Publishing Alternatives for Federal Communication Projects

This GPO white paper explains how to execute an effective digital and print strategy. It explores issues related to the migration of Federal content from print to digital and offers suggestions on stretching your agency's budgetary dollars. **Part I** focuses on eBook design, production and dissemination considerations. **Part II** discusses ways to control print costs while maximizing the effectiveness of a digital and print strategy.

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Migration from Print to Digital

The entire publishing industry, including Federal publishing, currently is going through a revolution. More and more content is "born digital" and often is provided in digital formats only, without ever going to print.

Consider these facts:
- eBook sales rose nearly 41 percent in 2012, plateaued in 2013, and rose again by 5.6% in 2014. (Source: *The Digital Reader*).
- Global eBook sales were estimated to be $14.5 billion in December 2014, with an expectation of continuing growth to $22 billion by 2017 (Source: *Kobo Book Report*)

Like many Federal agencies, you may find that budget cuts are putting some of your publishing projects on hold. White House directives also may be instructing you to post more information online, rather than in print.

Given the current budgetary climate, you might be wondering whether to make your content available in print or in digital formats (such as eBooks, eMagazines, and/or online as PDF documents).

Taking an "either/or" approach to the problem usually is driven by cost cutting considerations. By going strictly digital or strictly print with your content, you run the risk of not reaching substantial portions of your target audience. Although digital has been getting a lot of press coverage, it still represents less than 25% of the entire printing business. Print makes up the remaining 75%. Also, the majority of eBook sales to-date has been in "trade" publications – romance novels, spy thrillers…not the usual "academic" type content found in Federal publications.

The current trend in the publishing industry is to utilize a digital and print strategy. That is, take advantage of print AND digital to reach the widest audience. 90% of Science, Technical, and Medical (STM) publishers, 76% of college publishers, and 63% of corporate publishers (companies that produce content similar to Federal agencies) provide eBooks in addition to print, rather than in place of print.

(Source: *Aptara's Fourth eBook survey of Publishers*, September, 2012)

Take advantage of print **and** digital to reach the widest audience!

Costs: Print vs. Digital

Get a maximum return on your investment and **expand your reach by incurring costs once** and spreading them across multiple formats.

Many of the costs of producing print and digital content are similar:

Print	**Digital**
Editorial	Editorial
Design	Design
Formatting	Formatting
Printing	Conversion
Warehousing	Web Related
Shipping	Marketing and Promotion
Marketing and Promotion	Customer Support
Customer Support	

For most Federal publications, a large portion of the total cost of producing a publication is in editorial, design and formatting. You can get a maximum return

on your investment by incurring those costs once and spreading them across multiple formats (example: designing an eBook using the same files that were used to produce your print book). Since eBook readers may or may not be the same audience as print book readers, you can greatly expand your reach with minimal additional cost.

Project Planning

The key to making your content work across multiple formats is to plan ahead. By envisioning the audience you wish to reach, knowing how they like to receive their content (print, eBook, web, etc.) and figuring out where they go to look for the content (your website, libraries, Google search, etc.), you can save money and achieve maximum effectiveness at the same time.

Here are some basic steps that you should follow regardless of publishing methodology:

1. Review your project goals and develop a communication plan, to include:

    a. **WHO** your audience is.

    b. **WHAT** information you want to convey.

    c. **WHY** they need to know this information.

    d. **HOW** they normally like to receive information (i.e. in which formats). (Are you able to deliver the information to them in those formats?)

    e. **WHERE** they normally go to gather information on your topic.

       (How can you get your information placed there?)

    f. **WHEN** do they need to receive this information?

2. Determine your publishing requirements — do you want print, digital, or both?

3. Create a publication design and layout

    a. Cover design

       ■ The outside sells the inside. Even as a thumbnail jpeg file, a unique design will grab your customer's attention.

