

Print Media Distribution in a Digital Age

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A Research Monograph of the
Printing Industry Center at RIT

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Abstract

The United States Postal Service (USPS) is a distributor of print media, and its policies and practices will engender short- and long-term effects on commercial printers, and by extension, their customers (publishers and marketers). Increasing mail rates may force publishers to seek electronic and other alternatives that in turn might lower mail volumes sufficiently to adversely affect Postal Service operations, causing a cycle of rate increases coupled with volume decreases. Simultaneously, electronic bill presentment and payment competes for that class of mail that essentially supports the USPS. These occurrences could threaten the infrastructure that supports universal mail service and could negatively impact the \$900 billion printing and mailing industries. It may be that the future lies in the effective distribution of promotional and marketing materials in addition to informational product distribution, as well as an approach that contracts more services to private businesses and partners with other organizations to assure reliable distribution of print media. This paper looks at these and related trends.

METHODOLOGY

Primary sources include interviews with primary stakeholders, such as printing companies, mailing services, marketers, equipment suppliers, and USPS executives. Secondary sources include published reports, papers, and presentations. Analyses and estimates were developed to understand the relationship between print and mail.

Table 1: Printed Product by Process and Distribution, U.S. only, 2001

	Offset	Gravure	Flexo	Copier/ Digital	Other	% of Total Volume	% Dist.: Mail	% Dist.: News- stand	% Dist.: Retail Store	% Dist.: Other
Periodicals and Newsletters	63	21	0	15	1	11%	72	20	7	1
Newspapers	89	1	7	0	3	9%	18	55	12	15
Books	65	1	13	21	0	6%	16	6	71	7
Catalogs	52	39	0	9	0	8%	87	0	11	2
Direct Marketing	43	10	0	45	2	6%	100	0	0	0
Directories	83	0	1	16	0	6%	12	0	0	88
Financial, Legal and Transactional	50	0	17	33	0	4%	92	0	0	8
Packaging and Labels	29	20	40	5	6	12%	12	0	80	8
Technical Documentation	33	0	0	67	0	5%	6	0	70	24
Advertising and Promotional	68	4	0	28	0	16%	36	0	22	42
Stationery and Envelopes	72	0	11	15	2	4%	97	0	0	3
Internal and Forms	23	0	1	75	1	4%	21	0	0	79
Miscellaneous	43	2	0	53	2	9%	19	0	67	14
Total Percentage	54.85%	7.54%	6.92%	29.38%	1.31%	100%	45.23%	6.23%	26.15%	22.38%

(EDSF and DPC estimates based on standard page analysis: For many of our calculations we have used a quantifier called standard pages. We converted all the pulp that made all the paper and board in the United States and converted it to a standard sheet of 20 lb bond. This allowed us to look at volumes more objectively than revenue, existing pages, or other units. Our analysis then allowed us to quantify the volume of material produced by each process in each product category. Note that we considered copier and printer volumes in our calculations. All print is counted, whether produced by the printing industry, corporate or home markets. If weight was used, the mail percentage would be slightly higher.)

Print Categories and Distribution Methods

Mail is the most democratic form of information distribution. It does not discriminate based on income level, demographics, geography, or technology use. It provides something tangible, convenient, colorful, and — occasionally — persuasive. Print is a medium that must be physically delivered from originator to consumer. As stated in the EDSF study “Printing in the Age of the Web and Beyond,” (Romano et al.):

From its invention 550 years ago, through a renaissance and a reformation, through the industrial and information ages, through competitors such as radio, cinema, television, and even computer networks, paper-based communication has dominated our society and our culture.

Print is not one thing — it is many different products — and each has different dynamics in relation to distribution method.

As Table 1 and Figure 1 show:

- 45.23 percent of all printed products are distributed by mail. Major categories include periodicals, catalogs, direct mail, and transaction materials.
- 26.15 percent of all print is distributed through retail locations. Major categories include periodicals, books, packaged products, and greetings cards.
- 6.2 percent of all print is distributed through non-store newsstands, primarily newspapers, periodicals, and some books.
- 22.38 percent of all print is distributed by other methods, such as home-delivery and direct-to-business private services.

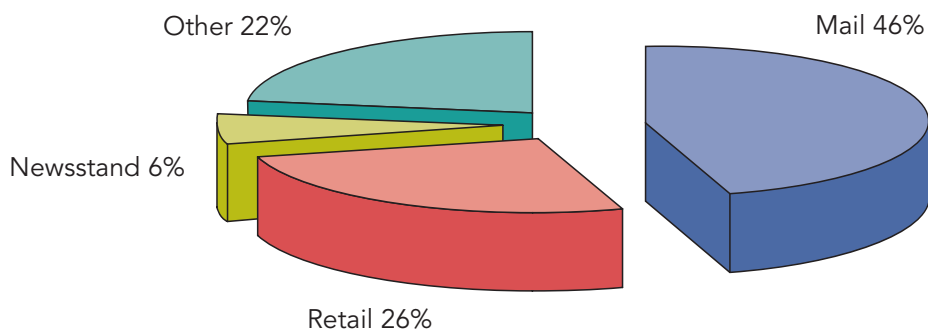


Figure 1: Percentage of Print that is Mailed
(Frank Romano estimates)

Print Categories and Distribution Methods

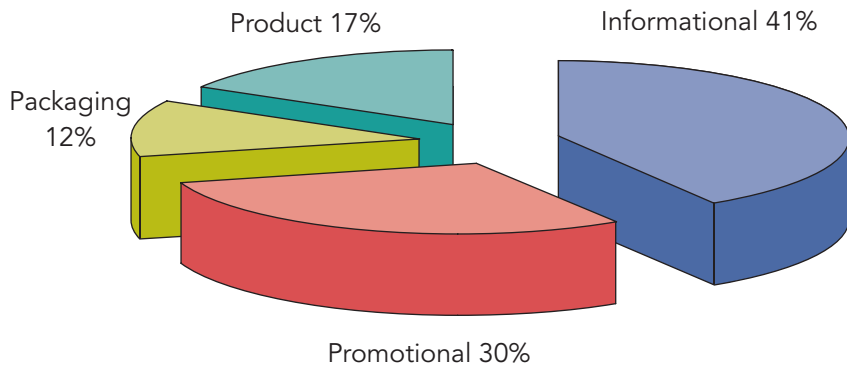


Figure 2: Print Media by Major Category (Romano estimates)

If we divide the scope of print media into four broad categories, as shown in Figure 2, it is evident that most of the print that is mailed is informational and promotional in nature, and represents 71 percent of all print. Informational and promotional materials become the focus of our inquiry on print media distribution by mail, because of their dominant share in mail distribution, as shown by Figure 3. Packaging and product materials do not have the same mail distribution dynamics.

