



Making Smarter Graphic Arts Equipment Decisions **with Market Research**

By [Lynne Hagan](#)
President

Table of Contents

Paper Scope	Page 2
Equipment Decision Factors	Page 2
Applicable Research Methods	Page 3
Research Methods Overview	Page3
Market Size	Page 3
Competitive Profiling	Page 4
Price Sensitivity	Page 5
Elasticity	Page 6
Benefit Preferences	Page 6
Key Target Segments	Page 7
Cases	Page 8
General Commercial Printer	Page 8
Niche Printer	Page 8
Quick Printer	Page 10
Summary	Page 10
About the Author	Page 10

Paper Scope

[\(Top\)](#)

This paper will help printing firms reduce the financial risk associated with investing in new equipment, especially equipment using new technology or meant to open up new markets with which the firm has little or no historical experience. An example might be the acquisition of digital printing equipment or data warehousing technology versus an additional offset press.

Most readers will be able to plan and implement basic market research that will help decide whether to invest (or not) in the new equipment, establish a pricing strategy, develop reliable revenue projections and generate a sales strategy. Results can then be used to pinpoint potential revenue and profit gains, as well as develop sales strategies.

Equipment Decision Factors

[\(Top\)](#)

All capital investment requires careful financial analysis. Whether the result is a net present value, an internal rate of return, a payback period or a book rate of return, this analysis is, nine time out of ten, based on estimates. Market research helps to increase the validity of these estimates and, in this way, reduces the risk of financial failure.

Factors that are part of most capital investment analysis include:

Potential revenue: This information takes the form of a probable range of either dollars or production units. The production units used depend on the market being investigated and can be in the form of pages, impressions, jobs/projects, mail quantities, etc. Potential revenue often comes from an estimate of attainable market share applied to total market or segment value.

The percentage of current revenue likely to disappear as a result of the new offering: This oft-overlooked analysis factor is the range of likely cannibalization of

Deleted: 10
Deleted: 1
Deleted: 10

existing sales that results from introducing a new service that directly competes with existing ones. Cannibalized sales are deducted from revenue potential.

Current competitive landscape: This research covers the structure of the competition (whether it's concentrated among a relatively few number of firms or encompasses a large number of firms), predominant pricing practices (cost versus value-based, for instance), pricing trendlines, turnaround/delivery practices, relative strengths and weaknesses, key customers and the strategies generally used for growth (used to predict likely responses to firm's entry into new equipment offering).

Prospect price sensitivity: This is a measure of how prospects value the new service. In developing pricing strategy, it is typically compared to both competitive price trendlines and cost-based pricing. This analysis also provides the opportunity to identify those prospects and their associated segments that are the least price sensitive and, therefore, represent the prospects with the highest margin potential.

Elasticity relationships: This information measures the relationship between price and demand and, sometimes, price and turnaround. It is used to develop pricing and capacity expectations.

Basic and enhanced features: This calls for identifying the equipment features and benefits required by the marketplace, as well as those that are perceived as adding significant value to the service offering. The data is then used to develop a shortlist of potential equipment models and associate them (and their acquisition and operating costs) with market values.

Segmentation schemes: Although often part of the market scoping, it's vital to identify potential segments fairly early in the market research process. For example, if a decision is made to limit the target market to particular segments, potential revenue, competitors, features and pricing are all delimited and need to be analyzed within the segmentation confines.

Research Methods

[\(Top\)](#)

Before discussing the types of research that apply to getting the answers needed to make new equipment decisions, let's take a look at some market research basics. Market research methods can be divided into three broad categories: Secondary, quantitative and qualitative.

Secondary research is derived from publicly available information and is used because it's usually more economical and faster than conducting primary (customized) quantitative or qualitative research. Secondary sources include trade publications and journals, previously done (and shared) syndicated research, directories and analysts' reports.

Quantitative research is the use of large amounts of data, usually derived from a combination of corporate records, commercially-available databases or large-scale surveys to answer specific questions with a high degree of validity. Findings from quantitative research are limited to the data at hand and are often constrained by data processing capacity. In addition, this type of research often demands specialist knowledge to implement and this can increase the cost of implementation.

