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An Investigation into printing industry demographics—2009

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A Research Monograph of the

Printing Industry Center at RIT

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R·I·T Printing Industry Center

An Alfred P. Sloan Foundation Center

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Abstract

What is the printing industry? The goal of this study is to discuss definitions for the U.S. printing industry and the "print universe." The print universe is our term for an expanded view of establishments that produce some kind of reproduction as a service.

There are about a dozen major sources of information about the printing industry with the primary source as the Federal Government. Printing is one of the most documented industries in the United States; yet, each of the sources arrives at a different view for the size and scope of the industry. This report investigates the challenges in developing a meaningful set of criteria for defining and quantifying the printing industry. Using a list compiled from Yellow Pages listings, we developed a database of 7,071 firms from the six New England states and New York State, and surveyed over 1,000 firms.

The result is a snapshot of what the printing industry and the print universe are and how its demographics might be structured.

Defining the Printing Industry

Printing Industry Data Sources

The Census Bureau and Bureau of Labor Statistics keep track of the number of U.S. businesses by business or industrial category within each U.S. county. County Business Patterns is an important information resource and business tool. Data for 1992 through 2002 is readily available and 2007 data is now being released. These data count printing establishments in each county and categorize them by their NAICS (North American Industry Classification System).

The North American Industry Classification System (NAICS) replaced the U.S. Standard Industrial Classification (SIC) system. NAICS was developed jointly by the U.S., Canada, and Mexico to provide new comparability in statistics about business activity across North America. NAICS has a six-digit coding system:

- The first two digits designate the Sector.
- The third digit designates the Subsector.
- The fourth digit designates the Industry group.
- The fifth digit designates the NAICS Industry.
- The sixth digit designates specific national industries assigned by the respective countries. If no national industries have been assigned the sixth digit is "0." (Adapted from U.S. Census Bureau, 2007.)

This categorization is based on how each company defines itself on its tax form (Form 941 for reporting FICA payments). Because of tax form data collection methods, some establishments are missed because the establishment selects codes from its primary industries, which could be converting, packaging, specialty areas, or the company is so small that it does not file a tax form because it has no employees. Data is shared between IRS and BLS via Schedule SE for self-employed individuals; however, some proprietorships may file a Schedule C instead of a Schedule SE.

Thus, the entire system is flawed because each entity decides what they are and some entities are missed completely. The possession and use of a printing device does not automatically correlate that the entity is in NAICS 323 (defined below).

Sector 31-33 -- Manufacturing
323 Printing and Related Support Activities

Industries in the Printing and Related Support Activities subsector print products, such as newspapers, books, labels, business cards, stationery, business forms, and other materials, and perform support activities, such as data imaging, platemaking services, and bookbinding. The support activities included here are an integral part of the printing

industry, and a product (a printing plate, a bound book, or a computer disk or file) that is an integral part of the printing industry is almost always provided by these operations.

Processes used in printing include a variety of methods used to transfer an image from a plate, screen, film, or computer file to some medium, such as paper, plastics, metal, textile articles, or wood. The most prominent of these methods is to transfer the image from a plate or screen to the medium (lithographic, gravure, screen, and flexographic printing). A rapidly growing new technology uses a computer file to directly "drive" the printing mechanism to create the image and new electrostatic and other types of equipment (digital or nonimpact printing).

In contrast to many other classification systems that locate publishing of printed materials in manufacturing, NAICS classifies the publishing of printed products in Subsector 511, Publishing Industries (except Internet). Though printing and publishing are often carried out by the same enterprise (a newspaper, for example), it is less and less the case that these distinct activities are carried out in the same establishment. When publishing and printing are done in the same establishment, the establishment is classified in Sector 51, Information, in the appropriate NAICS industry even if the receipts for printing exceed those for publishing.

This subsector includes printing on clothing because the production process for that activity is printing, not clothing manufacturing. For instance, the printing of T-shirts is included in this subsector. In contrast, printing on fabric (or grey goods) is not included. This activity is part of the process of finishing the fabric and is included in the NAICS Textile Mills subsector in Industry 31331, Textile and Fabric Finishing Mills (U.S. Census Bureau, 2008).

This investigation surmises that small companies are undercounted—and the U.S. printing industry is mostly small companies.

There is a more detailed economic census every five years, for years ending in "2" or "7"—the last was in 2007 and data is being released as this report is being finalized. Firms that constitute 80 percent of the printing industry receive the long form, and the balance of firms is sampled.

Thus, we are usually working from "old" data in an industry that is changing rapidly. We have many data sources for the printing industry; yet, we really do not know what is happening as it is happening. Data, as always, needs interpretation, opinion, and explanation.

County Business Patterns covers most of the country's economic activity, but excludes data on self-employed individuals. Thus, a one-person printing proprietorship may be listed in the Yellow Pages and operates as a "DBA" ("Doing Business As") but is not counted by CBP. Because tax filings are at the heart of the system for keeping track of businesses between censuses, non-employers do not get census questionnaires and are

not reflected in any of the other Business Statistics reports or detailed sector-specific reports. Non-employers are, however, included in "all firms" totals in reports on minority and women-owned business.

Non-employer businesses, such as independent contractors, are small and constitute a large part of the business universe in terms of number of establishments, but contribute a relatively small portion of overall sales and receipts. Non-employer statistics have been released every 5 years since 1972 for years ending in "2" and "7" for selected industries in conjunction with economic census publications. Comparability of data over time is affected by definition changes for establishments, activity status, industrial classifications, and methodology. An establishment is usually a single physical location at which business is conducted or services or industrial operations are performed. Each distinct business income tax return filed by a non-employer business is counted as an establishment and the businesses may operate from either a home address or a separate business location.

Non-employer statistics data originate from administrative records of the Internal Revenue Service. Data are comprised of sole proprietorship businesses filing IRS Form 1040, Schedule C, although a small percentage of the data is derived from filers of partnership and corporation tax returns that report no paid employees. There is processing, editing, and analytical review at the Census Bureau to distinguish non-employers from employers. The Social Security Administration, the Internal Revenue Service, and the Bureau of Labor Statistics are sources for assigning non-employer statistics industry classifications. Industry classifications from the IRS are self-classified by tax filers. The legal form of organization for non-employer businesses is determined by the business tax return filed. Non-employer statistics include:

- Individual proprietorships
- Partnerships
- Corporations

According to the U.S. Census Bureau (2009b): "In terms of sales or receipts, non-employers account for roughly 3 percent of business activity. At the same time, non-employers account for nearly 75 percent of all businesses. Most non-employer businesses are very small, and many are not the primary source of income for their owners."

We contend that any entity, individual or company, that sells reproduced material from any kind of reproduction device should be considered in the demographics of the printing industry. Thus, newspaper, lettershop, and pre-press firms that sell print services must be counted.

Printing industry information sources include the following:

Graphic Arts Blue Book (Reed Business Information) www.gabb.com

Started by A. F. Lewis in the early 1900s, the Graphic Arts Blue Book was the first published directory of printing companies. One can acquire all the Blue Books for the U.S. and track printing companies and establishments by state and city. A database of equipment and other user information is maintained. The Blue Book was acquired by Cahners Publishing in the late 1990s, and Cahners was later acquired by Reed Business Information.

The research firm TrendWatch was acquired by Reed Business Information in November, 2000 and integrated with Graphic Arts Monthly, AF Lewis Market Information Services, the Graphic Arts Blue Books, Quick Print Products, and Converting Magazine. TrendWatch Graphic Arts is part of the AF Lewis Group, which includes AF Lewis Market Information Services and the Graphic Arts Blue Book. They also publish GraphStats (formerly Blue Book Marketing Information Reports).

Behind the eight editions of the Graphic Arts Blue Books is a comprehensive list of more than 120,000 individuals at 73,000 locations encompassing printers, trade shops, and suppliers.

Graphic Arts Blue Books

- **Northeastern Edition:** $22 billion market: Maine, Vermont, New Hampshire, Rhode Island, Massachusetts, Connecticut, upstate New York, Ontario, Quebec, Prince Edward Island, Nova Scotia, Newfoundland, and New Brunswick. Published annually in April. Current edition: 2009
- **Metro New York/New Jersey Edition:** $30 billion market: Published annually in March. Current Edition: 2009
- **Delaware Valley/Ohio Edition:** $32 billion market: Pennsylvania, Ohio, Maryland, Delaware, District of Columbia and its Virginia suburbs. Published annually in October. Current Edition: 2008
- **Southeastern Edition:** $29 billion market: Virginia (except DC suburbs), West Virginia, North and South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama and Mississippi. Published annually in September. Current Edition: 2008
- **Midwestern Edition:** $33 billion market: Illinois, Indiana, Iowa, Michigan, Minnesota, Wisconsin, North and South Dakota. Published annually in June. Current Edition: 2009
- **Texas/Central Edition:** $22 billion market: Texas, New Mexico, Colorado, Nebraska, Kansas, Oklahoma, Arkansas, Missouri, and Louisiana. Published annually in July. Current Edition: 2009

- **Pacific Northwestern Edition:** $13 billion market: Northern and Central California, Oregon, Washington, Northern and Central Nevada, Utah, Idaho, Wyoming, Montana, Alaska, Alberta, British Columbia, Manitoba, Saskatchewan, Northwest Territories, and the Yukon. Published annually in January. Current Edition: 2009
- **Southern Cal./Southwestern Edition:** $10 billion market: Southern California, Arizona, Southern Nevada, and Hawaii. Published annually in December. Current Edition: 2008

The market-size information on the current website is the same as it was in 2003 when we took a screen shot of it.

The Top 101 Printers is a list of the largest 101 printers in the United States/Canada (by revenue) published by Graphic Arts Monthly magazine. Listings for 2009, 2008, 2007, 2006, 2005, 2004, 2003 are available (Cross, 2009; Cross, 2008; Cross & Avery, 2007; Cross, 2006; Cross & Blyth, 2005; Cross, 2004; Cross, 2003).

