InterAct

Management strategies for Increasing graphic arts firm value

by Lynne Hagan

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I. Paper Scope & Methodologies:

The objective of this paper to identify the key business strategies used by printing firms to deliver financial performance that is either on-par or superior to the general market from the perspective of shareholders/owners of printing companies.

- The term "business strategies" is used to refer to those business decisions made that are long-term in nature and affect the products and services offered by the firm and how the firm competes within its industry.

- The definition of printing used in this paper is that provided by the U.S. Census Bureau as follows: Firms that "print products, such as newspapers, books, periodicals, business forms, greeting cards, and other materials, and perform support activities, such as bookbinding, platemaking services, and data imaging."[1]

- Metrics for financial performance revolve around relative growth or decline in the fair market value of selected firms. To enable measurement of value, the value of the stock and long-term debt of a selection of publicly traded printing firms located in North America is used as a means of linking specific strategies with financial performance data. This allows for identification of success strategies while keeping as many other variables as possible stable. The limitation of this method is, of course, the weakness of sampling from a relatively few, atypical firms. (Most firms in the printing industry are privately held.)

- The S&P 500 is used as a general benchmark. When possible (and informative), this is augmented with comparisons to the performance of manufacturing in general.

Methods: The basic source for the information in this paper is secondary research derived from public sources. In addition, primary research in the form of interviews with industry experts and a survey of corner office executives of seven profiled firms are used to provide more in-depth coverage. These firms were randomly selected for profiling from those graphic arts companies that are publicly traded and operate largely in North American. They exhibit a spread of financial performance, a variety of sub-specialties and primarily national distribution:

In addition to a "soft" look at the link between specific business strategies and corporate performance levels, a small-scale factor analysis (using correlations) indicates which strategies and economic variables are linked with increasing firm value. Please note that because the number of firms included in the analysis is extremely limited, this analysis is indicative only and does not provide a high enough degree of statistical validity to be used for prediction.

[1] U.S. Census Bureau: *Statistical Abstracts of the United States, 2001*: NAICS 32: Printing and Support Activities

Executive Summary:

Like many mature industries, printing has the capacity to provide long-term shareholder value that can match and sometimes exceed the performance of the S&P 500 under sound management. The industry, like most, is undergoing uncertainty risk because of the advent and widespread acceptance of new communication technologies. These technologies represent major challenges and significant opportunities for enhancing firm value. In fact, not too long ago, those following the industry predicted its demise and replacement by entirely electronic forms of communication.

In addition, as a natural outcome of its maturity, the industry has become more competitive and commoditized. Both competition and technology changes have made returns harder to come by and lowered performance for the industry overall. As the industry has become a less attractive growth investment, the number of firms operating in this space has naturally declined.

An examination of industry literature and statistics, however, shows that commercial printing will not go away: The value of shipments has continued to increase, until the recent economic downturn. At this stage, individual firm growth will depend on the implementation of more sophisticated business strategies, as well more traditional factors, including the state of the general economy.

In the economic sense, printing firms operate in a competitive market. Although traditional economics usually assumes that long-term, above-average performance cannot occur in this industry structure, this is not necessarily so on the individual firm level. A number of studies[2] propose that, even where economic profit is minimal on an industry-wide basis, there are exceptions and that the management strategies used by firms can make a difference in financial and market performance, regardless of the economic environment[3]. This paper does not ignore the influence of historical financial performance on present values, but seeks to provide actionable guidance -- in the form of specific business strategies -- that can be used by managers to increase firm value.

After comparing the returns of seven publicly-traded printing firms with the S&P 500 over one, three and five year periods, we find several firms that have "beaten" the S&P 500 and identified several strategies they have used to do so. Interestingly, these strategies differ somewhat for short-term (1 year) versus longer-term (5 years) growth.

Within the scope of this analysis the following factors[4], in order of importance, are shown to contribute to creating superior ***short-term*** investor value:

- Customer segmentation/targeting
- Stock option compensation
- Employee development
- Vertical acquisition
- Price increases
- Reinvestment

[2] including Philip Bromiley, Sharon James-Wade; "Putting rational binders behind us: Behavioral understandings of finance and strategic management;" *Long Range Planning*; February 2003; pgs. 37-48.
[3] Todd M. Alessandri, Richard A. Bettis; "Surviving the bulls and the bears: Robust strategies and shareholder wealth;" *Long Range Planning;* February 2003; pgs. 13-35.
[4] Factors were identified using statistical correlation analysis. See chart in Appendix.

Long-term value is generated by the following strategies[5]:

- Global expansion
- Increase of capacity
- Employee development
- Economies of scale that come with larger operations
- Process improvement

About the Author:

As well as being an MBA student at Rutgers University (Newark, NJ), Lynne Hagan leads InterAct, a market research firm located in Tenafly, NJ that helps printing firms acquire, understand and use market and financial information to grow and prosper. The development of this paper has a dual purpose for Lynne. First, the research and analysis was conducted as part of a management economics course requirement under the direction of Dr. James Bicksler, PhD. Second, after years of reading economic reports and conducting market research and financial analysis for printing firms, Lynne wanted to conduct an independent study of what factors really contribute to success for her clients.

Situation Analysis:

Industry Description:
As indicated above, the printing industry covers firms engaged in the production of items such as newspapers, books, periodicals, forms, greeting cards and ad materials.