Deleted: 10

Deleted: 1

Deleted: 10

Qualitative research is the use of personal interviews, long-format surveys and focus groups to obtain more in-depth information. The data derived from qualitative research, while less valid for prediction, is more dynamic and often provides excellent insights for development of broad strategy or amplification of information gained through secondary and/or quantitative research. On the down side, qualitative research can sometimes be expensive, especially when outsourced, because of the time and out-of-pocket expenses required for a significant level of validity. Nevertheless, qualitative research is a very popular method of getting market information; it requires little expert knowledge and is relatively easy to design and fast to implement.

Research Methods for Sizing the Market

[\(Top\)](#)

One of two methods usually yields workable estimates of market size: secondary or quantitative.

At its most simple, the size of a specific market can often be estimated in one step by conducting secondary research using industry-pertinent periodicals and trade associations. For instance, trade publications such as *American Printer* and *Graphic Arts Monthly* and trade associations such as the National Association of Printing Leadership and the Printing Industries of America spend much time and effort monitoring the size of the graphic arts industry and, often, break down the size of the market by client industries and output type.

For markets that are a bit narrower in scope, combining data from two or more sources is useful. For example, sizing scholarly journal production can be accomplished by using estimates of the portion of revenue spend on production (available from publishing industry periodicals and associations) and revenue estimates available through syndicated research or government sources.

For those markets not covered through these resources, statistical primary research in the form of large-scale surveys asking target prospects what they spend on production is required. Survey results are then modeled and applied to the entire base of prospective buyers. The key to obtaining accuracy with this method is careful design of the survey to insure valid answers from key decision-makers. Although easier to execute, online surveys rarely provide a high enough response to insure accuracy. Best results recently have been accomplished by combining email and mail surveys. Offering a copy of the results to responders can also increase response rates.

Research Methods for Competitive Profiling

[\(Top\)](#)

Secondary research is also a starting point for competitive analysis. Trade publications, public databases, equipment vendors, sales people, trade associations, directories and Web search engines can all be used to identify potential competitors. In addition, surveys used to gather spending, preferences and attitudes from prospects can also include questions on current vendors.

Once the competitor list is complete, it's time to gather data that will allow you to narrow it to those firms that "own" the market. You'll already have a rough idea who the key competitors are: They're likely the firms mentioned most frequently while you were putting the list together.

The first stage of competitive profiling is using secondary research to gather firm size, revenue, location, key customers, key executives, capabilities and sales strategies. Again, trade publications (this time from industries served, as well as the printing publications) and trade associations can help. Most useful, however, is the Internet. Corporate Web sites, Hoovers,

Deleted: 10

Deleted: 1

Deleted: 10

EDGAR (the SEC’s site), Quicken, Dun & Bradstreet are all valuable sources for providing background for profiling competitors.

Secondary research is just the start, however. “Mystery shopper” phone interviews, ideally conducted by one or more professional researchers, is used to complete the profile and obtain competitive pricing for one to three prototypical projects at a variety (3-5) of quantities.

Profiles are then reviewed to identify estimated share of market (using the market sizing reviewed above as a base) to develop a prioritized “short list” of key competitors. In addition, competitive pricing is plotted resulting in a price trendline for comparison against costs and prospect value pricing.

Research Methods for Price Sensitivity

[\(Top\)](#)

Price sensitivity is a measurement of the value prospects, both individually and as a group, place on a service. Price sensitivity is measured for two purposes: To develop value-based pricing (versus prices based on costs or competition) and/or provide a true measurement of feature and benefit preferences. Both purposes can be accomplished simultaneously using surveys or personal interviews.

Respondents are asked to choose between two or more project descriptions that include key choice variables and price. One of the choices is treated as a basis or standard against which the other options are compared. The choice variables are an important part of the survey design and encompass only those elements considered *important to buyers* when making a vendor selection. For example, respondents could be asked to choose between a #10 mail piece with personalized letter at \$X and a #10 mail piece with personalized letter and brochure for \$Y. A second questions would ask the same questions with \$Y minus 10%.