Dun & Bradstreet (www.dnb.com)

D&B develops and maintains credit ratings, and there is said to be a listing for every business in the U.S. D&B's products and services are drawn from a global database of 79 million companies. They claim to use sophisticated data collection tools and update their database nearly one million times a day. However, we recall when we owned a printing business that we refused to provide information to the caller. They sent us a copy of what they developed as estimates and not one piece of information was correct. We did review a recent D&B database of printing companies for the original study. It mixed plants and firms, but was not complete in plants. It listed "shell" corporations, which were not operating businesses. Its employee counts did not match other published information. Contact information for the establishments listed was very good. D&B updates its database from filings made at County Courthouses and Secretary-of-State offices. New corporations and limited liability partnerships are filed with each states' Secretary of State, "DBA" proprietorships and certain partnerships are filed at County Courthouses.

NAPL (www.napl.org)

The National Association for Printing Leadership does a superb job is surveying the commercial printing market. NAPL tracks trends, financial and revenue patterns, and an index of printing activity. It was NAPL that discovered that in 1998-1999 printing industry revenue no longer tracked GDP as it had for over 20 years. NAPL does not publish lists or provide estimates on the number of firms. Revenue estimates are for "commercial" printers only. Their "Blue Book" series is the primary source of information on budgeted hourly rates for specific equipment and systems.

Commercial databases and information sources

There have been companies that maintain databases of printing companies. They acquire information in different ways. In some cases they use the 5,200 Yellow Page and Business White Page directories in the U.S.; State industrial directories, County Courthouse and Secretary of State data, new business registration and incorporations, 10Ks and other SEC filings, annual reports, and leading business magazines and newspapers are used to some degree. Postal service information including Change of Address, ZIP+4 carrier route and Delivery Sequence Files are also used.

Yellow Pages (www.infousa.com)

Anyone in the U.S who has a business phone number (as opposed to a residential phone number) is automatically listed in the Yellow Pages directory. Additional listings in other categories may be purchased. Many small printers use their residence phone as their business phone. InfoUSA has 14 million U.S. & 1.2 million Canadian telephone verified businesses. Every month approximately one million businesses change within its database. From one year to the next, 70 percent of the businesses within its database have a significant amount of change. They gather data from multiple sources and telephone-verify the information. They include nearly every single business, no matter how small, how large, or how newly established. One can acquire a list compiled from all the U.S. Yellow Pages directories. InfoUSA is a major supplier and we used their website to define a list of printers. The result was:

Table 1: Yellow Pages data

Employees	Listings 2003	Listings 2008	% Change
1 – 4	28,248	24,603	-12.9%
5 – 9	12,294	9,670	-21.3%
10 – 19	6,937	4,809	-30.7%
20 – 49	5,756	4,007	-30.4%
50 – 99	2,037	1,198	-41.2%
100 – 249	1,447	823	-43.1%
250 – 499	416	232	-44.2%
500 – 999	171	75	-56.1%
1,000 – 4,999	119	51	-57.1%
5,000 – 9,999	24	24	0.0%
10,000+	37	10	-73.0%
Total	57,486	45,502	-20.8%

This total was significantly higher than other totals for industry establishments, but did reflect the decline in printing businesses.

PIA (Printing Industries of America) www.gain.org

In 1998 PIA merged with the Graphic Arts Technical Foundation (GATF). PIA has about 7,000 members, most of whom belong to a local affiliate. The national association provides government affairs, management, and administrative services. GATF provides testing, training, and research services. PIA's Economics department does extensive research into plant operations. Its Ratio Studies are published annually for printing companies by market and technology. It is the Ratio database that allows printers to compare costs and other data against peer companies. PIA uses per-employee revenue to extrapolate the revenue for the entire industry, since no other organization provides such an estimate. In 2009, the GATF part of the name was dropped.

State Street Consultants (www.statestreetconsultants.com)

SSC maintains an extensive database of printing firms with information on their equipment and usage patterns. They do not list every printer but do have all major firms. State Street Consultants is a general management consulting firm specializing in sales productivity and growth for the graphic arts, packaging, digital imaging, and other high-tech industries. Concentrating on the graphic arts, packaging, and digital imaging industries in North America, they have developed, and continually update and expand, an in-depth database of over 22,000 telephone-qualified end-user sites. They target high-volume digital and color sites in each major market segment. Site-specific details, such as demographics, key applications, market segments, workflow, installed equipment, buying habits, and purchasing plans enable clients to estimate a site's purchase potential. The Market Scanning Service data is available as a subscription or as a targeted purchase. State Street shared one segment of their database with us and we found that the information was very accurate (out of 400 listings, two were incorrect).

C. Barnes (www.cbarnes.com)

C. Barnes & Co. is a market research firm that specializes in business and industry data. They publish annual directories, reports and custom research studies as well as selling custom mailing lists of sales leads and industry contacts. At one time they published a detailed set of pages in a binder and a CD-ROM detailing the majority of larger printing companies with detail on company, market, revenue, and key executives.

2003 Printing & Graphic Arts Directory—U.S. & Canada edition (2,900 companies)

- **Midwest** (650 companies) - IA, IL, IN, KS, MI, MN, MO, ND, NE, OH, SD, WI
- **Northeast** (550 companies) - CT, MA, ME, NH, NJ, NY, PA, RI, VT
- **South** (900 companies) - AL, AR, DC, FL, GA, KY, LA, MD, MS, NC, OK, PR, SC, TN, TX, VA, WV
- **West** (600 companies) - AZ, CA, CO, HI, ID, MT, NM, NV, OR, UT, WA, WY
- **Canada** (200 companies)

Market Segment Directories

- General Commercial Printing (940 companies)
- Book Printing (140 companies)
- Magazine/Periodical Printing (150 companies)
- Business Form Printing (130 companies)
- Catalog/Directory Printing (190 companies)
- Financial/Legal Printing (95 companies)
- Direct Mail Printing (175 companies)
- Specialty Printing (170 companies)
- Label Printing (85 companies)
- Package Printing (200 companies)
- Prepress Services (220 companies)
- Trade Binding (160 companies)

Employee Size Directories

- 50-74 Employees (600 companies)
- 75-99 Employees (350 companies)
- 100-149 Employees (450 companies)
- 150-249 Employees (450 companies)
- 250-499 Employees (300 companies)
- 500-999 Employees (100 companies)
- 1,000+ Employees (120 companies)

While there were a few in-plant operations and related industry companies listed, the Barnes database was extremely comprehensive. However, it is no longer published.

InfoTrends (www.infotrends.com)

InfoTrends (formerly CAPV) performs continuing analysis of the corporate, print buying, and printing environments. Its databases are used to survey the industry. InfoTrends is a strategic consulting firm for providers and users of digital business communication technologies and services. They provide knowledge and business strategies through timely research, analysis, forecasting, benchmarking, and strategy recommendations to make a competitive difference in their client's businesses. InfoTrends provides ongoing consulting programs that foster industry growth, optimize business processes, improve market and product positioning, and help increase profitability. These services are highly customizable to meet their client's business needs.

InfoTrends assists corporate clients and users to audit, analyze, and improve business processes for the management and delivery of information. In 2002, CAP Ventures acquired InfoTrends Research Group, a consulting firm that tracks the digital photography, Internet imaging, image processing, and scanning markets. InfoTrends concentrates on statistically relevant surveys to develop trends and revenue projections.

NPES (www.npes.org)

The Association for Suppliers of Printing, Publishing and Converting Technologies: Founded as the National Printing Equipment Association in 1933, the Association has grown from 26 charter member manufacturers of printing presses, bindery equipment,

typesetting machinery and specialty equipment to more than 460 members, including manufacturers and importers of machinery, equipment, supplies, systems and software used in every printing, publishing and converting process. Through GASC (Graphic Arts Show Company) it is one-third owner of the major printing exhibitions (Graph Expo and PRINT) in the U.S. with NAPL and PIA. It is involved in government affairs on behalf of its supplier membership, and provides data and assistance with international trade, market data, and market research. It is the U.S. secretariat for CGATS (Committee for Graphic Arts Technical Standards) of ANSI and is involved in product safety and standards. The organization sponsors in-depth research on behalf of its members (suppliers), but does not publish industry demographic information.

Trade magazines

Various publications list the top 101 and 400 printing firms. Some printing companies ask not to be published in these compilations or do not provide the requested data. Publication mailing lists are often used for direct mail and surveys. Circulation for the three major printing magazines is about 70,000 each, up from about 50,000 in 2003. This includes copies to every plant and multiple copies in some plants. One of these magazines recently offered monetary rewards to any advertiser who could get the other two to perform a site analysis to demonstrate the number of companies versus plants versus individuals. It is ironic that magazine circulation has risen as the number of industry firms has diminished.

Table 2: Circulation for the three major printing magazines

Magazine	2003 Circulation	2008 Circulation	% Change
A	52,608	75,012	+42.6%
B	51,656	70,100	+35.7%
C	56,987	78,837	+38.3%

Trade magazines are in the process of reducing their numbers to save money on printing and postage.

Industry suppliers

Some suppliers have acquired commercial databases and mailing lists and have then used their sales force and other marketing approaches to create their own databases. We have reviewed some of these databases and they are among the best in the industry for the markets on which they focus. However, they are proprietary.

U.S. Government (www.census.gov/eos/www/naics/)

The U.S. Government does not publish a "list" but it does publish statistics through the Bureau of Labor Statistics and the Census Bureau. County Business Patterns reports establishments by U.S. county. There are 3,173 county level units in the United States. Data from the 1997 Economic Census were published on the basis of the North

American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is now adopted in the United States, Canada, and Mexico.

County Business Patterns covers most of the country's economic activity. The series excludes data on self-employed individuals, employees of private households, railroad employees, agricultural production employees, and most government employees. Beginning in 1998, data are tabulated by industry as defined in the North American Industry Classification System: United States, 1997 (NAICS). Data for 1997 and earlier years are based on the Standard Industrial Classification (SIC) System. Thus, a one-person printing proprietorship may be listed in the Yellow Pages but not be counted by CBP.

CBP data are extracted from the Business Register, the Census Bureau's file of all known single and multi-establishment companies. The Annual Company Organization Survey and quinquennial Economic Censuses provide individual establishment data for multi-location firms. Data for single-location firms are obtained from various programs conducted by the Census Bureau, such as the Economic Censuses, the Annual Survey of Manufactures, and Current Business Surveys, as well as from administrative records of the Internal Revenue Service, the Social Security Administration, and the Bureau of Labor Statistics.

