

# An Investigation Into Printing Industry Trends

By  
**Frank J. Romano**

Professor Emeritus,  
School of Print Media

Rochester Institute of Technology

A Research Monograph of the  
Printing Industry Center at RIT

December 2004

No. PICRM-2004-05



# An Investigation Into Printing Industry Trends

---

By  
Frank J. Romano  
Professor Emeritus, School of Print Media  
Rochester Institute of Technology



A Research Monograph of the  
Printing Industry Center at RIT  
Rochester, NY  
December 2004

# With Thanks

The research agenda of the Printing Industry Center at RIT and the publication of research findings are supported by the following organizations:



# Table of Contents

Synopsis.....	3
Panelist Questions: Summary of Responses & Analysis.....	5
What are the key changes in the printing industry over the last 20 years?.....	5
What are the primary drivers of printing industry growth? .....	14
How have we measured and tracked printing industry productivity? .....	17
How do we assess these impacts on print volume?.....	18
What role did the Internet play in printing industry volumes?.....	18
Is there a preferred method or set of methods for measuring the impact that the Internet on print volumes? .....	19
What do you see as changing in the printing industry over the next five years?.....	20
How will the Baby Boom retirements impact print, if at all? .....	22
Can the printing industry stimulate its own growth? .....	23
Directions .....	24
Endnotes.....	25



# Synopsis

The Printing Industry Center at RIT hosted a colloquium to discuss methodologies used to measure, track, and project the future of the printing industry. Four economists, three with a relationship to the printing industry, responded to a series of questions about the past, present and future of various aspects of the printing business and its relationship to society. A group of approximately 60 RIT faculty, RIT graduate students, and Industry Partners of the Center attended.

## Panelists

- Dr. Ronnie Davis, Chief Economist, Printing Industries of America/GATF
- Dr. Michael Evans, Partner, Evans, Carroll & Associates
- Dr. Maryellen Kelley, Principal, Pamet Hill Associates
- Dr. John Zarwan, Principal, J. Zarwan Associates

## Moderator

- Professor Frank Romano

The panelists responded to a prepared set of questions, but the discussion was wide-ranging and eclectic. Instead of a word-for-word transcription, we have chosen to use the comments of the panelists as a launch pad for further investigation, discussion, and analysis. We have incorporated their public writings and presentations, as well as those of others, that are pertinent.

Our goal was to explore approaches to forecasting the future of the printing industry. Dr. Joe Webb<sup>1</sup> has said that “the purpose of research is to give executives objective facts about the marketplace. Once research gets into the forecasting process, it all too often loses the links to those objective facts and it becomes just another forecast.” Some of his comments in these areas have been incorporated.

The purpose of this conference was to find areas for further investigation that would develop meaningful forecasting tools for the printing industry. It is a work in process.





# Panelist Questions: Summary of Responses & Analysis

## WHAT ARE THE KEY CHANGES IN THE PRINTING INDUSTRY OVER THE LAST 20 YEARS?

The major changes discussed by the panel could be summarized as:

1. Desktop publishing: the move from typewritten (monospaced) printout to typographic (proportional) printout.
2. Personalization: the use of specific information to generate printed products, as well as the personal empowerment provided by personal computers and personal printers.

Over the course of the colloquium, other changes were mentioned or discussed, as follows.

### Digital Links To Customers

The one trend that profoundly changed the printing industry was the electronic delivery of files. In the past, the originator delivered a manuscript and then saw proofs; later he or she delivered mechanicals and then saw proofs. The printer controlled the prepress process and then desktop publishing became mainstream and the printer lost that control. This loss coincided with the evolution of the personal computer, “shrink-wrapped” software, and standardized page description languages. Jobs could be designed and produced by the originator and then sent to literally any printing service—or, to an in-house printing device. In the past the printer controlled the metal and later the film: the printer essentially “owned” the job. Today, the customer owns the job.

Once print jobs were in a standardized form, they had to be delivered to the printing service. The industry evolved from messengers and overnight delivery services that delivered disks of all kinds to telecommunications of all kinds. Today, it is estimated that less than 10 percent of all print is produced within a day. It is probable that within two decades almost one third of all print will be produced within a day. Of all the trends, this is the one that has affected all other trends. Once print jobs are in electronic form, new methods of printing and publishing become possible. New approaches to job management and job tracking become possible. Jobs become digital and that ushers in a new age for printers.

### Color

Only a decade ago most pages were black and white. Now almost all newspapers have shifted to color reproduction, primarily for advertising. Color is also splashed on every page of magazines and catalogs. It is hard to find a page that is not in color. Full color is growing from 48 percent of all pages today to 75 percent of all print pages by 2020 (InfoTrends/CAP Ventures, 2000). We will need better ways of managing color as print competes with electronic media. We will need more effective color workflows. There will be increasing opportunity to add color to the black-and-white pages that remain.

### Digital Printing

Most of the revenue from digital printing has come from black-and-white systems. Many jobs are black and white with occasional color pages—and cost-effective color printing will encourage the use of more color. Digital devices may be sheetfed or webfed and most apply toner-based or inkjet-based technology which creates a new page image with every impression. This distinguishes digital color printing

# Panelist Questions: Summary of Responses & Analysis

from traditional offset printing where every impression must be the same. Although Direct Imaging (DI) offset presses are called digital presses, they do not have the variable data printing capability since they use a static printing plate. Their advantage lies in making the plates on the press and thus reducing press makeready.

Inkjet provides a foreseeable threat to toner-based printing. Its goal is to achieve speeds that compete with printing press productivity. Although some experts were overly optimistic about the rate at which digital color printing would be accepted, we are now seeing the technology make significant inroads to the printing industry. Toner- and inkjet-printing require no makeready and are thus almost instantaneous in production. Over the next decade ink-based printing will yield some volumes to digital printing technologies. No printing process seems to disappear completely. Litho replaced letterpress but letterpress is still around. Digital will not replace litho, but it will take volume away. It is only today that several forces are merging:

- The move to shorter runs by print buyers
- The move to tighter schedules
- The move to target marketing
- Equipment cost and performance coming into harmony.

## E-commerce

E-commerce is not just file transfer—it is the relationship between buyer and seller enabled by the Internet. The nature of the buyer is changing. Almost half of all printing is purchased by “large” companies and they will be prone to automating the print buying process. This can be aided by e-commerce or e-business, which is essentially a new way of communicating. We use cell phones and pagers and PDAs to track jobs and communicate changes. We foresee the role of the Internet in improving that communication. About one third of all print is purchased by the 1,000 largest U.S. companies and we expect that they will apply various approaches to e-commerce first.

## Computer-to-Plate On- and Off-Press

It was not Computer-to-Plate (CTP) that changed the world. CTP is merely the tip of a giant iceberg called “workflow”—one level of process automation. Printers report that run lengths are getting smaller, with averages now in the 2,000 copy range. This means that new and more efficient methods of prepress and reproduction will have to be applied. Through the 1980s and 1990s film was a primary manufacturing medium for printers. All pages eventually wound up as film negatives which were required to make plates. Pre-media services converted art and type to film and then “stripped” it up (assembled it) into composite form. For printers, film could come from outside sources and this was especially true for publication advertisements. When all film units had been assembled, they were used to expose printing plates. CTP requires all page content in electronic form. There is no need for film since the laser “exposes” the plate directly. Since CTP systems were installed at the printing company, many content originators switched to dealing directly with the printer instead of the pre-media intermediary. CTP grew slowly from 1993 to 1998, but has exploded in the last few years, thus removing page volume from pre-media services. Today, CTP is mature and the majority of medium- and large-sized printers have implemented the technology.