       ■ Your design might be viewed on a range of devices - such as an iPad, Nook, Kindle etc. Plan your design elements to be striking enough to grab attention, but simple enough to be viewed on small screens as well as large ones.

       ■ The cover will also define the color palette and typography and "look and feel" of the interior. Make sure everything works together.

    b. Text reflow

       ■ An eBook is really a mini website within an eBook "wrapper." Most eBook formats such as an ePub will treat your text as a single column that reflows, depending on the device and reader preferences.

       ■ Typography choices will be limited. Embedded fonts are not recommended for ePub files and can create problems.

       ■ Ability to change type size increases accessibility for users. To maintain visual clarity, establishing a clear type hierarchy is important.

       ■ It is important to test your text reflow on various devices. Some devices may handle the reflow differently from others.

> Plan ahead to **save money and extend your reach**.

c. Graphics
- Graphics that were legible in a print publication may not scale to smaller readers, such as a Kindle or smart phone.
- Tables that span two pages in an 8 ½ x 11" publication are re-evaluated for devices that typically show one page at a time.
- Determining options around these types of limitations are part of the design assessment phase.

4. Export to eBook format/s.
   The most common formats are:
- **ePub –** Features resizable and reflowable text. Fast becoming the standard format for tablets, computers, and Android devices.
- **Mobipocket –** Designed for cell phones. Also used for older model Kindles.
- **KF8 –** Newer Kindles use this, such as the Kindle Fire.
- **PDF –** Displays "static" pages. Useful if you have a lot of tables and graphs or if body copy and images must always be displayed together on the same page.

5. Test your eBook to see how it displays on different types of devices.

6. If you want to disseminate your eBook into popular distribution channels, run your eBook file through validation software to assure compatibility with various channel databases (Google, Barnes & Noble, Apple, etc.). GPO can help you with this.

Digital Do's and Dont's

If converting to ePub or KF8 (Kindle):

DO:
- have a table of contents.
- create metadata to travel along with your eBook file. This will enable search engines to find your content.
- provide a separate cover image.
- use images that are readable even on small, handheld devices.
- use images that will display in night mode (transparent images).
- use alternative text (alt text) attributes. These are recommended for accessibility.

DO NOT:
- use images that are too large. They will get kicked out by sales channel validation software.
- over-use embedded fonts.

If converting to PDF or Zinio formats:

DO:
- embed the fonts in the PDF.
- supply a high-quality PDF (288 dpi or higher).
- supply a composite, single PDF.
- crop all pages to the same size.
- provide bookmarks and links for enhanced PDFs.
- call GPO if you want to make fixed pages interactive and dynamic for platforms such as Zinio.

DO NOT:
- supply your covers as spreads.

Many sales agencies would prefer to do most or all of the eBook design, production, conversion and dissemination work in-house. For those Federal agencies pursuing a "do it yourself" model, here are some production and dissemination challenges to consider:

Sales Channels

*Some creative thinking and/or compromises may be needed to **disseminate your content** through commercial channels.*

You will need a contract for each major sales channel. As a Federal agency, you will probably have some significant legal limitations and restrictions. Because of this, sales channel contracts often can take months to negotiate.

Most sales channels are set up around a "sales" model. They are in business to make a profit, not to act as a free distribution arm for Federal agencies. Many Federal agencies are resistant to this and want their content to be free in all cases to all audiences. This may lead to an impasse or require some creative thinking and/or compromises on the part of both parties.

Each sales channel uses different software to validate content (such as ePub files) being uploaded to them. You may find you have to make slight adjustments to your eBook files to ensure compatibility with sales channel databases.

Changing Technologies

eBook technologies are evolving constantly. Tablets, which didn't even exist a few years ago, are supplanting dedicated e-readers as devices of choice. On the software side, we have seen a migration from PDF to ePub, and from mobi to KF8. ePub3 shows promise of becoming a software standard, but as of this writing, many manufacturers have not designed their devices to take advantage of its unique features.