For this project, we input several years of County Business Patterns data by establishment size to compare changes in printing industry size by the number of employees:

Table 3: County Business Patterns, 1976-2008, by employee size range and companies

Employees	1976	1981	1986	1994	1997	2002	2003	2004	2005	2006	2007	2008
1-4	9,462	8,863	13,135	16,886	18,254	16,819	16,307	16,214	15,952	15,450	15,551	14,117
5-9	4,435	5,220	7,094	8,303	9,255	7,844	7,661	7,464	7,214	7,067	7,069	6,109
10-19	3,325	3,988	4,970	5,230	6,174	5,242	5,096	4,984	4,793	4,619	4,466	4,107
20-49	2,232	2,685	3,344	3,341	4,813	4,042	3,974	3,774	3,599	3,495	3,434	3,110
50-99	734	906	1,179	1,250	1,996	1,630	1,669	1,636	1,589	1,551	1,531	1,052
100+	547	631	842	987	1,569	1,325	1,317	1,249	1,238	1,251	1,230	1,055
Total	20,735	22,293	30,564	35,924	42,115	36,902	36,024	35,321	34,385	33,433	33,281	29,550

It appears that 1995-1998 were the watershed years for the printing industry. But, how accurate is CBP data? 1997-1998 was the transition from SIC to NAICS and there may be challenges in comparing data from before and after 1998.

County Business Patterns uses the NAICS system that is oriented to printing process. Newspaper, book, and periodical publishers have been moved to other categories. Most of the companies are proprietorships. But CBP is as close as one can get to comparing industry numbers. At the county level one can count establishments more efficiently.

Table 4. NAICS 323 Printing and related support activities by corporate structure, 2007

	Firms	Employment
All Establishments	29,550	1,530,959
Corporations	3,612	428,948
Individual Proprietorships	24,687	966,174
Partnerships	1,251	135,837

A Quick Comparison

One can see the differences between some of these information sources. Once the methodology and definitions are understood, each may be valid in its own right. Since different marketing people in different organizations select one or another source, their opinions and presentations reflect their selected sources. Thus, we hear conflicting numbers for the size and scope of the printing industry. Fortunately, most tend to be within a reasonable range—especially counts for larger firms.

Table 5: Comparison of five data sources describing the printing industry, 2008

Data Sources	Number of Firms*
County Business Patterns	29,000
Blue Book	36,000
Dun & Bradstreet	48,000
Yellow Pages	57,000
Magazine circulation	71,000

**Numbers rounded to nearest thousand.*

It would be interesting to merge all (except Federal data) into one database, then remove duplicates to arrive at one list that may be most closely aligned with the true size of the printing industry,

Methodology and What We Learned from the Phone Book List

Our 1999 report was based in large part on analysis from a Dun & Bradstreet database acquired by RIT. This 2009 report used a list compiled from phone books by InfoUSA. The D&B list was nationwide. The InfoUSA list included New York and the six New England states and national data was extrapolated.

Because we were using a sample audience for analysis, we needed to compare the sample to base data. In this case the base data is the last three Economic Censuses. The 7-state sample represented 12.52 percent of the U.S. This has changed slightly from 13.19 percent in 1997 and 12.64 percent in 2002.

Table 6: County Business Patterns, 1997-2007 (U.S. Economic Census data, 1997-2007

State	1997	Percent of U.S.	2002	Percent of U.S.	2007	Percent of U.S.
NY	3,005	7.01%	2,542	6.77%	1,912	6.65%
CT	678	1.58%	557	1.48%	423	1.47%
MA	1,164	2.72%	984	2.62%	753	2.62%
ME	192	0.45%	176	0.47%	132	0.46%
NH	253	0.59%	210	0.56%	164	0.57%
RI	225	0.52%	171	0.46%	135	0.47%
VT	135	0.31%	105	0.28%	81	0.28%
Total	5,652	13.19%	4,745	12.64%	3,600	12.52%
All US	42,863	--	37,538	--	28,754	--

Our sample required several adjustments. Because the Yellow Pages category is self-selecting, we had to analyze the InfoUSA list. We categorized all records and they fell into nine categories that are not considered part of the printing industry. 73.94 percent were print-related.

Table 7: Sample list categories from 2009 InfoUSA list

Description	List Amount	Percent of List
Printers (Mfrs), Commercial Printing Nec (Mfrs), Commercial Printing-Lithographic (Mfrs), Commercial Printing-Gravure (Mfrs), Offset Reproductions (Mfrs), and Manifold Business Forms (Mfrs)	4,736	66.98%
Silk Screen Printing, Screen Printing (Mfrs)	456	6.45%
Business Forms & Systems	36	0.51%
Print-Related Subtotal	5,228	73.94%
Copying & Duplicating Service	138	1.95%
Newspapers (Publishers/Mfrs)	38	0.54%
Advertising-Specialties (Whls)	43	0.61%
Business Service Centers	183	2.59%
Mailing & Shipping Services	22	0.31%
Embroidery	148	2.09%
Office Supplies	216	3.05%
Signs	81	1.15%
Other	974	13.77%
List Total	7,071	100.00%

This analysis resulted in the Adjusted Sample column. Interviews by phone, e-mail, and in-person revealed the number that were not physical printing firms:

- 15% of the listings were printing brokers with no equipment
- 7% were printers operating with different trade names from the same facility
- 4% were printers in a different city but with a local phone number
- 3% were sales offices for printing firms in other cities
- 1% were local plants of national firms
- 1% were printers that merged or ceased business

Thus, 31 percent of the listings were not printers.

Table 8: Sample list analysis

State	Sample InfoUSA	Adjusted Sample (no brokers, no dupes)	Adjusted Final Sample
NY	3,859	2,852	1,968
CT	750	554	394
MA	1,457	1,077	754
ME	266	197	140
NH	364	269	178
RI	217	160	109
VT	158	117	79
Total	7,071	5,225	3,621
All U.S.	56,168	41,508	28,641
Percent of U.S.	12.59%	12.59%	12.64%

The resultant analysis placed the six states at 12.64 percent of the U.S., while Federal data placed the seven states at 12.52 percent.

We contacted 1,217 of the 7,071 names in the purchased database using phone, in-person, and e-mail surveying. This allowed us to define the companies on the list. The survey questions are included in the appendix.

Table 9: Interviews

State	Phone	In person	E-mail	Total
NY	109	21	210	340
CT	84	33	121	238
MA	99	43	176	318
ME	28	11	56	95
NH	23	7	57	87
RI	19	3	45	67
VT	21	3	48	72
Total	383	121	713	1,217

Trade magazine lists emphasize circulation; thus, they have higher numbers in order to support advertising rates that are based on "cost per thousand" for advertisers. They achieve higher numbers by sending multiple copies to printing sites based on qualification forms.

Table 10: Magazine circulation by state*

State	Magazine A (AP) 2008	Magazine B (PI) 2008	Magazine C (GAM) 2008
NY	3,783	4,279	5,225
CT	738	1,028	1,097
MA	1,333	1,789	1,871
ME	211	305	326
NH	290	462	416
RI	168	264	267
VT	154	197	188
Total	6,677	8,324	9,390

**American Printer, Printing Impressions, and Graphic Arts Monthly counts*

Using Google, the A.F. Lewis Blue Book, industrial directories, one print magazine list, and on-line Yellow Pages, we sought to discover if there were printers that were not included in the InfoUSA list.

Table 11: Printers not on the sample list

State	Number
NY	122
CT	16
MA	54
ME	0
NH	0
RI	2
VT	4
Total	198

The underlying problem is that the majority of printers are individuals or proprietorships and some may not be listed anywhere.

Table 12: Preliminary NAICS 323 data presented by County Business Patterns based on 2007 Economic Census

State	Corporations	Individual Proprietorships	Partnerships	Total
CT	26	283	25	334
ME	7	102	4	113
MA	59	581	5	645
NH	12	138	10	160
NY	423	1,356	92	1,871
VT	13	13	56	82
RI	11	78	2	91
Total	551	2,551	194	3,296
Percent of 7 states	16.72%	77.40%	5.89%	100.01%

Non-employer statistics originate from tax return information of the Internal Revenue Service. The data are subject to non-sampling error such as errors of self-classification by industry on tax forms, as well as errors of response, non-reporting and coverage. Values provided by each firm are slightly modified to protect the respondent's confidentiality.

The result is that the sample selected and analyzed was a good basic list to establish an understanding of the printing industry.

Criteria for Consideration

The following criteria were considered:

1. The reproduction device.
2. Copying services.
3. Digital printing.
4. Packaging printers.
5. Specialty printers
6. Screen printers.
7. Newspapers.
8. Pre-press and post-press (finishing) services.
9. Firms or establishments?
10. What years' data are we using?
11. Difference between a small printer and a quick printer?
12. Categorize by reproduction processes?
13. In-plant operations.
14. Companies that do not provide data.
15. Multi-national firms?
16. Direct mail advertising, design, and other graphic services?

1. Is any person or company with a reproduction device that sells print, a printer?

Issues arise because of the nature of the reproduction device. Before copiers and digital printers, it was easy to identify a printing service. They had a press and sold the reproduced material that came from it.

Newspapers own presses, but usually only print for themselves. However, an increasing number of them provide commercial printing services. A major trend involves two newspapers printing on one press. Pre-press businesses have digital printers for proofing and short run jobs. Over the last decade they have become de factor printers. Lettershops (mailing services) do some printing for addressing but primarily perform stuffing and mailing services. Many have digital printers in addition to their mailing system's ink jetting capability.

By device and location, print is changing. Printout devices continue to proliferate. The copier has changed from a light lens copier to a multi-function printer (with integrated

scanner) or production digital printer (no integrated scanner). Over the last decade the copier has metamorphosed into a digital copier/printer—a scanner for the capturing of material not in digital form and a digital printing engine. A press uses ink and a fixed image carrier. A printer uses toner or inkjet and a dynamic image carrier. Presses are most appropriate in factories. Printers can be used anywhere, depending on their size. Some of the work that is now produced on copiers and presses has migrated to digital printers and shifted from factories to offices and homes. Bookstores could become print-on-demand centers for while-you-wait publications. The printer now competes with the press. Digital printing has allowed an individual with a printer in their basement or garage to sell print, even though they have a full-time job doing something else.