## Elimination of Film From the Production Process

As CTP required a filmless workflow, ads continued to be supplied in film form, which required that they were scanned in order to insert into the digital workflow required for CTP. In 2000, the PDF/X-1A standard defined an electronic approach to ad delivery to magazines for inclusion in page layouts. When *Time* magazine mandated this format, many other publications followed suit and the last vestiges of film began to disappear. Pre-media services assembled ads for ad agencies and then produced four films (for four-color process printing) and a proof for all publications that would run those ads. The film cost, proof cost, and other costs were marked up by the pre-media service. With a filmless workflow, the revenue from the film markup disappeared, and the markup of the electronic ad file was less

# Panelist Questions: Summary of Responses & Analysis

expensive also. This caused a reduction in revenue for most pre-media services. With *Time's* recent mandate for virtual (on-screen) proofs, another level of revenue has been removed from the pre-media service.

## Workflow

Workflow is a production continuum from the digital page to the finished product. Files will include electronic job tickets (JDF-based) for automatic processing through various steps in the digital workflow, as well as linking customers and services as never before. The result is automation from start to finish. Printers of every type now produce print in less time than in the past, and at lower cost. They are applying new and more automated presses and more sophisticated systems, all of it linked by new workflows. But one workflow does not fit all. Workflows tend to be oriented by printing process and not by printing product. JDF and CIP4 will play an important role, especially when implemented for both traditional and digital processes.

## Technology Integration

More and more presses are integrating different reproduction processes. The reason has to do with the nature of jobs—many are complex, with specialized coating or imprinting requirements. Print is not all flat sheets—complex and very complex jobs account for 32 percent of job volume, but 60 percent of job revenue (Romano, 1999). Printers can add value to complex jobs because there are so many production steps. Most importantly, printers use the process that is appropriate to the job. Gravure may print the editorial section of *National Geographic*, but offset is used for covers and advertising sections. “Hybrid” printing will grow in the following areas:

- Offset and inkjet
- Flexo and gravure
- Offset and toner
- Flexo and toner
- Flexo and inkjet.

## Cross Media

Cross media involves conversions from one file to any proofing or printout device or information distribution method. The Acrobat PDF is the most prevalent approach to moving

files from creators to reproducers to information consumers. It is called re-purposing, and there is no other word that describes taking a file created for one purpose and converting to the format for another purpose (print to CD to eBook to Internet and back again). XML coding will be pervasive as the lingua franca of content definition. Raster pages are losing favor for archival, reference or cross-media purposes. PDF is a medium that can cross the entire spectrum of publishing. Print is one viewing method for an information base that is becoming more and more electronic. Information is born in electronic form and it will either be viewed that way or as print. Printers who only print will be at a disadvantage to printers who provide cross media services as well.

## Variable Data Printing

Digital printing is growing. Personalized direct mail and other customized products are within the reach of all graphic arts firms. Personalized direct mail can be categorized in a number of ways, from mass marketing where every piece is the same, to target marketing where every piece is totally different. Variable data printing is a new market with new business volumes and it also stimulates offset volumes. On-demand books are possible because of variable data printing, and the future of books will be “on-demand.”

## Distributed Production

Within two decades print will shift from press-centric to printer-centric and from a Midwest base to a national and even international base. Some volume of print will move to smaller devices at the office or at home. Print production will occur closer to the point of distribution to deal with postal issues.

## Industry Infrastructure

The printing industry is made up of many segments. Our panel projected increasing consolidation of the industry. We already have it on an informal basis with “peer groups” of printers who combine for purchasing and distributed printing. Consolidation will occur because there is less printing than there used to be and such a reduction will mandate fewer printing companies.

# Panelist Questions: Summary of Responses & Analysis

## Shift of Work to Desktop— In-house or End User

The 1980s CEPS systems and scanners cost \$1 million or more. Today, their functionality is available on desktop computers and scanners priced under \$1,000. Some print volume, mostly simple work, migrated to desktop production. This has allowed pre-media buyers and originators to move some level of production in-house. Creative services (designers, ad agencies, etc.) have applied scanning and digital photography. The net effect is that volume has been eroded as pre-media production moves closer to the point of origination. Not all originators will choose to perform their own pre-media services, but enough will either move some percentage in-house or all volume in-house and this will affect the overall market volume. Corporations and individuals (at home) will have access to increasing levels of print quality and capability.

## Migration of Content to Non- Print Alternatives

Printing and pre-media services are attempting to reinvent themselves with digital asset management and cross media services in order to develop new revenue sources as some volume of print has migrated to Internet, PDF, and other electronic publishing methods. The printing industry has seen a loss of about \$16 billion in revenue since 1999 (Romano, *Print Outlook*, 2003; InfoTrends/CAP Ventures, 2003), as content that would have been in print form moved to Internet or recorded media distribution. Although pre-media services now also perform new media production, the volume and profit has not restored most companies to their pre-new media volumes and profits.

## The Vagaries of the Economy

Printing and pre-media services live and die by the volume of advertising—ads running in magazines and newspapers, direct marketing materials, collateral materials, catalogs, and newspaper ad inserts—which vary with the economy. Commentators abound, but it is valid to say that there are more alternatives for the advertising dollar, most of which are non-print oriented. Thus, it is doubtful that ad budgets will expand to include new media and also restore previous ad expenditure volumes.

We may have lost some volume of print-based advertising forever.

## Changing Structure of Demand

“On demand” is a euphemism for digital printing but it applies to any service based on immediacy. Digital printing eliminated two of the impediments to more timely printing production: makeready and drying. Thus, printing jobs could be produced in shorter runs and with shorter schedules—something quick printers and many commercial printers have been doing for years. Where will the volume of digital printing come from? We think it will continue to come from work moved from offset litho to digital.

Some growth will occur in Internet-generated volumes as more firms apply customer relationship management approaches. Although transactional documents are being usurped by electronic bill presentment and payment options, some volume will gravitate to full-color printing. Market niches will evolve. These include security printing, signage, art reproductions, and others. The commercial market is driven by market demand—what customers want. Print is a tool, one among many alternatives. As Dr. Joe Webb has said, “The Internet cannot be repealed.”

## Macro Trends

Five macro trends, with wide-ranging comments and many digressions, were discussed. We have tried to capture the essence of the session.

### 1. The Economy

Businesses, consumers, and government drive the economy. For the U.S. economy as a whole, the indicator most commonly used to measure long-term trends in growth is Gross Domestic Product or GDP, which includes the purchases of all goods and services by consumers and by government (at local and federal levels). The panelists agreed that the printing industry no longer grows as it once did, when it tracked GDP in a relatively consistent manner. NAPL economist Andy Paparozzi first demonstrated the relationship in 2001.

Panelist Dr. Kelley said that her research shows that GDP increased more than twice the total

# Panelist Questions: Summary of Responses & Analysis

Year	Print (adjusted)*	Real GDP
1999	\$5,330.0	\$8,861.0
1998	\$5,300.0	\$8,516.3
1997	\$5,160.0	\$8,165.1
1996	\$4,920.0	\$7,813.2
1995	\$4,810.0	\$7,537.1
1994	\$4,770.0	\$7,337.8
1993	\$4,520.0	\$7,054.2
1992	\$4,420.0	\$6,891.1
1991	\$4,420.0	\$6,669.1
1990	\$4,310.0	\$6,683.5
1989	\$4,220.0	\$6,568.7
1988	\$4,180.0	\$6,349.0
1987	\$3,960.0	\$6,092.6
1986	\$3,770.0	\$6,568.7
1985	\$3,500.0	\$5,689.8

\* The print revenue numbers were multiplied by 100 to best compare the two.

Table 1. Print Vs. GDP<sup>2</sup>

amount of the growth experienced by the printing industry over a 25-year period (1977-2001). Printing clearly was growing at a much faster rate than GDP throughout the period. Comparing the slopes of the estimated trends in Table 1, the rate at which industry output increased was more than 20 times greater than the trend in GDP growth. However, the other panelists agreed that print no longer grows at historical rates or with historical relationship to GDP.

