

Customer Satisfaction in Commercial Roofing:
A Study of Roofing Contractor Attitudes

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Abstract

This paper provides a detailed summary of a customer satisfaction survey administered to 200 commercial roofing contractors in the United States. The study identifies key satisfaction drivers for these contractors and measures how effectively roofing manufacturers are meeting these needs. The study also identifies differences in contractor attitudes regarding two key commercial roofing market segments: asphalt roofing and single-ply roofing.

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Introduction: The Value of Customer Satisfaction Research

Interest in customer satisfaction has increased significantly over the past twenty years. Much of this interest is driven by research indicating that positive customer attitudes (i.e. satisfaction) appear to be related to increased purchasing loyalty. Given this apparent relationship, researchers have focused considerable attention defining and measuring customer satisfaction. Research in this field has become so popular that over 15,000 articles have been written about measuring customer satisfaction within the past twenty years.

Surveys of customer satisfaction have been used frequently in the roofing industry by individual roofing manufacturers seeking to determine relative performance as compared to other competitors. Although such research obviously is useful to the sponsoring manufacturer, much of the information within these studies can be valuable to the entire industry. Because the study of customer satisfaction is essentially a study of *attitudes*, customer satisfaction data can offer insights into the predominance and relative importance of viewpoints within a consumer group. In addition, because customer satisfaction research focuses on differences between the *expectation* and actual *performance* of important business functions, the results of satisfaction research can be used to identify business processes that may merit industry-wide attention.

Like almost all information regarding customer satisfaction in the roofing industry, the data in this study are derived from a private survey commissioned by a roofing manufacturer. However, because many of the survey results can provide useful information for all stakeholders in the roofing industry, the sponsoring company has authorized an analysis of the data on a non-proprietary basis. In order to maintain the

confidentiality of the sponsor or any other manufacturer, however, no company-specific data are included in this report.

Key Satisfaction Factors in Commercial Roofing

Previous research has demonstrated that customer satisfaction is related to specific factors representing product or service attributes. These factors are sometimes referred to as *quality dimensions* or *customer requirements*. As part of an inaugural study of customer satisfaction for the sponsoring manufacturer of this study, an independent research firm conducted open-ended telephone interviews with commercial roofing contractors to elicit comments regarding their criteria for customer satisfaction. A panel of judges then analyzed these interviews and identified seven primary satisfaction factors, as well as three or four important sub-factors for each primary attribute. Based on additional studies conducted by other researchers, the factors and sub-factors appear to remain stable and consistent indicators of satisfaction. These primary factors and sub-factors are listed in Table 1.

Table 1

Satisfaction Factors and Sub-Factors for Commercial Roofing Contractors

Factor	Sub-Factors
Product	Lack of call-backs, ease of installation, value of accessories
Delivery / availability	On-time delivery, delivery accuracy, lead time
Technical support	Technical advice, roof inspections, training
Customer service	Responsiveness, complaint handling
Company	Track record, financial strength, brand name recognition
Local Representation	Responsiveness, professionalism, technical expertise
Other	Warranty terms, credit

Contractor Selection

Contractors were selected from a list of the 2000 largest commercial roofing contractors in the United States, as identified by an independent research firm. In order to verify the representativeness of the actual respondents selected, the survey included questions to determine approximate annual business volume (less than \$10 million / over \$10 million) and the percentage of revenue by major product segment (single-ply / asphalt). Location by city and state location for each respondent was also recorded in order to review the sample for reasonable geographic distribution.

Manufacturer Selection

Based on estimated current market share, the six largest manufacturers of single-ply roofing and the six largest manufacturers of asphalt roofing were selected for evaluation and included in the survey. Because several of these companies produce products for both segments, only ten manufacturers were evaluated in total.

Survey Design

Single-ply versus asphalt roofing. Although it is possible the importance of key satisfaction factors remain constant across major product segments of the commercial roofing market, a preliminary survey conducted prior to this study tends to indicate otherwise. Specifically, factor ratings appear to differ depending on whether the factors were applied to either of two major product segments in the commercial roofing market: *single-ply roofing* or *asphalt roofing*. In order to investigate the possibility that satisfaction attitudes regarding single-ply roofing differ significantly from sentiments about asphalt roofing, two versions of the survey were prepared: one for single-ply roofing products and manufacturers (the Single-Ply Survey) and one for asphalt roofing products and manufacturers (the Asphalt Survey).