*One way to avoid constantly reinvesting in technology is to **seek outside help**.*

One way to avoid constantly reinvesting in technology is to use a vendor to design, convert and distribute your eBooks. GPO can do the work for you or advise you if you wish to use other sources.

Reaching Your Target Audience

Many Federal agencies still take the "if you build it, they will come" approach to content creation and dissemination. They feel that if they create good content and post it to their website or put it in a "bricks and mortar" store, people will find it.

*It now is necessary to **get content out** to where people normally search for it.*

The rise of the Internet has changed that paradigm. It now is necessary to get content out to where people normally search for it … and where they search for it is all over the Internet. Putting your content into multiple online and "bricks and mortar" channels requires planning and foresight.

In order to be truly cost-effective in your communications, you should consider the following before creating your content (some of these we've mentioned previously — but they are worth repeating):

- Who is your target audience?
- Where do they normally go to acquire information?
- How do they like to read? Print? eBooks? eMagazines? Web? Some combination of these?
- How easy is it to find your information on your agency's website?
- Is your content something that a person would search for on Google? Look for in a Barnes & Noble store? Research in an academic library?
- Is your content something a person might be willing to purchase in order to have their own copy?
- Can your content be distributed as separate chapters or articles, or should it always stay together in "book" format?

Figuring out the answers to such questions will guide you to the proper print or digital formats to use and the proper means of promotion and distribution.

The Importance of Promotion

Both print and digital content require promotional efforts to make readers take notice. Many leading channels such as Barnes & Noble require written promotional plans before taking in a new title. If your agency decides to make your content available in both print and digital, you can and should promote both formats at the same time.

Time and again, GPO has seen that the books and eBooks that do best are the ones where the Federal agencies have made the efforts to promote their content through press releases, media appearances, conferences and other events. Federal agencies often have access to subject matter experts and celebrities who are willing and eager to help promote their missions to the public. GPO can work with you to assure that the promotional efforts we make on your behalf come together with those of your agency.

> Books and eBooks reach far more people when you **actively promote them**.

How GPO Can Help You Solve These Challenges

GPO can help Federal agencies:

■ **Design your content**
   Our in-house Creative and Digital Media Services department employs top design talent from around the country. We have both print and digital design experience and can assume much of the project management responsibilities.

■ **Produce your content**
   We have in-house printing and eBook/eMagazine conversion capabilities and also work with a Nationwide network of print and eBook conversion vendors.

■ **Disseminate your content**
   GPO currently has contracts in place with:
   - Google
   - Barnes & Noble.com
   - Apple iStore
   - Overdrive
   - MyiLibrary
   - Ingram Digital Distribution
   - Firebrand
   - Zinio

■ **Promote your content**
   GPO can employ a variety of tools to help you promote your content, including:
   - U.S. Government Online Bookstore Special Collections
   - Social Media:
     – Government Book Talk Blog
     – Facebook
     – Twitter
     – Pinterest
   - New Titles by Topic Listserv
   - Product Releases
   - Book Reviews
   - Direct Mail Fliers

■ **Simplify the procurement**
   Because we are a government-to government source, no request for proposal (RFP) is required! One simple SF-1 form is all that you need to get started.

PART II: Ways to Control Print Costs While Maximizing the Effectiveness of a Digital and Print Strategy

Controlling Costs on the Print Side of the Digital and Print Publishing Strategy

It is reasonable to expect that Federal agencies, for the foreseeable future, will have a need to continue to utilize tangible printed products to make content available to those who either cannot or are otherwise not inclined to access information using current digital alternatives — namely, devices to access the Internet.

A Pew report issued in April 2012 indicates that 20% of U.S. adults do not use the Internet at all. In this group are 59% of U.S. seniors who don't go online and 60% of adults who never completed high school. Also in this group are nearly 40% of people with an annual income under $30,000 and 46% of disabled adults who do not make use of the Internet. In light of this existing "digital divide," the need for traditionally printed content is apparent.