"The processes used in printing include a variety of methods used to transfer an image from a plate, screen, 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[6] 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)." [7]

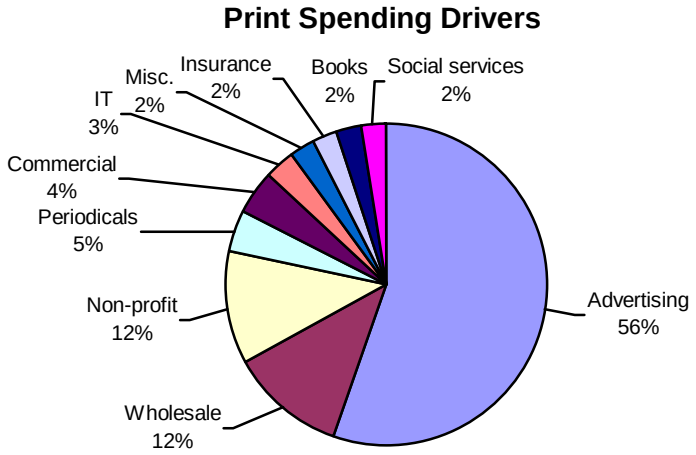
This description does not cover all the outputs that printers currently produce. While ink-on-paper still makes up the bulk of the printing business, a variety of other products including document management, CD-ROM duplication, software, Web sites, databases, process improvement consulting and advertising creative, are used to enhance revenue, profits, share of customer and financial stability.

As of 2000, the printing industry encompassed just over 39,000 firms employing 813,000 workers (73% of them production workers) with shipments valued at $104.6 billion of which $63.5 billion was value-added.[8] The bulk of these shipments (an estimated $88 billion[9])

[5] Ibid.
[6] AKA "digital printing"
[7] U.S. Census Bureau, *Statistical Abstracts of the United States,* NAICS Printing and Support Activities description.
[8] Ibid.
Note: Adjusted value added takes into account (a) value added by merchandising operations (difference between sales value and cost of merchandise without further manufacturing, processing or assembly), plus (b) net change in finished goods and work-in-progress inventories between beginning and end of year.

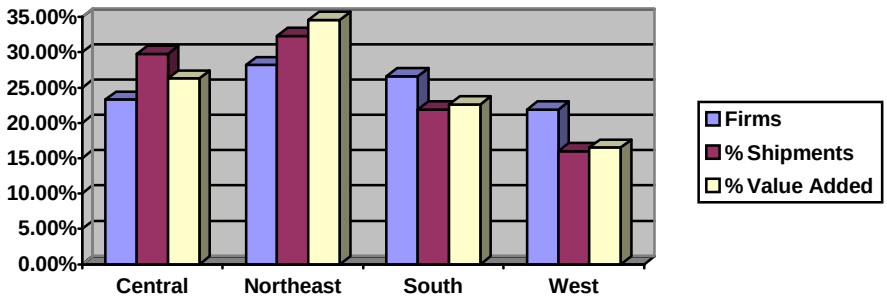
originate from general "commercial printing" firms. Recent financial performance for the industry has been dismal: Sales declined by 3.5% in 2002 and 4% in 2001 and before-tax profit rates were 1% in 2002 (the lowest level in 30 years). A recent survey of printing executives found that 1/3 of respondents reported losses.[10]

Demand sources are fairly diverse with advertising materials (across all industries) accounting for quite a lot of revenue.



Source: Ron Davis, Ph.D., "What drives print demand?;" www.gain.net/industry/print_markets/demand/index.html

Geography also plays a part in determining both demand and financial performance since customer are much more likely to do business with a firm that is located close at hand and some regions are more prolific than others for revenue potential and price sensitivity. The graph below outlines the number of firms, the value of shipments and the value added for commercial lithographic printing firms in 1997 (the latest year for which this data is available). The graph illustrates that revenues and margins for firms operating in the Northeast and Central regions of the U.S. are disportionately higher than those located in the South or West.



Scope trends in the printing industry:

The number of printing firms and employees has been steadily declining since the mid-1990's.

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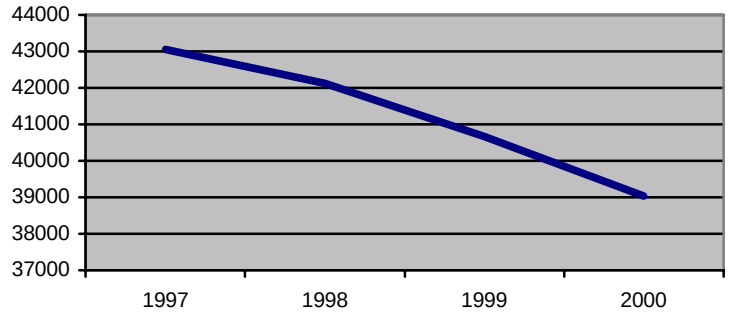
[9] "NAPL Economist: Print Sales Should Rebound, but Real Recovery is Still Far in the Future;" *2003 Sheetfed Pressroom Conference;* National Association of Printing Leadership, June, 2003 (http://www.napl.org/press_releases/2003_releases/06012003_ShtfdPaparozzi.html)

