essential information.

For compiling to work, you must have your original in the exact form you want it. And you have to want to print repeat images some time in the future. And you have to be willing to spend some front end time and effort to compile your files. I usually start compiling by using the *Adobe Distillery*. This program is available on *GENie* PSRT as our file #186 DISTILL.PS. I then take these results and further shorten them by a manual "double distilling" process using #340 MAUDED.OC.PS or something newer. The final files end up both very short and quite fast. Around 12K for a typical three column and two figure technical page.

## Bound and Determined

Once the pages are printed, they must get trimmed and bound. Traditional printing equipment is outrageously expensive and badly mismatched to small scale production. Sources of traditional supplies appear in *Quick Printing*, *Printing Impressions*, and *Instant Printer*.

Trimming is essential for smaller books and makes any output look much better. It is normally done with a big old guillotine cutter. *HorseTrader* is one used cutter source.

The *Personal Velobinder* system is useful for low end non-perfect clamping binding. This system is suitable for proposals, community reports, plays, and similar. The *ChannelBind* system is a newer replacement that eliminates any need for punching. But *ChannelBind* doesn't hold the pages very well. And \$1000 is too much to pay for the *ChannelBind* machine, which is nothing but a cleverly disguised pair of vise grip pliers. Both systems offer very good looking hard cover options.

For serious work, though, a cold- or hot-glue perfect binding is a must. The *Unibind* system is very good for this and is highly cost effective. Even better is *Unibind's* new *Pelsaer* system. *Pelsaer* is simply a "U" shaped hot glue preform with two fly sheets attached. You drop your text inside and wrap your cover around the outside. Then drop it into a special toaster. *Pelsaer* costs around forty cents and gives you a true perfect binding with an unlimited choice of cover options. Yes, spine lettering is easily done.

*Planax North America* offers all sorts of interesting binding solutions. But they seem to have slipped a decimal point or two on their pricing and have thus outrageously priced themselves completely out of the Book-on-demand market. Their newer *Optitherm* system uses ingenious peel-and-stick hot glue strips which are (except for that ludicrous pricing) even better than *Pelsaer*. And they have a *Planax F2* cold glue system that quickly sets up once under pressure by a unique "dewatering" scheme.

In general cold binding glues are much better than hot ones. But, before *Planax*, cold binding has been avoided because of the long setup times. One source of hot and cold glues is *Gane Bros*, but I've found these turkeys impossibly difficult to deal with.

Of the "real" print shop perfect binders, the *Standard Bindfast-5* is often a good choice.

A number of tricks can be used to enhance your covers. Fancy colored cover stocks are all you really need. Tricks such as *Kroy Color* or *Bakerizing* can improve covers.

*Kroy Color* is a way of faking hot stamping. It involves

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melting toner under heat and pressure to grab "real ink." Mattes, glossies, golds, silvers, and metallics are offered. Bakerizing is a simple calendering process that makes toner blacker, more durable, and a higher gloss. Other obvious cover options include color copiers or actual multi-color jiffy printing. Much more on all this in *Ask the Guru III*, my *LaserWriter Secrets*, and *Blatant Opportunist I*.

Any of a number of simple laminating techniques could give you decent scuff resistance. Covers can be scored with a homebrew machine, or by using ready-to-go units found in the *Printers Shopper*.

To date, I have been using Unibind matte see-through covers that overlay a fancy parchment title and backing sheet. It looks fairly unique, but you can't letter the spine. It also can not pass the on-shelf "Turing" test. But I soon intend to go the Pelsaer route, since it is cheaper, permits spine lettering, and gives unlimited cover options.

### Who needs it?

Just who can use Book-on-demand for what? Here are some obvious examples...

I use book on demand for *technical reprints* where the total market is limited but quick distribution and rapid error correction are both essential.

I also use Book-on-demand for *proposals* and *community reports* where the fast turnaround and a fully professional appearance of only a few copies is essential.

You can use Book-on-demand for a *market exploration* where you do not know if a subject has enough of a market for serious production.

Teachers can use it for *specialized coursework*, where only the exact needed material is gathered together.