Informational 41%
 Periodicals and Newsletters
 Newspapers
 Books, Directories
 Technical Documentation
 Financial, Legal and Transactional

Promotional 30%
 Catalogs, Direct Marketing
 Advertising and Promotional

Packaging 12%
 Packaging and Labels

Product 17%
 Stationery and Envelopes
 Internal and Forms
 Miscellaneous
 (Wallpaper, Wrapping Paper,
 Greeting Cards, Paper plates, etc.)

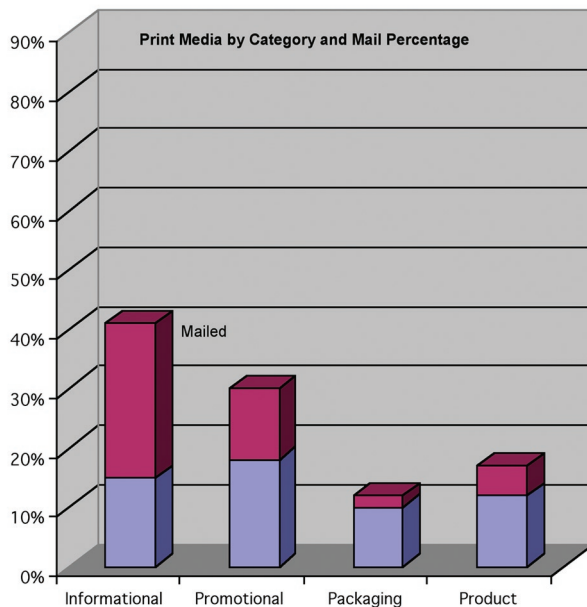


Figure 3: Percentage of Each Category that is Mailed (Romano analysis and estimates)

From the King's Highway to the Information Highway

Benjamin Franklin saw the need for a reliable postal system and the fact that he was a publisher has not been lost on present generations. The Postal Service was a prime progenitor for the modern marketing, publishing, and printing industries. Rural Free Delivery expanded service to American farms that city inhabitants enjoyed. When the post office refused to service some communities with impassable roads, a nationwide investment in rural roads, highways, and bridges took place. RFD helped to deliver the Montgomery Ward and Sears catalogs to every home, and the introduction of Parcel Post helped to deliver the products promoted in them.

In James Bovard's article "The Last Dinosaur: The U.S. Postal Service," he says:

"In 1970, after a nearly complete breakdown of mail service in the 1960s, the Post Office was changed from a cabinet department to a pseudo-independent corporation and renamed the Postal Service. The main effect of this change was that congressmen could no longer appoint local postmasters and rural carriers directly . . . The Nixon administration promised that the change would depoliticize mail delivery and place the new corporation on a businesslike footing. But the USPS retained the postal monopoly and thus had no strong incentive to provide good service. Both wages and postage rates quickly soared out of control."

The USPS began to see erosion of its core market for First-Class mail in 1996-97 as the effects of facsimile, telephone, and the Internet converged. Mail volume growth rates have been dropping since then. The USPS lost \$1.68 billion in fiscal 2001. Large deficits continue as volumes and revenues decline; rates and debt are increasing; capital needs are not being met; and the Service's liabilities exceed its assets.

Despite multiple rate increases, the Service's net income declined from fiscal years 1995 through 2001 (USPS).

Postal employee T.L. Righter, in "Restructuring the Postal Service for the 21st Century," writes:

"The U.S. Postal Service (USPS) served Americans well in the 20th century. In an era where paper, print, information, communications, advertising, and prosperity came of age, the U.S. Postal Service developed a vast network of post offices and people to bring them all together to the American people. Paper was the medium—the U.S. Postal Service was the messenger. Today, in the 21st century, letters and words have been digitized and electronicized [sic]. Paper is no longer the medium and the U.S. Postal Service is no longer the messenger. If the U.S. Postal Service doesn't act (react) soon, it will no longer be.

"The USPS is being stretched, and at some point, its capabilities to provide universal service will be outstripped by the confluence of these trends. However, there are three relatively simple answers to these problems that can insure the viability of the postal service for the foreseeable future: (1) eliminate Saturday delivery; (2) convert current walking (park and loop) routes to mounted deliveries; and (3) convert city letter carriers' compensation to one similar to the one used by rural carriers.

"Advantages of the elimination of Saturday mail delivery include: (1) reduced wage costs, including the elimination of a substantial amount of overtime pay; (2) reduced fuel costs up to 1/6th; (3) other operational (support) costs reduced;

King's Highway to the Information Highway

(4) personnel freed . . . to handle new delivery points; (5) rightsize delivery with mail volume; (6) allowing letter carriers to enjoy a traditional five-day work week.

“In an age where messages can be electronically transmitted with ease through readily available mediums at 186,282 miles per second [sic], what sense does it make to walk door to door in the 21st century? Maybe that was OK for the 20th century . . . In order to stay competitive, viable, and alive, the USPS should (as soon as possible) convert all walking (park and loop) routes to mounted routes, wherein, deliveries are made via postal vehicle to a curbside box or centralized type delivery box.”

Mr. Righter's ideas have merit but there are problems with some of them:

1. Saturday delivery clears a substantial amount of mail from the system. Without it, Monday deliveries would be far larger and perhaps unmanageable.
2. Curb-side delivery may sound like a good idea, but apartment houses and multi-tenant buildings would be a challenge. City dwellings may not lend themselves to box locations at the curb.

The USPS has presented a transformation plan to Congress that calls for a new business model and for legislation to change the 1970 Postal Reorganization Act. The USPS proposes a Commercial Government Enterprise with the flexibility to adapt to market conditions and develop new sources of revenue. This model would allow them to use their retail and delivery network in joint ventures with the private sector. The transformation plan calls for cutting \$5 billion more in costs by outsourcing or consolidating administrative functions and improving efficiency.

Postmaster General Potter created a Postal Transformation Checklist that may share some of Mr. Righter's agenda:

1. Increase Sunshine - Transparency - Accurate Accounting Practices.
2. Increase accountability and oversight.
3. Eliminate waste and fraud.
4. Focus on core mission, productivity increases, cost containment, not revenue growth/diversification.
5. Downsize entire organization to meet declining demand.
6. Reduce and hold postage rates below the rate of inflation.
7. Level the competitive playing field.
8. Improve labor relations.
9. Financial incentives should reward “real” business achievements.
10. Prepare the agency for ultimate demonopolization and privatization.

