ORIGINAL

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, D.C. 20268–0001

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POSTAL RATE COMMISSION
OFFICE OF THE SECRETARY

MAILING ONLINE SERVICE

Docket No. MC98–1

RESPONSES OF
UNITED STATES POSTAL SERVICE WITNESS
GARVEY TO PRESIDING
OFFICER'S INFORMATION REQUEST NO. 2
QUESTIONS 3–5
(October 28, 1998)

The United States Postal Service hereby provides the responses of witness Garvey questions three, four and five of Presiding Officer's Information Request No. 2, issued on October 16, 1998. On October 26, the Postal Service filed a motion for extension of time to provide these responses. In addition, the Postal Service is filing today a motion that certain requested information be provided only under protective conditions.

Each question is stated verbatim, followed by its response, together with a declaration from witness Garvey covering all of his responses.

Respectfully submitted,

UNITED STATES POSTAL SERVICE

By its attorneys:

Daniel J. Foucheaux, Jr.
Chief Counsel, Ratemaking

K. T. Hollies

Kenneth N. Hollies

475 L'Enfant Plaza West, S.W.
Washington, D.C. 20260–1137
(202) 268–3083; Fax –5402
October 27, 1998

POSTAL RATE COMMISSION
DOCKETED
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OFFICE OF THE SECRETARY

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS GARVEY
TO PRESIDING OFFICER'S INFORMATION REQUEST NO. 2

3. In response to OCA/USPS-T5-17, witness Garvey stated that non-merge jobs are treated as separate batches. Tr. 2/182.

a. Will non-merge jobs continue to be treated as separate batches during the market test? During the experiment?

b. If so, please explain why the non-merge jobs are not batched and if there are any plans to modify the system so that non-merge jobs can be batched.

RESPONSE:

a. As stated in the response to OCA/USPS-T1-45 (a),

> . . .at the present time all non-merge jobs are treated as separate batches. The current MOL system is an enhanced version of the original proof of concept software used for the operational test. The initial phases of system development have focused on simplicity and consistent operability. Consequently only mail-merge jobs are currently combined into co-mingled batches; all others are handled as separate batches. Current (and future) system development is focused on improved functionality including the capability to combine all like documents into co-mingled batches.

The current conditions for batching are likely to prevail throughout the market test. Depending on the success of technical developments which will allow the desired co-mingling, as well as the timing of the experiment, these conditions may change upon or after the initiation of the next phase of testing.

b. The current limitations on batching simplify the technical requirements of the system. The capability of co-mingling batches more fully depends on a variety of technical considerations, many of which are being examined as the systems configuration develops. The system developers have

been instructed to expedite, to the extent possible, modifications which allow greater co-mingling of batches.

4. During oral cross examination, witness Garvey stated that there is a "marketing plan that includes a variety of different devices and ways in which [the Postal Service] will market the Postoffice Online." Tr. 2/305.

a. Please provide this, and any other relevant, marketing plans.

b. Please provide copies of the marketing materials used by the plan identified in response to a.

c. Will customer service representatives market or promote Mailing Online services? If so, how?

RESPONSE:

a. The pertinent marketing plan is commercially sensitive and thus inappropriate for public disclosure. A motion requesting protective conditions is being filed today; if that motion is granted, then these articles can be provided.

b. Copies of marketing materials are provided as Attachment 1 to this response (marked as "Attachment 1 to POIR2.Q4").

c. Current plans call for very limited involvement of customer service representatives (as well as other field marketing personnel) in the marketing and promotion of the PostOffice Online, including Mailing Online. The primary marketing emphasis will be through targeted advertising in various media as well as on the internet itself. The PostOffice Online marketing plan itself states at page 2, "The market test will not be supported by a live sales force." Customer service representatives and others in field marketing will be made aware of the PostOffice Online and they likely will have occasion to discuss it with customers, but there are currently no plans for dedicated use of their time

and resources.

Some limited use of tactical marketing sales specialists is scheduled for trade shows and conferences; these instances will be reported as part of the data collection plan.

Coming soon to a screen near you.

One click and it all starts to click.

ONE CLICK AND IT ALL STARTS TO CLICK.

PostOffice Online™ will let you simplify and reduce the time it takes to prepare your business's mail, from mailing your advertising, invoices and correspondence to shipping your urgent documents and merchandise.

Our new Web site for small businesses will be like having a post office and a professional printing-and-mailing service inside your personal computer that is open 24 hours, 7 days a week. The address will be www.postofficeonline.com

PostOffice Online will offer Mailing Online™ to simplify the way you prepare your First-Class Mail and Standard A Mail. Instead of spending hours printing each piece, stuffing envelopes, applying postage and doing the mailing, you'll be able to have someone else conveniently do it for you. PostOffice Online will also offer Shipping Online™ to simplify the way you prepare Express Mail® and Priority Mail™ shipments. You'll be able to prepare shipping labels, schedule pickups, track Express Mail and confirm Priority Mail deliveries — all from the convenience of your keyboard.

PostOffice Online is convenient

- Access our Web site anytime from your home, office or on the road
- Navigate quickly and easily with point-and-click menus
- Create, print and send First-Class Mail and Standard A Mail efficiently using Windows 95 (or Windows NT) and the Internet with Mailing Online
- Access expedited mail services conveniently and securely using Windows 95 (or Windows NT) and the Internet with Shipping Online

PostOffice Online is reliable

- Benefit from the reliability and integrity of the U.S. Postal Service

- PostOffice Online will be available this fall to the first 5,000 small businesses who qualify for this pilot program in limited geographic markets

www.postofficeonline.com

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We deliver.

MAILING ONLINE™ ONE CLICK AND IT ALL STARTS TO CLICK.

Mailing Online™ is the quick and easy way to prepare your First-Class™ Mail and Standard A Mail

Mailing Online™ will be available through PostOffice Online,™ our new Web site for small businesses. It will be like having a post office and a professional printing-and-mailing service inside your personal computer that are open 24 hours, 7 days a week. The address will be www.postofficeonline.com

Instead of spending hours addressing your First-Class Mail and Standard A Mail, printing each piece, stuffing envelopes, applying postage and doing the mailing, you'll be able to have someone else conveniently do it for you. Create your mail on Windows 95 (or Windows NT), using a variety of word processing and design programs, then send it electronically—along with your mailing list—to the U.S. Postal Service. We'll send them to a USPS-approved printing-and-mailing service that will take care of the rest of the work.