The problem, the panelists admitted, is that there are no leading indicators to project print volumes. The relationships and policy choices pertaining to macroeconomic performance, such as unemployment and inflation, are leading indicators for the U.S. economy. Intelligent economists have opinions that are diametrically opposed to those of other intelligent economists. The *Economic Report of the President* contains a statistical report that collects relevant macroeconomic information. It is the standard breakdown of total output (GDP), personal

consumption expenditures, investment, government purchases, and net exports, such as:

- Gross Domestic Product: The total value of all goods and services produced in the U.S.
- Personal Consumption Expenditures: Consumer purchases of cars, movie tickets, personal services, books, etc.
- Investment: New homes, factories, machine tools and other goods that provide value over several years.
- Government Purchases: Spending by government on military, education, etc.
- Exports-Imports: Goods and services sold abroad minus those purchased from abroad.
- Output: That which can be consumed now (food, haircuts) or in a form that yields output later (factories, etc.). Income is used either to consume now or to save for later.

None of these indicators appears to predict print volumes. In fact, separately, or in toto, they may not predict the economy in general, because different economists use the same data to get very different results.

## 2. Advertising

Marketing/advertising dollars drive magazines, journals, newspapers, as well as ad circulars, ad inserts, direct mail, and catalogs. Newspaper revenues depend up to 87 percent and magazines up to 70 percent on advertising.<sup>3</sup>

Media competition: There has been a significant amount of research published that suggests that the Internet is chipping away at traditional forms of media usage and communication. Vertis, a graphic communications provider, has published significant research in this area. However, these findings show that although Internet usage has increased by 8 percent from 2000 to 2002, consumers' use of TV, newspapers and radio has increased at a comparative level, and these outlets are still popular.

# Panelist Questions: Summary of Responses & Analysis

- From 2000 to 2002, Generation Y women have increased their readership of ad inserts by 13 percent, a growth from 55 percent to 68 percent.
- Since 2000, younger men (18-24) and men 35-44 have shown significant increases in their ad insert usage when deciding where to shop for home improvement (up from 43 percent to 53 percent) and home electronics goods (58 percent to 65 percent).
- Generation Y women are increasingly influenced by housewares and home improvement ad inserts (each up 6 percent).
- Five percent more Generation Y women turned to ad inserts for help with a decision (22 percent in 2000 versus 27 percent in 2002).
- The use of special offers and discounts in direct mail increased the likelihood of adults opening a mail package by nine percent from 2001 to 2002.
- The timing of a direct mail piece is increasingly important to recipients (up from 58 percent to 68 percent).

Yet, advertising dollars have been shifted to other media, and especially new media. The Internet is playing an increasingly influential role in consumers' purchasing behavior. Investment banker Veronis Suhler Stevenson

Year	Advertising*	Marketing Services*	Consumer End User*	Institutional End User*
2002	\$170.4	\$134.8	\$167.5	\$147.2
2003	\$175.8	\$141.0	\$178.4	\$153.1
2004	\$188.5	\$148.1	\$191.3	\$161.8
2005	\$198.4	\$156.4	\$204.2	\$171.8
2006	\$211.7	\$165.8	\$218.0	\$183.0
2007	\$223.8	\$176.4	\$232.8	\$194.2
2008	\$241.1	\$187.4	\$248.7	\$207.1

\* Figures in billions

Table 2. Sources of Communications Industry Revenues<sup>4</sup>

(VSS) projects that advertising no longer is the primary business model for most media content—consumers are. This may signal a fundamental shift in the economics of the media industry, consumers now spend more money on media than advertisers do.

In 2003, VSS said that U.S. consumers spent \$178.4 billion buying or accessing media content, nearly three billion more than marketers spent advertising on media outlets to reach consumers. The fact that advertising is now a bit player could have a fundamental impact on the way advertisers, agencies, and media companies think about their business models. Advertising will outpace the growth of the two other sectors of communications industry spending: specialty media and marketing services, and institutional end-users.

Two of the panelists believe that consumers do not influence print volume. However, they do make decisions on media preference—from watching TV to buying a book. When print was the only form of communication, the consumer made a decision based on purchase; with the same content available in multiple mediums, the consumer makes a decision based on choice.

The Magazine Publishers of America 2004 edition of its annual *Magazine Handbook* (Magazine.org) shows that the magazine market is also in flux, but can hold its own against other media:

- The number of total magazines was down in 2003 versus the previous year—from 17,321 to 17,254. The number of consumer magazines was up by nearly a thousand titles, going from 5,340 to 6,234, an increase of 17 percent.
- The leading editorial subject covered by magazines was Entertainment/Celebrity, with more than 18.2 million pages representing more than 12 percent of all pages. Apparel/Accessories was the second-highest editorial category, with more than 10 percent of all pages.

# Panelist Questions: Summary of Responses & Analysis

- The percentage of advertising/editorial pages is up from one year ago—from 46.6 percent to 47.9 percent—although it is still lower than 1996, when advertising represented more than 50 percent of magazine pages.
- The top 25 magazines out-deliver the top 25 prime-time TV shows for several adult and teen demos.

A presentation at the Gravure Association of America by RR Donnelley revealed that Donnelley had sponsored a large-scale research project through Shop.org to explore the changing dynamics of the marketplace. They found that economic pressures have complicated matters by reducing ad pages while increasing advertiser demands, putting pressure on newsstand sales and the need to build circulation. It's important to use multiple distribution channels to build customer loyalty. Merchandisers and publishers are thinking much more narrowly about the content they create and the audiences they want to reach. At the same time, they are expanding the range of media they use to distribute their content. Customers are using multiple media to distribute their content: print, Internet, broadcast, and brick-and-mortar to name a few. Customers are no longer defined by a specific communications medium. They're not magazine publishers, or catalog merchants. They're brand-builders.

The Donnelley report includes data gleaned from nearly 20,000 responses from multi-channel merchandisers. The data showed that shoppers spend more money with and demonstrate an increased loyalty to merchandisers with a presence in more than one marketing channel—print, store and Internet. Multi-channel merchandisers receive a bigger share of wallet than single- or double-channel marketers. By delivering continuity of brand and message to end customers through catalogs, retail outlets and the Internet, the industry is discovering that the value of the multi-channel customer is dramatically higher than a customer who just buys from the catalog channel or the retail channel.

As the demand for multi-channel marketing increases, merchandisers and publishers will need greater flexibility, speed-to-market and cost efficiencies to communicate with the consumer—to offer more flexibility in when, where, and how a consumer shops.

There are also challenges and changes with distribution dynamics. Newspaper circulation seems to be on the decline and new ways to communicate with younger readers will be a chief priority. The news will need to be presented in multiple formats. Newspaper circulation decline has had significant impact on merchandisers as well. Retailers who produce retail inserts are finding it more difficult to reach the saturation of the audiences they need. These retailers are seeking additional distribution channels like direct mail, or mid-week insertion opportunities—seeking alternative ways to deliver their messages to consumers.

Major shifts in consumer demographics in the next 5 to 10 years are expected. The demographic composition of consumers buying products from catalogs, magazines and retail locations today will not necessarily be the same as those buying these products five years from now. As the communities of baby boomers, Generation Xers and a larger Hispanic population flourish in North America, publishers and merchandisers will need to re-align their products and services, as well as the distribution channels, to meet the changing needs and preferences of each audience group.

Retailers are already experiencing the effects of Generation X who, in large part, do not depend solely on the content they receive in a daily newspaper like their parents or grandparents used to. This group responds more positively to content that is available quickly and in multiple formats such as a mix of print and electronic mediums. More versioning and personalization of catalogs, retail inserts and magazines will be needed to communicate effectively with people in this country and around the world who may speak English as a second language, or not speak English at all.

We will have the “call, click, or visit” generation.