The agency outlined “moderate regulatory and legislative reforms” to:

- Expand negotiated discount prices with the mailers who can sort and organize volumes of mail.
- Introduce experimental mail classifications and phased rates.
- Make it easier to close or consolidate post offices.
- Make buying procedures more flexible.
- Ask its unions to move to a mediation process that permits White House intervention to settle disputes.

The transformation plan would give the USPS broad flexibility to set prices, but within a regulatory framework so users would not be overcharged.

King's Highway to the Information Highway

Though there are a plethora of good ideas in the transformation plan, implementation is often retarded by an ingrained culture that favors the status quo. It may be difficult for such organizations to reinvent themselves.

“No amount of tinkering will solve the postal problem. . . . service has deteriorated while rates have soared. Since we're already getting the adverse side effects, we have nothing to lose by trying competition. The ideal solution is to open the floodgates to private competition. There is no excuse for nationalizing the transport of small envelopes. In 200 years, government has yet to reveal a genius for the

task. As long as the mail is carried by a tenured bureaucracy with no incentive to move quickly, service will continue to be slow, expensive, and doubtful. . . . It would be a small step from private contracting to open competition. Once politicians and the public see the success and savings from private contracting, the mystique of the government mail monopoly would quickly dissipate. And the monopoly survives on mystique alone, since there are no good economic or social reasons for such pervasive restraint of trade. It should not be a federal crime to provide better service than the government.” (Bovard)

King's Highway to the Information Highway

Overview of the United States Postal Service (USPS)

The USPS tracks volume by pieces, weight, and revenue. The Postal Reform Act of 1970 requires that every class of mail must cover its own costs.

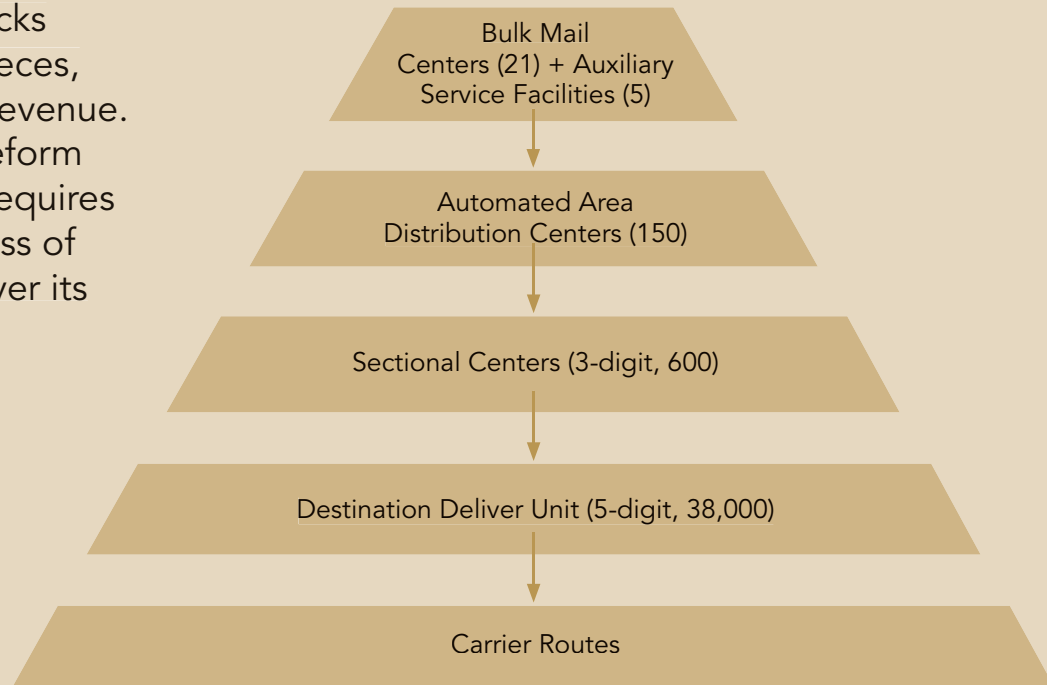


Figure 4: USPS Infrastructure
A simplistic overview of the USPS infrastructure shows a complex organization that would be difficult to replicate from scratch.

	Pieces	Weight	Revenue
First-Class	50%	16%	55%
Standard A	43%	42%	24%
Standard B	1%	14%	3%
Periodicals	5%	18%	3%
Other	1%	10%	15%
	208 B pieces	26.8 M pounds	\$64.5 B

Table 2: USPS Service Data (2001 GAMA estimates based on pieces of mail)

Magazines and Journals	3.42%
Newsletters	1.93%
Newspapers	1.45%
Catalogs	9.16%
Books	4.34%
Direct Mail	28.39%
Bills/Payments	24.42%
Correspondence	10.60%
Ad Circulars	6.75%
Other	9.54%
	100.00% (207.5 billion pieces)

Table 3: Distribution of Mail (2001 GAMA estimates based on pieces of mail)

The Cost of Print and the Cost of Mail Collide

Over the last two decades most of the benefits of print media productivity have been passed back to the print buyer. Commercial printers are selling full-color print at prices below those for the same product twenty years ago. This has been the result of automated presses, computer-to-plate, on- or off-press, and advanced digital workflows. Over that same period, even with significant investments in automation, postal costs have increased. Print is a bargain and its record of relentless cost reduction mitigates some of these increases.

Figure 5 illustrates the average cost to produce a full-color standard page compared with the First-Class postage rate over time. The print value averages all long-run and short-run color printing in constant 2002 dollars.

Cost is a fact; price is a philosophy. With printing, both cost and price have declined in recent years. The key to success in the printing industry has long been cost control, which has been accomplished through heavy doses of automation. Applications of new technology have allowed printers to cut costs and keep some semblance of profit in a very competitive market.

Back in the 1950s and 1960s printers found a major cost advantage in switching from letterpress to offset technologies. Much of the savings was in prepress, but overall, the printing industry was able to absorb an entirely new technology while maintaining an existing pricing structure. Hot metal and letterpress were expensive and print buyers were accustomed to paying the price because print required unique skills, while competitors were few and far between. After offset, the barriers to entry fell and we saw