Mailing Online is convenient

- Create, print and send First-Class Mail and Standard A Mail via the Internet
- Prepare your advertising mail, correspondence, even your invoices, today, and have them in the mail tomorrow
- Personalize documents with data-merge
- Have your mailing lists standardized automatically for more effective delivery
- Navigate easily with point-and-click menus
- Store frequently used documents, mailing lists and return addresses
- Estimate mailing and production costs beforehand with a built-in calculator
- Accepts Visa,® MasterCard,® Novus™/Discover® and American Express®

Mailing Online has impact

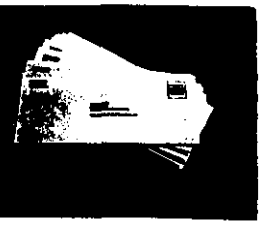
- *Give your mail impact with highlight color and graphics*
- Give your mail a professional touch with high-quality printing

Attachment 1 to POIR 2.Q4, Page 3

www.postofficeonline.com

UNITED STATES POSTAL SERVICE.

We deliver.



How does Mailing Online automatically standardize my mailing lists for more efficient mailing?

Each time you upload a mailing list through Mailing Online,™ it's checked against the U.S. Postal Service's National Address Management System to standardize your addresses, including abbreviations, directionals and ZIP Codes.® Unverifiable addresses are extracted and returned for review and correction.

How sophisticated can I get with my mailpiece designs?

The software packages that Mailing Online accepts offer you a wide variety of mailpiece-design options. Use of highlight colors includes your choice of red, blue, green or magenta (one highlight color per mailing).

What word processing or design software can I use?

You can mail most documents that you create on MS Word 6.0 or later, WordPerfect 6.0 or later, Pagemaker 6.5 or later, Ventura 7.0 or later, or QuarkXPress 6.0or later.

What mailing-list (spreadsheet or database) software can I use?

You can submit mailing lists that you create on MS Word 6.0 or later, WordPerfect 6.0 or later, MS Access 95 or later, Excel 5.0 or later, or an ASCII Tab Delimited text file.

Can I really send invoices too?

Mailing Online lets you use the Mail Merge feature of Word and WordPerfect. You can use the Mail Merge feature to personalize each invoice. Then you simply send your document and mailing list to Mailing Online. We take care of the rest of the work for you.

SHIPPING ONLINE™ ONE CLICK AND IT ALL STARTS TO CLICK.

Shipping Online™ is the quick and easy way to prepare expedited shipments

Shipping Online™ will be available through PostOffice Online,™ our new Web site for small businesses. It will be like having a post office inside your personal computer that's open 24 hours, 7 days a week. The address will be www.postofficeonline.com

Instead of writing out shipping labels by hand, you'll be able to prepare them electronically. You'll be able to use our online U.S. Postal Service database to check your addresses for accuracy and completeness. You'll be able to accurately calculate your postage, pay by credit card, schedule pickups, track Express Mail® and confirm Priority Mail™ deliveries...all online. Express Mail and Priority Mail are already terrific values. Shipping Online will make them even better values.

Shipping Online is convenient

- Access expedited mail services via the Internet
- Create shipping labels and schedule pickups from your personal computer
- Track Express Mail shipments
- Confirm delivery of Priority Mail shipments
- Order shipping supplies
- Navigate easily with point-and-click menus
- Accepts Visa,® MasterCard,® Novus™/Discover® and American Express®

Shipping Online is accurate

- Check your addresses for accuracy and completeness using the U.S. Postal Service's National Address Management System
- Be certain of our most current rates and service delivery times
- Pinpoint mail collection boxes and post office locations

www.postofficeonline.com

UNITED STATES POSTAL SERVICE

We deliver.

Should I consider sending all my expedited shipments via Shipping Online ?

Give it serious thought. The more you use it, the more convenient it becomes. You can prepare several shipping labels and pay for them together, without ever having to visit the post office.

What is the charge if I schedule a pickup?

You pay a single $4.95 fee for each scheduled pickup. We will pick up as many Express Mail® or Priority Mail™ packages per stop as you want. If you have one package, it's $4.95. If you have ten packages, it's still just $4.95.

Do Express Mail and Priority Mail deliver on Saturdays?

Yes. We deliver Express Mail shipments 7 days a week, 365 days a year, including Saturdays, Sundays and holidays. There's no extra charge for weekend or holiday Express Mail deliveries. We deliver Priority Mail shipments Monday through Saturday, and there's no extra charge for Saturday Priority Mail deliveries. We also deliver Express Mail and Priority Mail shipments to Post Office Boxes.

You want 24 hour access to the Post Office? Here are the keys.

The keys to a whole new world of opportunity. With PostOffice Online, you can create your own mail piece right on your PC and then send it electronically to be printed and mailed out. All without leaving your desk. You'll also be able to arrange to send Express Mail® and Priority Mail® right from your PC, at your convenience, 24 hours a day.

To take advantage of PostOffice Online™ all you need is a PC that's connected to the Internet and the desire to expand your business. Click onto our Web site www.postofficeonline.com/one for complete details. But hurry, because PostOffice Online will only be available to the first 5000 small businesses who qualify for this exciting pilot program. ONE CLICK AND IT ALL STARTS TO CLICK™.

Fly Like an Eagle.™

UNITED STATES POSTAL SERVICE®

We deliver.

You want 24-hour access to the Post Office? Here are the keys.

Fly Like an Eagle.™

The keys to a whole new world of opportunity. With PostOffice Online™, you can create your own mail piece right on your PC and then send it electronically to be printed and mailed out. All without leaving your desk. You'll also be able to arrange to send Express Mail® and Priority Mail™ right from your PC, at your convenience, 24 hours a day. To take advantage of PostOffice Online™, all you need is a PC that's connected to the Internet and the desire to expand your business. Click onto our Web site, www.postofficeonline.com/key for complete details. But hurry, because PostOffice Online™ will only be available to the first 5,000 small businesses who qualify for this exciting pilot program. ONE CLICK AND IT ALL STARTS TO CLICK.™

UNITED STATES POSTAL SERVICE.