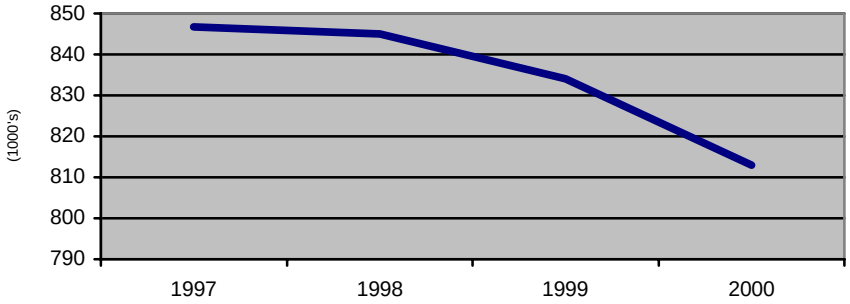
[10] "The Business of Print: Readying for the new year: industry analysts and consultants offer 2003 forecasts on the business, technological, and political fronts along with some recommendations;" *Graphic Arts Monthly;* January 2003.

Number of Printing Firms



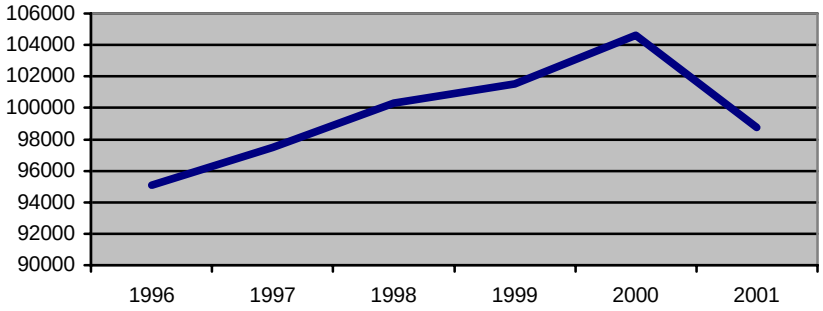
Source: U.S. Census Bureau: *Statistical Abstract of the United States*, 2001; 1998-2000 NAIC description: Printing and Related Support Acitivies

Employment



Source: U.S. Census Bureau: *Statistical Absatracts of the United States, 1997,-2001*

Value of Shipments, Inventories & New Orders (millions of $)



Source: U.S. Census Bureau, *Statistical Abstract of the United States, 2002*

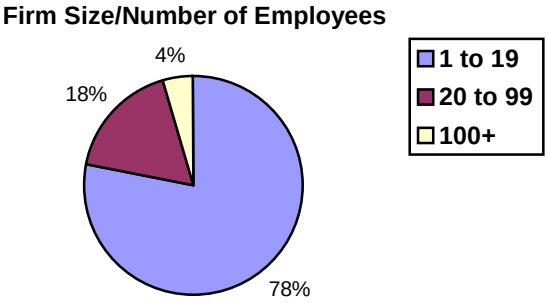
Simultaneously, the value of shipments has shown an increase (exempting 2001). According to several sources, this has been accompanied by an increase in price competition as well.[11] All of these factors – the decrease in firms and employees, the increase in shipment value and price sensitivity – point to an industry coming increasingly close to becoming a "competitive market."

[11] "Preparing for Prosperity: As the New Year Approaches, Executives Size up the Problem Plaguing the Industry and Offer Seven New Riles and Time-Tested Strategies for Business Success," *Graphic Arts Monthly*, December, 2002; pg. 30.

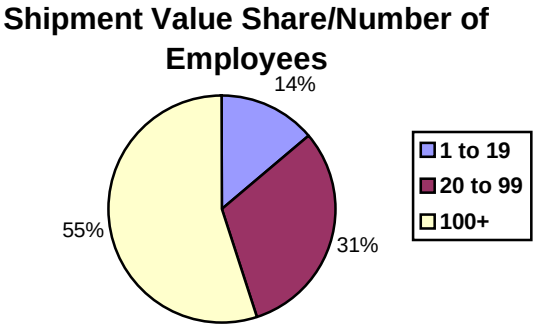
Most economists define a competitive market as one having a relatively large number of competing firms offering roughly the same service, which freely enter and exit the market. Fairly accurate information (information symmetry), including competitive pricing, is shared quickly and inexpensively. Inherent in the theory of competitive markets is the existence of little or no economic profit opportunity.[12]

This applies to a large extent to the printing industry. First, no one firm dominates the market. Share of market in this industry is diffuse. When we look at revenues for our sample of North American printing firms, even the larger ones have only about 5% each of the total market.

In fact, as shown below, the majority firms are very small with fewer than 10 employees. However, these small firms command only 14% of the value of all shipments where as large firms (those with 100 or more employees) account for 55% of all shipments.



Source: U.S. Census Bureau: *1997 Economic Census: Manufacturing Industry Series/Commercial Lithographic Printing*; Detailed Statistics by Industry , 1997; page 8



Source: U.S. Census Bureau: 1997 Economic Census: Manufacturing Indu Series/Commercial Lithographic Industry, 1997; page 9

Barriers to entry are present to some degree. The decreasing revenue opportunities and the over-abundance of capacity often referred to in the industry trade press have lowered margins and increased price competition[13] to the extent that the number of printing firms, both new

[12] James A. Brickley, Clifford W. Smith, Jr., Jerold L. Zimmerman (2004), *Managerial Economics and Organizational Architecture,*; McGraw-Hill (New York); p. 138.