# Panelist Questions: Summary of Responses & Analysis

Location	Expenditures	% Change (in billions)
United States	+ 6.5%	\$263.8
Overseas	+ 4.5%	\$232.1
Total	+ 5.6%	\$495.9

Table 3. Ad Projection for 2004<sup>5</sup>

Robert J. Coen, Senior Vice President, Director of Forecasting, in Universal McCann's *Insider's Report* expects significant improvement in ad growth in both the U.S. and most overseas markets in 2004 (see Table 3).

Universal McCann is the global media services operation of McCann-Erickson WorldGroup, and Coen's reports and projections on advertising are respected. Coen is one of the few forecasters of advertising, but he admits that political, global, or economic changes in any given year can affect advertising expenditures. 2004 will be affected by the Olympics and the national elections.

Panelist Dr. Davis reported that print advertising represents \$250 billion, and that the goal of the new Print Council is to increase print by one percent, as a start. Originally, we thought that one could analyze the past 20 years of actual ad expenditures and find patterns. But with a number of new media—from cable to the Internet—it would be a challenge because the very nature of what advertising is is changing and the past may not be a good indicator of the future.

Thus, advertising—or perhaps marketing trends—must be factored into any print indicator in some manner based on current and evolving models.

### 3. Postal rates

Panelist Dr. Evans stated that a 10 percent increase in postage results in a 5 percent decrease in standard mail (\$30 billion sector). All panelists stated that rising postal rates remain a huge concern. The USPS has had to raise rates four times over the last six years, resulting in a system-wide average increase of 17 percent. For publishers and merchandisers, it is difficult to overcome increases in postal

rates that can account for up to 40 percent of the total cost of the catalog, magazine, or retail circular. Historically, increases in postal rates have not impacted circulation numbers because the costs were mitigated elsewhere in the process. As rate increases return, the ability to control and find supply chain opportunities to offset these costs will be more difficult. In addition to postal rates, the cost for publishers and merchandisers to acquire and retain customers is also rising.

Panelist Dr. Davis stated that 2004 and 2005 could be pretty good years for print markets, with the economy healthy, advertising spending growing, and postal rates stable. There is a potential problem ahead with the next postal increase scheduled for spring of 2006. How might the next postal rate increase impact the printing industry? PIA/GATF estimates are that about 45 percent of the dollar volume of printing ends up in the mail stream (a Printing Industry Center report found it to be 44 percent<sup>6</sup>). This amounts to about \$70 billion in annual printing shipments delivered through the USPS.

Without postal reform, current projections are for postage rates to increase 15 percent to 18 percent in 2006. With postal reform, rates may still increase but by a lesser amount—perhaps 9 percent. Estimates of the elasticity (or responsiveness) of mail volume changes (in pieces and weights) from a given postage rate increase indicate that volume could change in percentage terms by as much as half of the percentage rate change. This translates to a possible 7.5 to 9 percent reduction in advertising and transactions-related mail from a 15-18 percent postage hike. The 9 percent increase in postage translates to a 4.5 percent decrease in advertising and transactions related mail.

The printing industry, because of a larger postage rate increase, could lose 3.3 to 4.1 percent of total dollar volume, according to Dr. Davis. This negative impact would offset the 2-3 percent growth expected from typical trend economic growth. The net impact could be a decrease of 1-2 percent of total printing or around \$1.6-\$3.2 billion—an average of \$2.4 billion in annual printing sales. Thus, we may be looking at another 2001 and 2002 type year



# Panelist Questions: Summary of Responses & Analysis

in terms of print volumes for the industry in the year or two following the postage rate hikes.

Over the 2001-2002 period, the printing industry lost about 2.4 percent of dollar volume each year. Industry profits were virtually wiped out, industry employment declined by around 100,000 and the industry lost some 2,500 printing plants. The negative impact of a postage increase with postal reform is less. A 9 percent increase in postage rates translates to around a 2 percent reduction in total annual printing shipments. This could result in a net growth of about .5 percent in annual printing sales in the 12 months following the postage increase. The difference in printing shipments between postal reform and no reform is around \$3 billion in annual sales.

#### 4. Desktop printing

The panelists singled out desktop printing because of its ability to remove volume from the printing enterprise. With 21.5 percent of all print (including copier volumes) produced in corporations or homes (see Table 4), one would assume that such volume has moved away from the commercial printing industry.

Over time, print volumes could shift from factories to offices to homes. With printers at the right price/performance levels, more print could move to the home. However, even though desktop printers are inexpensive, the high cost of inkjet ink has limited the growth of home printout of documents.

#### 5. Off-shoring

The newest competitor to the U.S. commercial printing industry is non-U.S. printers. According to Dr. Joe Webb, the U.S. trade surplus in printed matter has declined 38 percent since 2003, and the deficit with China alone was more than \$500 million in the first half of 2004. For the first half of 2004, the surplus in printed materials trade declined by \$75 million. That's a 38 percent decrease compared to 2003. About ten years ago, the U.S. had a 72 percent surplus in books and printed matter; today it is barely more than 16 percent.

Factory	Copier	Printer	Press	Total
Big Printers	–	3.00%	34.00%	
Medium Printers	–	1.50%	18.00%	
Small Printers	2.00%	1.50%	13.00%	
Other copy shops	1.00%	–	\$204.2	
Others	1.00%	–	–	
	4.00%	6.00%	66.00%	76.00%
Office (plus In-plant)	Copier	Printer	Press	Total
Departmental	3.00%	3.50%	0.00%	
Centralized	3.00%	4.50%	5.00%	
	6.00%	8.00%	5.00%	19.00%
Home	Copier	Printer	Press	Total
Home office	0.25%	1.00%	–	
Personal	0.25%	2.00%	–	
	0.50%	3.00%	–	3.50%
Other	Copier	Printer	Press	Total
Other	0.50%	1.00%	–	1.50%
				100.0%

Table 4. Where Print is Produced<sup>7</sup>

Webb adds that trade agreements such as NAFTA, the European Union, the World Trade Organization, and other initiatives further reduce the barriers to trade. Trade is very important, because it raises the standard of living on both sides of the transaction. But the sudden shock of dealing in a new trade environment can be difficult for some businesses.

There is a need for more specific information on the net effect of print moving offshore. We do not know with a degree of certainty how much print has shifted to Canada/Mexico or to Asia, especially to China's 100,000-plus printers. We also do not know the hidden loss of printing, based on the massive amount of material manufactured overseas, with accompanying packaging and support documentation.

# Panelist Questions: Summary of Responses & Analysis

Off-shore print “competition” must be factored into a print volume indicator. Print may be growing in all the wrong places.

## WHAT ARE THE PRIMARY DRIVERS OF PRINTING INDUSTRY GROWTH?

“Economy drives consumer confidence; consumer confidence drives consumption; consumption drives advertising,” according to panelist Dr. Evans.

Panelist Dr. Davis says the demand for printed products and services is driven by many forces—overall economic growth, advertising expenditures, the Internet, changing customer behavior, population growth, and school enrollments, to name just a few. Analysis using the Standard & Poor’s/DRI inter-industry model showed that, while almost every U.S. industry contributed to the demand for commercial printing, expenditures by the advertising sector accounted for 44.8 percent of total demand (see Table 5). Wholesale trade, non-profit organizations, periodicals, other commercial printers, computer processing and software, miscellaneous business services, insurance carriers and agents, book publishers, and social services rounded out the top 10 industry purchasers.

Printing Expenditures	Percent of Total
Advertising	44.8%
Wholesale Trade	9.3%
Non-profit organizations	9.2%
Periodical publishers	3.5%
Commercial printing	3.5%
Computer processing and software	2.6%
Miscellaneous business services	2.0%
Insurance carriers	2.0%
Book publishers	2.0%
Social Services	2.0%

Table 5. Top 10 Industries Ranked by Print Demand<sup>8</sup>

For the last 50 years, top executives at U.S. printing companies have listened carefully to economists and prognosticators who predict the GDP rate. Because for all of those years, print revenue tracked GDP. As discussed above, this is no longer true.