Digital printers, whether monochrome or color, are reproduction devices. They are used by printers of all sizes or by firms that are outside the traditional industry but sell print of some kind. Offset lithography, as well as flexography and gravure, are used by firms clearly defined as printers, but digital printing can be used but other kinds of firms for internal use or for pay. We may not wish to include these firms in the demographics of the printing industry, but we should quantify and track them.

2. Should anyone who provides copying services be counted?

There are over 6,000 defined copy shops and almost all of them do not own printing presses. However, light-lens and digital copiers abound. Under the new NAICS system, copy shops have been integrated into "Other Business Services."

> ***NAICS 561439: Other Business Service Centers (Including Copy Shops)***
> *This U.S. industry comprises (1) establishments generally known as copy centers or shops primarily engaged in providing photocopying, duplicating, blueprinting, and other document copying services, without also providing printing services (e.g., offset printing, quick printing, digital printing, prepress services) and (2) establishments (except private mail centers) engaged in providing a range of office support services (except printing services), such as document copying services, facsimile services, word processing services, on-site PC rental services, and office product sales.*

> ***Other Business Service Centers (including Copy Shops) (NAICS 561439)***
> *This U.S. industry comprises establishments generally known as copy centers or shops primarily engaged in providing photocopying, duplicating, blueprinting, and other document copying services, without also providing printing services (e.g., offset printing, quick printing, digital printing, prepress services), and establishments (except private mail centers) engaged in providing a range of office support services (except printing services), such as document copying services, facsimile services, word processing services, on-site PC rental services, and office product sales.*

- *Establishments engaged in providing document copying services in combination with printing services, with or without a range of other office support services, and*

establishments known as quick or digital printers are classified in Industry 32311, Printing;

- *Establishments engaged in providing mailbox rental and other postal and mailing services with or without one or more other office support services (except printing) are classified in U.S. Industry 561431, Private Mail Centers;*
- *Establishments exclusively engaged in providing a single office support service (except document copying) to clients, but not the range of office support services that establishments in this industry may provide, are classified according to the service provided; and*
- *Establishments engaged in providing full service office space, whether on a lease or service contract basis, are classified in Industry 531120, Lessors of Nonresidential Buildings (except Miniwarehouses).*

2007 Census descriptions, 1997 – 2007

2007	2002	1997 NAICS	Description
561439	561439	561439	Blueprinting services
561439	561439	561439	Business service centers (except private mail centers)
561439	561439	561439	Copy centers (except combined with printing services)
561439	561439	561439	Copy shops (except combined with printing services)
561439	561439	561439	Document copying services (except combined with printing services)
561439	561439	561439	Document duplicating services (except combined with printing services)
561439	561439	561439	Photocopying services (except combined with printing services)
561439	561439	561439	Reprographic services

Table 13: Evolution of Federal definition of copy shops

Year	SIC/NAICS	Description	Establishments	Sales ($1,000s)	Payroll ($1,000s)	Employees
1992	7334	Photocopying and duplicating services	4,949	3,464,252	1,100,959	58,149
1997	561439	Other business service centers (including copy shops)	5,780	6,844,260	1,811,334	87,221
2002	561439	Other business service centers (including copy shops)	6,202	NA	2,340,697	82,790
2007	561439	Other Business Service Centers (including Copy Shops)	5,856	6,277,267	1,926,969	70,172

Data from the 1997 Economic Census are published on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is now adopted in the United States, Canada, and Mexico.

Many retail locations have coin-operated walk-up copiers and many local post offices and libraries also provide such services. These "occasional" copier locations should not be included. However, copy shops and business services that provide reproduction services should be counted, and may be categorized with quick printing. If quick printers make copies and are considered part of the printing industry, then copy shops that make copies should also be considered. We discovered that 45 percent of the copy shops we surveyed used wide format inkjet printing.

3. Should anyone who provides digital printing services be included?

The first users of digital printing were desktop service bureaus; the first users of digital color printing were pre-press services. All commercial reproduction services—with copiers or printers—count. We also have to count office supply retailers such as Staples and OfficeMax. Digital printing is a viable printing process and any type of user must be considered.

If one sold press rollers, then Staples is not important to their marketing. This is where the confusion comes in—market definition and segmentation are based on what someone needs to do their job. Suppliers often drive the research agenda based on their needs and thus industry statistics reflect a narrower view. Some analysts do not count Staples because it is not in commercial printing, but if the supplier sold copier equipment, they would. But Staples competes with the quick printing market, and perhaps with a part of the commercial printing market. To exclude them would be to exclude a major competitive area and distort the real size of the industry.

We must note that the copier and digital printer world are merging. All new copiers are digital printers with scanners. This makes the device multi-functional in that it can accept hard copy pages or digital files. Many digital printer users perform copying because they have a scanner on the printer's network. Today, digital printing is a substitute for offset lithography just as offset litho was a substitute for letterpress. We contend that any entity that sells digital printing—and digital copying—should be counted. How they are counted is a different problem. Counting each Staples location, for example, as a printing establishment is appropriate. Counting all of Staples' revenue, for example, would be inappropriate.

In 1997 the Census Bureau added the category "Digital Printing" under pressure from some trade associations.

Table 14: 323115 Digital printing establishments, 1997-2007

Year	Establishments
1997	386
2002	1,036
2007	2,346

The result has not been helpful. Our survey found that over half of the sample population has either digital printing or digital copying. This can be extrapolated to mean that over half the industry has such. Thus, the 323115 category is essentially useless. Based on our survey interviews, industry firms have:

- Offset litho 83%
- Digital copying 57%
- Digital printing 61%
- Other* 56%

**Other could be screen, flexography, or gravure printing.*

Digital printing is a viable process and must be considered in any demographic profile.

4. Do packaging printers count?

Packaging printers print on board and flexible materials. We must be careful to segregate packaging plants owned by companies that make the board or film or aluminum. They are essentially in-plant operations, but they then sell the printed package to a beverage or food company.

Commercial printers count if they print packaging, but packaging printers do not count. The confusion may come in the difference between a packaging printer and a converter. A converter takes a raw substrate, like board, and converts it into cartons. Or takes rolls of aluminum and makes it into cans. In the process they print color, code numbers and other information on the carton or can or package. They are defined under NAICS as converters. Over the last decade much of the growth in packaging has been in flexible packaging.

The flexible packaging industry currently supports 360,000 employees. About 80,000 are directly employed by converters. Flexography and gravure have been the primary printing processes for packaging; although, an increasing volume is being done with offset lithography. Digital printing is evolving rapidly for packaging and labels.

Table 15: Comparison of eight packaging areas by flexo and gravure printing (Dunnington, 2002)

Flexography	Plants	Percent
Corrugated production	1,400	34%
Flexible film packaging	2,950	25%
Folding carton	125	20%
Labels	3,200	13%
Envelopes, bags	260	5%
Newspapers	45	3%
Publications	0	0%
Products	0	0%
Total	5,980	100%
Gravure	Plants	Percent
Corrugated production	0	0%
Flexible film packaging	94	29%
Folding carton	84	12%
Labels	84	3%
Envelopes, bags	4	0%
Newspapers	0	0%
Publications	23	35%
Products	160	21%
Total	449	100%

Paperboard and plastic lend themselves to offset lithography that opens the packaging market to commercial printers. As an increasing amount of packaging moves to commercial plants, it will be necessary to include packaging printing in all demographics in order to measure activity and determine trends.

Table 16: Printing processes used by percentage (Lamparter, 2009)*

Process	2007	2009	2011	2013
Offset Litho	42%	39%	36%	31%
Gravure	15%	14%	13%	11%
Flexography	21%	22%	24%	21%
Digital	17%	19%	23%	31%
All other	6%	6%	4%	6%

** Based on printing revenue--no paper or ancillary services.*

Certain areas of packaging have been dominated by flexography:

Table 17: Flexo growth by packaging type (Dunnington, 2002)

Packaging Type	2002	2004	2008
Paper bags	95%	95%	95%
Corrugated board	75%	80%	80%
Flexible packaging	70%	75%	80%
Labels	30%	35%	30%
Folding cartons	20%	30%	30%

Table 18: Labels printed by process (analysis by the author)

Process	Percent of volume	Percent of revenue
Flexography	57%	56%
Offset Litho	30%	29%
Gravure	9%	10%
Digital	4%	5%

Some converters may only fabricate plastic or paper into unprinted bags or cartons. We contend that packaging printers, and converters who print on any substrate should be counted. We count commercial printers who print packaging; we should not exclude packaging printers or converters because they specialize.

5. Do specialty printers count?

These printers print on vinyl and plastic and other non-paper substrates. It is necessary to separate those that sell a service from those who are part of a company's manufacturing process. Products printed or decorated include:

- Automotive trim
- Automotive license plates
- Bank forms
- Bank notes and securities
- Bottle closures
- Business forms
- Candy trademarking
- Cigarette filter tips
- Decalcomania
- Decorative adhesives
- Film ribbons
- Fine art reproductions
- Floor coverings
- Food stamps
- Foreign currency
- Games
- Gift wraps
- Heat transfer papers for textile printing
- Hot foil stamping
- Instrument panels
- Insulation trademarking
- Laminate flooring
- Lamp shades
- Lottery tickets
- Insulation trademarking
- Lamp shades
- Lottery tickets
- Luggage fabric
- Marble pattern book end papers

Another term for this area is "industrial printing." Many commercial printers print on plastic substrates, or on special papers that are then laminated. Thus, we should count specialty or decorative printing firms.

6. Do screen printers count?

Screen printers print on T-shirts, textiles, wood and other unusual substrates. Wide-format printing is beginning to compete with screen printing for signage, but many screen printers print apparel and manufacturing components.