[13] "A 'better' 2003 lifts prospects for print: no one expects a banner year, but an industry in deep recession will settle for a modest improvement," *Graphic Arts Monthly*, December, 2002, pg.34.

entrants and existing rivals, has been steadily declining. On the other hand, specialized assets are rarely required and, because output is customized to customer specifications, there is limited scope for manufacturing scale economies beyond targeting a rapidly diminishing number of long-run projects.[14] There is, however, some economy of scale available from supply chain management and bundling of administrative functions. Volume discounts for primary materials – ink and paper – are common.

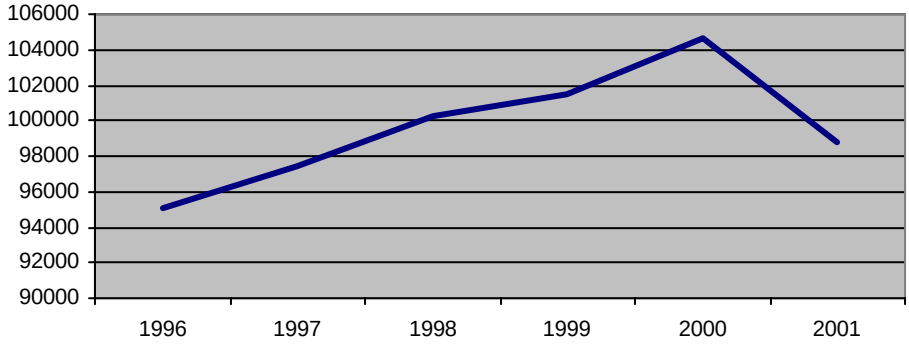
Although many firms state that an average of 75% of their annual sales come from existing accounts[15], most incumbent advantages – licenses and patents, learning-curve effects and brand advantages – are fairly limited in the industry. There are some annual and multi-year contracts that yield more predictable cash flows for individual firms, but since the customer base is as diffused as the printing industry itself, these do not yield marked advantages to incumbents. Exit costs are limited as well and entail selling presses and other equipment for which there is a fairly active market.

Information symmetry is evident. Pricing information is acquired through competitive research or openly available through either customer feedback and/or corporate Web sites. Manufacturing capabilities are also frequently listed in the firm's promotional communications.

Capacity Utilization

Despite the steady increases of shipment values (shown again below), capacity utilization within the printing industry has, until recently, declined. This trend follows that of manufacturing overall and is probably the result of productivity boosts and equipment upgrades. Capital expenditures, nevertheless, have remained fairly steady. (The increase in 1998 results from the shift from SIC to NAICS industry categorization.

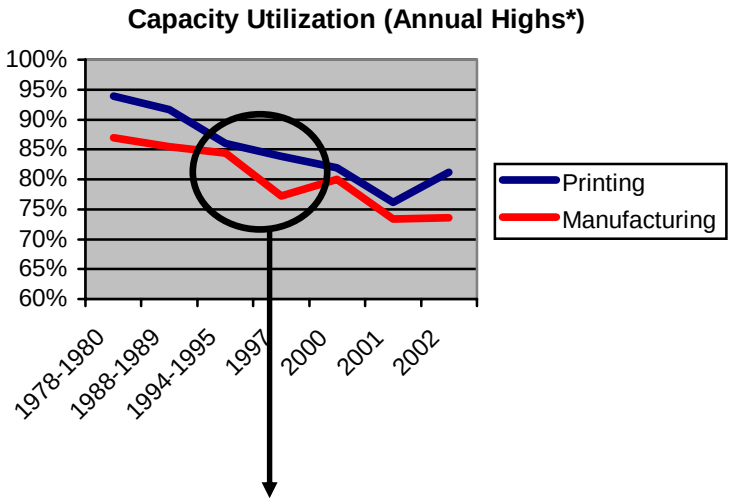
Value of Shipments, Inventories & New Orders (millions of $)

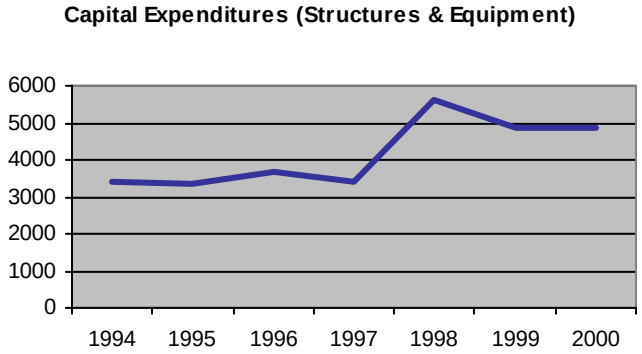


Source: U.S. Census Bureau, *Statistical Abstract of the United States, 2002*

[14] Jill Roth cites industry guru, Frank Romano, as estimating that currently one-third of all print projects are "short-run" and that this proportion will grow to 50% in the next 15-20 years, "Dollars and Sense: Ideas to Drive Profit," *American Printer,* July, 2002.

[15] "Facts and Figures," *Printing Impressions*, January, 2003, pg. 14.