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Growing your business comes down to pushing the right buttons.

Fly Like an Eagle.™

All you have to do is type www.postofficeonline.com/one. It will let you create your own mail piece right on your PC and then send it electronically to be printed and mailed out. All without leaving your desk. You'll also be able to arrange to send Express Mail® and Priority Mail™ at your convenience, right from your computer, 24 hours a day. All you need is a PC that's connected to the Internet and the desire to expand your business. Click onto our Web site www.postofficeonline.com/one for complete details. But hurry, because PostOffice Online will only be available to the first 5000 small businesses who qualify for this exciting pilot program. ONE CLICK AND IT ALL STARTS TO CLICK™.

UNITED STATES POSTAL SERVICE®

We deliver.

How much time do you spend on mailing and shipping? That's too much.

It shouldn't take longer than the click of a mouse. PostOffice Online™ will let you create your own mail piece right on your PC and then send it electronically to be printed and mailed out. All without leaving your desk. You'll also be able to arrange to send Express Mail® and Priority Mail™ right from your PC at your convenience, 24 hours a day. All you need is a PC that's connected to the Internet and the desire to expand your business. ***Click onto our Web site, www.postofficeonline.com/key for complete details. But hurry, because PostOffice Online™ will only be available to the first 5,000 small businesses who qualify for this exciting pilot program. ONE CLICK AND IT ALL STARTS TO CLICK.™***

Fly Like an Eagle.℠

UNITED STATES POSTAL SERVICE.

We deliver.

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Now you only need one box to do all of your shipping.

Fly Like an Eagle.™

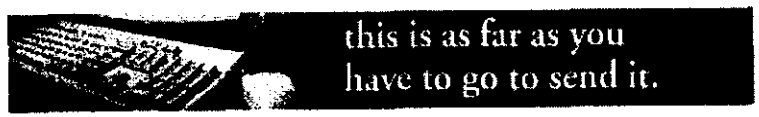
Your desktop or even a laptop. With PostOffice Online you'll be able to arrange to send Express Mail® and Priority Mail™ at your convenience, right on your PC, 24 hours a day. Even track or confirm delivery. And that's not all. PostOffice Online will also let you create your own mail piece right on your PC and then send it electronically to be printed and mailed out. All without leaving your desk. All you need is a PC that's connected to the Internet and the desire to expand your business. Click onto our Web site www.postofficeonline.com/one for complete details. But hurry, because PostOffice Online will only be available to the first 5000 small businesses who qualify for this exciting pilot program. ONE CLICK AND IT ALL STARTS TO CLICK™.

UNITED STATES POSTAL SERVICE

We deliver.

No matter how far
your package is going...

No matter how far
your package is going,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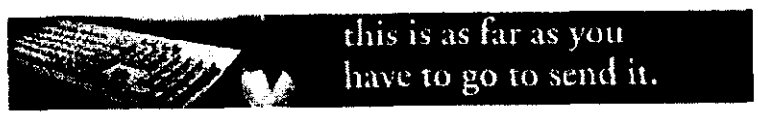
have to go to send it.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have to go to send it.

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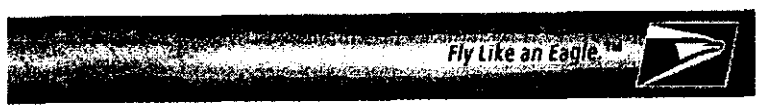
PostOffice Online™
ONE CLICK AND IT ALL STARTS TO CLICK.™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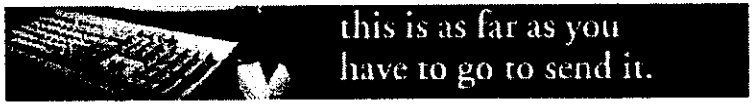
No matter how far
your package is going,


this is as far as you
have to go to send it.

UNITED STATES POSTAL SERVICE
PostOffice Online™
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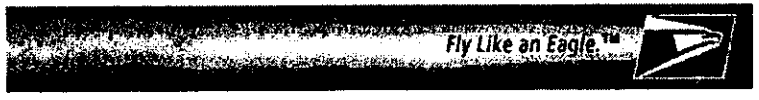
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RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS GARVEY
TO PRESIDING OFFICER'S INFORMATION REQUEST NO. 2

5. During oral cross examination witness Garvey stated that "the underlying technology of digital printing has a certain characteristic of limiting the usage to mailings of less than 5,000." Tr. 2/398.

a. Please discuss the characteristics that limit usage.

b. Is this 5,000 limit expected to increase as the technology improves? If so, over what time horizon?

RESPONSE:

a. The usage of 5000 is an agreed upon "rule of thumb" limit for digital printing run length and can be found in the subject literature.[1] A characteristic of digital printing is that each copy of a document has a "run length of one". Each unit copy costs the same as any other copy, regardless of how many are produced. This differentiates digital on-demand printing from the traditional offset printing methods in which a great deal more of the cost is associated with a job itself as opposed to the flat rate costs of digital printing. For example, traditional offset printing methods require an initial set-up cost for each job, with each additional copy having a very small incremental cost. This means that for small jobs the whole cost of set-up must be borne by a small number of copies, making it generally uneconomical to produce small runs; large jobs however have very low per-unit costs since most of the cost is in the initial set-up.

In digital printing, small jobs are more economical while large jobs

[1] This answer was prepared in consultation with the Printing Industries of America.

ultimately cost more per copy than traditional methods, producing higher unit costs above a certain threshold. The number 5000 is a generally accepted cut-off for digital printing per unit cost advantages. Included as Attachment 1 to this response (marked as "Attachment 1 to POIR2.Q5") is the introductory section from an industry guide, *The Print on Demand Opportunity*, which discusses in detail the economics of digital printing. It is provided with the permission of the authors, CAP Ventures, Inc.

b. The technology of printing is dynamic. According to CAP Ventures, increases in speed and efficiency of print engines can be taken for granted in digital on-demand printing.[2] Currently, the number 5000 expresses an extreme upper limit for economically rational consideration of digital printing with its flat cost curve as compared to the volume driven economies of offset printing. The number 5000 is unlikely to rise dramatically despite improvements in on-demand technology. The basic concept of digital print-on-demand as a highly effective short run length tool is well established and may lead to increased use of smaller mailings, but in general large quantities will continue to be served better by other technologies.