Response scale. In previous studies commissioned by the sponsoring roofing manufacturer, performance attributes and manufacturer performance were rated by respondents using a seven-point scale, with the highest scale value (7) indicating the highest importance or best service and the lowest scale value (1) indicating the least importance or poorest service.

Conducting the Survey

An independent survey company familiar with the commercial roofing industry administered the questionnaire via telephone. In order to assure the confidentiality of the

sponsoring manufacturer, survey associates stated that the study was being conducted for a large, but unidentified, roofing manufacturer. In all interviews used in the survey, the survey associate obtained an interview with either a primary owner or key executive of each firm. Using the seven point rating scale, scores were solicited and recorded for the relative importance of 1) each satisfaction factor, 2) the relative performance of each manufacturer in regard to each factor, and 3) an overall performance rating for each manufacturer. In order to minimize possible biases, the two questionnaire forms (Single-Ply and Asphalt) were randomly assigned to the telephone interviews, and the order of questions within the interview was also randomized. In addition, each respondent was asked to rate a particular manufacturer only if the respondent had done business with the manufacturer within the past year.

In order to complete the 200 interviews used in the study (100 each for the Asphalt and Single-Ply surveys), a total of 252 respondents were contacted randomly from the master list of 2000 contractors. Of this group, 26 respondents refused to begin the interview, and 26 were disqualified for various reasons, including inadequate answers, change of business activity or non-qualified respondents.

Analyzing the Data

Respondent Demographics

The 200 total respondents were located in 39 states of the U.S., with no more than 10 from a single state. In addition, 33 different states were represented within the asphalt

survey and 37 states were represented within the single-ply survey. In terms of business, the sample also appears to include all levels of the current roofing industry, with 56% of the overall sample from small contractors (less than \$10 million annual revenues), and 44% from large contractors (\$10 million or more annual revenues). In addition, the asphalt sample is weighed more heavily toward the larger contractor, which is also fairly representative of the industry, since larger amounts of capital equipment are required for asphalt roofing.

In terms of product mix, the overall sample was broad and diverse. In the asphalt sample, contractor usage of asphalt products (built-up roofing and/or modified bitumen) varied from 33% to over 87% of business volume, with an average of 47% asphalt usage. In the single-ply sample, contractor usage of single-ply products (thermoset and/or thermoplastic) varied from 38% to over 90% of volume, with an average of 67% single-ply usage.

Key Satisfaction Factors: Asphalt Roofing

On-time delivery and *delivery accuracy* appear to be the most important satisfaction dimensions for asphalt roofing. Considering the amount of equipment and the size of field crew that must be assembled to install an asphalt roof, it is easy to understand how poor delivery service could produce a significant negative impact for the contractor. In the same manner, high ratings for prompt *customer service response*, *complaint handling* and *lack of call-backs* are also likely related to the high field costs associated with asphalt roofing.

Although the asphalt survey identifies product delivery as crucial to satisfaction, many of the specialized services provided by roofing manufacturers appear to command

much less importance. *Roof inspections* and application *training*, both specialized service features, receive relatively low ratings. In addition, specialized product features such as *accessory value* and *warranty terms* are also rated low in importance. A possible explanation is that contractors have less need for manufacturer-supplied features to achieve business success with asphalt roofing.

Although timeliness and accuracy of delivery carry a high priority in asphalt roofing, the importance of *delivery lead-time* trails significantly in importance. It is possible that manufacturer lead-time is less important to the contractor installing asphalt roofing because many of the products used in asphalt roofing are commonly available from local roofing distributors. This hypothesis appears to be reinforced by the low rating assigned to *credit services* offered by roofing manufacturers, an indicator that credit also may be a local distributor issue. Both lead-time and credit may still be important to contractors, but neither may be performance factors primarily required from roofing manufacturers.