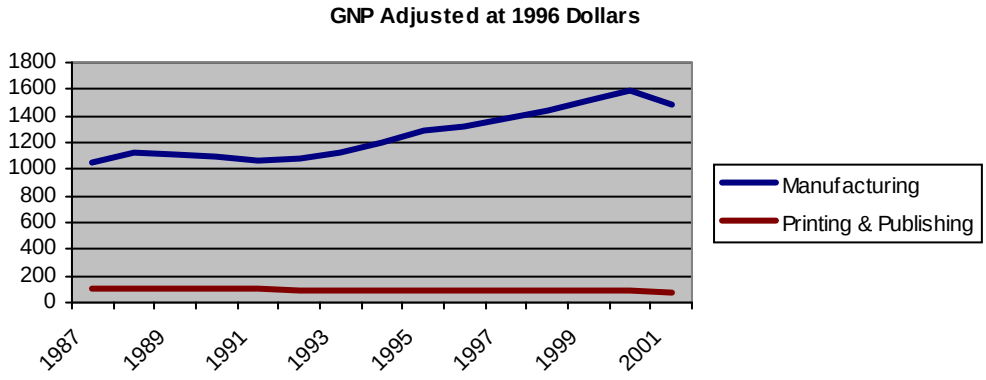




Sources: "Industrial Production and Capacity Utilization: The 2002 Historical and Annual Revision;" Federal Reserve Board Bulletin, April 2003; pg. 174; "Industry Production and Capacity Utilization;" Federal Reserve Statistical Release; Nov. 16, 1998; pg. 8 and "Industry Production and Capacity Utilization;" Federal Reserve Statistical Release; July 16, 2003.

Industry Performance:

Overall, the printing industry has not historically performed well when compared to the overall economy. Its contribution to the gross national product has remained flat while that for the manufacturing sector as a whole has risen.

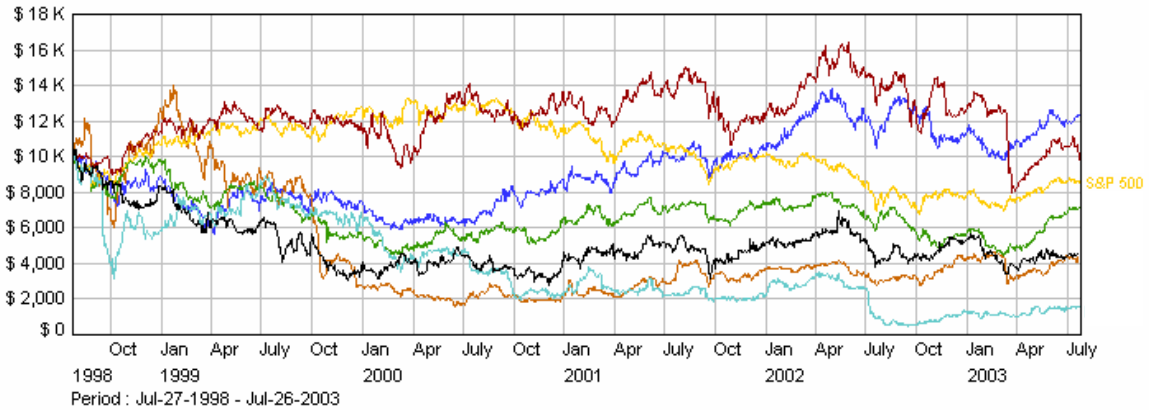


Source: U.S. Census Bureau: *Statistical Abstract of the United States, 1987-2001*

In terms of stock performance, stock growth since 1998 for profiled firms has not faired well against the general market as benchmarked the S&P 500. Only one firm (represented by the

red line in the chart below) has *consistently* beaten the S&P 500 index while all the other firms have provided below-market returns. Note that one other firm (the blue line in the chart) has started providing above-market returns since mid-2001. These performances are explored in more detail below.

Growth of $10,000



Source: Quicken.com

Economic Trends & Issues

Most economists and industry commentators have stated for a number of years that the industry is in a state of flux. In the last ten years, this industry has gone from a moderate growth industry – with growth rates leading the overall economy – to what one economist (Ron Davis of Printing Industries of America) terms a mature industry with growth that lags the economy.[16] Dependent on economic growth, printing sales are expected to grow 1-2.5% this year and 4% next year.[17] The number of firms, on the other hand, is expected to continue to decline with the greatest losses occurring among firms with 20-49 employees.[18]

A number of factors seem to be determinants of print spending. Logically, they include advertising spending and the related factors of consumer spending and confidence, stock market trends, corporate business investment and corporate profitability. In addition, the transition away from printed to digital communications is thought by many to represent both a negative and positive variable.[19]

The impact of economic recovery is expected to vary from segment to segment.[20] Revenue growth for 2003 is expected to be moderate with the following areas providing superior growth opportunities: Marketing/promotional support (7.23%), direct mail (5.79%) and electronic prepress (5.02%) according to PIA's Quarterly Market Survey (a survey of an established panel of print executives).[21] Industry economists also cite their belief that only those who move

[16] "The Business of Print: Readying for the new year: industry analysts and consultants offer 2003 forecasts on the business, technological, and political fronts, along with some how-to recommendations;" *Graphic Arts Monthly;* January 2003.

[17] "NAPL Economist: Print Sales Should Rebound but Real Recovery is Still Far in the Future;" National Association of Printing Leadership; 6/1/03, (http://www.napl.org/press_releases/2003_releases/06012003_ShtfdPaparozzi.html)

[18] Mayu Mishina, "On the rebound;" *American Printer;* December 2002, pgs. 32-33.

[19] "A 'better" 2003 lifts prospects for print;" *Graphic Arts Monthly;* December 2002.