[2] CAP Ventures, The Print-on-Demand Opportunity (Norwell, MA: CAP Ventures, 1997) at 442

The Print-on-Demand Opportunity

Technologies, Products & the Business

2ND Edition

By CAP Ventures

Jim Hamilton, Editor

Contributing Editors:
Merilyn E. Dunn
Ron J. Gilboa
Jeffrey J. Hayes
Barbara A. Pellow
Peter W. Perine
Charles A. Pesko
David C. Pesko
James S. Summers

The Print-on-Demand Opportunity

Technologies, Products & the Business

2ND Edition

CAP Ventures

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CAP Ventures, Inc.
600 Cordwainer Drive
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781-871-9000
781-871-3861 (fax)
info@capv.com (e-mail)
http://www.capv.com

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Introduction

For the past twenty years, digital processes have been overtaking and replacing conventional ones. Typesetting was the first to go. Then imagesetters and digital scanners ended the role of the camera room. Platesetters could soon finish off the plate room. The press room is next. Today we stand at the edge of a new era of on-demand digital color printing. Print on demand's success in the black & white world is well known. Color is not far behind. Anyone involved in the printing and publishing industry needs to know about print on demand.

Where is the opportunity?

To understand the importance of print on demand, it helps to look at the economics of printing. If you were to make a chart of print cost per page versus run length, it would look something like Figure I-1.

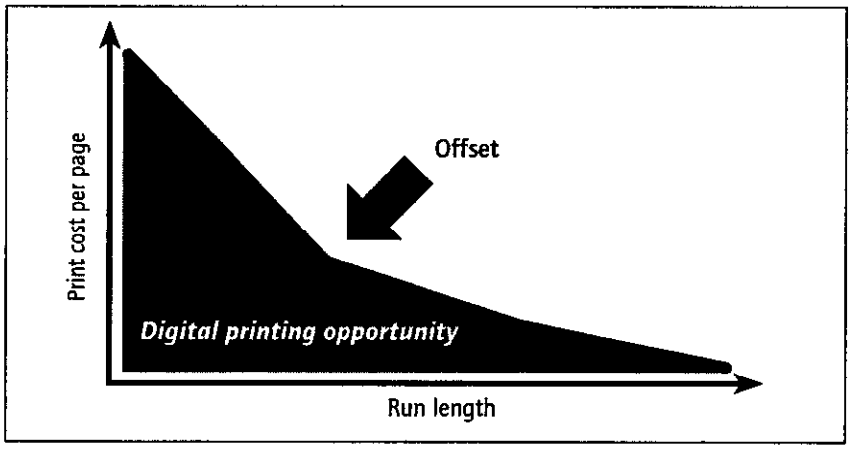


Figure I-1

Short runs are much more expensive per page because of the cost of preparing films, burning plates, and press make-ready. However, as the press run increases, the price per page drops. Conventional offset lithography provides a very low price per page for long runs. Therefore the window of opportunity for digital printing is anywhere under the curve. The shorter the run, the greater the opportunity. Currently, most commercial printers shun short-run work because they can't produce it economically. The make-ready costs are simply too high and in addition, they are not set up to handle many low-dollar-item transactions.

Figure I-2 is a variation on the traditional cost curve shown in Figure I-1.

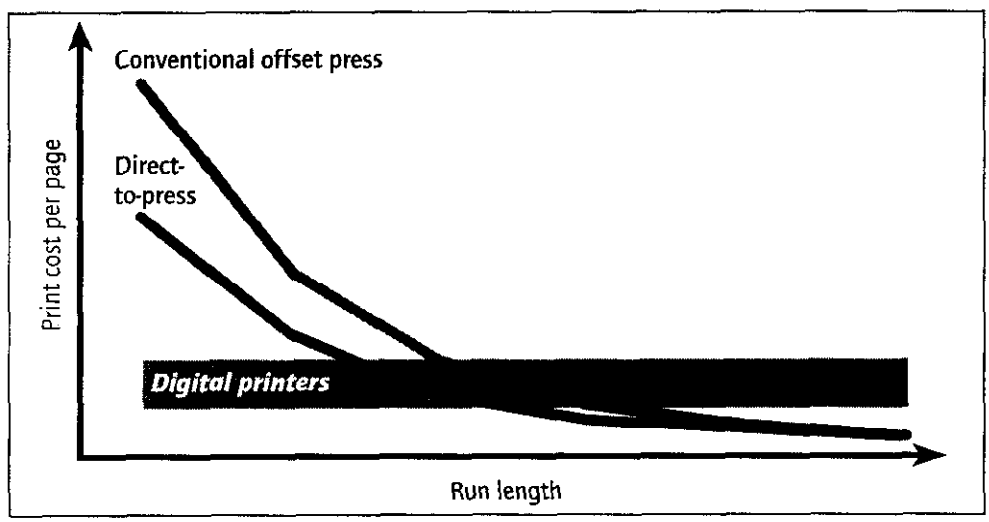


Figure I-2

It includes a comparison between conventional offset lithography, direct-to-press offset (like the Omni-Adast 705 CD DI series and the Heidelberg GTO-DI and Quickmaster DI), and high-speed digital printers (see the Representative Products section for a full listing of black & white, spot color, and process color digital printers). Press automation (like digital platesetters, automatic plate mounters, and press control units) helps to improve the cost per page of offset lithography. Direct-to-press devices, because they image the plate on press, go even further, eliminating plate mounting and thereby improving register and making it easier to get up to color. Digital printers often have little or no make-ready. Their cost curves are virtually flat. This means that they can profitably attack the short-run market, but because of high consumables cost and relatively low speed, they cannot compete with offset lithography for long runs.

More than just short runs

It would be a mistake to conclude that digital printers are simply scaled down versions of traditional presses that are suited solely for printing a few copies of the same document. This misses an important strength of digital printing: variable data (also called personalization). Many digital printers are capable of printing a totally different image on each successive sheet of paper. That means that you could conceivably print an entire book one page at a time consecutively in page order. Or you could print sales materials that have your sales representative's address and photo on each one (even if you have hundreds of sales reps who only need 100 copies each). Or you could print personalized catalogs based on information from a database.