Key Satisfaction Factors: Single-Ply Roofing

Although basic delivery and customer service factors are also vitally important in single-ply roofing, a number of value-added attributes gain influence. Specialized services such as *roof inspections* and *technical advice* appear to be almost as important as basic service factors. Specialized product features such as *ease of installation* also gain influence. The importance of these specialized service and product attributes points to the specialized nature of the single-ply roofing segment as compared to asphalt roofing. If ease of installation, roof inspection and technical advice are important in single-ply roofing, then it is reasonable to assume that single-ply products possess design

complexities that require a higher level of manufacturer support. This increased demand for manufacturer support may be due either to some inherent complexity of single-ply installation procedures or to the diversity of competing product designs among single-ply roofing manufacturers.

Satisfaction Factors: Asphalt versus Single-Ply

Comparing the results of the single-ply and asphalt surveys, both similarities and differences can be observed. With the exception of lead-time (which, as previously stated, may be related more to roofing distributors and not roofing manufacturers), basic customer service and delivery factors carry the highest priority in both market segments. Beyond basic service and fulfillment factors, the highest commonly rated factor in both surveys is *company track record*. The importance of a manufacturer's track record is most likely a reflection of the overall conservative approach of roofing contractors to business relationships, as documented by a number of previous attitude surveys conducted by roofing industry associations.

Just as important as the highest factors are the lowest common factors between both surveys. Leaders in the commercial roofing industry spend a lot of time talking about the importance of *training*, especially in view of the significant shortage of skilled labor for roofing field crews. Recent industry initiatives sponsored by the Roofing Industry Alliance for Progress provide an excellent example of how industry resources are currently directed toward the training issue. However, the respondents of this study rate the importance of training at or near the bottom in both the single-ply and the asphalt surveys. It is possible that roofing contractors do not view manufacturers as an important source of training resources in asphalt roofing, since many of the field practices in asphalt

roofing have developed more as a traditional craft rather than a specialized assembly process. But the low rating for training in single-ply roofing is difficult to explain. If single-ply systems are relatively complicated to install (at least as indicated by the high ratings given to roof inspection and technical advice), then the low importance given to an activity that could reduce mistakes and inefficiency is problematic at best.

Table 2 provides comparative results for the asphalt and single-ply surveys.

Table 2

Contractor Satisfaction Factors: Asphalt versus Single-Ply Survey

Factor	Asphalt Survey	Single Ply Survey	Significant Difference (Conf. Level)
Customer Service			
Complaint Handling	6.1	6.1	No
Responsiveness	6.3	6.8	Yes (80%)
Sales Representative			
Technical Expertise	5.9	5.6	No
Professionalism	5.3	6.0	Yes (90%)
Responsiveness	5.8	6.1	No
Product			
Accessory Value	4.9	5.5	Yes (80%)
Lack of Call-Backs	6.1	6.6	Yes (80%)
Product Ease of Installation	5.9	6.5	Yes (80%)
Delivery			
Accuracy	6.4	6.6	No
Lead Time	5.5	6.0	Yes (80%)

On-Time Delivery	6.6	6.8	No
Company			
Financial Stability	5.6	6.1	Yes (80%)
Brand Name	5.8	5.7	No
Track Record	6.3	6.3	No
Technical Support			
Technical Advice	5.8	6.5	Yes (80%)
Inspections	5.5	6.1	Yes (80%)
Training	5.0	5.5	Yes (80%)
Other			
Warranty Terms	5.0	5.7	Yes (90%)
Credit	5.1	5.8	Yes (80%)

Manufacturer Performance Ratings: Asphalt versus Single-Ply

In order to analyze the performance of roofing manufacturers without compromising the confidentiality of individual data, three generic ratings were computed. First, the highest rating and the lowest rating for any manufacturer for both overall performance as well as each satisfaction factor were recorded. Next, a weighted average for all manufacturers was calculated, using the total of scores for each manufacturer divided by the number of respondents who reported a score for that manufacturer. High, low and average manufacturer scores are summarized in Table 3 for both the asphalt survey and the single-ply survey.

It is important to note that the high individual factor ratings in both the asphalt and the single-ply studies were distributed among the various manufacturers. No single manufacturer was either able to consistently achieve the highest rating or was subject to the lowest rating in all satisfaction factor categories. In fact, individual manufacturer performance was dispersed among the factor categories, indicating that each roofing manufacturer possessed a unique set of strengths and weaknesses in addressing the needs of roofing contractors.