[20] Regis J. Delmontagne, "Prospects for print growth vary;" *PackagePrinting;* March 2003, pgs. 50-52.

[21] "Sales Growth by Market Segment;" Graphic Arts Information Network (http://www.gain.net/industry/print_markets/growth.html)

beyond ink-on-paper to communication management will prosper. Growth will come from supplementing print, not replacing it. An ongoing economic survey of a panel of printing firms conducted by the National Association of Printing Leadership (NAPL) shows that offering communication-support services enhances ink-on-paper revenue.[22]

The Internet has had a widespread effect on the printing industry, both negative and positive. It's estimated that the industry has lost $36 billion in sales (34% of total shipments) to non-print media (read the Web) over the last three years.[23] For example, products sold through the Internet do not require the compelling, eye-catching packaging so essential at retail. As Internet sales grow, print revenue resulting from packaging will decline in direct proportion.[24]

Positive Internet effects include the introduction of online job bidding, job tracking, purchase of hardware and software, proofing, hiring and training of employees, use of electronic signatures, Internet sales and the use of the Internet to receive and/or distribute work to/from freelancers and agents.[25]

Despite it's classification as a competitive market (and therefore, at least theoretically, yielding little economic profits), pundits do believe opportunity exists for above-average profitability. For example, one study looks at the operational differences between the top 25% of printers in terms of profits (averaging 8%) and the rest.

The study finds that the top 25% of printers in terms of profits don't necessarily have higher prices. Pricing has, over the last ten years, remained at 2.7-2.8 times direct order additives with very little variation across companies. Interestingly, the study also finds that material price fluctuations and productivity increases have been passed on to the customer. In addition, the difference in value-added margin between the most profitable printers (those with a 8+% net earnings to revenue ratio) and the least is negligible (63.8% versus 63.2%).[26,]

The industry movement to managing hourly job costs – measurably increasing the productivity of each printing job by reducing the number of labor hours spent – has not been accompanied globally by the decrease in employees or increase in sales necessary to increase profits.[27] The difference between the "profit leaders" and the rest of the firms lies in the ratio of compensation to value-added dollar. The top 25% have paid compensation that averages 54.5% of value-added over the last 11 years. The bottom 75%, on the other hand, have paid out an average of 63.9% of their value-added over the same period.[28] In sum, this analysis points to the ability to control *real* costs and then generate additional sales as key determinants for profitability.

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[22] Ibid.

[23] Regis J. Delmontagne, "Prospects for print growth vary;" *PackagePrinting;* March 2003, pgs. 50-52.

[24] Ibid.

[25] "Trendwatch Index;" Trendwatch Graphic Arts/Reed Business Information (http://www/trendwatchgraphicarts.com/indicator.html)

[26] Roger V. Dickeson, "PIA sets the Table;" *Printing Impressions*, March 2003, pg. 52.

[27] Roger V. Dickeson, "Does productivity influence profit?," *Printing Impressions;* January 2003, pg.s 56-58.

[28] Roger V. Dickeson, "Balancing people capacity;" *Printing Impressions,* April 2003, pg.72.

Analysis:

Success Factors:
When the seven profiled firms are compared to the S&P 500 benchmark for rate of change of stock values, none has performed well in the short-term (1 year), while most of have performed well in the mid-term period (3 year) and only two beat the benchmark for the long-term (5 year) period. These firm provided a return over five years (4% and 1.2% respectively) that exceeded the S&P 500 (-1.9%).

Growth Rate Ranking for Each Time Length

Company	2002 return[1]
S&P 500	**29.50%**
Company D	15.6%
Company A	7.5%
Company C	5.2%
Company G	0.9%
Company B	-5.0%
Company F	-23.8%
Company E	-39.0%

	3-year share value growth[1]
Company A	25.0%
Company D	23.8%
Company B	13.5%
Company F	9.8%
Company C	5.4%
Company G	-7.8%
S&P 500	**-11.3%**
Company E	-25.6%

	5-year share value growth[1]
Company A	4.0%
Company G	1.2%
S&P 500	**-1.9%**
Company F	-6.8%
Company B	-8.2%
Company C	-14.8%
Company D	-16.2%
Company E	-31.7%

[1]**Source:** Morningstar.com 7/22/03
Note: Shaded areas indicate firms that have higher growth rate than S&P 500 for that period.

As mentioned in the "Executive Summary," strategies statistically correlated with return growth differ for each length of time with previous financial performance – in the form of previous growth rates, revenue growth and cash flow growth – providing a consistent predictor of future success.

Short-term strategies indicated include customer segmentation, stock option compensation, employee development and vertical acquisition.

Comparing Company A and Company E provides a stellar example of how well segmentation works.

Company A is a long-established printer. Their returns have been consistently positive over the last five years: Value growth was 8% last year, 25% in the last three years and 4% in the last five years. They serve mainly the publishing and direct marketing industries, but have extended their services with two operations that parallel their core competencies. While print serves to generate a fairly predictable flow of cash, these two "early adopter" units seek to gain more aggressive rates of return.

Company E, on the other hand, is a general commercial printer with one set of operating units manufacturing speciality printing outputs. In addition, until recently, they operated another specialty unit that generated returns superior to the rest of their operations. They do not target any specific segments. This is just one of several factors resulting in their below-par financial performance of –39% last year, -26% in the last three years and –32% in the last five years.