People often have difficulty imagining how these kinds of capabilities will be used. This is simply because the market is new and developing. As customers are educated about the possibilities of the technology, there is little doubt that they will take advantage of it. In Chapter 1 we'll talk specifically about print-on-demand applications.

A growing market

In 1995 the U.S. printing & publishing industry generated $224 billion in sales. Of this total, $87.9 billion went to general commercial, in-plant, and quick printers. (See Figure I-3.)

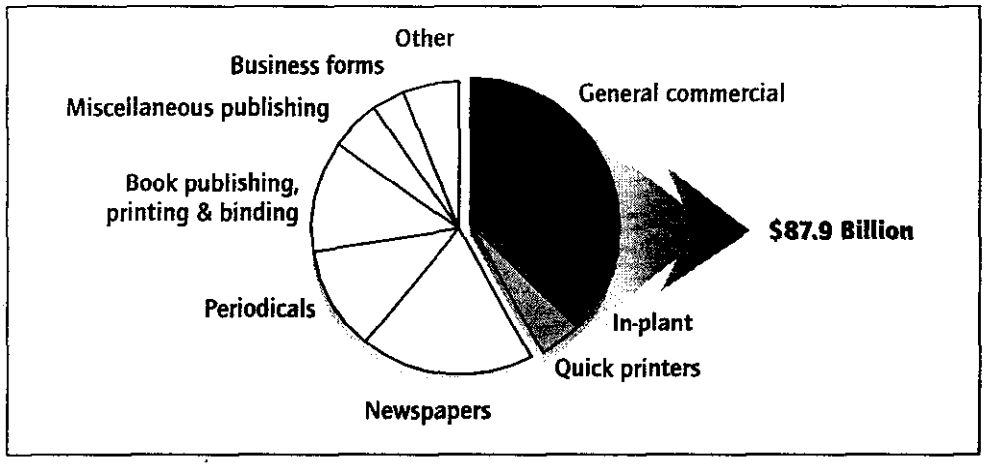


Figure I-3: Total 1995 U.S. printing & publishing industry is $224 billion – general commercial, in plant, and quick printers make up $87.9 billion of that total.

If you look at the $87.9 billion general commercial printing portion and break it down by run length, $41.3 billion is for run lengths under 5,000 impressions. (See Figure I-4.)

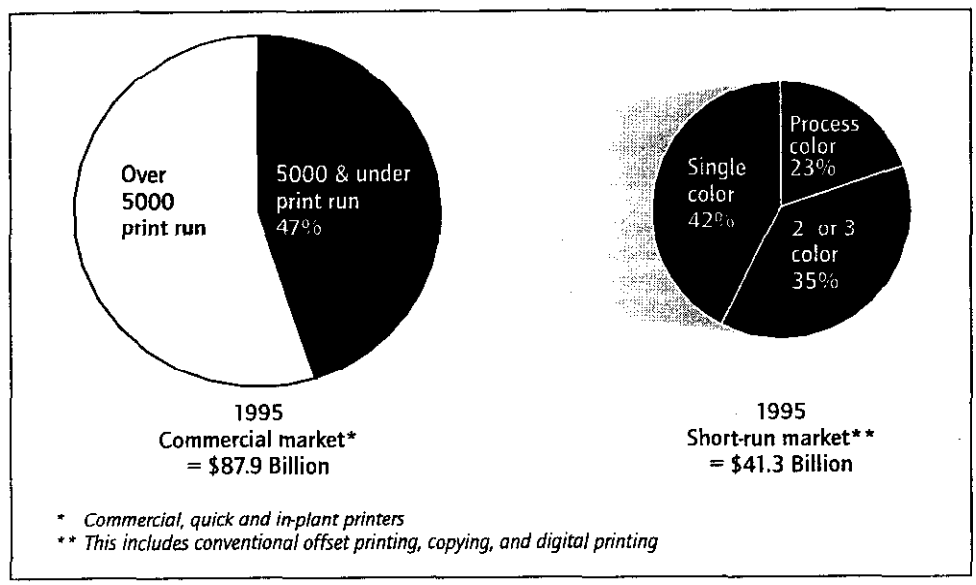


Figure I-4: Nearly half the general commercial print market is eligible for digital printing systems

It is this portion of the commercial printing market that is the area of opportunity for digital printing. While much of this work (42%) is currently black & white, the economies of digital printing make it likely that at least a portion of this will move to color (either 2-, 3- or 4-color).

Of the $87.9 billion 1995 U.S. print market, CAP Ventures estimates that about 7%, or $5.8 billion, was printed with on-demand methods. (See Figure I-5.) Another $82.1 billion was printed by conventional offset techniques. By the year 2000, the print on demand portion will account for 19.1%, or $22.4 billion of the total. There will be continue to be growth in the offset market, but it will not occur at nearly the rate of print on demand.

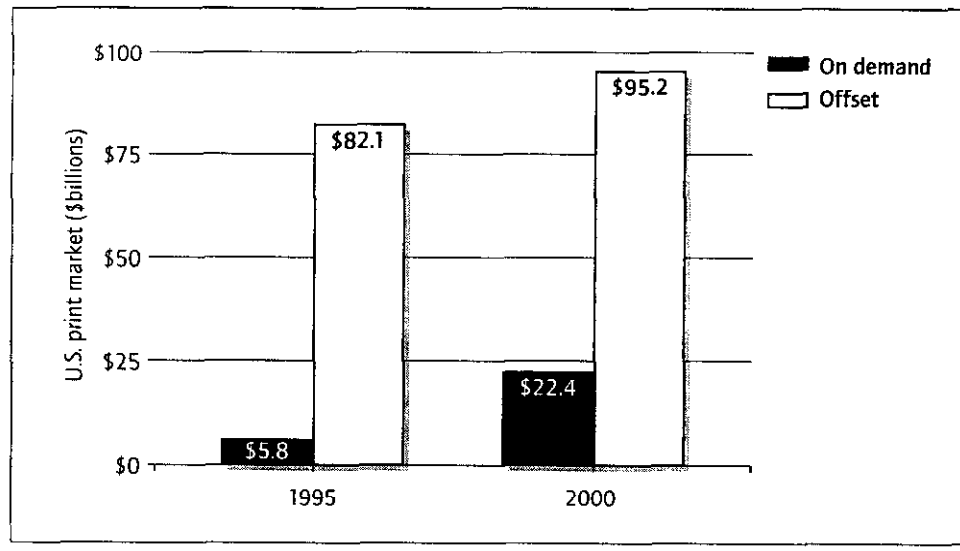


Figure I-5: Growth of print on demand compared to offset

These numbers paint a clear picture of an industry in need of change. Print on demand can provide it.