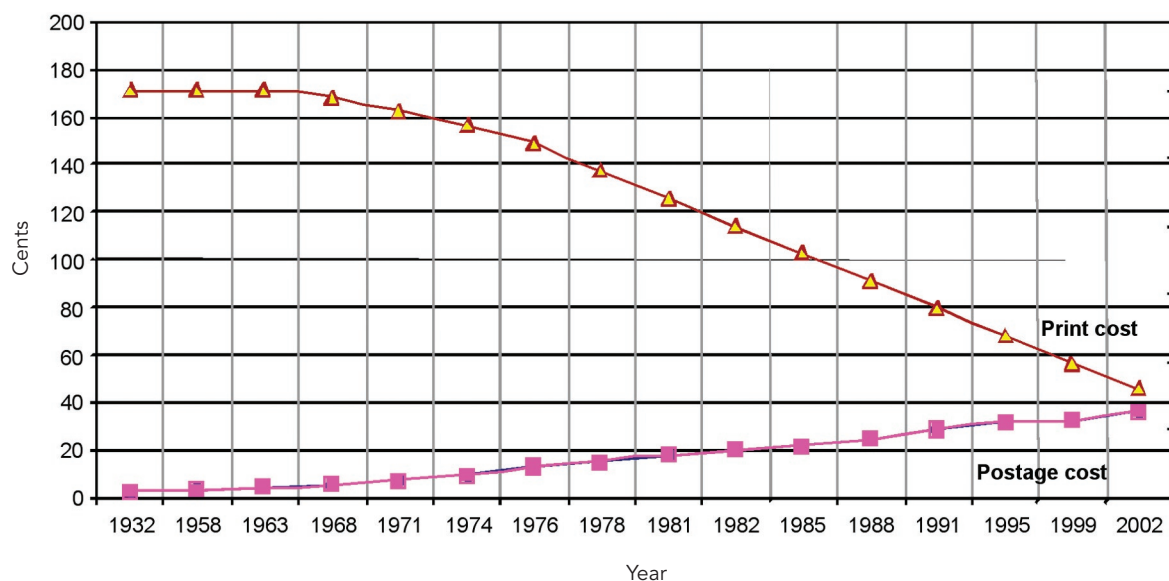


Figure 5: Print Cost vs. Postage Cost
(Lyman, and industry interviews and estimates)

The Cost of Print and the Cost of Mail Collide

a phenomenal growth in the number of printers. This engendered higher and higher levels of competition as more and more printers fought for a growing base of work. This period saw the rise of quick printing and the birth of many new commercial printers. For printing alone (putting ink on paper), the selling price today is equal to or slightly lower than it was in 1982, considering inflation and other factors. Without cutting production costs, most printing companies would be at breakeven or less. Print is no longer growing at previous levels and we are seeing a contraction in the number of printers.

The cost of distribution can have serious consequences for the printing and mail industries, since publishers and marketers consider all costs in their business models.

Direct mail, for instance, is marketing by the numbers. Based on the quality of the audience, response rates can range from one to 35 percent (Broudy and Romano).

The more pieces you print, the lower the production cost; however, there is no postal discount based on volume. Mass mailings in the millions are based on the simple arithmetic of percentage of return: if I mail 100, I may get one response; mail a million and I may receive 1,000 responses. However, calculations are made on the costs versus the results. Printing, mailing, and other costs are totaled to determine the cost effectiveness of direct marketing. Direct marketing professionals are testing targeted marketing approaches that utilize variable data printing in order to bring cost and response rates into some equilibrium. If the cost of distribution increases at a rate that cannot be sustained, some print buyers will seek alternatives. Magazine and journal publishers are already preparing for that eventuality.

The Impact of Competing Distribution Channels

A. NEW COMMUNICATION TECHNOLOGIES

Time Inc. announced in February 2002 that all digital ads received by its 56 titles must be in ISO PDF/X-1a 2001 format (PDF/X is not an alternative to PDF; it is a focused subset of PDF specifically for reliable prepress data interchange). Time's titles account for about 25 percent of all magazine ads in the United States. By eschewing TIFF/IT-P1, PostScript and DCS 2 file formats the move is designed to improve workflow, reduce file sizes, and accommodate distributed digital printing and cross-media publishing.

Raster-based pages and files are useless as data for archival, reference, or cross-media purposes. PDF is a medium that can cross the entire spectrum of publishing. And that is what this move is all about. If Time is ever to deliver their publications on a Palm or PDA or other e-reading device they need an approach that will re-scale (and perhaps re-format) the information to the screen dimensions. With Time's clout in the advertising industry the implications of this announcement will profoundly affect magazines and advertisers for years.

In the next decade, a portable, wireless reading device will become available to challenge the distribution of some categories of print (Gozzo). As shown in Table 4, such a device may impact the distribution of information-based print media.

Informational	Moderate to high impact
Promotional	Low impact
Packaging	No impact
Product	No impact

Table 4: Impact of Digital Technology

Some volume of information-based print media could shift to digital technology with the right blend of reader/screen/infrastructure—but not the majority of the volume. This is an opinion based on the observation that some members of society opt out of technology use. But even with such access, information-based print would be most affected. Promotion-based print would still require a distribution channel that reaches all population sectors.

In interviews with printers throughout the U.S., one fact became very clear: print buyers combine printing and distribution costs in their calculations. Print, as an industry, carries the burden of the mail system and is adversely affected by it when publishers and marketers evaluate alternative forms of communication.

The Internet Is Not Free—It Just Seems that Way

“Paper-based communication’s most effective competitor began quietly as a relationship between the military and academia but soon came to encompass more of society in its electronic tentacles. E-mail exploded in use and the text-based nature of the Internet blossomed into color and photos and graphics and moving imagery as the browser entered the market in 1994. Virtually overnight, millions of people were on-line, communicating, working, buying, learning, and amusing themselves, with access to the largest library that has ever existed. Finally, print had a worthy contender.” (Romano et al.)

Postmaster General John Potter was quoted as saying that it costs 43 cents to print and mail a Social Security check (he did not note that 80 percent of that cost is mail), but only one cent to deposit it electronically. The “one cent”

The Impact of Competing Distribution Channels

number keeps coming up. *Electronic Publishing* magazine sends 30,000 e-mail newsletters every month for one cent per name.

One cent is the tip of an iceberg. It does not take into consideration the cost of the computer hardware, software, network infrastructure, as well as the cost of access and other charges. While fax moved most of the cost to the receiver (paper, printout), the Internet does the same.