Federal budget constraints dictate that agencies make intelligent assessments of when and how much printed material is needed, how best to produce the material, and how to do so at the least cost while still achieving the purpose of the publication. The pages that follow discuss how to minimize the cost of Federal agency printing, with a focus on the decisions made during the planning and design stages that can significantly influence production costs. This discussion also provides some specific guidelines and examples for making cost-effective decisions in a way that does not require an in-depth understanding of print production or printing terminology.

Job Planning and Design

The keys to saving money on print production are:

■ Planning your print publication with its purpose and intended audience clearly in mind – that is, focus on how the publication will be used and produce it accordingly.

■ Understanding the relative costs of decisions made regarding each of these aspects of the publication printing process:

- Job planning and design
- Pre-press and proofing
- Print production
- Bindery/finishing
- Delivery/distribution

■ Realizing that the planning and design phases set the course for how much you will spend to produce your finished product

The decisions you make in the document planning stage are critical in controlling your print budget **– challenge conventional thinking!**

An effective job planning process should challenge the conventional wisdom of how and why you have produced this or similar pieces in the past. The essential question that should be asked is: *"How can we do this at a lower cost and still meet our communication objectives?"*

The GPO provides free job planning consultation that can be invaluable in ensuring that your job plan and design are achieving your communication objective at the most cost-effective price point. Federal agencies can arrange for this service by contacting a GPO National Account Manager at **nam@gpo.gov** or **202.512.1904**. The GPO team will meet with your editors, authors, graphic designers, and program managers to assist in getting a print project properly aligned with your budget **before** any design decisions are made.

From the job planning perspective, the controllable areas that have the most potential cost impact are: Size, Quantity, Paper, Schedule, and Complexity

Size

When it comes to determining the optimal size of your printed piece, the keys to controlling cost are to **minimize waste** and to avoid finished sizes that create unnecessary expense in binding.

1. Choose a finished size (that is, folded, trimmed or bound final size) that fits well with standard parent size sheets. (Parent sheets are those sizes stocked and readily available from paper mills, paper merchants, or from the printer's in-house inventory.) The most common finished sizes are familiar to most of us and include sizes such as:

   - 8.5" x 11"
   - 5.5" x 8.5"
   - 6" x 9"
   - 9" x 12"
   - 8-3/8" X 10-7/8" (for long-run web-press publications)

These sizes and their multiples create minimal paper waste because they originate from parent sheet sizes designed to allow for efficient cutting to these finished sizes.

2. Avoid unusually large or unusually small finished sizes that cannot be bound (stitched, folded, collated, etc.) using automated methods. Binding these types of pieces typically involves handwork that is slow and costly for higher quantities.

Quantity

Traditionally, establishing a print quantity was driven by the desire to avoid the possibility of having to go back to press because your inventory was depleted before the document became obsolete. This mindset complements the conventional "print, warehouse, fulfill, and distribute" model of document lifecycle management. The driver for this model has always been the "per piece" economy of a long print run – that is, the higher the print quantity, the lower the unit rate. What this model rarely factors into the equation is the cost of warehousing, fulfillment, distribution, waste due to obsolescence, and the intangible damage of distributing dated or inaccurate information. In today's dynamic communications environment demand for printed products is rapidly changing (and generally decreasing). At the same time, readers also expect to receive the most current information available. Fortunately, options now exist that make the decision on initial print quantity less critical.

> Avoid "quantity roulette" by **designing print files that can be easily repurposed** for digital printing.

With the increasing acceptability of high-end digital printing as a surrogate for offset printing, a hybrid solution to the quantity conundrum now exists: **use digital printing to bridge any inventory shortfall between reprint cycles.** By printing small digital quantities, you can:

- Ensure that readers receive the most current content (rather than continuing to distribute obsolete or dated content in the interest of "using up the inventory")
- Eliminate or dramatically reduce the cost of warehousing and inventory management for slow-moving items by printing and fulfilling in small batches (or literally on-demand).