What is print on demand?

Print on demand is an electronic printing process that delivers exactly and only what the customer wants, when the customer wants it, and at the place where it is needed.

Changing customer requirements and expectations have led to the need for print on demand. Today, customers expect shorter and shorter turnaround times, often approaching same-day delivery. They want to be able to revise documents right up to the moment of printing. The impact on printing operations is a radical compression of production times. This compression is made possible by the explosive growth of electronic prepress, and by technological changes that have automated the print production process.

Print buyers are under pressure to get better results from shrinking print budgets. This includes receiving quick turnaround or printing short runs without paying a price penalty. Color is becoming more important, particularly since it is so easily attainable from desktop publishing systems.

Instead of disregarding these trends, print-on-demand providers look to supply:

- What the customer wants
- When the customer wants it
- Where the customer wants it

What the customer wants

One of the benefits of print on demand is that the customer can select – or create – exactly what is desired for printing and have it prepared in the format they wish. Here is an example: Print on demand is being used to assemble reading materials for college courses. Professors can, once appropriate copyright clearances are obtained, collect selected chapters from different textbooks into a customized textbook, and assemble them in the order in which they will be studied. Books are then printed in the quantity required for that course (based on student pre-registration). The professor provides exactly the course materials desired, and, perhaps more importantly, the student pays less for the course materials. No longer must the student spend, say $60 or more, for a textbook in which only one chapter might be used.

When the customer wants it

The production of printed materials exactly when they are needed is the essence of print on demand. The net result is a reduction in inventory, reduced storage requirements, and potential overall cost savings due to a reduction in pieces printed. Additionally, the customer has the opportunity to revise the document until the time when it is printed, ensuring a more timely and more accurate finished product.

Where the customer wants it

Print on demand can also substantially reduce charges to ship the printed materials. In combination with the ability to electronically distribute documents, print on demand enables distribution before printing. This process not only reduces freight charges (which sometimes add 10% or more to the cost of printing), it also allows the user of the document to receive it without shipping delays.

Print on demand is a process

Print on demand is more than just physical printing. It's everything from idea generation to printing, to delivering and distributing that information to the end user. Because print on demand is so all-encompassing, it requires a re-engineering of the

entire process. The best way to see how print on demand changes the process is to ask the following questions:

1. Why is the job being printed?
2. What are the costs associated with printing the job?
3. What are the benefits of printing the job in a more effective manner?

In today's environment, most printers don't get involved in the discussion of why the job is being printed. The customer calls up, they need a job printed, and the printer tells them how much it will cost and when it will be delivered.

Regarding cost, however, printers have this down to pennies and tenths of pennies per page. A lot of time is spent analyzing the cost elements, but printers rarely measure the effectiveness of a document (This issue, of course, is paramount to the print user.)

Without feedback in these three key areas, it is difficult for a printer to position the benefits of on-demand printing, because it isn't always a simple issue of cost. Obviously it is expensive and wasteful to print large quantities and either ship or warehouse them, but there are other less tangible costs that come from using documents that are either out-of-date because they are printed so infrequently or so generic that they are of little use.

There is another reason why it is important to understand the costs and the benefits of printing: printing is just a small part of a much larger process of communication. In looking at print costs versus process costs it becomes clear that the cost of printing is only about 10% of the total cost of creating, ordering, warehousing, and inventory. (See Figure I-6.)

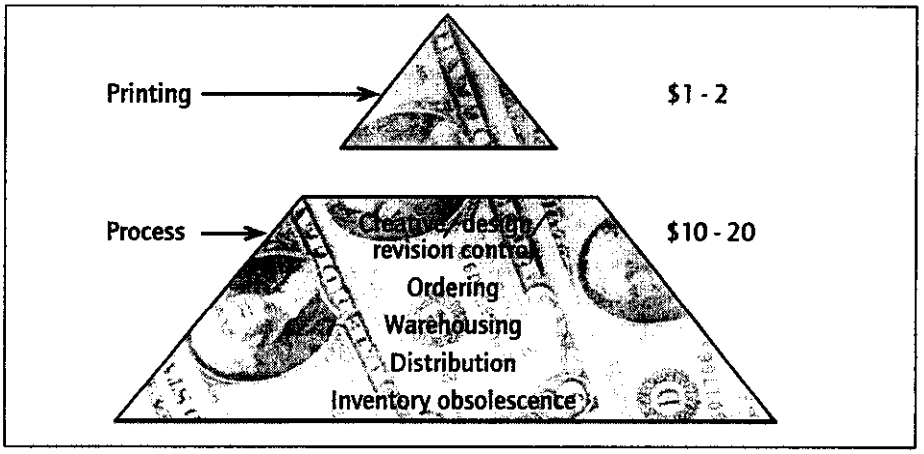


Figure I-6: Print cost versus process cost

With all this time spent on creating and managing information, it is surprising that the focus is on the printing of that information rather than the communication of the information. If it is the information that is so important, how do we present it in the most effective fashion? How can we re-use that information? Re-purposing information for a variety of applications – from print to CD-ROM to on-line – has become, and will continue to be a key issue for information providers.

No longer a linear process

Traditionally, print buyers have followed a very linear process from idea creation through production and distribution (see Figure I-7). They work with multiple suppliers, order large quantities, print infrequently, ship needed materials while warehousing the rest, and simply throw away publications if they go out of date.