The second short-term success factor found is stock option compensation. These incentives are used alone or in combination with cash and stock grants for all of the firms examined. The two companies providing the best performance short- and long-term use only options, unmitigated by grants and/or cash awards.

Vertical acquisition – the purchase of or merger with a firm that offers complementary products and services -- is also used by the two short-term value leaders (Company A and Company D). Other firms have sought to achieve the same effects organically. Company G has been especially aggressive in forming complementary business units offering, among others, content management, database management and logistics. This has not, however, generated radically superior growth, but has probably helped them maintain their long-term place just above the S&P.

Long-term growth is spurred by the following, very logical strategies: Global expansion, increase of capacity, employee development, process improvement and the economies of scale associated with larger firms (as measured by number of employees and the value of assets).

Global expansion is a strategy associated with the mid- and large-cap industry players. The effect of this strategy may, then, be derived from economies of scale. Nevertheless, entry into other countries, especially Latin America and China, have been very productive.

Expansion of capacity is cited by all firms as taking the form of additional equipment, usually positioned as an upgrade against outmoded units, or productivity gains. These productivity gains come as a result of process improvement. For example, Company F lays special emphasis on a recent restructuring that uses technology to optimize operations and manage continuous improvement.

Although not a major contributor to above-benchmark return, economies of scale have positively impacted performance, especially for the larger firms. Their employee and asset base probably contribute to the ability to negotiate terms with vendors, gain new customers and keep existing ones. In addition, the infrastructure built to operate internationally has most likely lowered

administrative costs of handling large, global accounts. These firms are also more likely to mention annual and multi-year contracts than the other companies analyzed.

There is a fairly significant correlation between employee development programs and firm value, both short- and long-term. This development varies in form. It may include technical training, employee solution teams and/or collaborative process improvement. Sales training, especially solution selling techniques, is common.

The table on the following page outlines each firm's historic financial performance and key strategies. A table of statistical correlations is provided in the appendix.

Strategy Utilization by Profiled Firms

Metric	Company D	Company A	Company C	Company G	Company B	Company F	Company E
2002 return[1]	15.6%	7.5%	5.2%	0.9%	-5.0%	-23.8%	-39.0%
3-year share value growth[1]	23.8%	25.0%	5.4%	-7.8%	13.5%	9.8%	-25.6%
5-year share value growth[1]	-16.2%	4.0%	-14.8%	1.2%	-8.2%	-6.8%	-31.7%
Cume 5-year revenue growth[2]	178.0%	-0.5%	2.5%	63.9%	10.7%	-5.2%	19.2%
5-year operating cash flow growth[2]	132.6%	27.9%	123.0%	24.0%	-26.6%	-44.8%	-119.9%
2002 Capital spending/Cash Flow[4]	0.0%	20.8%	29.2%	0.0%	0.0%	0.0%	0.0%
Executive Comp. Type	Options	Options	Options & stock grants	Options & stock grants	Options, stock grants & cash	Options, stock grants & cash	Options & stock grants
Work Type[4]	Project	Project	Contract & project	Contract & project	Contract & project	Contract & project	Project
Process Improvement[4]	No	Yes	Yes	No	Yes	Yes	No
Productivity Measure	N/A	Throughput	Capacity utilization	N/A	N/A	Six Sigma tools	N/A
Employee Development[4]	Yes	Yes	Yes	Yes	No	Yes	No
Firm Value Rating	1	1	1	1	4	1	2
Risk Aversion Rating[3]	90%	50%	60%	80%	80%	80%	50%
New services[3]	Yes	Yes	Yes	No	Yes	Yes	No
Added capacity[3]	Yes	Yes	No	Yes	No	Yes	No
Horizontal acquisition[3]	Yes	No	Yes	Yes	Yes	No	Yes
Vertical acquisition[3]	Yes	Yes	No	No	Yes	No	No
Segmentation[3]	Yes	Yes	Yes	No	No	No	No
Price increases[3]	Yes	No	No	No	No	No	No
Global expansion[3]	No	Yes	No	Yes	Yes	Yes	No
Layoffs[4]	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Increased marketing spending[3]	No	No	No	No	No	No	No
Cost cutting[3]	Yes	Yes	Yes	Yes	Yes	Yes	Yes

[1]**Source:** Morningstar.com 7/22/03

[2]**Source:** SEC 10Ks via EDGAR; Cashflow=Net earnings + depreciation

[3]**Sources:** (A) Survey results; (B) Interpreted from annual report management commentary

[4]**Source:** SEC 10Ks via EDGAR

[5]**Source:** Mergent (www.mergent.com)

Summary:

Although the printing industry fits the classic economics definition of a competitive market, opportunities exist for generating superior firm value and return through the use of specific business strategies. The identification of these strategies has been attempted, but deserves greater study and analysis, especially through the use of more statistically projectible methods using larger sample sizes.

Nevertheless, despite its limitations, the findings outlined in this paper are confirmed through several sources. For example, one study conducted by Resource Data International (a unit of Deloitte Touche Consulting), analyzed some of the tools used by those companies – titled the "value elite" – to create competitive advantage and superior investor returns. Common strategies include the creation of customer value, competitive focus, accountability, cost control measures and continuous improvement. This paper's findings match this to some extent: The firms examined have used tools such as targeted vertical acquisition to add value for customers, stay focused and decrease risk. All of the firms profiled use equity-based incentives to try to align management and shareholders' interests. While all profiled firms cite cost control, continuous improvement apparently is a mixed bag. Statistically, there's a link between this behavior and mid-range and long-term return, but when trying to confirm this "by eyeball," it's difficult to see. This is an area, along with employee development that needs to be examined and quantified more thoroughly.