To take advantage of this marriage of offset and digital technologies, you ideally should use a document design and format that lends itself to digital as well as offset printing methods. Done well, your print-ready files can be re-purposed for on-demand printing with little, if any, modifications or compromise in the quality and look of the finished product. It is prudent to avoid bleeds, large solids, use of spot varnishes, fine screens, and other elements that may not render well (or at all) on a digital printer.

A discussion of the relative unit costs of offset vs. digitally printed products is found later in this document.

Paper

The reality is that paper can account for 20% to 40% of the cost of a print project. The simple advice is: do not overspend on paper without a good reason. Some paper attributes affect the actual final product quality while other attributes are much more subjective. For example, quality coated paper stocks render offset printed images much more accurately and vibrantly than similar weight uncoated papers. Choose according to your budget and your audience. At one extreme, if you are producing a simple but high-profile publication with a generous budget, you might decide to print simple black text on a costly gloss coated sheet and use an expensive hard-cover binding. In this case, the appeal is purely to the subjective impression of the reader by lending an air of importance to the publication but there is no inherent benefit in terms of legibility or image quality in choosing a more costly paper.

On the other hand, if you are producing a full-color publication (and watching your budget) you might choose to consider a smooth, bright white, uncoated text sheet, particularly if your content and design are better suited to the more tactile "warmth" of this type of sheet. Images will not be as "crisp" as those on a coated sheet, but they can be just as appealing.

There is no doubt that paper can enhance the legibility and overall quality of a printed piece. However, achieving this result does not necessarily dictate that you choose high-end, expensive stocks. GPO can provide pricing on alternative paper stock to help you balance the level of potential savings against the printing characteristics of less expensive paper stocks and the overall needs of your audience.

Another reality is that if your print run is very short, the total paper cost will be minimal regardless of what paper stock you choose. So, for a few hundred copies, you can afford to splurge on paper even on a tight budget.

Scheduling

Like any custom manufacturing process, shorter lead times can result in higher costs. The key is to set realistic expectations about production schedules and then work to keep on schedule. This means having all involved (editors, writers, reviewers, designers, etc.) invested in meeting interim deadlines along the way. Condensed production schedules increase costs (due to overtime, couriers, rush fees) and can lead to errors without adequate time to recover. The same holds true for holding proofs longer than scheduled.

> Adding complexity to your design adds **hidden costs and additional time to production schedules**.

Complexity

In print production, increased complexity almost always equates to increased costs and many times it is difficult to recognize when you are adding costly layers of complexity. A few of the more obvious areas of complexity that impact costs are:

■ Adding production steps

When you specify additional production steps such as foil-stamping, embossing, die-cutting, conversion, or numbering your costs will escalate for two reasons. First, each step requires some set-up and paper stock waste that increases the amount of paper needed in order to make your final printed count. Since most of these finishing steps are done individually, each additional step requires its own allotment of paper waste. Second, many of these functions are done by trade specialty vendors and often sustain a mark-up from the printer that is passed along as part of your overall price.

■ Adding ink colors and coatings

Using offset technology, each unique ink color used requires that a separate printing "unit" be made-ready and employed in the production of your publication. Presses with more ink units command a higher hourly rate than presses with fewer ink units and this higher cost is passed along to you. Adding traditional spot or flood varnish treatment also utilizes dedicated ink units (either in-line on the press or on another separate press run). Aqueous coatings, which are often applied in-line on a special unit, may be less costly than, and just as effective as, varnish. In short, if you can design an effective piece without

varnishes or coatings, you are designing an overall less costly publication. If you opt to use a coating, choose an in-line process whenever possible.

Utilizing an effective 2-color design, in lieu of 4-color process, can result in a less costly and equally pleasing end-product if the subject matter, content, and design concept lend themselves to this treatment. It also conveys a healthy level of budget-consciousness on the part of your organization.