Dr. Evans noted that there is some concern the U.S. economy could undergo a lengthy period of stagnation, much as the Japanese and German economies are doing. Tax cuts and ever lower interest rates appear to have had little impact, although consumer refinancing and buying of new housing has helped keep the economy relatively strong. U.S. net exports have continued to decline as well, due, in part, to the sagging economies of many of our trading partners. Comparing the Bush tax cut, Phase I, to the Reagan tax cuts of the 80s, Evans noted that 80 to 90 percent of the Reagan cuts were spent by the recipients. The cuts triggered federal budget deficits, but also caused the economy to surge. But only 20 to 25 percent of the Bush tax cuts were spent. Some apparently saved the rebates, others may have bought stock, or paid down debt. Capital spending will be weak, he said, and net exports will continue to decline. What should the U.S. do? Dr. Evans proposes:

1. Reduce the value of the dollar 10-15 percent to stimulate exports.
2. Issue tax credits for firms that invest in plants and add jobs for U.S. workers.
3. Insist on lower tariffs on American exports to Japan and China.
4. Retrain workers who lose their jobs.

Panelist Dr. Kelly added that the fact she found no direct relationship between the GDP and the overall trend in printing industry growth does not mean that changes in GDP are not important to the printing industry—only that the connection between the industry’s growth and GDP is indirect. After all, GDP growth reflects the growth of the entire set of goods and services purchased by consumers (and the government). Since 1977, there has been considerable change in both the variety of goods purchased and the amounts that consum-

# Panelist Questions: Summary of Responses & Analysis

ers spend on one or another service or product. Such changes in the composition of GDP over time are likely to be of more direct relevance to the printing industry than the growth of the economy as a whole. However, since the purchases that industries make are excluded from GDP, we can only assess the relationship between printing and other industries by comparing “snapshots” of the inter-industry transactions from different periods. She has assessed the growth in print commodity sales to industries between 1982 and 1999, comparing all industries’ purchases of each print commodity. Using data from the national I-O accounts in the benchmark years of 1972, 1982 and 1997, she conducted a detailed analysis of the industries that have contributed to the growth in commercial print commodity sales.

## Leisure Time

In a fast-paced society, once work and other tasks are done, there almost always seems to be a shortage of time for what we enjoy. Many workers complain about sleep-deprived lifestyles. Surveys show the country has never had as much leisure time (compared to 50 and 100 years ago), and evidence from spending patterns suggests that today’s Americans are using their time off to fit more recreational activities into their lives.

Over the past four generations, the time an average U.S. employee devotes to on-the-job work decreased by nearly one-half. Looking at just the most recent two decades, when concerns about American living standards became more pronounced, work hours declined an additional 9.3 percent, the equivalent of 23 days a year.<sup>9</sup>

From 1970 to 1990, the average daily time devoted to household tasks fell—from 4 hours,

12 minutes in 1950; to 3 hours, 48 minutes in 1973; to 3 hours, 30 minutes in 1990; and 3 hours 27 minutes in 2000. Microwave ovens, no-iron fabrics, the Roomba automatic vacuum cleaner, self-cleaning ovens, frost-free refrigerators, and other conveniences make household work faster. In effect, technology is boosting household efficiency by enabling us to accomplish more with the same or less effort (see Table 6).

Census Bureau data since 1950 show that there was more than a 20 percent increase in the hours worked by people between the ages of 25 to 54, while among people 65 to 74, the hours worked were cut in half. Technology will certainly eliminate jobs, and rather than simply force people to be unemployed, we will have to either shorten the workday, work week, or work year to absorb the excess labor without lowering the standard of living. Innovations in communications technology extend work and cut into leisure, by keeping people within easier reach even on golf courses or beaches. Once you have a beeper and a cell phone, you are connected 24 hours a day. The Internet has also had an effect on leisure time—on time in general (see Table 7).

Panelist Dr. Evans believes that full retirement is not in the offing for the Baby Boom generation. He believes that they will be relatively healthy and will remain involved, perhaps working part time. With more discretionary income (the Baby Boom generation was the first to invest in retirement programs), they will travel, vacation, and purchase more “entertainment” products.

We are not certain about how to factor the generational issues into any forecasting model, but age and population will be important elements.

Hours per day	1980	1985	1990	1995	2000	2005	2010
Work	8.39	9.10	9.22	9.24	9.05	8.56	8.51
Travel to and from work	1.33	1.35	1.38	1.43	1.44	1.22	1.12
Sleep	7.57	7.47	7.42	7.44	7.41	7.42	7.41
Watching TV, reading	2.13	2.18	2.23	2.26	2.34	2.33	2.33
Other free time	4.58	3.90	3.75	3.63	3.76	4.47	4.63

Table 6. Comparison of Daily Activity Durations<sup>10</sup>

# Panelist Questions: Summary of Responses & Analysis

Changes	Percent
Less time watching television	61%
Less time reading newspapers	36%
Less time reading books	19%
Less time reading magazines	19%
Less time shopping in stores	26%
Work at home (no cut in office time)	18%
Less time with family and friends	14%
Attend fewer social events	9%

Table 7. Due to Internet Usage, Change in Duration of Daily Activities

## The Computer Era

In 1984 the number of people using personal computers surpassed the number of people using shared computers.<sup>11</sup> The personal computing relationship is personal, analogous to the automobile—and it can now be seen in the relationship one has with cell phones and PDAs. Ubiquitous computing means computers will be embedded in walls, appliances, clothing, light switches, autos, and more. As computational technology increases the power of personal communication devices like cell phones and PDAs, there will be some effect on print. Although, we may not be comfortable reading on screens, future generations may be.

The panelists seemed to use the term “computer era” as a euphemism for personal empowerment, and this included printing.

## Classifying Printing

1. Service: To supply published material to customers.
2. Process: Used in a business process, either for advertising, packaging, or product manufacturing.

The results of this discussion reached no clear consensus.

Panelist Dr. Zarwan asserted that printers undertake a variety of strategies to combat slowing sales and declining margins. They should be focusing on productivity improvements and increasing sales both to existing and

to new customers. One approach has been to increase or establish “ancillary” or value-added services, like fulfillment, direct mail, finishing, etc. Printers must expand into new markets. While opportunities in packaging and digital printing get much of the press, companies are finding opportunities in less publicized areas like wide-format inkjet printing. These applications are everywhere—posters, backlit displays, banners, signs, billboards, building wraps, exhibition graphics, point-of-purchase displays, street furniture ads, transit posters, fleet graphics, and wall murals, to name just a few. IT Strategies estimates the worldwide value of point-of-purchase advertising to be in excess of \$60 billion, and outdoor advertising another \$25 billion. The print provider of wide-format graphics accounts for about \$25 billion of that. The firm forecasts a nine per cent compound growth rate, bringing the printing value to \$40 billion by 2007—enough to be of interest.

Out-of-home advertising allows a marketing campaign to take advantage of multiple venues, including indoor and outdoor, and reinforces other, more traditional methods and media use. State Street Consultants states that 15 percent of printers already have an inkjet printer that is used primarily for final output, about as many as those who use a wide-format inkjet printer for proofing.

Business strategy is a very real and powerful driver of innovation. Being first out of the blocks does provide a competitive advantage that, if done properly with the right technology, will limit competitors’ ability to catch up. By being among the first to use a suppliers’ products, pioneering printers are able to influence design and help ensure that what eventually makes it to the market is actually a reflection of their own needs and requirements. They may also have favorable financial arrangements with their suppliers. A driver for many of these early adopters is the right to claim a competitive advantage. Sometimes that’s enough to win business. Other times, they really do achieve the advantages of a new product or way of operating, thus being able to lower cost, improve quality, or offer faster delivery. For them, these advantages outweigh both the cost of being first and the cost of failure.