Screen printing is used for applications which cannot be handled by offset, gravure or flexography. Applications with substrates such as cloth, wood or rigid plastic are primarily printed with screen printing because of the flexibility of the screen. Inkjet printing may be a potential fit because of the similar substrate flexibility in at least some current screen-printing applications. Screen printing is described as an "invisible" industry. The independent screen print providers tend to be small proprietorships, and most of the capacity is in organizations that don't identify themselves as screen printers—a textile factory or a company that makes printed circuit boards. Applications are specialized and the industry is highly fragmented. Plausible points of entry include: (1) automotive and transportation furnishings, (2) textiles, (3) flatbed display, (4) wide format applications with difficult ink requirements, and (5) flatbed industrial printing.

The commercial graphics screen-printing industry is estimated at 19,000 companies by industry publication and associations, but this does not correlate with Census data:

Table 19: 323113 Commercial screen printing

Year	Establishments
1997	4,096
2002	4,382
2007	4,687

We speculate that the difference may be based on several factors:

1. The 19,000 represents a circulation list.
2. It includes individuals/proprietors—most of the industry is made up of very small shops
3. It includes in-plant (manufacturing industries) establishments.

The in-plant and apparel-oriented screen printers should not count, but those in signage and graphics should.

7. Do newspapers count?

Almost all daily newspapers own their own press or presses. Most weeklies are printed on presses owned by dailies or commercial services, some of which are not involved in newspaper publishing. The challenge is placing a value on the printing that is done when printing the newspaper may be integrated with the publishing operation. We do not suggest that. We contend that only the commercial printing aspect of the newspaper industry should be considered.

Table 20: U.S. newspapers (U.S. Census Bureau, 2007)

Year	Establishments
1997	8,758
2002	8,603
2007	6,400
Newspaper Type (2007 data)	Percent of Companies
Daily	14.6%
Weekly	76.6%
Other	8.7%

The majority of newspapers with presses now provide commercial printing services (67 percent). They print other newspapers than their own, newsprint magazines, ad circulars, or other materials. Under NAICS, newspaper publishers are now in a separate category that includes publishers.

Code: 511
Title: Publishing industries (except Internet)
Sector: 51

Definition:
Industries in the Publishing Industries (except Internet) subsector group are establishments engaged in the publishing of newspapers, magazines, other periodicals, and books, as well as directory and mailing list and software publishing. In general, these establishments, which are known as publishers, issue copies of works for which they usually possess copyright. Works may be in one or more formats including traditional print form, CD-ROM, or proprietary electronic networks. Publishers may publish works originally created by others for which they have obtained the rights and/or works that they have created in-house. Software publishing is included here because the activity, creation of a copyrighted product and bringing it to market, is equivalent to the creation process for other types of intellectual products.

In NAICS, publishing--the reporting, writing, editing, and other processes that are required to create an edition of a newspaper--is treated as a major economic activity in its own right, rather than as a subsidiary activity to a manufacturing activity, print-

ing. Thus, publishing is classified in the Information sector; whereas, printing remains in the NAICS Manufacturing sector. In part, the NAICS classification reflects the fact that publishing increasingly takes place in establishments that are physically separate from the associated printing establishments. More crucially, the NAICS classification of book and newspaper publishing is intended to portray their roles in a modern economy, in which they do not resemble manufacturing activities.

Music publishers are not included in the Publishing Industries (except Internet) subsector, but are included in the Motion Picture and Sound Recording Industries subsector. Reproduction of prepackaged software is treated in NAICS as a manufacturing activity; on-line distribution of software products is in the Information sector, and custom design of software to client specifications is included in the Professional, Scientific, and Technical Services sector. These distinctions arise because of the different ways that software is created, reproduced, and distributed.

The Publishing Industries (except Internet) subsector does not include establishments that publish exclusively on the Internet. Establishments publishing exclusively on the Internet are included in Subsector 519, Other Information Service. The Publishing Industries (except Internet) subsector also excludes products, such as manifold business forms. Information is not the essential component of these items. Establishments producing these items are included in Subsector 323, Printing and Related Support Activities.

8. Should we count pre-press and post-press (finishing) services?

Pre-press (or pre-media) and post-press firms are certainly a part of the printing industry. An increasing number of pre-press firms are providing digital printing or even conventional printing services.

Table 21: U.S. pre-press firms (Rosen, 2009)

Type of firm	1970	1980	1990	2000	2009
Typographers	9,200	10,800	10,800	2,800	100
Desktop publishers	0	0	0	4,100	2,900
Color separators	2,700	4,000	5,000	3,900	1,100
Other pre-press	2,300	3,500	3,600	2,900	200
Total pre-press firms	14,200	18,300	19,400	13,700	4,300

Pre-press firms are most likely to integrate printing. The earliest adopters of digital color printing and the majority of users for many years were pre-press services. They have the technical and color skills to deal with the technology. However, finishing services are not as likely to integrate printing as printers are likely to integrate finishing.

Because pre-press and post-press firms are an integral part of the industry, they should be categorized and counted; those with printing of any kind should be broken out.

9. Should we count firms or plants (establishments)?

According to the Census Bureau: "An establishment is a single physical location at which business is conducted or services or industrial operations are performed. It is not necessarily identical with a company or enterprise, which may consist of one or more establishments. When two or more activities are carried on at a single location under a single ownership, all activities are generally grouped together as a single establishment. The entire establishment is classified on the basis of its major activity and all data are included in that classification."

Establishment size designations are determined by paid employment in the mid-March pay period. The size group "1 to 4" includes establishments that did not report any paid employees in the mid-March pay period but paid wages to at least one employee at some time during the year—and were in the proper NAICS category. Small businesses are notorious for using an incorrect code, or not paying taxes at all.

Additional definition of these terms is available from the U.S. Census Bureau (2009a):

Company
In the Economic Census, a company (or "enterprise") is comprised of all the establishments that operate under the ownership or control of a single organization. A company may be a business, service, or membership organization; consist of one or several establishments; and operate at one or several locations. It includes all subsidiary organizations, all establishments that are majority-owned by the company or any subsidiary, and all the establishments that can be directed or managed by the company or any subsidiary.

A company may have one or many establishments. Examples include product and service sales offices (retail and wholesale), industrial production plants, processing or assembly operations, mines or well sites, and support operations (such as an administrative office, warehouse, customer service center, or regional headquarters). Each establishment should receive, complete, and return a separate census form.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

Establishment
An establishment is a single physical location where business is conducted or where services or industrial operations are performed. Data in this sector includes those establishments where manufacturing is performed. A separate report was required for each manufacturing establishment (plant) with one employee or more that was in operation at any time during the year.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

This is also where most of the confusion arises in quantification of the industry. In some cases, sales offices or pre-press offices are counted. For example, AGT, a pre-press service has an office in the McGraw-Hill building in New York City, which serves as a contact point for M-H customers. There are computers, servers, high-speed transmission lines, and technical people. Should this office be counted as a "plant?" We think it should be counted if there is equipment, personnel, and production operations.

It is relatively easy to find and identify the largest industry firms:

- The *Graphic Arts Monthly* 101 largest printers show the smallest printer on the list at $30 million.
- The *Printing Impressions* magazine list of 400 printers shows plants ranging from $6 billion to $13 million, and represents $112 Billion in total revenue.
- All production facilities should be counted. We should not include sales offices.
- The Census counts both firms and establishments, but reports all of its data in establishment format.
- D&B and other database services count business entities, which results in a large number of shell corporations in their counts.
- Yellow Pages data is full of companies operating under multiple names and print brokers who have no equipment.
- County Business Patterns counts only businesses that pay Social Security tax on Form 941 (which is the same count that is used for the Census, and is the best indicator of a real business).

Table 22: NAICS 323 companies vs. establishments from the 2007 economic census

Subcategory	Companies	Establishments	1 – 19 emp.	20 – 99 emp.	100+ emp.	Total employment
Commercial lithographic printing	12,576	13,197	10,050	2,468	679	314,819
Commercial gravure printing	265	288	203	52	33	17,131
Commercial flexographic printing	895	973	580	305	88	34,362
Commercial screen printing	4,687	4,730	3,976	642	112	70,429
Quick printing	6,033	6,157	5,897	253	7	34,040
Digital printing	2,346	2,477	2,059	349	69	42,009
Manifold business forms printing	473	600	343	193	64	22,591
Books printing	556	600	400	120	80	32,735
Blankbook, looseleaf binders	196	204	116	67	21	8,605
Other commercial printing	1,910	1,916	1,728	159	29	19,476
Tradebinding and related work	1,034	1,057	738	273	46	25,110
Prepress services	1,378	1,500	1,220	233	47	23,532
Total	32,349	33,699	27,310	5,114	1,275	644,839

However, the delta between the number of firms and the number of plants (establishments) is less than 2,000. Perhaps it does not matter.

10. What years' data are we using?

We have observed an increasing number of company closings and consolidations. One must be careful to compare data from the same source for the years in question. County Business Patterns data is published every two years. 2002 data was available at the end of 2004. Some 2007 data is available but most will not be released until 2009. If 2010 CBP data is compared then 2010 data from other sources should be used, but unfortunately the Federal data does not always coincide.

After 1997, the SIC system changed to the NAICS system and this changed the basis for defining and counting establishments. Although there is a bridge between SIC and NAICS, a significant amount of interpretation is required. This is primarily because book printing and publishing, magazine printing and publishing, etc. were combined in the old SIC system.

11. What is the difference between a small printer and a quick printer?

The U.S. Census Bureau (2003) defines quick printing, digital printing, commercial lithographic printing, and copy shops as such:

> ***NAICS 323114 Quick Printing***
> *This U.S. industry comprises establishments primarily engaged in traditional printing activities, such as short-run offset printing or prepress services, in combination with*

providing document photocopying service. Prepress services include receiving documents in electronic format and directly duplicating from the electronic file and formatting, colorizing, and otherwise modifying the original document to improve presentation. These establishments, known as quick printers, generally provide short-run printing and copying with fast turnaround times.

NAICS 323115 Digital Printing
This U.S. industry comprises establishments primarily engaged in printing graphical materials using digital printing equipment. Establishments known as digital printers typically provide sophisticated prepress services including using scanners to input images and computers to manipulate and format the graphic images prior to printing.