In terms of overall ratings, however, the data clearly indicate a significant difference in performance between asphalt and single-ply roofing manufacturers. The average rating for single-ply roofing manufacturers was 5.7 as compared to a rating of 5.1 for the asphalt manufacturers, a difference that is significant at a 90% confidence level. In addition, the overall highest score for a single-ply manufacturer at 6.4 was a full point higher than the score of the highest-rated asphalt manufacturer at 5.4. This overall trend between asphalt and single-ply roofing manufacturers also extends throughout the individual satisfaction factor scores. The average single ply manufacturer performed significantly better than the average asphalt manufacturer in 10 of the 19 satisfaction categories, while the highest-rated single ply manufacturer outperformed its asphalt counterpart in nine of the categories.

However, in one crucial area, single-ply manufacturers appear to be performing poorly, at least in relation to the high expectations of their contractor customers. When rated for effectiveness in *complaint handling*, the scores assigned to both the lowest and the highest rated manufacturer as well as the average for all manufacturers was lower than all other factor scores. In the asphalt study, in contrast, the complaint handling

performance of manufacturers was rated in the mid-range of all scores. In order to better understand the dynamics involved in this uniformly low rating, the researcher for this study contacted six of the respondents in the single-ply study and asked them how they would compare the overall performance of single-ply manufacturers in handling complaints as compared to asphalt roofing manufacturers. Four of the six indicated that single-ply manufacturers typically responded to complaints as well as asphalt manufacturers, but the complexities of single-ply roofing made that response much more critical. Based on this informal sampling, it is possible that the relatively low ratings for complaint handling assigned to all single-ply manufacturers reflects the cold, hard reality that even a single complaint handled poorly carries significant negative consequences in single-ply roofing.

Table 3

Manufacturer Performance Ratings: Asphalt versus Single-Ply Survey

	Overall Rating					
	Asphalt Survey			Single-Ply Survey		
	Highest Mfr.	Lowest Mfr.	Average All Mfrs.	Highest Mfr.	Lowest Mfr.	Average All Mfrs.
All Factors	5.4*	4.8	5.1*	6.4*	4.2	5.7*
Customer Service	By Performance Factor					
	Asphalt Survey			Single-Ply Survey		
	Highest Mfr.	Lowest Mfr.	Average All Mfrs.	Highest Mfr.	Lowest Mfr.	Average All Mfrs.

Complaint Handling	5.6	5.0	5.3	5.9	4.0	5.0
Responsiveness	5.6*	4.8	5.2	6.2*	4.4	5.5
Sales Representative						
Technical Expertise	5.9	4.6	5.3	6.2	4.2	5.5
Professionalism	5.6*	4.4	5.0*	6.4*	4.6	5.8*
Responsiveness	5.5	4.4	5.0*	6.1	4.2	5.5*
Product						
Accessory Value	5.0*	4.6	4.8*	6.0*	4.4	5.3*
Lack of Call-Backs	5.5	4.4	5.0	6.1	4.2	5.5
Installation Ease	5.4*	4.8	5.1*	6.4*	4.4	5.8*
Delivery						
Accuracy	5.7	4.8	5.3	6.0	5.1	5.8
Lead Time	5.8	4.4	5.1*	6.1	5.1	5.7*
On-Time Delivery	5.6	4.2	4.9*	6.1	4.9	5.7*
Company						
Financial Stability	5.9*	4.4	5.2*	6.7*	4.5	6.1*
Brand Name	5.8*	4.4	5.1*	6.6*	4.4	5.8*
Track Record	5.9	4.6	5.3	6.2	4.2	5.5
Technical Support						
Inspections	5.5*	4.6	5.1*	6.4*	4.6	5.8*
Training	5.7	4.0	4.9	6.0	4.1	5.3
Tech. Advice	5.8*	4.9	5.4*	6.7*	5.4	6.1*
Other						
Warranty Terns	5.8	4.8	5.3	6.4	4.9	5.9
Credit	5.7*	4.8	5.3	6.5*	5.0	5.8

*Indicates a significant difference at a minimum 80% confidence level between the score in the asphalt column and the corresponding score (highest / lowest / average) in the single-ply column.

The significance of the difference in performance between asphalt and single-ply manufacturers can be further illustrated by use of gap analysis charts. In a gap analysis, a two-axis chart is used to compute the relative importance of a satisfaction factor on one while the actual performance rating is delineated on the other axis. This procedure allows the data to be placed into one of four possible quadrants: high importance / high performance, high importance / low performance, low importance / high importance, and low importance / low performance.