# Panelist Questions: Summary of Responses & Analysis

In the last few years, numerous companies have come out with on-line, automated solutions designed to help print buyers and suppliers save time and money and improve their business relationships, said Dr. Zarwan. He found that overall awareness and usage levels among printers and buyers are low. Less than half of the small, mid-size, and large specialty and multi-plant printers interviewed were aware of any one dot-com vendor offering tools and/or services that utilize the Internet and e-commerce for procurement; most vendors were known by less than one-third. Because of these low awareness levels, those printers that are using the Internet and e-commerce for procurement are in the minority. Although most printers are open to the idea of e-commerce—68 percent of those interviewed have a Web site, and 42 percent purchase supplies and equipment on-line—only 30 percent enable buyers to order and specify jobs on-line. Twenty-one percent bid for or receive requests for quotes (RFQs) for print jobs on-line, and only 8 percent use Application Service Provider (ASP) services; the rest, according to the study, are taking a wait-and-see approach.

Only 17 percent of print is currently procured via processes that are at least partly Internet-enabled, and that figure will grow by 80 percent by 2005. Many customers have testified to the value of e-commerce. Dow Corning, for example, requested a system that could solve its global print-on-demand requirements: 2,000 items ordered by 9,000 employees worldwide, with orders running at about 50,000 pieces per month. Dow Corning reduced warehouse and fulfillment costs by 25 percent, substantially reduced print ordering costs, reduced delivery time from two weeks to three days, and realized better tracking, fewer back orders, and greater productivity. It's a growing market, and the benefits are clearly there.

Panelist Dr. Kelley described print as three distinct facets:

1. Process—the technology for reproducing information on paper
2. Product—the resultant printing
3. Business—the company that produces printing.

The panelists did not seem to find meaning in the distinction between process and service.

## HOW HAVE WE MEASURED AND TRACKED PRINTING INDUSTRY PRODUCTIVITY?

The real unit labor cost is the real wage rate divided by output per worker—the wage rate divided by the price of output. Output per worker was said to be the same as productivity. When wages are high relative to prices and productivity, real unit labor cost is high, and vice-versa. Panelist Dr. Evans sees GDP divided by CPI (the Consumer Price Index) as an index for measuring productivity—with some type of implicit consumption deflator. But he admits that this would only include establishment hours, and self-employed individuals would be excluded.

The printing industry is sensitive to the pace of the general economy and advertising spending said panelist Dr. Davis. Profit leaders' financial performance held up "very well" with profit on sales rates remaining above 10 percent for the third year in a row. This statistic demonstrates that opportunities still exist in the printing industry for well-managed printers to achieve enviable returns, even in difficult times. Profit leaders are firms in the top 25 percent of productivity.

Dr. Davis advocates sales per employee as a productivity measurement. This is the primary product of the PIA/GATF Ratios. The annual "PIA/GATF Ratios" economic survey is available in 18 volumes, covering different segments of the graphic arts industry. Approximately 900 printers, prepress companies and trade binderies participate in the annual survey. For 82 years, the PIA/GATF Ratios have been the printing industry's tool for measuring individual company performance and benchmarking it against industry averages and the performance of profit leaders. The information is compiled from surveys conducted annually from January to May

# Panelist Questions: Summary of Responses & Analysis

and the reports are published every July. The volumes provide specific financial data for sheetfed and web offset printers, quick printers, digital printers, label and document printers, and book and advertising printers, as well as binders and prepress specialists.

Sales per employee has been a primary indicator of printing company productivity and profitability.

## HOW DO WE ASSESS THESE IMPACTS ON PRINT VOLUME?

Employment of production and technical workers for PIA/GATF member printers dropped the most, with the average member firm employing 2.5 percent fewer production technical workers. The “sales” department (CSRs, inside sales reps, and outside sales reps), was the only department that saw any type of growth, as competition for sales intensified. The average member reported that employment of sales employees grew by an average of 0.4 percent, with six out of every ten members adding sales personnel during the year. Over the past year, however, labor turnover (both voluntary and involuntary) for the average printer has fallen to just 7.7 percent of employees. Among occupation types, turnover rates varied considerably by job type, region and even size of firm.

The panelists saw employment as the most definable impact.

## WHAT ROLE DID THE INTERNET PLAY IN THE PRINTING INDUSTRY VOLUMES?

The Internet bubble years (1995-1999) drove print volume while removing volume (even though print increased above trend). From 2000-2003, the Internet became a direct competitor to print (print was reduced below trend). The panelists generally agreed that from 2003 on, the Internet became a complement to print.

The printing industry has lost some volume of print. When the Public Printer says that half of all federal information is now distributed electronically, that means that half is no longer printed. The state of Wisconsin saved \$23 million by putting their public information on a Web site in PDF form. When a printer prints a short-run on-demand job, we have reduced the volume of print that may have been printed in longer runs with some volume discarded because of obsolescence or lack of sales. Every day we are all exchanging emails, PDF and Word files, and more. Our society and our industry have lost some volume of all paper-based communication. The loss of print:

- to e-mail affects direct mail, stationery, and envelopes.
- to PDF affects book and report printing.
- to other file formats affects on report and inter-office communication reproduction.
- to Web sites affects catalog, publication, transaction, and other informational printing.
- to CDs affect documentation, catalog, and other printing.
- to e-books affects book printing.
- to other media affects magazine and journal advertising.
- to on-demand affects long-run printing.

These losses have been hidden by a sluggish economy and the growth of non-print ancillary services, which have increased revenue for printing firms, but hidden a decline in ink- or toner-on-paper revenue, which has actually decreased. This is confirmed by paper and ink manufacturers who report reductions in paper and ink for printing.

Why is it important to quantify any possible loss of print? Because if we know where the lost

# Panelist Questions: Summary of Responses & Analysis

print went and why it went, we can develop strategies to possibly get it back. Twenty years ago, print had no real competitor. Today, it has several. Marketers have to decide where they spend their ad dollars, and there are now more media than ever before. And marketing budgets do not increase just because there are more media.

We cannot hide from the fact that there has been a change in print volume, and the economy is not entirely to blame. Our feeling is that most of the material that will go into other media has already gone and that we are seeing a stasis—a balance or equilibrium—of print and other forms of communication.

The panelists agreed that print has lost volume in the last five years.

## IS THERE A PREFERRED METHOD OR SET OF METHODS FOR MEASURING THE IMPACT OF THE INTERNET ON PRINT VOLUMES?

The simple answer was “no.”

In 1990 Alvin Toffler predicted a knowledge-based society in his book *Power Shift*. It would affect commerce as we know it and mass communication as well. The Internet is quite often presented and even labeled as an alternative to print media. The question remains whether we, as a society, are ready for our magazines, newspapers, and political information to become purely electronic. There is a distinct belief that the Internet will simply increase the efficiency of the “exchange” of information between print media and society—that the Internet will stimulate print media. In some cases, like Amazon.com, it may, but in many cases it will not. Not only will it allow a new avenue for information, but also increased productivity of work. The Internet provides a more clear, concise, and efficient way of providing our society with information.

In trying to quantify the volume of information/knowledge in print and digital form, we sought some understanding of the interrelationship of the two. Print can and will grow—at perhaps a slower rate than in the past—at the same time that electronic competition grows. What truly changes is print’s market share—its percentage of all information drops, even though there may be modest increases in print growth.

This is why there is confusion about print’s role in information dissemination. Some see its decreasing percentage of the fast-growing information base and ignore its increasing percentage of volume growth. It is the synergy between electronic and hard copy print that will cause this to occur. It will be over 50 years before that synergy changes significantly. No one has truly measured the amount of knowledge or its growth—and its format. Many try to do it with the number of words, yet images must be measured as well. One thing is certain: there is more information than at any time in human evolution—but having more information and being smarter are not connected.