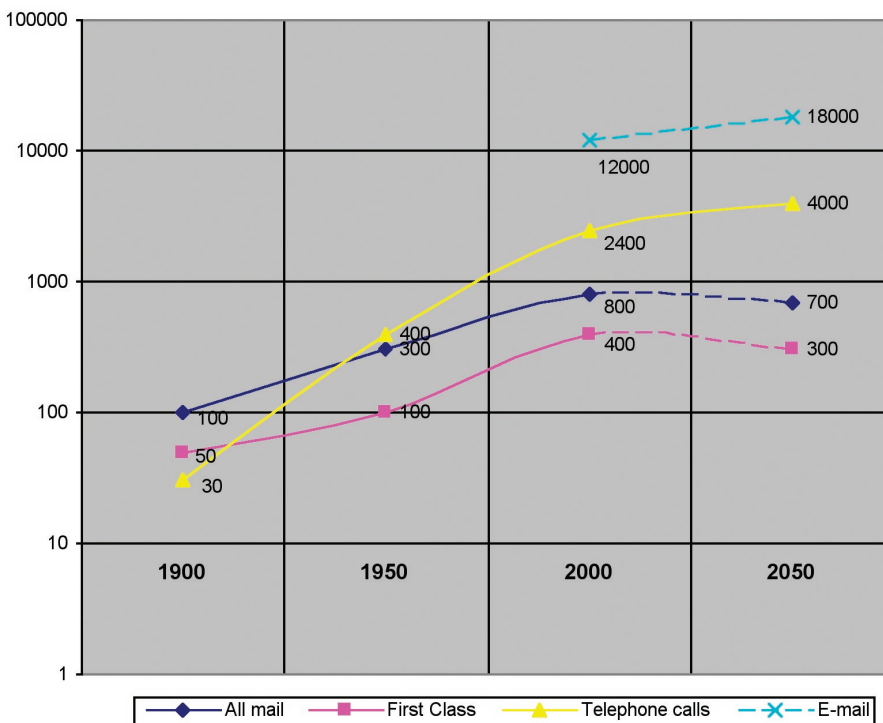
The average user considers e-mail as free; yet, they are paying a monthly Internet access fee, electricity, equipment and software costs, and some part of their phone charges. A very rough calculation based on \$92 a month for these costs divided by 1,800 minutes of use per month comes to about 5 cents a minute. The “free” newsletter probably costs a few cents. And all the unwanted e-mail costs more. Unwanted paper mail costs the receiver nothing.

We cannot argue with the fact that of 880 million Social Security checks, tax refunds and other payments, 68 percent were sent electroni-

cally, depriving the USPS of \$180 million in revenue, according to the General Accounting Office. Mailings by banks to customers have dropped 18 percent. More consumers are paying their bills online every year; bills and bill payments are about half of all First-Class mail.

Based on income levels and other factors, we estimate that at least 20 percent of the U.S. population may not have Internet access. For example, the U.S. population is 287.9 million of which 31.1 million, or 9 percent, are below the poverty threshold (U.S. Census Bureau). Universal mail service will be required since it is unlikely that the entire population will adopt electronic approaches. That is the problem in a nutshell: no one has projected that there will be a universal electronic access device or system for all the information and promotion that is now in print media format. For the foreseeable future, there will be the need for universal mail distribution even if increasing parts of the population adopt digital tools for competitive access.

USPS studies suggest that total mail volume will grow more slowly than the overall economy and will peak in 2003 at about 216 billion pieces:



“As volume growth slows, it is difficult to keep rate increases below the rate of inflation because the revenue earned from that volume must not only cover the cost of those volumes but must also cover the costs of a growing delivery system. Furthermore, in recent years, mail volume growth has not kept pace with the economy.” (USPS)

Significant changes in the volume of letter mail began before e-mail—the telephone had already replaced written correspondence. According to former Postmaster General Marvin Runyon, “E-mail communication has further eroded the volume of personal letters, notes, and office memos.” The USPS delivered 202 billion pieces of paper mail in 2001. Estimates for e-mail messages sent in 2001 range from 900 billion to 4 trillion (U.S. Internet Council).

Figure 6: Per capita, per year, per person (Wattenberg; United Messaging. Dotted line represents Romano’s projection.)

The Impact of Competing Distribution Channels

Communication is increasingly via e-mail and telephone. E-mail is the most successful communication technology since the telephone or television. All have been the major culprits in the reduction in mail volume. According to United Messaging:

“At year-end 2000 there were 891.1 million electronic mailboxes in the world, including for the first time an appreciable number of wireless messaging devices. That represents a massive 67 percent expansion in the number of e-mail boxes in the past year, up from a revised 533.1 million devices at the end of 1999. With 268 million service provider mailboxes in the U.S.—roughly half and half between web mail and ISP e-mail—calculations estimate that approximately 90 million people are using e-mail in the U.S. for non-business reasons, or more than a third of the population.

“U.S. e-mail use totals ran to two-thirds of workers and half of all households, for a grand total of 40 percent of the population. According to this year’s figures, a total of 58 percent of the population were using e-mail in the U.S. at year-end 2000. While there is still room to grow, in the future most expansion of e-mail use is expected to come from a deepening of the number of uses for e-mail, not a broadening of the user base.”

It is interesting that physical mail delivery was the norm and on-line access was a supplement. Now on-line methods are becoming the norm and physical mail is the supplement. We may be doomed to a hybrid system.

B. PRIVATE SERVICES

The seeds of competition by private services go back to 1839. Kelly B. Olds reported in *The Cato Journal*:

“During the years 1839-1851, the United States Post Office [faced] [p]rivate competition . . . that made effective use of railroad and steamship lines. This competition was so successful that a number of congressmen feared postal service was on

the verge of an involuntary privatization. Because the monopoly profits garnered by the Post Office were important to politically powerful interest groups, the federal government did not allow postal service to be privatized. To eliminate private competition, however, the government was forced to reduce drastically postage rates and adopt many important reforms. The postal system arguably underwent more change in those 12 years than in the rest of its history. The pressure of competition from private firms . . . was also responsible for changing the nature of postal service. Private companies introduced payment-by-weight, prepayment, postage stamps, and home delivery to the American market. Those reforms were adopted afterward by the Post Office.”

In 1912, rural congressmen pushed through a bill that got the government into the parcel business. Although the United Parcel Service (UPS) and many other express companies were already providing parcel service, rural residents were anxious to find a way to avoid paying the full cost of parcel delivery to sparsely populated regions (Bovard).

The 2000 USPS Annual Report stated :

“At the same time that labor costs are rising, we face the prospect of slow mail volume growth. The diversion of First-Class and Standard mail to electronic alternatives is gradually diverting volume from the mail stream, and we expect this to continue. As electronic bill payment becomes more popular, it seems likely that the number of bills presented to consumers electronically will also grow. We expect First-Class Mail volume growth to remain sluggish, a result of economic conditions and the increasing market share of alternative bill presentation and payment technologies.”

The Impact of Competing Distribution Channels

A main competitor is UPS (United Parcel Service). It is highly unionized like the USPS, but relentlessly efficient.

“UPS is the world’s largest package distribution company. In 2000, UPS delivered 3.5 billion packages and documents, and earned \$29.8 billion in revenue. On average, UPS delivers 13.6 million packages and documents each day, or approximately six to seven percent of the U.S. gross domestic product (GDP). UPS serves every

address in the United States and more than 200 countries and territories worldwide with approximately 359,000 employees.