■ Using bleeds and crossovers

Bleeds (images running to the edge of the trimmed sheet) are common design elements. In certain situations, bleeds can require the use of a larger (i.e. more costly) sheet size than a similar layout without bleeds. The use of crossovers (images typically used in a saddle stitched book that continue from one page to the facing page across the bound fold) is not inherently more costly. However, depending on the nature of the image being used, the level of accuracy required to properly render the crossover can affect the pre-press, press, and bindery plan for the printer with an attendant increase in production costs. In addition, the use of a fine-detailed crossover (such as splitting the image of a face) can increase the risk that the final product will not consistently produce a pleasing result. It is best to graphically design around these potential problems rather than risk the additional cost and potential for failure that might require a re-design and re-print later.

All of the areas addressed here are clearly within your control in the planning stage as you make decisions about the design and layout of the publication. Good decisions at this stage can have a significant impact on the final cost of your publication. Keep in mind that simpler is cheaper!

Pre-Press and Proofing

These steps represent the initial print production expenditures on your publication. In an offset printing workflow, they are the necessary processes to get your print-ready files onto the press plates used to print your publication. If you are using a digital print engine, these steps are much simpler and, therefore, much less costly. Nonetheless, in both an offset and digital printing scenario you should strive to minimize costs in this area.

Here are some key aspects of containing costs through the pre-press and proofing stages of the print production workflow:

1. Avoid AA's (author's alterations) and editorial changes at the proofing stage.

    Cost-wise, it is crucial to have all interested parties proofread and edit your content **before** it goes to the printer as a print-ready file. The processes that the printer uses to prepare your proof involve high hourly labor rates and can involve costly proofing materials. Repetitive proofing cycles can significantly add to the cost of your publication.

2. Ensure that print-ready files are properly prepared.

    Print files should undergo a "preflight" check before they are sent to the printer. This will verify that bleeds are properly set; photo and graphic resolution is appropriate; page sizes are correct; and color designations are consistent. It is prudent to send both a print-ready PDF file as well as the native application files. This allows the printer to make minor corrections that you may catch during the proofing process without your having to submit new files.

3. Pick the appropriate proof type for your publication.

    The types of proofs generally available for offset printed publications are listed below in order of ascending cost with a suggestion of when each proof type is most useful:

    ■ **PDF/Online proof –** This is an electronic proof provided by the printer from the rasterized print-ready file that you provided. It is not adequate for gauging color accuracy, image

resolution, or color registration. Use it only as a **"content proof."** That is, to check that all of your text and graphic elements are there, in the right place, and at the right size.

- **Laser proof –** This is a color laser printout used mostly for **content**, pagination for books, and to illustrate the intended folding and image orientation for a brochure. Laser proofs are not adequate for proofing color accuracy. Laser proofs of books can be bound to illustrate the intended final size, binding edge, and even binding type.

- **Inkjet proofs –** These proofs are produced on inkjet devices calibrated to the actual printing press in an effort to provide the most accurate inkjet rendering possible of the color of the final product. They are often referred to as **"contract"** proofs, as they represent the contract between the printer and the customer. These proofs should be used to proof trapping and 4-color process images for registration and color accuracy.

- **Laminated proofs –** This proof is one of the most expensive and most accurate proofs available. Use it when color matching is imperative. Laminated proofs are also considered "contract" proofs.

- **Press proof –** This proof is actually a printed sheet produced on a press similar to the one being used for your entire print run. This is **the most expensive proof** alternative since the press is completely set up to run your print job in order to produce the proof. It allows you to see not only color accuracy but how the paper may affect your image quality, including dot gain which cannot be effectively rendered on any other type of proof. This type of proof should be reserved for critical color publications only.