### Leading Indicators

The consensus among the panelists was that there are no leading indicators for print.

There are many economic indexes: consumer expectations, stock prices, average weekly initial claims for unemployment insurance, manufacturers’ new orders for nondefense capital goods, and manufacturers’ new orders for consumer goods and materials, building permits, average weekly manufacturing hours, vendor performance, real money supply, and interest rate spread. These are some of the economic indicators used by economists.

In 1986, the National Association of Printers and Lithographers made a commitment to conduct timely, valid analysis of business conditions in the commercial printing industry. They said that they would build a broad, representative panel of printers whom we would survey regularly. Because the same companies would participate every time, data would be strictly comparable from period to period. They would build a long-term relationship with participants. They’d share not just numbers but their business philosophies, strategies, opportunities,

# Panelist Questions: Summary of Responses & Analysis

Print Sales (in millions)	1997	1992	1987
Actual (Census of Manufactures)	\$76,738.10	\$56,438.90	\$44,786.10
NAPL Estimate	\$77,684.20	\$57,617.10	\$45,953.20
Difference	1.2%	2.1%	2.6%
Five-Year Sales Growth	1997-92	1992-87	1987-82
Actual (Census of Manufactures)	36.0%	26.0%	61.9%
NAPL Estimate	34.6%	25.4%	>66.1%
Difference	-1.4%	-0.6%	4.2%

Table 8. Composition of NAPL Survey Panel

and threats, because numbers without context are as meaningless as words without context. The surveys would be strictly confidential but never anonymous, so they could verify and probe responses.

They also said that we would build survey-independent statistical models of the industry because no survey, no matter how well designed and executed, is bias-free. And they said that they would update their database continuously. Good indicators would be replaced by better indicators and entirely new indicators would be added, all to ensure the most accurate picture possible of what is happening and of what is ahead for print.

The survey group, the NAPL Printing Business Panel, consists of 300 printing companies from across the U.S. and Canada. Every quarter between 200 and 300 printing executives participate in an NAPL Critical Issues Survey. These surveys, which cover topics such as the Internet's effect on print, capture the story behind the numbers by asking participants to think hard about their businesses and their industry. The statistical models have performed admirably, as the comparison in Table 8 with the Census of Manufactures, published every five years by the U.S. Department of Commerce, shows:

But the best databases yield a lot more than accurate numbers. They capture what those numbers really mean and identify the trends that define the industry and its future.

The NAPL Printing Business Panel Member Profile has 302 members. We liken the NAPL indicators to the television Nielsen Reports (see Table 9). They have always been reliable—but they only represent a sub-set of the industry: the commercial printing market.

## WHAT DO YOU SEE AS CHANGING IN THE PRINTING INDUSTRY OVER THE NEXT FIVE YEARS?

Panelist Dr. Davis reported that the number of U.S. printing plants peaked in 1993 at 54,462. Since then the total number of plants has declined every year, reaching 44,514 at the end of 2003. This marked a decline of 9,948 plants or 18.3 percent. In terms of employees, the number of small and medium size plants have declined while the number of larger plants has actually increased:

- The number of plants with 250 or more employees increased from 727 to 745 or 2.5 percent.
- The number of plants with 100-249 employees increased from 1,571 to 1,639 or by 4.3 percent.

The decline has been particularly drastic for plants with less than 10 employees. Plants with 1-4 employees have declined by 1,422 or 8.5



# Panelist Questions: Summary of Responses & Analysis

Annual Sales		Geographic Zone		Geographic Zone	
\$1M or less	8.9%	West	14.3%	South	22.1%
\$1M+ to \$3M	19.9%	Pacific	8.2%	South Central	3.0%
\$3M+ to \$5M	14.1%	Mountain	6.1%	Southeast	10.9%
\$5M+ to \$10M	23.6%	Midwest	37.1%	South Mid-Atlantic	8.2%
\$10M+ to \$0M	18.1%	Plains	10.4%	East	22.8%
\$20M+ to \$40M	10.1%	North Central	26.7%	North Mid-Atlantic	13.4%
Over \$40M	5.2%	Canada	3.7%	New England	9.4%
Product/Service	Offer	Primary	Product/Service	Offer	Primary
General Commercial	89.9%	78.8%	Posters	34.3%	0.5%
Direct Mail	43.0%	4.5%	Business Forms	22.7%	1.0%
Magazine Inserts	22.7%	0.5%	Quick Copy	17.9%	1.5%
Newspaper Inserts	12.6%	0.5%	Art/Design/Creative	22.7%	0.0%
Catalogs	43.5%	2.0%	Electronic Preparatory	34.8%	1.0%
Point-of-Purchase Material	22.7%	4.5%	Binding/Finishing	47.8%	1.5%
Magazines/Periodicals	19.0%	0.5%	Database Management	6.8%	0.0%
Directories	12.6%	0.5%	CD Services	6.3%	0.0%
Journals	8.7%	0.5%	Web Page Design	6.3%	0.5%
Labels & Wrappers	24.6%	2.5%	Web Hosting	2.9%	0.0%
Packaging	13.5%	1.5%	Fulfillment	25.1%	1.0%
Financial & Legal	15.5%	0.0%	Facilities Management	2.4%	0.0%
Annual Reports	28.5%	0.0%	Mailing	10.1%	0.0%
Books	19.3%	4.5%	Training/Consulting	1.0%	0.0%
Minimum:	\$108,170				
Maximum:	\$127,608,229				
Average:	\$11,745,1995				

Table 9. Census Comparisons

percent over the last three years. The number of plants with 5-9 employees has declined by 900 or 7.5 percent over the same period. In one sense what's happening to America's printing plant population is analogous to general population trends. We had a "Baby Boom" of printing plants started in the 50s and 60s as the population, economy, and industry grew strongly. This Baby Boom generation of plants naturally evolved and moved through the size

distribution of printing plants as they grew from very small, to small, to medium, to large. As plant owners mature they are retiring and, in many cases, liquidating their firms. The printing industry itself is changing dramatically, with slower growth of traditional ink-on-paper printing and increased sales of digital printing and ancillary services. As the number of smaller printing plants declines, the pool of small firms growing into medium and larger firms

# Panelist Questions: Summary of Responses & Analysis

is reduced, reversing the trend of growth in medium sized and larger plants. The number of plants with 10-19 employees began to decline in 1998; 20-49 employees in 1999; and 50-99 in 2001. There will still be thousands of smaller and medium sized printing plants but they will comprise a shrinking share of plants and industry sales—printers that survive will typically face fewer but larger competitors.

In a recent article, Dr. Joe Webb said, “The printing industry has been a textbook case of a pure competition marketplace: easy entry and exit of competitors, an undifferentiated product, availability of the same technologies to all participants, and no government price controls. In this case, profitability is achieved by having a different internal cost structure than other firms. That is, those firms that have lower unit costs than other firms are the ones that make money, while the other ones suffer.”

Capacity utilization inside the firm is one essential measurement among many, but is not meaningful from an industry or “macro” perspective. This is why in an industry downturn there are still companies that do very well.

In Webb’s opinion, there is no real “magic number” for utilization. In fact, when utilization rates were higher, printers were still complaining about “overcapacity” and intense pricing pressures. (What’s funny is that when macroeconomic utilization gets to 80 percent, central bankers start worrying about inflation and try to slow economies down.) What matters more for individual businesses is their product mix. That is, selling products that have higher margins than other products. This is hard for many printers to grasp or change. Ingrained in the industry is a price estimating system based on marking up materials and charging for time. Basically, printers are charging for hurling liquids at substrates and every thing else is incidental—hence, the “undifferentiated” product classification. This is one reason why value-added gets so much attention, but I fear that those services are just more things that are done on a cost-plus basis, and not on a reduce-total-cost-to-the-client basis.