“UPS is an enabler of global commerce, providing the infrastructure that allows trade to move in an efficient and reliable manner. The delivery of physical goods is our core business, and we see that continuing as we move forward. The development of the ‘virtual world’ will not replace the physical delivery of goods, but rather will both coexist and enhance each other. The development of electronic commerce has allowed UPS to offer “value added” services that enhance our core business of package delivery. UPS seeks to integrate three flows of commerce to help customers solve their transportation and logistics needs: the movement of goods, information and funds. The development of electronic commerce, including tools like electronic document exchange and electronic signatures, enables UPS to add value to existing products and services, and to develop new products and services that enhance these three flows of commerce.” (United Parcel Service)

Online sales of merchandise are expected to increase substantially over the next few years, generating increases in parcel shipments, many of which could be carried by the USPS as priority mail. But the USPS faces entrenched competition from UPS and other competitors like local messenger and private delivery services.

In 2001, it was announced that FedEx will provide air transportation for a large percentage of the USPS’s Priority, Express and First-Class mail — an arrangement that USPS says will save \$1 billion in air transportation costs over seven years. FedEx will place roughly 10,000 drop boxes at post offices nationwide. Partnerships, outsourcing, and other relationships are one of the ways that USPS can cut costs — and are the future of the USPS.

Pneu Media

In The Brooklyn Eagle on December 30, 1900, Postmaster General Charles Emory Smith predicted a pneumatic tube system to every house for mail delivery—underground tubes connecting U.S. cities and homes using compressed air to send canisters filled with mail zipping beneath the streets. By 1916, there were over 112 miles of such tubes in place—Boston (13.6 miles), Chicago (19.8 miles), New York (55 miles), St. Louis (3.9 miles) and Philadelphia (20 miles). Canisters eight inches in diameter carried 500 letters per trip. In Manhattan, mail commuted under city streets at 30 mph from Wall Street to 125th Street. By 1898, 21 neighborhood post offices in Manhattan were connected to the main branch, with 30 percent of the First-Class letters distributed to branches by pneumatic tube. After World War I, a committee appointed by the postmaster general suggested the use of the automobile. Chicago, Philadelphia and St. Louis lost the tube service first. New York briefly stopped it, resumed it in 1922 and ran parts of it as late as 1953. In Paris, the “carte pneumatique” survived for more than a century as a network spanning 269 miles, delivering millions of messages and mail annually. Letters were sent to post offices by canister and then delivered the rest of the way by a mailman riding a bicycle. The system was abandoned as unprofitable in 1983.

But there are some places that pneu or new media may not go: Supai, Arizona is the most remote mail route and also the last mule train delivery left in the U.S. Mail and supplies are delivered to the Havasupai Indian Reservation with 500 or so tribal members deep beneath the south rim of the Grand Canyon. Helicopters and other air access methods are impractical, so the mule train makes the four-hour trip every week, in all weather.

Solving the Problems

A. PERIODICALS

“Subsidizing newspapers was a government policy. It was publicly argued that the cheap transmission of public information was necessary to inform and educate voters. More cynically, the newspapers’ influence on public opinion gave great political power and, thereby, encouraged the subsidy.” (Olds)

The periodical market is changing. There have been long-term underlying problems that are now coming to the forefront. Barry Meinert, production executive at AOL Time Warner, helped to put it in perspective during a lecture at RIT in 2001:

- The average newsstand sell-through for magazines (U.S.) this year will be around 35 percent. Almost two thirds of the magazines you see on a newsstand go unsold. This percentage (65% of magazines distributed through this channel going unsold) has been declining steadily over the past decade. 88 percent of Time magazines are sold through subscription — only 12 percent at the newsstand.
- The production costs for unsold magazines exceeds \$1 billion. There are huge environmental ramifications to this fact, since they must be deposited in landfills, burned or recycled.
- The average cost to mail Time magazine is \$0.21. This amount continues to rise as First-Class volume is reduced and costs are spread to other mail classes.
- The approximate cost to print Time magazine is \$0.50, which has actually decreased over the last decade.

- Major problems facing the industry include: lack of leadership, love of status quo, massive crisis looming with USPS, and distribution channel failures. If unaddressed, it will push us to e-book and electronic approaches.
- RR Donnelley is the largest consolidated user of the USPS outside of the Federal Government. It supplies 20 percent of USPS tonnage.
- Quad/Graphics and Quebecor World supply approximately 30 percent of the tonnage of the USPS.

Impacts and projections (Romano et al.):

- Rising postal costs will exert pressure on periodical publishers to distribute some portion of their circulation in electronic form.
- E-pubs will become a threat to traditional magazines and journals as e-reading appliances improve.
- Electronic content will free information for repurposing and reuse.
- Print-on-demand for selected articles will take place in bookstores and business/home locations. Some print volume will shift from the factory to the home or office.

Solving the Problems

- Periodical printing will move from centralized manufacturing to points closer to the customer. ATMs for periodical printing will evolve so that readers can have certain issues, articles, or combinations of issue/article printed out on-demand or downloaded to an e-reader.
- Although advertising dollars will grow with the economy, the advertising base of the magazine/ journal publishing industry will shrink, reducing the volume of printed pages.
- Electronic distribution of articles will increase, especially to support distance learning.
- Publishers will evolve standardized repositories of electronic information from which print, disk, or electronic downloading will be possible.
- Content protection methodologies will evolve to guard intellectual property. Gatekeepers such as the Copyright Clearance Center and others will facilitate electronic acquisitions.
- Libraries will evolve new financial models so that users can access publication articles.
- The number of titles in print and electronic form will continue to advance as entrepreneurs and others develop niche markets.
- Newsstands will carry periodicals, but some will also be printout and downloading centers.
- Of the periodicals printed, many will be reproduced in regional rather than centralized facilities in order to bring production closer to distribution.

USPS Solutions

Flat mail typically is comprised of large envelopes, magazines and other periodical mail measuring no more than 15 x 12 inches, and

no thicker than 3/4 of an inch. One of the USPS' long-term goals is to move flats processing, one of the most labor intensive, from a manual/mechanized environment to one that is automated. Previously flat mail was sorted by hand or on mechanized equipment.

The new equipment is equipped with three automated feeders to eliminate the need for manually feeding individual flat mail pieces. It uses technology to read a wide range of addresses, including handwritten addresses and bar codes. This increases sorting rates by roughly 10,000 pieces to a total of 15,000 pieces per hour, approximately three times faster and at a third of the cost of the previous equipment. This speed enhancement, coupled with a staffing reduction of more than half the Flat Sorting Machine Operators resulted in a total flat productivity increase of 27 percent — a cost savings of \$292.5 million annually. Moreover, the software behind the address recognition system imbedded into the system keeps hard-to-read addressed mail in efficient automated mail processing and away from costly manual sorting (USPS, Press Release).