Surveys can be linear with all questions presented to all respondents or adaptive with questions either randomly varied or varied based on previous answers. Adaptive surveys must be conducted either online or in-person using a laptop. Choice questions are mixed up enough to insure that respondents do not compare options across questions and cover all permutations of the consideration variables. A few questions are usually added to validate previous choices.

Results are analyzed for each survey to prioritize, first, those variables most important to each respondent as measured by their willingness to pay a premium. Cumulative results are then used to calculate expected elasticity for each variable and overall. Price sensitivity segments can then be identified by cross-referencing price sensitivity categories with other demographic, geographic or preference data.

The strength of choice-based surveys is not only the ability to identify the market’s price preferences, but to segment prospects by their willingness to pay above-average prices (supplying above-average margins) for specific services. This data can be used to fuel very customized sales presentations and bids. When combined with statistical analysis techniques such as regression or factor analysis, this type of data can often predict price sensitivity for prospects who have not participated in the survey.

The weakness of this method is the special knowledge required to create the survey so that it yields valid data and analysis of the results. This often makes choice-based surveys more

Deleted: 10

Deleted: 1

Deleted: 10

expensive than those that are homegrown, but firms find that the results frequently provide enough additional profits and sales insights to payback on the research investment.

Research Methods for Estimating Elasticity

[\(Top\)](#)

Elasticity is the measurement of the relationship between two variables. The most common use of elasticity measurements is price and demand. This economic measurement is founded on the observation that lowering the price increases the number of units sold and applies to goods and services where price is not used to determine quality by the consumer or where a monopoly does not exist. An elasticity measurement indicates the percentage gain in demand (units sold) for every percentage point that price is dropped. For printing firms, elasticity measurements can also be applied to price and turnaround timing.

Generating elasticity measurements for new services resulting from equipment and technology acquisitions can be challenging, but not impossible, to obtain. The data needed for this analysis takes the form of a database that links unit price with unit sales for a wide period of time. Since we're dealing with new service offerings, this data cannot come directly from the firm's financial records, but must be extrapolated from them with the following conditions:

- The new service must appeal to the firm's existing client base.
- The new service must be an enhancement or direct replacement for the firm's current services.

If these two conditions are met, demand and turnaround elasticities can be calculated based on the firm's current elasticity curves modified with an error factor coming from price sensitivity survey data ([see above](#)). The error factor is a percentage of current unit pricing calculated using self-reported price, turnaround preferences and demand.

Two notes of caution:

- Because (A) there are so many factors that determine demand and (B) new services are often not true substitutes for existing ones, resulting demand/turnaround estimates (linked with specific prices) can be extremely ballpark. A heavy dose of judgement should be used to temper the demand estimates.
- Self-reported information, in this case the pricing preferences reported by survey respondents, is notoriously unreliable. One way to increase its validity is to compare historic survey response with prices actually accepted and use the difference as an adjustment to survey results.

Research Methods for Obtaining Benefit Preferences

[\(Top\)](#)

Identifying feature and benefit preferences can be done either on a market, segment or individual level.

Obtaining preferences on a market level, depending on the current usage of the equipment under consideration, can be done informally or formally. Informally, identifying key benefits of the services provided by established equipment can be as simple as gathering samples of promotional pieces from key competitors and ranking the benefits highlighted in them. This assumes that

Deleted: 10

Deleted: 1

Deleted: 10

competitors have already identified the benefits most appealing to the marketplace and use them to generate and convert leads.

A more formal approach is needed for new technology and for identifying preferences at the segment and individual level. The easiest way is simply to conduct mail, phone or personal surveys that include one or more questions asking participants to rank pertinent benefits. The technique using choice-based surveying ([see the section on Price Sensitivity above](#)) can also be used to generate preferences and has the benefit of providing more realistic values for each benefit. In both cases, results are then entered into a database for sorting by segment and association to particular prospect individuals/companies.

Preliminary identification of benefits to be included in the survey is usually fairly intuitive. Most printing firm execs know the benefits inherently associated with a service, but to get the most out of the survey, consider including a “Other” category with a space for fill-in to allow for respondents who’ve got unusual needs or to catch omissions. Also make sure to design the question so that the benefits you believe are most important aren’t those that appear first. Bury them in the middle.