The key to controlling costs associated with proofs is to choose the proof that is appropriate for your particular publication and circumstances. To avoid the cost associated with additional changes (AAs), spend adequate time reviewing and marking your proofs. As part of the "contract" between you and the printer, your proof represents the printer stating: **"This is what we intend to produce unless you tell us otherwise."** In this way, the proof is designed to protect the printer. It is your job to make sure it accurately reflects what you expect the end product to look like.

4. Utilize press sheet inspections for the right reasons.

A press sheet inspection is when you, a GPO representative, or both are physically on-site at the printing plant when a print project is coming off of the press. You do a press sheet inspection to ensure that the finished printed product meets both your specifications and the quality level proscribed by you and GPO. As such, press inspections involve the cost of holding a press open while press sheets are inspected, not to mention your time and the time of the GPO quality control staffer. Below are some general guidelines on when a press inspection would be warranted:

- Very high-profile and critical color publication.

- You are facing a critical deadline with no time to reprint.

- Long run lengths – this helps avoid a situation where the printer has invested all of the paper and press time to produce a job that may not meet your expectations.

- You are using design components that can't be adequately rendered on a proof, such as spot varnishes, tinted varnishes, or designs where the interaction of the ink and the paper may produce an undesirable or unexpected effect.

- Your track record or familiarity with the printer warrants an onsite press sheet inspection.

A key distinction between a "digital printer" and an "offset press" is that a digital printer does NOT require or utilize an intermediate medium (a printing plate) to produce a finished printed image. A commercial-quality production digital printer is akin to your desktop printer only at a different scale, quality level, and running speed. On the other hand, an offset press requires the creation of a printing "plate" (one for each color for each side of any printed press sheet). This plate is used to transfer an inked image to a rubberized blanket, and then transfer that image to your printing substrate (usually paper). The "offset" printing process takes its name from the fact that the imaged printing plate does not come in direct contact with your paper. Rather, the image is "offset" onto a blanket cylinder and then onto the paper.

The start-up costs for offset printing make it **a costly option for short run projects.**

Dramatic digital printing improvements in image quality, run speed, sheet sizes and types, and color matching have taken place in the past few years. While the general run of thumb continues to be that offset printing is more cost-effective for higher quantities, the presumption that you must use offset printing to obtain a high-quality product is no longer true. Digital printing has become an increasingly acceptable substitute for traditional offset printing in many applications.

It is important to appreciate both the general characteristics and pricing paradigms for both of these printing methods in order to take advantage of their respective strengths as a publishing solution.

On the offset side, the investment in pre-press and proofing functions, along with the cost of getting the press ready to print (a process called "make-ready" which involves putting ink in each press unit, loading paper stock, hanging the printing plates, and running copies to achieve full color, registration, and ink density) create a significant front-end cost **before you get to the first usable printed copy**. It is this cost that makes the traditional offset press a poor choice (cost-wise) for very short-run projects. However, on longer runs this cost gets absorbed over the entire quantity produced and can relatively quickly yield a lower unit rate than that of a digital printing process.

On the digital side, there is no equivalent investment in getting to the first usable copy. In general, the first copy off the machine is usable (assuming it matches the approved proof – which is also run on the same machine and same paper stock). Operating more like a "copier" than a press from a pricing standpoint, digital printing is typically priced based on a unit "per impression" basis. That "per impression" price does not fluctuate significantly for longer runs on digital devices. Therefore, you do not get the eventual unit cost benefit from a longer print run on a digital copier that you would on an offset press.

The following graph represents a generalized profile of **unit pricing** curves for offset vs. digital printing. It is designed to illustrate the significant start-up costs for offset printing and their impact on unit cost for short run lengths. It also shows the relatively flat unit pricing curve for digital printing driven by the "per impression" pricing model used by equipment manufacturers and, subsequently, by digital print providers. The quantity point at which unit pricing becomes more favorable for offset printing varies based on the nature of the publication and the equipment being used. The point at which additional unit price savings cease for offset printing is also a function of the publication type and the press equipment being used.