“Knowing far enough ahead will not be the only deciding factor in alleviating these situations. The percentages of increase will have more of an impact. If the numbers are smaller, customers will take the hit so as not to disrupt mail plans. The question was asked whether predictability would lead to increased volumes. The answer is MAYBE. Again, the size of the increases will be the most determining factor. If you look at our business, the greatest percentage of our new business comes from existing customers. Part of that is because they have long-term contracts with costs that are laid out over a number of years. They know when prices will increase, and they know how much they will increase. However, they also know that they will continue to get more value for the dollars that they spend during the life of that contract, and we know that we have to control our costs during that same period of time in order to be profitable.” (Schick)

B. CATALOGS

Impacts and projections (Romano et al.):

- The consumer catalog will continue to exist as a “push” medium and will supplement the company’s Web site and retail location by showing selected items and promoting more product information on-line.
- The printed catalog will use variable data printing, selective binding and other approaches to produce hybrid, but more personalized, versions.
- Catalog page counts will probably decline over several years with the purpose of the catalog mainly to push or direct the recipient to the Web site rather than generate the order directly. For selected markets, there will be sufficient information to buy from the catalog.
- The decline in page counts will begin as postal rates rise (because the amount of First-Class mail will decline, the cost of operating the postal system will mandate price increases for all mail classes).
- The printed catalog cannot compete with the Web site, which is more extensive and up-to-date, but the Web site cannot entirely replace the printed catalog.
- The business-to-business catalog will move almost entirely to the Web, linking companies via EDI (electronic data interchange) and e-commerce. A new generation of purchasing managers will use the computer as routinely as they now use the printed catalog.
- By 2010, e-mail and physical mail locations will be linked, which will then usher in the direct e-mail market. Some degree of digital divide between the techno-haves and the techno-havenots will exist and this will still mandate paper-based promotions.

- Print buying will be transformed by electronic commerce methods that link business computer networks.
- Consumers are increasingly going on-line and developing more confidence in e-purchasing. By 2010 the Internet will represent 25 percent of all U.S. retail sales, up from five percent in 2000.
- For every electronic transaction, the equivalent of 200 sheets of paper are generated, representing packaging, labels, receipts, and promotional materials.
- Distributed printing will play a major role in order to reduce postal and distribution costs.

C. USPS AS DATABASE

The USPS has high fixed costs. It provides 6 days per week delivery of mail to approximately 138 million addresses (which grows by nearly 2 million annually) with 900,000 employees, and maintenance of a national retail infrastructure of 38,000 post offices, branches, and stations. 567 million pieces of mail are handled every day. There are also over 3 million post office boxes. Undeliverable mail totaled 5.4 billion pieces in 2000, of which 39 percent was forwarded, 24 percent returned to sender, and 37 percent discarded.

More than 40 million individuals, families, and businesses move each year, meaning that up to 20 percent of the people or companies in a database could have a new address, which is an obstacle to maintaining high-quality mailing lists and low production and postage costs. Citing that returned mail is costing it more than \$1.5 billion per year to process, the USPS has stepped up enforcement of a rule that requires businesses to clean up their address databases in order to earn mailing discounts. To qualify for a First-Class presort discount, businesses must update their lists at least every six months. If businesses are not updating their addresses files and reducing their share of undeliverable mail, they can expect fines for recovery

Solving the Problems

of back postage. The USPS file contains over 115 million records and 48 months of permanent address changes. Since 1986, the National Change of Address (NCOA) service has saved mailers millions of dollars that would have been wasted in paper, postage and labor.

More than 770,000 businesses use the USPS to send bulk mail — 5.2 million tons of promotional mail annually, about half of which is tossed, unopened, into the trash or recycling bin. Mailers should make use of NCOA service prior to Standard-Class mailings — because the USPS does not forward undeliverable standard mail; it is often discarded.

The Universal Postal Union has stated that 86 percent of the domestic mail in industrial countries is generated by the business sector, compared with 14 percent by households. Their forecast for 2005 shows an increase in the business-to-household segment, while there is a significant decline in the household-to-household segment.

No matter what may happen to the USPS there will still be a need for a national database that tracks household and business locations and moves. Having a reliable resource for reaching every mail address in the U.S. will advance the use of targeted marketing and cut wasteful mass mailings.

SCENARIO 1: MODERATE GROWTH IN USPS MAIL VOLUME

The system needs robust growth to cover its labor and transportation costs as well as its long-term pension and health care benefits. Moderate growth is not sufficient. Magazines provided the majority of the growth over the last decade, fueled by advertising dollars. The 2001-2002 advertising slump has shown how vulnerable magazines are.

- The decline in page counts will begin as postal rates rise (because the amount of First-Class mail will decline, the cost of operating the postal system will mandate price increases for all mail classes).
- The printed catalog cannot compete with the Web site, which is more extensive and up-to-date, but the Web site cannot entirely replace the printed catalog.
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- Distributed printing will play a major role in order to reduce postal and distribution costs.

Moderate growth will exacerbate cost and efficiency problems. Growth through monopoly status hid the problems for many years.

SCENARIO 2: ELECTRONIC BILLING AND PAYMENT ALTERNATIVES DECREASE FIRST-CLASS MAIL VOLUME

Bills, statements and payments constitute about half of the 102 billion pieces of First-Class mail. Of this amount, approximately 15 percent comes from consumer payments—15 billion household bills paid per year. The principal threat to physical mail volumes is shifting away from established communication services (facsimile, e-mail, EDI) toward electronic bill payment and presentment (EBPP). Although electronic bill payment (direct debit, online banking, e-commerce) has been around for some time, its combination with electronic (Internet) bill presentment is new. The potential market is considered significant.

Table 7: First-Class Cannibalization Rate
(PriceWaterhouseCoopers)

E-mail	1%
EDI	2%
E-bills and statements	70%
E-payments	70%

Estimates of the global market for EBPP vary. Forrester Research estimates that by 2004 some 20 million U.S. households will be using some form of EBPP and that 13 percent of all consumer bills will be paid by EBPP. McKinsey & Co. predicts 15 million EBPP households will pay 7 percent of total consumer bills by 2002. This could cut First-Class mail volume by 25 to 30 percent by 2008.

Once again, some people will use EBPP and some will not use EBPP—thus the cost of the postal system will climb as it loses this profitable level of mail volume. Universal mail service is certainly in jeopardy and this will affect magazines, newspapers and catalogs that depend on the USPS for delivery. As distribution costs rise, these print-based products may seek electronic alternatives, thus creating cascading effects that severely cripple the mail system.