Research Methods for Defining Segments

[\(Top\)](#)

Segmentation is one of your most important strategies for maximizing profits. There are some prospect groups which are so price sensitive that they cannot result in reasonable margins. The crux of marketing is the discipline of identifying and selling to prospect groups that result in the highest margins possible.

With this in mind, the practice of segmenting only by output type – magazines, direct mail, flyers, business cards, etc. – is far too basic. It doesn’t help screen out undesirable prospects. What’s needed is the ability to segment by price sensitivity or those characteristics that serve to predict it. The challenge, of course, is pinpointing those predictive characteristics.

Once again, the method depends on the nature of the new equipment under consideration. First, let’s examine the tools available for equipment that supplements or replaces the services currently offered. In this case, the answers lie in your own financial records and can be mined using a set of statistical analysis tools called predictive analysis. There are two types: regression analysis and factor analysis. For the purposes at hand, we’ll stick to the relatively simpler technique of regression.

Regression analysis requires that you have an electronic record of your sales transactions that includes some numerical measurement of margin. The format can be as simple as an Excel spreadsheet or a comma-delimited data file. The data is then overlaid with the production specification, demographic and preference data you intuitively believe is related to margin. The resulting dataset is then run through one of the commercially available regression software programs. The resulting output takes the form of a mathematical function whose components comprise the variables that are predictive of the “dependent” variable, in this case project margin. The output is reviewed and refined to obtain the regression function covering the highest percentage of variability (a measurement of validity). Currently available software now makes this type of analysis accessible to firms with a staff member with an MBA or one with a basic statistical background.

Deleted: 10

Deleted: 1

Deleted: 10

Although this method provides the most valid segmentation results, it can't be applied where the equipment being considered does not relate directly to the services currently offered by the firm. Historical transactions for one service can't be applied another. In the case of new, untried markets, segmentation is usually done by using the results of a large-scale survey to gather price sensitivity, demographics and preference data and doing a regression analysis on the results. As is to be expected from self-reported data, the regression results from survey data is not as valid as that coming from behavior-based historical financial information. Nevertheless, it provides a better alternative than the more common demographic segmentation that provides no indication of profitability potential.

Case: General Commercial Printer

[\(Top\)](#)

ABC Printing Company¹ was interested in adding lettershop and fulfillment capabilities to their already successful regional offset printing business as a means of growing revenue. Key questions included:

- How much additional revenue could be expected from their existing clients?
- How many new clients (both for the mailing and the printing operations) could they acquire?
- Would there be opportunities from national accounts or accounts from outside their current business region?
- Who would be the primary competitors?
- What were the primary needs of the marketplace and how were they priced by competitors and valued by prospects/customers?
- What market segmentation variables were predictive of (A) those prospects spending the most annually on direct mail and/or fulfillment and (B) those prospects with the greatest margin potential?

A survey including choice-based, spending and demographic questions was sent to customers and a random selection of regional and national companies obtained from a direct marketing publication. The mailing quantity was carefully gauged, based on projected response, to insure that results would be projectable and provide a valid basis for regression analysis as well.

Results were turned into cross-tabulation reports outlining direct mail usage, current vendors used, vendor satisfaction, price sensitivity and key benefits. Breakdowns were developed for customers vs. prospects, regional vs. national and "heavy" vs. "light" direct mail users. Price sensitivity responses were plotted to generate a value price line for a variety of service types. Price sensitivity was also used as the independent variable for a regression analysis to develop segmentation schemes.

When combined with secondary research and competitive analysis, this data enabled the printer to enter the direct mail business with a better payback period (and higher net present value) than originally expected.

Case: Niche Printer

[\(Top\)](#)

XYZ Printer² served a small portion of the publishing market and was investigating the investment in a digital press to augment its current offset offerings. A few of its competitors had

¹ This printer asked to remain anonymous.

Deleted: 10

Deleted: 1

Deleted: 10

installed DocuTech or DocuColor equipment and several accounts had expressed interest in the ultra-shortrun capabilities of the equipment.