NAICS 323110 Commercial Lithographic Printing
This U.S. industry comprises establishments primarily engaged in lithographic (i.e., offset) printing without publishing (except books, grey goods, and manifold business forms). This industry includes establishments engaged in lithographic printing on purchased stock materials, such as stationery, letterhead, invitations, labels, and similar items, on a job order basis.

NAICS 561439 Other Business Service Centers (including Copy Shops)
This U.S. industry comprises (1) establishments generally known as copy centers or shops primarily engaged in providing photocopying, duplicating, blueprinting, and other document copying services, without also providing printing services (e.g., offset printing, quick printing, digital printing, prepress services) and (2) establishments (except private mail centers) engaged in providing a range of office support services (except printing services), such as document copying services, facsimile services, word processing services, on-site PC rental services, and office product sales.

Even a cursory reading reveals significant overlaps. The size of the firm is a factor:

Table 23. Average characteristics of firms by size (analysis by the author)

Characteristic	Small printer	Medium printer	Large printer
Average revenue	$700,000	$5 million	$20 million
Average employees	10	50	100
Press type	Sheet - Page	Sheet - Signature	Web - Signature
Press size	2-up	4/8-up	8/16-up

Thus, the bigger and faster the press, the better the printer can handle very long runs of publications with high page counts.

Table 24. Average press characteristics within firms (analysis by the author)

Press Characteristic	Small printer	Medium printer	Large printer
Runs	Short – Long	Moderate – Long	Long – Very Long
Page counts	4 -100	4 - 200	4 - 400
Types	Promo	Promo	Promo, Catalog, Magazine

"Small printer" can mean the firm has a small press (offset duplicator), while others say a Heidelberg GTO (14 x 20) is a small press. We define a small press as one with a 13" x 19" sheet size or smaller capacity. Press size has traditionally been an indicator of a firm's print capability, which is why many printers define themselves by their press (i.e., "I'm a 40-inch house"). One very large commercial printer claimed that they were a quick printer even though they had almost 500 employees. Small employee counts have also been traditional indicators. Some say under 10 and some say under 20 employees is where the boundary lies.

Table 25: Percentage of establishments ranked by number of employees, 1995 – 2015*

Number of employees	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2015
1 to 4	45%	44%	44%	46%	45%	46%	46%	46%	46%	45%	46%	47%
5 to 9	21%	22%	22%	21%	21%	21%	21%	21%	21%	21%	21%	22%
10 to 29	14%	14%	14%	14%	14%	14%	14%	14%	13%	14%	13%	12%
30 to 59	11%	11%	11%	11%	11%	11%	11%	11%	10%	11%	10%	9%
60 to 99	5%	5%	5%	4%	5%	4%	4%	4%	5%	4%	5%	5%
100+	4%	4%	4%	4%	4%	4%	4%	4%	5%	5%	5%	5%

**Analysis of Census data, 1995 – 2009. Projection to 2015 result of analysis by the author.*

We do not expect the percentage of firms by size to change significantly.

There is a significant overlap in terms of services provided and equipment in use between these segments:

Table 26. Services provided by size of firm (analysis by the author)

Service	Small printer	Medium printer	Large printer
Copying services	Yes	Yes	No
Design services	No	Yes	Some
Small offset litho	No	Yes	Some
Large offset litho	No	Some	Yes
Bindery services	Some	Yes	Yes
Mailing services	Some	Some	Most
Digital monochrome	All	All	Some
Digital color	Most	Most	Some
Wide format inkjet	Most	Most	Some

The term "instant printer" or "quick printer" arose in the 1960s as the camera-plate-maker and offset duplicator allowed printers to offer while-you-wait services. These firms evolved into black-and-white and color copying as well and split into two markets: franchise and independent companies. Copy services arose with the growth of the copying machine. Today, all copiers are digital printers.

Quick printers may have up to 20 employees, multiple locations, and revenues exceeding $2 million. However, they typically operate from a single storefront location and have fewer than 10 full-time employees. The average annual revenues of these companies fall between $600,000 and $1 million, but extremes abound and actual sales figures can range from $100,000 to $30 million per year.

We tend to think of quick printers as relying on walk-in customers for the bulk of their business. Many of these firms are refocusing their resources on local corporate accounts. As part of their changing business strategy, they are pursuing corporate business instead of waiting for the customer to walk through the door. Quick printers aren't necessarily "quick". Their typical turnaround for jobs is longer than 24 hours.

There appears to be widespread integration of mailing/fulfillment and wide format printing services. Quick printers are also involved with pick-and-pack, kitting, fulfillment, and other post-printing services—a trend that is expected to accelerate. Corporate customers are also ordering posters, trade show exhibits and other point-of-purchase products.

Quick printers are usually considered to be franchises. The franchise segment of the quick printing industry continues to contract. In 2003, there were about 3,500 franchise print shops, according to Quick Printing magazine (Lowery Hall, 2009). That was 184 less than the previous year. A struggling economy has led to a challenging year for U.S. franchise systems.

Table 27: Franchise printing firms (Lowery Hall, 2009)

Year	2006	2007	2008
Total firms	3,290	3,117	2,931

Of the 2,931 franchise locations, 2,341 are in North America and 590 are international. All franchises have seen a reduction in the number of franchisees:

> "Every system decreased its number of shops this year. Franchise Services, whose previous year numbers were adjusted to account for the Signal Graphics acquisition, declined by 86 locations. ICED decreased its numbers by 37. Allegra Network saw 31 shops fall by the wayside. CPrint's members fell by 14, which is in keeping with the way that particular franchise is structured. Minuteman Press (seven), AlphaGraphics (five), and LAZERQUICK (one) experienced single digit departures.
>
> Minuteman, with 973 locations, remains the largest system overall. Franchise Services is the second largest, with 665 shops. And ICED has 529 shops. There are 386 locations in the Allegra Network and 259 in the AlphaGraphics system. CPrint has 101 affiliates. LAZERQUICK, the only remaining regional franchise, has 23 locations, 12 of which are owned by the parent company GISI. The only other system that still holds a corporately owned location is ICED (Lowery Hall, 2009)."

Note: Kinkos is not a franchise; all stores are owned by the company.

In 2008, total sales for U.S.-based quick printing franchises were $2,008,538,426, a decline of 3.4% on the year (Lowery Hall, 2009).

Commercial printers

The printing industry exists because someone wants to sell something to someone else. Books are sold, but book printers are not considered commercial printers. But commercial printers print books. Newspapers are sold, but newspaper printers are not considered commercial printers, even though many of them print material for others. We went on the Web and searched for "commercial printer" and found these two definitions:

1. *The commercial printer is the manufacturer of a variety of custom printed products, ranging from stationery, flyers, newsletters, invitations and mailers to folders, brochures, posters, portfolios, catalogs, and annual reports* (Art Directors Club of Metropolitan Washington [ADCMW], 2009).
2. *[ABC Company] has been servicing local printing needs for over 50 years. While we continue to provide top quality products in printing we also offer Website development as well. We are a full service commercial printing facility ready to provide any type of printing your company may need. Letterheads, envelopes, business cards, industrial tags, full color printing, folders, manuals, multi-part business forms, embossing, continuous and flat printing.*

The list was pretty specific until we reached "full color printing"—which could be just about anything. Thus, commercial printers can print anything. In the 19th and early 20th century they were called job printers. Their presses were called "jobbers." All printers are really commercial printers.

The line has blurred between copy shop, quick printer, and commercial printer and that present definitions are less and less helpful. All should be counted.

12. Should we categorize by reproduction processes?

What difference would it make? We saw the result of exclusion in the 1950s and 1960s when offset lithography began to truly challenge letterpress. Litho was not considered a true reproduction process and excluded from industry data and discussion. At one time New England Printer & Lithographer was so named because in 1950 lithographers were not considered real printers. Specialized associations and publications arose (NAPL was the National Association for Photo Lithographers when it was founded, and GATF began as the Lithographic Technical Foundation). Yet, within a decade offset lithography replaced letterpress printing. New digital printing technology is growing in use and should be considered in all demographics. The following table provides our estimates of reproduction volumes by process:

Table 28: Reproduction type by process (analysis by the author)

Lithography	Percent	Flexography	Percent	Digital	Percent
Publication	40%	Publication	1%	Publication	29%
Packaging	25%	Packaging	82%	Packaging	5%
Promotion	30%	Promotion	3%	Promotion	65%
Product	5%	Product	15%	Product	1%
Gravure	Percent	Letterpress	Percent	Copying	Percent
Publication	35%	Publication	0%	Publication	5%
Packaging	40%	Packaging	90%	Packaging	0%
Promotion	1%	Promotion	0%	Promotion	15%
Product	24%	Product	10%	Product	5%
				Other	75%

Many printers now use a blend of printing processes and their reportage to the Census Bureau may often be faulty or non-existent. For instance, offset lithographic printers with digital printing do not often break the digital printing volumes out. A major trend has been the move to hybrid printing—printed products produced with different printing processes and assembled into one unit. Overall, the trend has been towards increased use of offset and hybrid approaches for magazine and catalog production. Transactional documents (statements and bills) are also hybrid in that they are preprinted with offset lithography and then imprinted with toner or inkjet printing.

Table 29: Percentage of print volume for four publication categories, 1997–2007* (Dunnington, 2002)

Publication Type	Year	Offset	Gravure	Both
Catalogs	1997	80%	11%	9%
	2002	84%	9%	7%
	2007	90%	4%	6%
Magazines	1997	61%	31%	8%
	2002	60%	27%	13%
	2007	72%	20%	8%
Sunday magazines	1997	61%	31%	8%
	2002	60%	27%	13%
	2007	78%	21%	1%
Inserts	1997	37%	63%	0%
	2002	45%	54%	1%
	2007	56%	34%	0%

**Based on number of page units printed.*

Although it is helpful to see the evolution of process volumes, the use of multiple processes in a plant may make the reporting difficult. Census data attempts to provide data on plants by reproduction process in use. As more work moves to hybrid approaches it will be difficult to find such data meaningful. We will then have to rely on surveys of statistically relevant groups of printers and then extrapolate the results to the known universe of printers.