In order to conduct the gap analysis, sub-factor scores were combined into a composite rating for five primary satisfaction factors: 1) service/delivery factors, 2) product factors, 3) technical support factors, 4) local sales rep factors and 5) company factors. The scores on these composite factors for the highest-rated company, the lowest-rated company and the average for all companies, both asphalt and single-ply, were then located on the gap chart, using a score of 5.5 as the mid-point between high performance and low performance. Each of these scores was also located on the chart in terms of the overall importance of the composite factor, again using 5.5 as a mid-point of importance. A gap analysis of these five primary satisfaction factors is contained in Appendix A of this study.

As illustrated in the gap analysis charts, both the highest-rated and the average single-ply manufacturer consistently achieve high performance ratings, both on factors which are high in importance as well as low in importance. Conversely, the highest-

rated asphalt manufacturer barely achieves a high performance rating, while the average performance rating for all asphalt manufactures is consistently low.

Opportunities for Industry Improvement

Complaint handling. Complaint handling provides the most obvious and urgent opportunity for improvement for both the asphalt and single-ply market segments. While contractors rated complaint handling very high in importance, manufacturer performance ratings for this critical factor were mediocre, both in terms of the average for all manufacturers as well as the individual performance of each manufacturer. Because poor performance on this critical factor appears to be pervasive, the dissatisfaction generated undoubtedly impacts the entire business relationship between roofing contractors and manufacturers.

It is important to note that the consequences of not satisfying customers usually are more significant than the consequences of satisfying customer expectations. As a consequence, the lost business opportunity resulting from negative customer experiences may far exceed the new business opportunity that can be created by positive experiences. This relationship is particularly important in regard to complaint handling, because other studies have identified complaint handling to be a critical determinant of customer behavior as well as customer attitudes. In particular, complaint handling has been identified to be critical in retaining customers. Given the overall low level of satisfaction in regard to complaint handling among roofing contractors, it is very possible that all roofing manufacturers are suffering from excessive and unnecessary customer turnover.

Unfortunately, even though the data suggest complaint handling is an obvious business opportunity for roofing manufacturers, the data also suggest that no individual

company has taken advantage of the opportunity. In addition, it is possible that even if a single manufacturer were to initiate a special initiative in regard to complaint handling, the pervasiveness of negative perceptions regarding complaint handling throughout the industry may negate the results of such an initiative. In fact, the relatively low scores for all manufacturers also suggest that there is no “best practice” model within the industry to follow to improve complaint handling.

Lacking an adequate model to address complaint handling, it may be in the best interest of all manufacturers to explore the issue at the industry level, especially in conjunction with major industry trade associations. Perhaps a panel discussion at an industry-wide event or a focus group study sponsored by an industry association would generate interest in this issue. Given sufficient interest and participation, it may be possible over time to identify and develop industry service standards and procedures for responding to customer problems.

The challenge of the future. The gap analysis charts in the appendix to this study do not paint a very optimistic picture for the asphalt roofing segment. At best, manufacturers of asphalt roofing materials barely meet the expectations of their customers; and on average, they fail to meet these expectations. Although many aspects of the roofing business are conservative and traditional, the industry has experienced significant change over the past twenty years; and change in the future will likely be at least as swift as in the recent past. Because the negative consequences of poor service can far outweigh the positive consequences of excellent service, asphalt roofing manufacturers may be vulnerable if roofing contractors demand a greater emphasis on service in the future.

Conversely, some of the single-ply manufacturers in this study may be much better positioned for the future based on their current high performance in service-related factors. Across the board - in delivery service, in technical support, in product attributes, in the performance of local sales representatives – the highest rated single-ply manufacturers appear to be setting the pace for meeting and exceeding contractor expectations. Assuming that the future of roofing, like many other industries, will involve increasing sophistication in technology and in service, all manufacturers would be wise to imitate the service orientation of the best-rated suppliers.