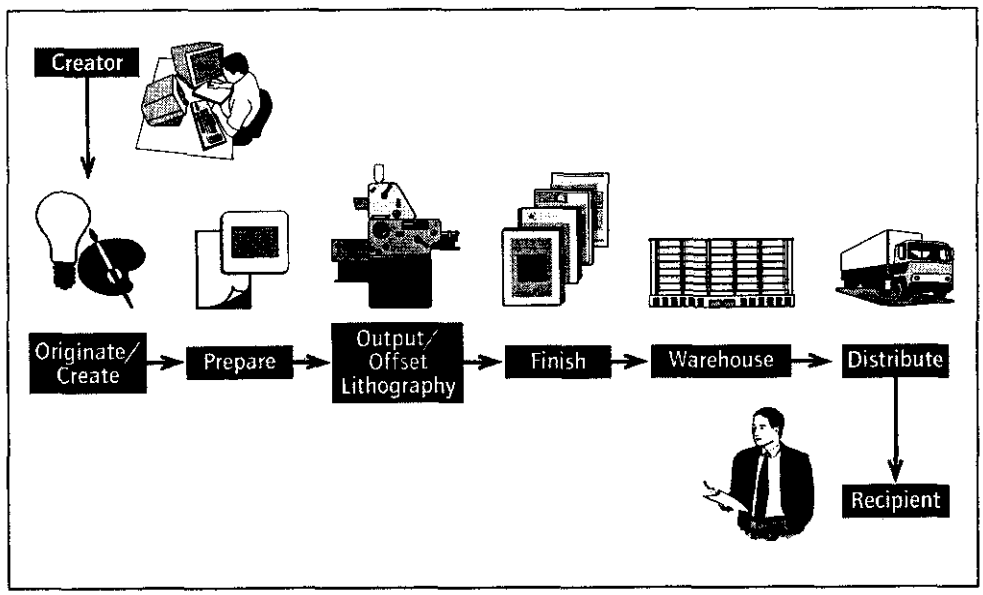


Figure I-7: A traditional linear production process

A re-engineered print-on-demand process (see Figure I-8) provides customer access at many points in what is essentially a continuous, dynamic process. The customer can order documents and track their progress, they can create new documents or edit existing ones, they can draw on information from a database and update the database as well, they can print to remote locations closer to the ultimate destination of the document. In essence, they can take greater control over the process.

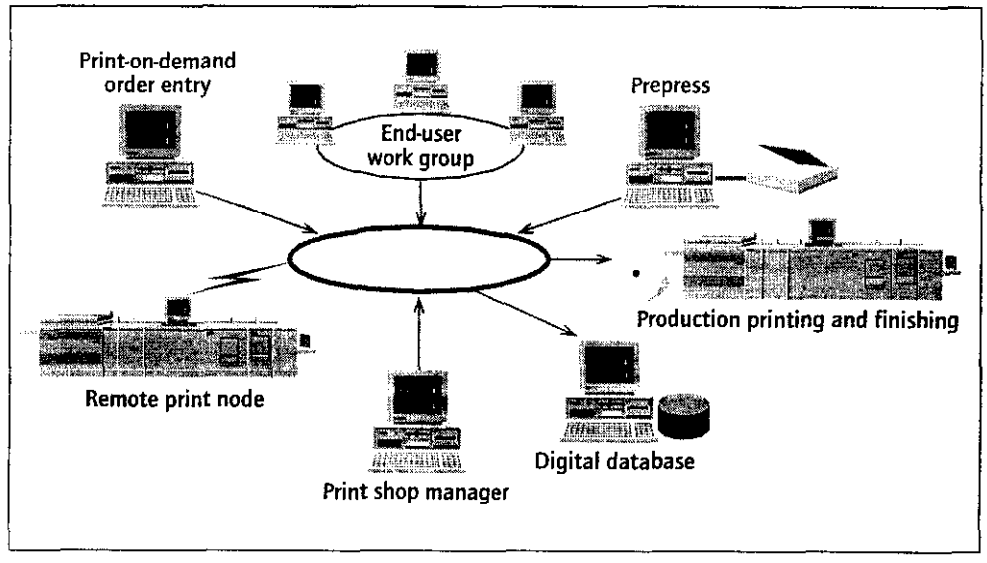


Figure I-8: A print-on-demand production process

All of this requires a 100% digital workflow. For quick and easy access, documents must be in an electronic format. But once this is accomplished, the benefits are enormous. One benefit of a fully digital print-on-demand workflow is that it allows users to print fewer copies of more targeted, up-to-date documents. A targeted document, for example, could be a sell sheet for a product that is customized with the name, address, and photograph of the participating dealer (even if the dealer only needs a hundred copies).

What is a short run?

Because print on demand is often described as short-run printing, it is important to clarify what is meant by the term "short run". Is it the number of pages (sheets, impressions, etc.) in a single press run? How does the number of pages in the document play a role? (In terms of complexity, it is clear that 100 copies of a 50-page document is a much more complex job than 5,000 copies of a single page document.) What if variable information is printed on each page, essentially making each document a run length of one? Color printing, either spot or process, adds another level of complexity to a document. And what if the document is printed several times in different locations, with different editions as time passes (such as regional editions of a newsletter)?

As you examine this question, it becomes clear that the term "short run" can mean different things to different people. In general, this is a good blanket definition for short run:

Short-run printing: A limited number of impressions – usually fewer than 5,000 but sometimes as many as 20,000 – for a single job. This could mean 5,000 copies of a single-page, or 200 copies of a 25-page document.

In production, there are practical limits to the the number of pages that a device can print, these may be technology-limited (the plate life of a Quickmaster DI is about 20,000 impressions) or cost-limited (there is little sense in making 1,000 copies on a color copier because offset lithography can generally provide a higher quality product for less money at that run length). In addition, once variable information is added to a document, the whole concept of run length becomes something of a moot point. How much shorter can you get than a run length of one?

Of course, print on demand is much more than short-run printing. And that will become clearer as we look at the different levels of print on demand described in Chapter 2.

The changing market

A variety of factors are making digital printing and print on demand processes a business necessity:

- **Increase in the number of jobs supplied in digital format** – Today nearly half of the jobs received by commercial printers are in digital format. By the year 2000, over three quarters of all jobs received by print providers will be in digital format.
- **Increase in the use of color** – Digitally submitted black & white jobs can have spot or process color added to them relatively easily. And though many current print-on-demand jobs are monochrome, there is ample reason to believe that the number of color jobs will increase dramatically as it becomes easier and less expensive to create and print color documents.
- **The accelerated pace of business** – The business environment is becoming increasingly fast and fierce. Greater production volume is

expected from jobs with smaller budgets; increasingly, customers in all areas are demanding faster job turnaround at a lower price. Print on demand fits well into this new business model.