Offset and Digital Unit Pricing
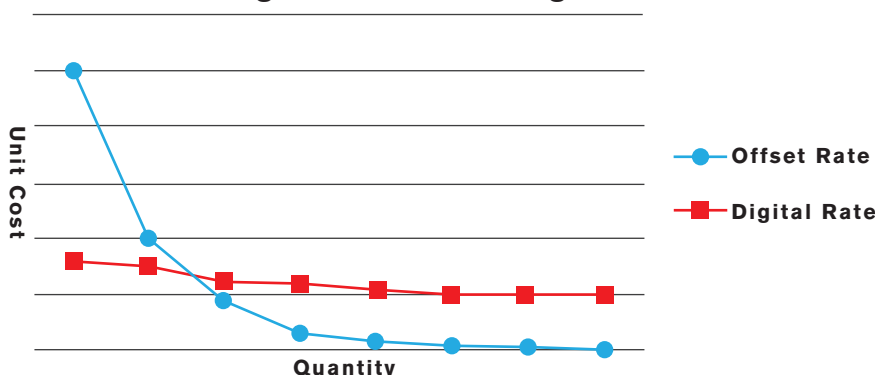
The table below addresses some of the characteristics associated with each printing method.

Production Characteristics	Offset	Digital
Cost effectiveness for short runs		X
Cost-effectiveness for long runs	X	
Costly pre-press and proofing processes	X	
Economy of multiple images on a single printed sheet	X	
Flexibility in paper stocks - weight, finishes, grain	X	
Flexibility in non-paper stocks (e.g.,plastics)		X
Easy to match PMS "spot" colors	X	
PMS "spot" colors usually created from 4-color build		X
Format sizes to fit a wide range of finished products	X	
Minimal or no drying time before bindery can begin		X
Best choice for quick (24-48 hour) turnaround times		X
Proof and finished product may vary due to dot gain	X	
Books can come off collated and ready for bindery		X

Bindery and Finishing

Often used interchangeably, the terms "bindery" and "finishing" refer to those "post-press" functions that include:

- Trimming
- Scoring
- Mechanical binding such as: saddle stitching, perfect binding, coil binding, side stitching, stapling
- Folding
- Drilling
- Collating
- Insertion
- Tabbing
- Padding
- Other handwork
- Specialty finishing, such as embossing, die-cutting, conversion, and gluing.

It is important to recognize that the production plan for every print publication involving bindery and finishing processes includes a pre-planned amount of waste for set-up for each function in order to ensure that you receive your final delivery quantity. This equates to more paper and a longer press-run in addition to the unique costs associated with each finishing step. If budget is paramount, avoiding multiple finishing steps helps keep your costs in check.

Designing pieces that are non-standard sizes (overly large or very small) can result in bindery work being done by hand rather than using much more efficient automated equipment. Likewise, processes that can only be done by hand (such as placing drilled text pages onto the rings of a binder or inserting loose sheets into binder pockets) incur charges that could be avoided as you plan your publication. As your quantities increase, the use of automated equipment becomes more critical to controlling costs, so plan your publication to take advantage of the speed and efficiency of automated bindery processes (such as saddle stitching or perfect binding).

Delivery and Distribution

If your publication is being disseminated by mail or other delivery service, here are a few key things to remember:

- Make sure (up front) that your publication is **designed** to conform to USPS guidelines for automated mailing. If you are not sure, ask your GPO National Account Manager.
- Try to keep abreast of changes in postal regulations that impact rates and delivery times.
- Keep mailing lists up-to-date to avoid unnecessary postage waste.
- Consider alternative stocks that may help minimize the weight of your publication.
- Avoid using digitally printed pieces if they are likely to be subjected to irradiation (most prevalent in the Washington DC area).

Federal government employees may contact GPO for more information or for assistance in planning the most cost-effective publication for your audience, your budget, and your specific needs. Contact a GPO National Account Manager at **nam@gpo.gov** or **202.512.1904**.

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