There are several “fixed cost” points in any operation. One is for a whole firm. Another is

for an internal operation. And individual print jobs have fixed costs as well, such as makeready, which leads to the line, “It costs \$X just to put a job on press.” If a company is not making money, it’s often the fixed costs that they have created that get them to that point, not their variable costs. These fixed costs include mortgages, long term debt, certain taxes like property tax, insurance, etc. , as well as costs incurred with internal operation (overhead costs like administration, management, compliance with regulations, etc.).

In a market where demand decreases and the nature of that demand (number of colors, run lengths, number of jobs) changes as well, the fixed cost structure is where the squeeze comes.

## HOW WILL THE BABY BOOM RETIREMENTS IMPACT PRINT, IF AT ALL?

The Boomers were born in the bloom of post-war prosperity and have reshaped society from science to politics to pop culture. By 2060 the last of the Boomers will die out (sorry to be so morbid), but their economic clout will still be felt. Someone born in 1950 can expect to live until 2040 or so. Their children, let us say, were born in 1980. They can expect to live until 2070 or so. Let us call the 1950 generation the Boomers. Let us call the 1980 generation the GenXers.

Generation	Population	Key Technology
Boomers	79 million	Television
GenXers	41 million	MTV and cable TV
GenYers	70 million	The Internet, the cell phone

Table 10. Key Traits of the Generations

The children of the GenXers will be GenYers, born around 2010 and extending to 2100. We expect this generation to be extremely

# Panelist Questions: Summary of Responses & Analysis

comfortable with computers, with less generational attachment to paper. Their children are the GenZers and they will be born around 2040 and cross the century mark almost as the Boomers did. Thus, it will take three generations to see a shift in the knowledge tools used for education, personal, and business applications. If there is any shift in paper use it will happen between 2050 and 2100. It will probably happen gradually and not be noticed.

From the EDSF “Printing in the Age of the Web and Beyond,” a number of points about population were made. Other than education, one factor is a predictor of societal change: population age. Older Americans vote more and read newspapers more. We tried to track generational effects from the first of the Baby Boomers but an analysis produced no evidence of any major changes in print media. As various generations moved through the period between 1972 and 2000, there were few differences among young and old. To see generational effects you must look at different generations. Because of the records available, there are few effects we can measure.

The cause of many changes in society may date to the 1950s and the culprit was television. The generation born in the 1930s were the last Americans to grow up without television. In 1950 only 10 percent of American homes had television sets, but by 1959, 90 percent did. Viewing hours grew by 17 to 20 percent during the 1960s and by an additional 7 to 8 percent during the 1970s. In the early years, TV watching was concentrated among less educated viewers, but during the 1970s viewing time of the more educated population increased. Television viewing increases with age, particularly upon retirement. By 1995 viewing per TV household was over 50 percent higher than in the 1950s.

Television may usurp 40 percent of the average American’s free time, up about 30 percent since 1965. Multiple sets have proliferated and today 90 percent of U.S. homes have more than one set. There is even an interesting relationship between civic involvement and television viewing that can be compared with the links between civic involvement and newspaper reading. Could it be that heavy readers are

Age	Percent of household income spent on reading matter, 2000	Percent of household income spent on information, 2020
Under 20 years old	0.18%	0.22%
21 to 39 years old	0.41%	0.55%
40 to 55 years old	0.52%	0.71%
56 to 65 years old	0.33%	0.59%
66 or older	0.22%	0.42%

Table 11. Age Vs. Media Spending Habits<sup>11</sup>

joiners, whereas heavy viewers may be loners? Each hour spent viewing television is associated with less group involvement, while each hour reading a newspaper is associated with more. Newspaper circulation has dropped by more than 60 percent since its peak in 1947. The Internet may have had a decentralizing and fragmenting effect on society. We still need to measure this aspect of it.

In 2000, the average household spent \$169 for reading matter. The spending was strongest in households headed by individuals from 21 to 65—the age groups that will be growing most rapidly over the next decade. This is excellent news for printed publications for the short term but future scenarios may not be the same. Predictions are often made by the wrong generation, which is why they are often inaccurate.

## CAN THE PRINTING INDUSTRY STIMULATE ITS OWN GROWTH?

The consensus was that it will be difficult for the printing industry to convince advertisers and marketers and even consumers to use more print. However, with meaningful research that shows the effectiveness of various forms of print media, some volume of print may be regained or stimulated within selected markets.

Media research firm Affinity LLC tests periodical print. It announced the launch of Vista, a new syndicated research product that promises to address two major needs of advertisers, by measuring reader involvement and advertising

# Panelist Questions: Summary of Responses & Analysis

effectiveness for magazines. Vista will initially measure the top 50 consumer magazines, which it says account for 65 percent of all print ad dollars. Over the next year and a half, Affinity will field over 350 issue-specific studies covering over 20,000 magazine ads. Affinity will also monitor reader involvement, and even editorial readership for specific titles. Although there are other magazine metrics, they are essentially audience numbers. Vista will be able to help planners look much deeper into magazines' strengths—determining the effectiveness of particular placements such as cover positions or editorial adjacencies, and how they perform for specific titles. It is this type of research that will hopefully demonstrate the effectiveness of print.

Panelist Dr. Evans stated that the printing industry has ridden a wave since Gutenberg, with continual growth, sufficient for an industry to expand and prosper. Now it has stopped and print will have to grow through innovation and productivity.

## DIRECTIONS

We still think that there is some forecasting model that can be developed that might give the printing industry a leading indica-

tor as to print volume. The use of paper, ink, and other supplies result from print volumes. Print volumes result from print sales. Print sales result from:

1. Advertisers placing ads in publications
2. Marketers promoting direct mail, catalog, or collateral materials
3. Businesses' need to communicate with their customers and employees
4. Publishers producing end products for reading consumers
5. Companies producing printed products (e.g. wallpaper)
6. Manufacturers inserting directions/warning with products
7. Brand builders requiring packaging.

All of these, and more, are factors that affect print media. We thank the panelists for their input in all forms.

# Endnotes

<sup>1</sup> Dr. Webb is one of the industry's best-known consultants. He is most recently known for his development of the successful and influential TrendWatch information service. His commentary, speeches, and lively Q&A sessions has been featured at industry trade events. He is a Ph.D. graduate of the NYU Center for Graphic Communications Management and Technology (1987) and serves on the Center's Board of Advisors. More information is available at <http://www.sfminc.com/>.

<sup>2</sup> Source: Paparozzi, NAPL, 2001.

<sup>3</sup> Vertis; [http://www.vertisinc.com/strategic\\_services/consumer\\_research.asp](http://www.vertisinc.com/strategic_services/consumer_research.asp), 2004.

<sup>4</sup> Source: Veronis Suhler Stevenson's *2004 Communications Industry Forecast & Report*, PQ Media.

<sup>5</sup> Source: Universal McCann's *Insider's Report*.

<sup>6</sup> *Print Media Distribution in a Digital Age*, by Frank Romano, a research monograph of the Printing Industry Center at RIT, 2002.

<sup>7</sup> Source: Romano estimates, 2002.

<sup>8</sup> Source: Davis, PIA/GATE, 2004.

<sup>9</sup> U.S. Census Bureau, 2001.

<sup>10</sup> Source: EDSF study, 1999.

<sup>11</sup> IDC, "Transition to the Information Highway Era" in 1995-96 *Information Industry and Technology Update*.

<sup>12</sup> Source: EDSF report, 1999.







Rochester Institute of Technology  
College of Imaging Arts and Sciences  
55 Lomb Memorial Drive  
Rochester, NY 14623  
Phone: (585) 475-2733  
<http://print.rit.edu>