Appendix

Printing Shipments, Value-Added by Region & State

Region	State	Firms	Shipments	Value Added	% Firms	%Shipments	% VA
Central	Arkansas	129	$292,918	$169,848			
Central	Illinois	1009	$4,155,403	$2,425,100			
Central	Indiana	396	$970,386	$493,283			
Central	Iowa	203	$591,724	$319,861			
Central	Kansas	206	$740,772	$425,346			
Central	Michigan	660	$1,665,119	$973,409			
Central	Minnesota	433	$2,708,640	$1,547,455			
Central	Missouri	446	$1,039,172	$607,878			
Central	Nebraska	127	$294,151	$167,234			
Central	North Dakota	43	$48,518	$32,903			
Central	Oklahoma	203	$345,660	$182,344			
Central	South Dakota	44	$43,564	$26,274			
Central	Wisconsin	445	2,059,418	128,064	23.3%	29.8%	26.3%
Northeast	Connecticut	315	$1,031,093	$572,914			
Northeast	Delaware	37	$44,336	$28,583			
Northeast	DC	44	$89,257	$50,175			
Northeast	Maine	87	$209,081	$105,223			
Northeast	Maryland	353	$1,113,552	$675,538			
Northeast	Massachusetts	490	$1,367,422	$824,940			
Northeast	New Hampshire	113	$241,235	$199,351			
Northeast	New Jersey	684	$2,291,834	$1,294,359			
Northeast	New York	1351	$3,770,393	$2,455,987			
Northeast	Ohio	823	$2,404,685	$1,448,594			
Northeast	Pennsylvania	825	$3,335,070	$2,012,903			
Northeast	Rhode Island	88	$173,201	$102,781			
Northeast	Vermont	50	$174,136	$95,591	28.2%	32.3%	34.6%
South	Alabama	236	$415,450	$211,593			
South	Florida	944	$1,447,735	$837,799			
South	Georgia	529	$1,347,843	$793,459			
South	Kentucky	201	$1,047,649	$684,932			
South	Louisiana	175	$199,126	$118,019			
South	Mississippi	105	$161,300	$95,990			
South	North Carolina	482	1,037,249	603,877			
South	South Carolina	199	255,998	161,450			
South	Tennessee	378	1,223,596	713,778			
South	Texas	1228	2,570,837	1,513,794			
South	Virginia	409	1,216,046	679,169			
South	West Virginia	61	76,081	46,940	26.6%	21.9%	22.6%
West	Alaska	28	$22,104	$14,413			
West	Arizona	278	$416,949	$252,810			
West	California	2297	$5,111,977	$2,997,976			
West	Colorado	341	$726,015	$413,044			
West	Hawaii	47	$75,948	$49,266			
West	Idaho	87	$62,606	$39,437			
West	Montana	58	43,040	26,502			
West	Nevada	74	136,255	76,681			
West	New Mexico	85	84,923	44,216			
West	Oregon	263	513,945	278,749			
West	Utah	121	240,221	135,988			
West	Washington	362	589,715	359,936			
West	Wyoming	30	$17,673	$10,134	21.9%	16.0%	16.5%

Source: "Industry Statistics, Selected States, 1997;" *1997 Census: Manufacturing Industry Series/Commercial Lithographic Printing,* U.S. Census Bureau, U.S. Department of Commerce (Washington, DC), pg. 7

Statistical Correlation between Strategic Variables and Stock Performance (Growth)

Table of correlations

	2002 return	3-year share value growth	5-year share value growth
2002 return	1.000		
3-year share value growth	0.732	1.000	
5-year share value growth	0.533	0.553	1.000
Cume 5-year revenue growth	0.479	0.232	-0.153
5-year operating cash flow growth	0.903	0.601	0.260
Process Improvement (Y/N)	0.096	0.495	0.406
Employee Development (Y/N)	0.585	0.470	0.545
Firm Value Rating	-0.244	-0.084	-0.182
Risk Aversion Rating	0.324	0.335	0.204
Growth thru new services (Y/N)	0.480	0.874	0.278
Growth thru added capacity (Y/N)	0.360	0.444	0.613
Growth thru horizontal acquisition (Y/N)	0.093	-0.422	-0.509
Growth thru vertical acquisition (Y/N)	0.561	0.753	0.277
Growth thru segmentation (Y/N)	0.726	0.613	0.106
Growth thru price increases (Y/N)	0.483	0.429	-0.214
Growth thru global expansion (Y/N)	0.027	0.265	0.821
2002 Capital spending/Cash Flow	0.406	0.270	0.188
2002 # Employees	-0.214	-0.329	0.438
2002 LT Debt	-0.369	-0.587	0.153
2002 Total Assets	-0.104	-0.355	0.420
Executive Comp. Type_Options	0.605	0.688	0.242
Executive Comp. Type_Options & stock grants	-0.265	-0.814	-0.369
Executive Comp. Type_Options, stock grants & cash	-0.315	0.203	0.162
Work Type: Contract & project	-0.010	-0.075	0.333
Work Type: Project	0.010	0.075	-0.333