Published authors can use Book-on-demand for *bound galleys* that quickly let your new book get in the hands of reviewers. This also lets the reviewer's comments appear on the cover blurbs of the actual production book.

Book-on-demand can be used as a *life extender* for a book that has gone out of print but does not justify another full press run. Because of the IRS inventory and backlist penalties, this route is extremely attractive.

A *book packager* (sort of a publisher's agent) can show his marketable product in the intended final layout. While producing just enough copies for thorough review and evaluation, without heavy expenses.

A *backlist miner* could gather together titles that have gone out of print and produce them on an on-demand basis, again without the high old-way risk factors.

The *custom kiddy books* opportunities in which a text is individualized (with the brat's own *Grandma* and *Teddy* and *Widdle Brudder*) for each and every customer is nearly unlimited. Primitive versions are already starting to appear at malls, swap meets and fairs.

There are *classic revivalists* out there dedicating their lives to preserving and restoring rare out-of-print classics. Book-on-demand is the only way to go here.

And, of course, Book-on-demand would be ideal for the *otherwise unpublishable*. Stuff such as memoirs, family genealogies, offbeat religious tracts, pseudoscience titles, ultra-specialized, X-rated, or get-rich-quick scams.

Finally, there are unique opportunities in *CD ROM Book Publishing* in which one single CD ROM holds several hundred titles, along with a renewable kit of printing and

binding supplies. Properly priced, anyone would buy the entire CD to get the specific three or four titles they really wanted. Thus one CD could combine hundreds of tiny and fragmented markets into one large and profitable one.

Obviously, "all of the above" require *Book-on-Demand consulting* services, materials, and supplies. Even if you are not doing your own Book-on-demand titles, there's a buck to be made in helping others do so.

Way down the road, I can see *BOD Franchises* in jiffy markets and in video rental stores consisting of a popcorn sized machine and a stack of a thousand CD ROM disks. Several hundred thousand book titles would be in stock, say ten times that of a traditional bookstore. All the rest of them would be a modem call away. And I do mean *all*. The entire Library of Congress for openers.

### For More Help

Many of the resources mentioned have been gathered together into the *Book-on-demand resources sidebar*. Newer and better stuff now can be found on the *Acrobat and BOD* library shelves of my *Guru's Lair* website.

Yes, I do both custom Book-on-demand *consulting* and *production here at my own Synergetics*. Three other groups working on their own Book-on-demand services include Kathy St-George at *Special Editions*, Henry Schneiker at *HDS Systems*, and Kate Daniel at *Dantech*. One specialist on book packaging is Jeff Duntemann at *PC Techniques*.

Naturally, I'd be most happy to sell you samples of our current Book-on-demand output. These include my three *Ask the Guru* volumes, two *Hardware Hacker* reprint sets, *LaserWriter Secrets*, *PostScript Beginner Stuff*, and the *Blatant Opportunist* reprints.

I am very hesitant to release the definitive book about Book-on-demand just yet. At least one more round of printer and binder iterations is needed before this emerging opportunity can really take off. And there are several other loose ends that still need cleaned up. But now is certainly the time to be starting up your own venture.

So, what I've done instead is gather together everything I've done so far into a *Book-on-demand Resource Kit*. This includes reprints of anything that even is remotely related to Book-on-demand publishing, bunches of material and technique samples, resource listings, and even several supplier ads and catalogs. You can write, call, or email me at [don@tinaja.com](mailto:don@tinaja.com) for further details. ♦

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UPDATE: BOD has gotten a lot more realistic since this was written. Although binding remains a crucial problem. Acrobat PDF greatly improves on PostScript, and the HP 4000 is an incredible and cheap BOD machine. Check out [www.tinaja.com/acrob01.html](http://www.tinaja.com/acrob01.html) and [www.tinaja.com/bod01](http://www.tinaja.com/bod01) for the latest info and updates.

*Microcomputer pioneer and guru Don Lancaster is the author of 35 books and countless articles. Don maintains a US technical helpline you'll find at (520) 428-4073, besides offering all his own books, reprints and consulting services.*

*Don has a free new catalog crammed full of his latest insider secrets waiting for you. Your best calling times are 8-5 weekdays, Mountain Standard Time.*

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