13. Should "in-plant" operations be considered?

Although the so-called "in-plant" market is large and robust, we should only consider commercial services in printing industry counts. There are two aspects to this area:

1. Corporate related
   In-plant printing operation
   Central reproduction department
   MIS/IT
2. Publishing related
   Periodicals
   Newspapers
   Periodicals
   Other

The corporate market consists of hospitals, financial services, retailers, state and federal agencies, utilities, and other corporate entities that require paper-based reproduction. The International Publishing Management Association (formerly the In-plant Printing Management Association) (http://www.ipma.org) states 10,000 as the number. These

establishments consist of at least one printing press. There have been widely reported numbers for this area, ranging up to 60,000, but no one has ever produced an unduplicated list of more than 8,000 names.

The discrepancy arises from the definition of in-plant printing facility. The accepted definition is that there is at least one press. There are a very large number of Centralized Reproduction Departments (CRD) in companies with copiers and digital printers—but no press. The A. F. Lewis Blue Book statistics are the most reliable because they provide employee counts, equipment in use, and an available list:

Table 30: In-plant printing sites by employee count (Graphic Arts Online, 2008)

In-plant employees	1-4	5-9	10-19	20-49	50-99	100-249	250+	Total
In plant--non-profit	536	247	111	46	11	6	3	960
In plant--schools	1,405	550	248	144	36	9	6	2,398
In-plant--government	355	256	176	114	37	6	3	947
In plant--other business, industry	2,098	1,681	1,459	1,228	151	122	110	4,849
Total	1,394	2,734	1,994	1,532	235	143	122	11,154

One estimate had 10,111 in-plant printing establishments in 2005.

InfoTrends reports that in-plant printing sites have a mean budget of $4,638,100, with 52 percent of respondents from the finance and insurance industries, and a workload of 45 percent mixed, 34 percent transactional, 19 percent graphic arts, and 3 percent utility.

According to InfoTrends, the in-plant market is difficult to define. There is no agreed-upon definition for an in-plant. Some groups count only in-plant operations that offer traditional printing, leaving out copy-oriented sites. There is a convergence between data center and in-plant operations. Some data center operations that might not have been considered in-plants are beginning to handle copying and on-demand digital printing work.

There are two types of in-plant facilities:

- **In-Plant Print Shop**
  - A department within an establishment that is primarily engaged in copying/printing documents where the primary business of the establishment is anything but printing or print-related services.
  - An in-plant print shop is one that aligns with a primary site. This means that it supports print needs that are company-wide (and not just for a specific department or division).

- **Small In-Plant Copy/Print Site**
  - An in-plant small copy/print site aligns more with a secondary classification, with the primary classification being the work of the department or division (i.e. a copy/print site that is dedicated to the human resources department).
  - Departments within an establishment that are more closely aligned to a secondary establishment. These small copy/print facilities are staffed environments but exist to support the workgroup in a generally distributed manner.

Within the company, there may be one or more centralized services for copying, digital printing, and other support services. Lastly, there is the MIS/IT department, which may have a roll-fed digital printer for transaction documents. It may be that these three areas are integrated, or, in many cases, they may not be. In some cases, the company outsources the work, but the facility is on company property. To exacerbate the definitional problem, some in-plant operations "sell" printing or copying to other companies.

The most interesting aspect to the in-plant market is the assignment of a value to what they produce. Some analysts assume a value based on the commercial market. We contend that using the department budget is a more realistic approach to developing a revenue number. Major trends:

- CRDs save their organizations an average of 15% of the cost of outside printing; some could save up to 30% if they operated more efficiently.
- The amount of print work completed in-house by CRDs over the past decade has grown significantly by 20%, an increase largely driven by the improved capability of the digital printer, which has replaced the offset press as the primary in-plant reproduction technology. By 2012, less than 30% of CRDs will use offset printing at all.
- Although monochrome printing dominates in-house work, volumes are declining. Color printing, however, has increased due to the use of charts, graphs and pictorial imagery. The volume of full-color pages produced by CRDs is now equal to that of monochrome pages.
- In-plant wide format printing is growing in use to produce posters, trade show exhibits, banners and other signage – in 1998, not a single CRD offered this; in 2008, 65.8% did.
- CRDs need to conduct more frequent benchmarking to quantify their value to their parent companies. Nearly 50% of those surveyed do not regularly benchmark their performance, citing that this is only done as needed. Over 15% never benchmark.

- The growth of the Internet has had a major impact on CRD operations—over 65% of files (and growing) were submitted online in 2008, a major shift from the paper based workflow of a decade ago.
- Many CRDs have implemented a Web-to-print solution to take advantage of the reduction in errors in order submission and most state that Web-to-print has either exceeded or far exceeded their expectations. Similarly, over half of the CRDs with a Web presence reported an 'excellent' level of internal customer satisfaction – customers prefer the efficiency and ease of ordering print via the web.
- Print schedules are becoming tighter, with an increased demand for turnaround within 24 hours or less.

How and why these companies are counted can substantially change industry demographics. We think they should be counted in some manner.

14. What about companies that do not provide data?

How do we count the uncountable? For instance, we were at a focus group for a textbook publisher. In the elevator we met an executive from one of their printers. I said I had not heard of them. The executive boasted, "We are a $200 million company." I said that I did not recall seeing their listing in the popular large printing company lists that the major magazines publish. "We ask them not to list us," he said. In other cases, companies that are listed do not provide the requested data. Most commercial printers are privately owned and there is often no reason to share financial data.

We pulled D&B reports over the years on companies that did not cooperate with D&B. D&B then tried to estimate their revenue, etc.

15. What about multi-national firms?

Many of the largest printers are multi-national firms. Some are based in Canada and have a very large presence in the U.S. Some very large U.S.-based printers own companies and facilities in other countries. An increasing number of U.S. printers are establishing facilities or partnering with Asian companies.

Their revenue represents worldwide revenue. Yet, they are listed with a majority of firms that are U.S. only. This skews revenue comparisons substantially. Another anomaly is the volume of Canadian printing sold in the U.S. in direct competition to U.S. printing. Breaking the international revenue from the total revenue of these firms is difficult, if not impossible.

We estimate that 11 of the top 20 firms were international in nature and that approximately 18 percent of their totals revenue was outside the U.S.

16. What about direct mail and graphic design firms?

The digital printer in both document and wide format versions has extended the reach of reproduction.

NAICS 541860: Direct Mail Advertising
This industry comprises establishments primarily engaged in (1) creating and designing advertising campaigns for the purpose of distributing advertising materials (e.g., coupons, flyers, samples) or specialties (e.g., key chains, magnets, pens with customized messages imprinted) by mail or other direct distribution; and/or (2) preparing advertising materials or specialties for mailing or other direct distribution. These establishments may also compile, maintain, sell, and rent mailing lists.

Firms	3,454
Employees	85,669

NAICS 54143 Graphic Design Services
This industry comprises establishments primarily engaged in planning, designing, and managing the production of visual communication in order to convey specific messages or concepts, clarify complex information, or project visual identities. These services can include the design of printed materials, packaging, advertising, signage systems, and corporate identification (logos). This industry also includes commercial artists engaged exclusively in generating drawings and illustrations requiring technical accuracy or interpretative skills.

Firms	15,851
Employees	62,036

NAICS 54192 Photographic Services
This industry comprises establishments primarily engaged in providing still, video, or digital photography services. These establishments may specialize in a particular field of photography, such as commercial and industrial photography, portrait photography, and special events photography. Commercial or portrait photography studios are included in this industry.

Firms	18,741
Employees	79,630

Digital printing is shifting certain amounts of volume from dedicated service providers to some kind of in-plant operation. We must find a way to include them.

The Bottom Line: Reconciling the Numbers

Each decision made in the points above changes the final total. Because different marketers and analysts segment the data differently, they arrive at different counts.

Table 31: U.S. printing industry from four points of view

Category	County Business Patterns	Blue Book	PIA (Davis)	RIT (Romano)
COMMERCIAL PRINTING				
General Commercial	Y	Y	Y	Y
Quick Printing	Y	Y	Y	Y
Magazine Printing	Y	Y	Y	Y
Newspaper Printing	Y**	N*	Y	Y**
Book Printing	Y	Y	Y	Y
Financial, Legal Printing	Y	Y	Y	Y
Screen Printing	N	Y	Y	N
Thermography	Y	Y	Y	Y
FORM, LABEL & TAG PRINTING				
Business Forms Printing	Y	Y	Y	Y
Label, Wrapper Printing	Y	Y	Y	Y
Tag, Ticket, Tape Printing	Y	Y	Y	Y
OTHER PRINTING				
Copy Shops	N	N	N	Y
Greeting Card	Y	Y	Y	Y
Specialty Printing	N	Y	Y	Y
Packaging Printing	N	Y	Y	Y
Selected Converters	N	N	N	Y
TRADE SERVICES				
Prepress Services	Y	N*	Y	Y**
Trade Binding	Y	N*	Y	N
Other Services (mailing)	N	N*	Y	N
OTHER CLASSIFYING FEATURES				
Firms or Establishments	F/E	E	F	E
In-plant operations	N	N*	N	Y
2002 DATA				
Total firms/establishments	34,172	38,336	45,181	55,563

**Not automatically counted in printing numbers*

***Those that provide commercial printing services*

PIA bases its numbers on the Blue Book. PIA counts virtually every category so one can consider selected categories as they wish.

Conclusions and Projections

Table 32 is an overview of the printing industry and the print universe. The print universe combines traditional categories that have been considered part of the printing industry with additional categories that include selected company types that apply production-level printing technology.