SCENARIO 3: ELECTRONIC SUBSTITUTES SUPPLANT DIRECT MAIL

Most of us are more upset to receive unsolicited e-mail (derided as “spam”) than to receive unsolicited print mail (derided as “junk”).

- Personalized direct mail will grow significantly over the next two decades. It will be the basis for relationship and targeted marketing.
- Mass mailings will continue. Until everyone has access to the same electronic data, there is no other way to reach a large audience. Direct mail is “democratic.”
- Direct mail marketing will continue to exist as a “push” medium and will supplement the company’s web site. Personalization will be commonplace.
- Business-to-business direct mail may move almost entirely to the Internet, linking corporate entities via EDI and e-commerce.
- The USPS, via partnerships, will offer consumers the ability to receive their direct mail as print or as electronic files. Printing operations will be linked to USPS locations.
- The USPS database will be the national repository of street and e-mail addresses so that cross-media mailings can be made.
- The concept of junk mail and spam will continue; marketers will be challenged to avoid both through targeted approaches.
- Dynamic digital printing will be the most prevalent form of production because of its ability to handle variable data printing.
- Although direct e-mail will be a competitor, targeted print will grow because of its ability to reach specific audiences.

SCENARIO 4: RATE INCREASES FORCE PUBLISHERS TO ADVANCE ELECTRONIC ALTERNATIVES

Informational print lends itself to electronic delivery. However, a number of technological and societal factors will have to converge to create the critical mass necessary for them to operate profitably.

At no time in history has the confluence of technology, attitude and infrastructure come together in such a way as to truly challenge the domination of print in our society and our lives. Over the next 20 years the foundation will be in place to disseminate information in non-paper formats to the mass of people.

- The wired and wireless communications infrastructure is nearly in place to handle the volume of textual, audio and video information.
- Reading and computing appliances are evolving for mass consumption with functionality and pricing that will assure acceptance.
- The cell phone, PDA, image capture device, and web-connected e-reader are merging into one portable appliance.
- Digital displays are developing with paper-like readability and machine interfaces are tending towards speech recognition and other ease-of-use factors.
- Text-based communication will be challenged by sound and imagery.
- Significantly more content will be available in electronic form and printed on-demand.
- New generations will be in place to welcome and embrace new technologies and attitudes about screen-based reading will change as new age groups dominate the population.

(Romano, EDSF)

Within a few years display and reading technologies will cannibalize some of the informational-based mail volume. The technology infrastructure is almost in place to accomplish this and publishers are already investing in preparation for such an outcome.

SCENARIO 5: USPS PARTNERS WITH PRINTERS AND MAILERS

Many USPS employees still view direct mail and catalog mail as junk that doesn't pay its own way, and only increases their workload. USPS must educate their employees about the changing landscape of their business. That is, that direct mail and catalogs (promotional material) will be their future lifeblood as First-Class mail volume declines.

“Allow the printing industry to become more involved in the process of developing new technologies that will influence both of our businesses: the best example would be flat sorting equipment, which is an extension of [the printing] process — [print] output in finishing becomes their input on the flat sorters.” (Schick)

This also means that the USPS must become more efficient to keep costs under control. Asserting monopoly powers will not work in the future.

“USPS also recently tightened its prohibition against the private use of postal boxes. Even though a person's post box is his property and is attached to his house, the USPS prohibits access to it by private carriers or others and seizes any letters, notices, or paraphernalia it finds in them. The service routinely seizes privately delivered magazines and returns them to the publisher months later — after charging the private carrier for postage.” (Brovard)

In our interviews with printers, it was clear that USPS must do more to learn the business of their customers (publishers and marketers) and their key business partners (printers). They can no longer be aloof.

“They must listen to their business partners. Printers are actually unpaid consultants, willing to be unpaid consultants, who probably do more managing of the USPS than many of their own managers. Yet, there are far too many times when printers provide the USPS with feedback and suggestions, only to see them hire outside consulting firms that will tell them the same thing. Or worse yet, tell them something that is detrimental to our mutual business.” (Schick)

The growth area for both print and mail will be promotional-based material. It is not “junk” — it is an essential part of business and commerce in America.

Conclusions

1. The future of the USPS will be based on the delivery of marketing, advertising and promotional materials — direct mail and catalogs. This type of mail is derided as “junk mail” and it is well known that the vast majority is discarded unread. Yet, enough is actually read to justify its expense.
2. Advertising and promotional materials in print will continue to grow in volume and become the primary business for mail services. Brochures (single or multiple sheets folded into sets), flyers (single sheets usually folded) and booklets (24 or more sheets accumulated into sets) are typical products, but posters, cards, and other promotional materials will grow. Many have no electronic counterpart.
3. The electronic brochure is possible, but much advertising material is picked up at a retail or other location. This place-based aspect makes electronic dissemination of promotional material more difficult.
4. A major competitor to offset-based advertising printing will be increasingly higher quality color printers, both inkjet and toner. This would allow stores and other locations to print materials locally, on demand.
5. With more automated workflows, regional and personal printing, as well as increasing quality and paper availability, most promotional material will remain in the printing factory because of finishing.
6. The move to six-color and other high-fidelity color printing approaches, along with coating operations, will be required by the creative community. High quality color printing will continue into the next century.
7. Finishing aspects will provide a major impediment to personal printout. The convenience of a folded, bound, and finished product will outweigh the output of simple sheets; although, speed and other reasons will see some volume move to desktop printers.
8. To replace advertising materials there would have to be one or a variety of standardized electronic access approaches that could receive and present the information in a promotional manner.
9. To become more efficient in delivering print media, the USPS must partner with other delivery services, printers, mailers, marketers, and publishers. It is not a case of “us or them” — it is all “us.”

Conclusions

Marvin Runyon, former Postmaster General, remarks:

“You talk about privatization. Well, we’re being “privatized” every day by our competition—letter by letter, package by package. Competition is giving us plenty of incentive to improve. It’s making us realize that if we’re to be an innovative leader in the communications industry, we’ve got to get out there and compete for every postal dollar we get.” (Cato Institute)

Ben Cooper, Executive Vice President/Public Policy, Printing Industries of America, remarks:

“Perhaps no single entity is more important to the future of the printing industry than a reliable mail delivery system. Let’s face it, most of the items handled by the USPS are printed products.”

The emphasis should be on the word “single” — we believe that a collaboration of services will be necessary to meet the need of the American population in its thirst for material of all kinds, for learning, entertainment, and commerce. We envision partnerships between printing companies, mailing services, other delivery services, and even new media that deliver what a consumer wants, where a consumer wants it, in the form the consumer chooses. For the foreseeable future, we believe print media will be one of those choices.

The future of mail is the future of print: partnerships and promotional materials.

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