Market research goals were:

- Verify the feasibility of profitably offering digital printing.
- Quantify the size of the opportunity, including the effect of cannibalization.
- Profile the competitors offering (or likely to offer in the short-term) digital printing.
- Generate price trendlines outlining competitive and market place value pricing for digital and offset printing.
- Identify key digital printing benefits on both a segment and individual level.

Secondary research was used to link digital printing benefits with the market's current challenges, scope the total size of the market in terms of revenue and unit potential and provide an initial assessment of attitudes toward digital printing. Sources included publishing publications, syndicated research and directory databases.

Competitive profiling involved "mystery shopper" phone interviews with 15-20 firms identified through salesforce interviews and secondary research as serving the market. Secondary research was also used to provide background information on each firm. All firms were asked to bid on five projects, each having different production specifications, at least three different run lengths. Five firms that already offered digital printing or were planning to do so in the near future were targeted for second and third phone interviews with multiple staff members.

A mail survey targeted several thousand key production decision-makers in the U.S. and Great Britain. Questions covered price sensitivity, benefit preferences, basic demographics and account revenue potential. In addition, an online version of the survey was posted and email was used to drive supplemental response. After receiving several hundred completed surveys, results were analyzed to:

- Generate marketplace price trendlines for comparison with digital and offset competitive pricing.
- Current usage rates of and patterns for digital printing to aid in sizing the opportunity and likely share potential.
- Benefit ratings.
- Key comparisons against offset qualities.
- Price sensitivity segment categories and the demographics associated with both low and high price sensitivity levels.
- A list of best prospects for both color and black & white digital printing.

Results were combined with equipment acquisition and operating cost data to enable the firm to make a "go" or "no go" decision. The research also pointed to specific equipment capabilities that would be required to meet minimum market requirements, the price points expected by the marketplace and what benefits would serve to enhance margin. The launch of the new service was also made easier and payback was faster because the salesforce began the process with a starting list of best prospects and their digital printing needs and attitudes.

² The printer for this case has asked to remain anonymous.

Deleted: 10

Deleted: 1

Deleted: 10

Case: Quick Printer³

[\(Top\)](#)

Bayou Printing, located in Houma, LA, was faced with some common, but daunting challenges. Two hurricanes plus the relocation of clients was impacting revenue substantially. Strategic planning was essential and owner Jace Prejean made the decision that he would start with some unbiased, independent market research. And this time, instead of focusing on the competition, he'd pay attention to customers and prospects.

Bayou mailed 900 surveys to local businesses (both customers and prospects). Telephone and in-person interviews with some of the larger companies were also conducted.

Questions were designed to gather the following types of information:

- Types of business
- Locations
- Current printer and their location
- Types of services offered by printer
- Criteria used to select printer
- Satisfaction level with current printer
- Key printing decision makers within company
- Annual print spending

Research results were used to identify business trends and purchasing habits: Types of printing most often used, best prospects in terms of annual print spending, key decision-makers, the companies and types of firms that were the most price sensitive and geographic patterns related to print spending.

Summary

[\(Top\)](#)

With the rate of financial risk and the number of expansion choices rising for printers operating in today's competitive marketplace, it's imperative that printing firms looking to make significant capital investments invest in independent market research and extensive financial analysis to avoid failure and maximize return.

There are a variety of market research tools available for printers, ranging from fairly simple techniques that can be planned and executed by existing staff members to sophisticated predictive techniques usually requiring the help of someone experienced with the practical application of statistical sampling and analysis. A basic understanding of some of these techniques can help the printer decide which meets their risk attitude and budget needs.

About the Author

[\(Top\)](#)

Lynne Hagan heads up InterAct, a Tenafly, NJ market research firm. InterAct specializes in helping printing firms make smarter operating and marketing decisions using a variety of market research and financial analysis tools. Lynne has over ten years of experience working with a variety of commercial and niche printers. In addition, she has also worked with the National Association of Printing Leadership to improve services designed to increase printers' profits and started her career as a print buyer at one of the top direct marketing agencies.

³ "Survey Says: Know Your Customer," *American Printer* (Chicago); February, 2003, pg. 10.

Deleted: 10

Deleted: 1

Deleted: 10