Table 32: The Print Universe, 1995-2015

Category	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2015
Commercial Printing												
General Commercial	24,900	21,878	21,076	20,497	20,205	19,392	17,527	16,800	13,197	13,000	12,100	11,800
Quick Printing	9,700	8,996	7,699	7,259	7,150	7,136	6,779	6,190	6,157	6,123	5,900	4,000
Newspaper Printing	6,400	5,213	5,124	5,079	5,042	5,002	4,897	4,797	4,690	4,400	4,300	3,000
Book Printing	430	367	361	341	343	341	295	285	281	281	281	245
Financial, Legal Printing	200	173	173	173	172	171	137	130	121	111	102	98
Screen Printing	4,122	4,096	4,188	4,382	4,474	4,549	4,630	4,698	4,687	4,204	3,999	2,000
Digital Printing	11	386	554	1,036	1,498	1,792	1,930	2,160	2,346	2,860	3,190	3,000
Subtotal	45,763	41,109	39,175	38,767	38,884	38,383	36,195	35,060	31,479	30,979	29,872	24,143
Form, Label & Tag Printing												
Business Forms Printing	1,178	764	736	704	682	660	558	502	499	479	469	300
Label, Wrapper Printing	890	822	814	798	797	797	709	699	689	650	640	510
Tag, Ticket, Tape Printing	210	146	141	136	136	135	124	120	120	110	105	95
Subtotal	2,278	1,732	1,691	1,638	1,615	1,592	1,391	1,321	1,308	1,239	1,214	905
Other Printing												
Greeting Card	70	55	51	49	49	48	39	32	31	31	29	20
Specialty Printing	1,200	1,019	991	994	975	951	821	800	798	788	790	980
Packaging Printing	1,900	1,700	1,667	1,630	1,624	1,559	1,436	1,400	1,380	1,360	1,340	1,310
Subtotal	3,170	2,774	2,709	2,673	2,648	2,619	2,619	2,619	2,619	2,619	2,619	2,600
U.S. PRINTING FIRMS	51,211	45,615	43,575	43,078	43,147	42,594	40,205	39,000	35,406	34,837	33,705	27,648
Trade Services												
Prepress Services	7,300	2,753	2,491	2,153	2,070	1,900	1,700	1,600	1,500	1,300	1,200	500
Trade Binding	1,400	1,300	1,299	1,239	1,200	1,190	1,100	1,089	1,057	1,003	1,000	1,000
Other Finishing Services	900	811	780	779	762	743	956	1,636	1,910	2,000	2,200	2,000
Subtotal	9,600	4,864	4,570	4,171	4,032	3,833	3,756	4,325	4,467	4,303	4,400	3,500
U.S. PRINTING INDUSTRY	60,811	50,479	48,145	47,249	47,179	46,427	43,961	43,325	39,873	39,140	38,105	31,148
Other Services												
Direct Mail Services	4,211	4,178	4,087	3,977	3,843	3,673	3,603	3,588	3,556	3,501	3,477	3,200
Graphics/Photo Services	5,300	5,990	6,100	6,300	6,400	6,600	6,890	7,002	7,500	7,670	8,000	9,000
Copy Shops	9,000	6,900	6,300	6,202	6,100	6,000	5,930	5,840	5,856	5,900	5,800	4,000
In-plant Services	12,000	7,900	7,100	6,854	5,977	5,442	5,241	5,198	5,188	5,165	5,100	5,000
Subtotal	30,511	24,968	23,587	23,333	22,320	21,715	21,664	21,628	22,100	22,236	22,377	21,200
PRINT UNIVERSE	91,322	75,447	71,732	70,582	69,499	68,142	65,625	64,953	61,973	61,376	60,482	52,348

The number of printing industry firms has been contracting since 1995, and we project that it will be close to 50 percent of its size in 2015 as compared with 1995. It is digital printing that has allowed the expansion of the printing industry into new categories of user.

The chart that follows plots the number of traditional printing firms from 1965 to 2020 and projects that the printing industry will return to its 1965 size in 2020. This is based on the fact that electronic substitution will continue to reduce the volume of print and this will result in fewer printers needed to produce the reduced print volume.

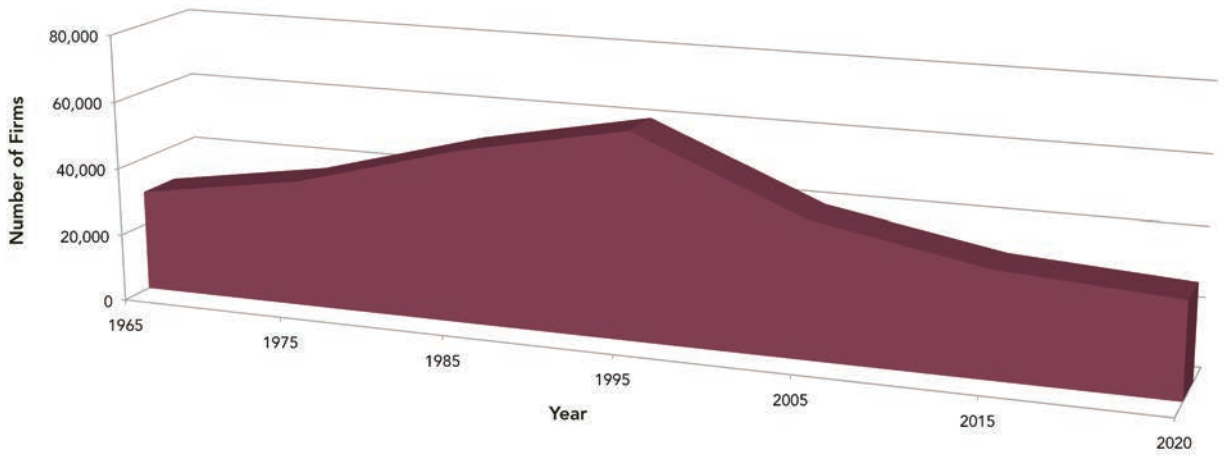

Figure 1: The growth and decline of printing firms in the U.S., 1965 - 2020

Table 33: Number of traditional printing firms in the U.S., 1965 - 2020

Year	1965	1975	1985	1995	2005	2015	2020
Firms	29,800	37,500	51,000	60,811	40,205	31,148	28,000

Summary

The printing industry is diverse and complex. Selecting a set of criteria for quantifying and tracking the industry is equally diverse and complex. A lot may have to do with what is sold to the industry and how it is sold. But there is a fundamental need for base data to allow consistent comparison over time for the printing companies themselves. The time has come for an audit of the printing industry. This would entail the acquisition of every known mailing list database and their integration into one master list (after de-duping).

A university, such as RIT, could analyze the list and check listings in industrial directories and other databases in order to keep the list current. Participants in the audit would then have access to the list for their own research and marketing. It would be suggested that the participants include universities, associations, and research organizations.

The printing industry needs a centralized database in order to maintain and research relevant information on a timely basis.

References

Art Directors Club of Metropolitan Washington. (2009). *Printing.* Retrieved from http://www.adcmw.org/CommercialPrinters.html

Cross, L. (2009). Top Firms GAM 101: Green Shoots at Top Printers. *Graphic Arts Monthly, 81(6),* 14. Retrieved from http://www.graphicartsonline.com/info/CA6468782.html

Cross, L. (2008). GAOnline 101 North American Printers: Big Printers Get Bigger. *Graphic Arts Monthly, 80(6),* 45. Retrieved from http://www.graphicartsonline.com/article/298876-GAOnline_101_Top_North_American_Printers_Big_Printers_Get_Bigger.php

Cross, L., & Avery, T. (2007). Top Firms 25 Years. *Graphic Arts Monthly, 79(6),* 27. Retrieved from http://www.graphicartsonline.com/article/302353-Top_Printers_25_Years.php

Cross, L. (2006). GAM/GABB 101 Top Printers01: 2006 Official Ranking of the Industry's Top Printing Firms. *Graphic Arts Monthly, 78(5),* 25-29. Retrieved from http://www.graphicartsonline.com/article/301538-GAM_GABB_101_Top_Printers01.php

Cross, L., & Blyth, S. (2005). GAM 101: 2005 Official Ranking of the Industry's Top Printing Firms. *Graphic Arts Monthly, 77(5),* 37-41. Retrieved from http://www.graphicartsonline.com/article/299175-GAM_101.php

Cross, L. (2004). The 22nd Annual GAM 101: Official Ranking of the Industry's Top Printing Firms. *Graphic Arts Monthly, 76(11),* 23-27. Retrieved from http://www.graphicartsonline.com/article/297675-The_22nd_Annual_GAM_101.php

Cross, L. (2003). The GAM 101: Official 2003 Ranking of the Industry's Top Printing Firms. *Graphic Arts Monthly, 75(11),* 43. Retrieved from http://www.graphicartsonline.com/article/306083-The_GAM_101.php

Dunnington, R. (2002, April). The 2002 Gravure industry statistical survey. *Gravure*, p. 56.

Graphic Arts Online. (2008). *Graphic Arts Blue Book.* New York, NY: Reed Business Information.

Lamparter, B. (2009, September 12). *Technology harnessed: Driving the road to recovery.* Chicago, IL: Executive Outlook Conference.

Lowery Hall, K. (2009). How do their gardens grow? *Quick Printing, 32(7),* 14-17.

Rosen, R.H. (2009, September 11). *Report on pre-media markets.* Chicago, IL: Print CEO Forum.

U.S. Census Bureau. (2009a). *Annual Survey of Manufacturers (ASM).* Retrieved from http://www.census.gov/manufacturing/asm/definitions/index.html

U.S. Census Bureau. (2009b). *Nonemployer Statistics.* Retrieved from http://www.census.gov/econ/overview/mu0500.html

U.S. Census Bureau. (2008). *2007 NAICS Definition: Sector 31-33—Manufacturing, 323 Printing and Related Support Activities.* Retrieved from http://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=323&search=2007%20NAICS%20Search

U.S. Census Bureau. (2007). *2007 NAICS Codes with Full Titles: The North American Industrial Classification System.* Retrieved from http://www.riedc.com/files/2007%20NAICS%20US%20Code.doc

U.S. Census Bureau (2003). *2002 NAICS Codes and Titles.* Retrieved from http://www.census.gov/epcd/naics02/naicod02.htm

Appendix: Survey Questions

We only asked a few questions to allow analysis of the InfoUSA sample list.

1. Is your company a proprietorship, partnership, or corporation?
2. How many employees do you have?
3. What is your primary business?
4. What reproduction device(s) do you have?
5. Percent of work produced on each?
6. Are you part of a larger organization?
7. Are you a broker?
8. What is your specialty?
9. Your title?

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