- **Downsizing** – Fewer and fewer companies can afford dedicated design and printing facilities in house. They are turning to full-service providers (some known as facilities management, or FM, companies) to handle documents and printing. This allows them to focus on their core business, whatever it may be.
- **Just-in-time manufacturing** – Just-in-time manufacturing techniques demand just-in-time production of collateral materials and documentation.
- **Global market** – Companies cannot operate in a vacuum. Increasingly, competition may come from anywhere in the world. And, companies must be prepared to serve customers worldwide. Print on demand is only one aspect of this trend. As we will see in the Chapter 2, a new paradigm called "distribute and print" will change how companies handle printed matter.

These market forces result in documents which require frequent updates and changes and thus have a shorter useful life than ever before. Print-on-demand technology can satisfy these priorities and do so in smaller print runs.

The changing role of the print buyer

Increasingly, the demand for print is driven not only by traditional print buyers, but also by the document owner. The corporate environment is becoming decentralized, and department managers – often with profit and loss accountability and compensation driven by the bottom line – are buying or directing the print buying for their own areas. Many of these managers are quite willing to make trade-offs that traditional print buyers find unacceptable. For example, a product manager may accept lower quality or higher cost in exchange for a rapid turnaround time that makes it possible for updated product sell sheets to be ready in time for an important trade show.

Print buyers will take a more active role in initiating the printing process, perhaps without even consulting their print sales representative. Software is already available that allows print buyers to specify the job, including choosing paper, print run, and finishing requirements. With an approved line of credit, and some method of on-line -

job quoting, the print buyer can act quickly and effectively. In these ways, technology is changing the business environment and enabling more people to become print buyers. In turn, these people are driving changes in the services and products offered by print providers.

Key benefits of print on demand

Print on demand changes the rules of who prints, what is printed, and the relationship of print to the corporate profitability of both the print buyer and the print provider. For example:

- **More effective documents** – Documents produced by print on demand can be more effective for a variety of reasons. First and foremost, print on demand improves the time to market by reducing the entire production cycle involved in preparing and printing a document. This also allows document creators to push back their editorial deadlines so that they can include more up-to-date information. Print on demand can allow them to produce more frequent editions in shorter print runs. The use of color or variable data can also improve the comprehension of documents or the response rates that the documents generate.

  Print on demand provides an opportunity for the customer to develop more effective documents, perhaps, by using customized information or by personalizing the document with a person's name or a specific message based on prior knowledge of the recipient. Print-on-demand technology also presents an opportunity to provide timely, accurate information that is subject to rapid change, such as corporate telephone directories or rate tables for the banking and insurance industries.

- **Decreased inventory** – There are two considerable advantages to the decrease in inventory that print on demand allows. First, time and cost savings are realized because of decreased warehousing requirements, reduced shipping costs, and increased handling efficiency because only the necessary print quantity is handled through the distribution channel. Second, print on demand also reduces the costs of renting and staffing a warehouse facility.

Controlling costs makes for good customer service. CAPV research has shown that faster turnaround times and cost savings are the top two priorities of print buyers.

- **Waste** – Between 12% and 26% of all printing purchased is obsolete, out-of-date, or discarded. (See Figure I-9.) At the same time, print buyers are being asked for more effective printing with a lower budget. If, with print on demand, you can cut in half the throwaways due to outdated information and shipping damage, you have achieved a strategic cost advantage.

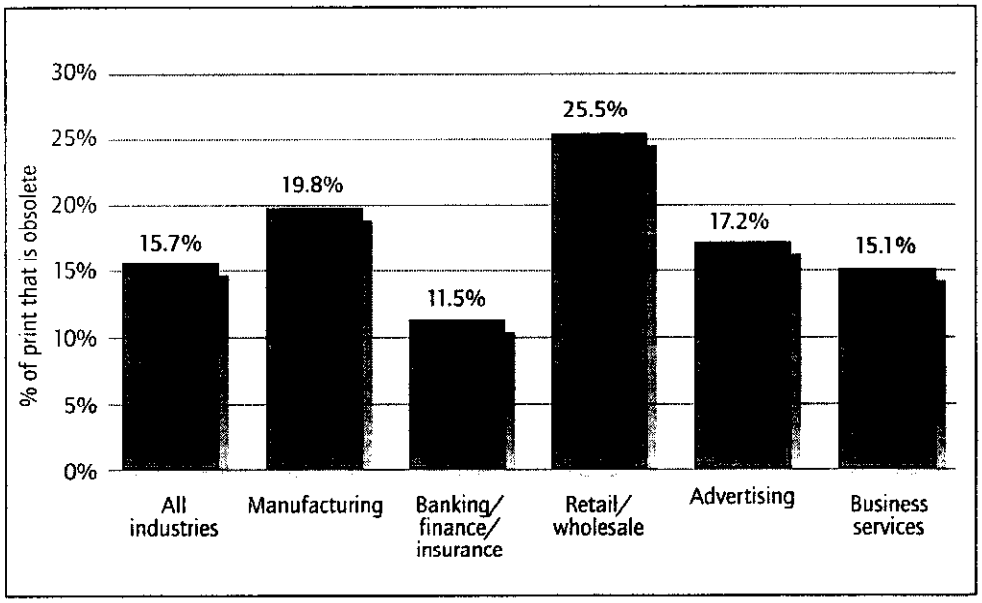
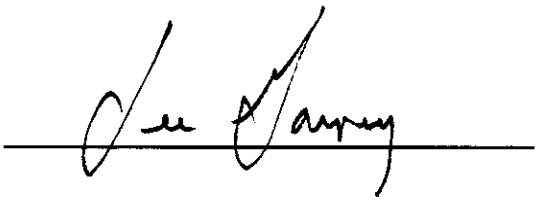


Figure I-9: Pre-printed material that is obsolete (by industry)

These benefits will come into play as we look at the applications discussed in Chapter 1.

DECLARATION

I, Lee Garvey, declare under penalty of perjury that the foregoing answers are true and correct, to the best of my knowledge, information, and belief.



Dated: 10/28/98

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon all participants of record in this proceeding in accordance with section 12 of the Rules of Practice.

K N Hollies

Kenneth N. Hollies

475 L'Enfant Plaza West, S.W.
Washington, D.C. 20260–1137
October 28, 1998