Single- versus multiple-sourcing. The study data also appear to indicate that, especially in the single-ply segment, contractors with multiple-sourcing strategies experience significantly higher levels of dissatisfaction in dealing with roofing manufacturers as compared to contractors aligned with one primary manufacturer. Although the study did not investigate this issue in depth, verbal interviews with a number of the respondents indicate that many multiple-sourcing contractors experience operating problems that can impair business effectiveness. Problems associated with multiple-sourcing include inaccurate cost estimating, reduced field productivity and increased installation errors. Unfortunately, the primary solution offered by the same contractors - that manufacturers “get together and use the same products and details” - is in clear opposition to a reasonable business strategy on the part of manufacturers to differentiate their products and position in the marketplace.

Obviously, multiple-sourcing can be an effective method of spreading financial risk and leveraging costs; and the advantages of reduced financial risk and lower purchasing costs may well outweigh the disadvantages identified previously. At the same

time, any contractor who relies on more than one major supplier should at least take some time to identify and quantify both the advantages and disadvantages to determine if multiple-sourcing provides a net benefit overall.

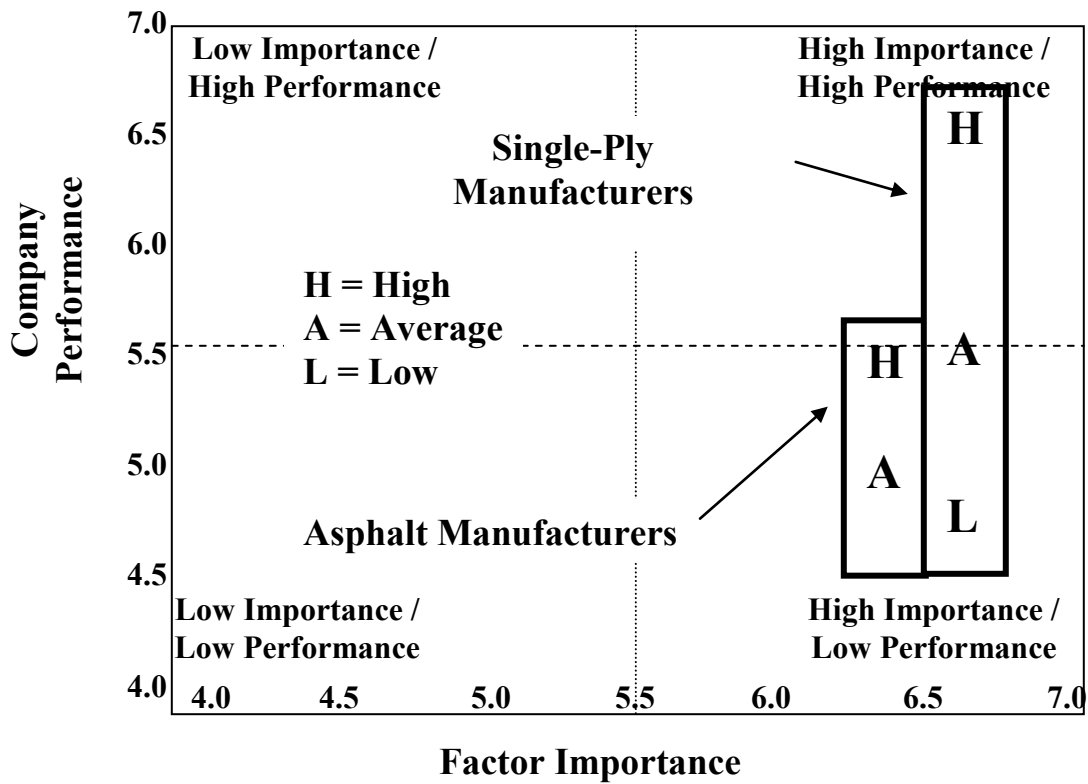
Training. As mentioned previously, given the challenges of a viable labor supply for the roofing industry, it is difficult to understand why training ranks so low in importance to contractors in this study. During selected follow-up interviews, most of the contractors interviewed expressed surprise that their ratings for training were lower than for many other factors, and many wanted to change their scores to a higher number. It is not certain whether this response was motivated by genuine misunderstanding or embarrassment that their interview scores were lower than current public “posturing” regarding the importance of training. Regardless of the reason for this discrepancy, the data suggest that the industry should conduct additional research to better understand contractors’ needs and opinions regarding training.

APPENDIX A

Gap Analysis Charts

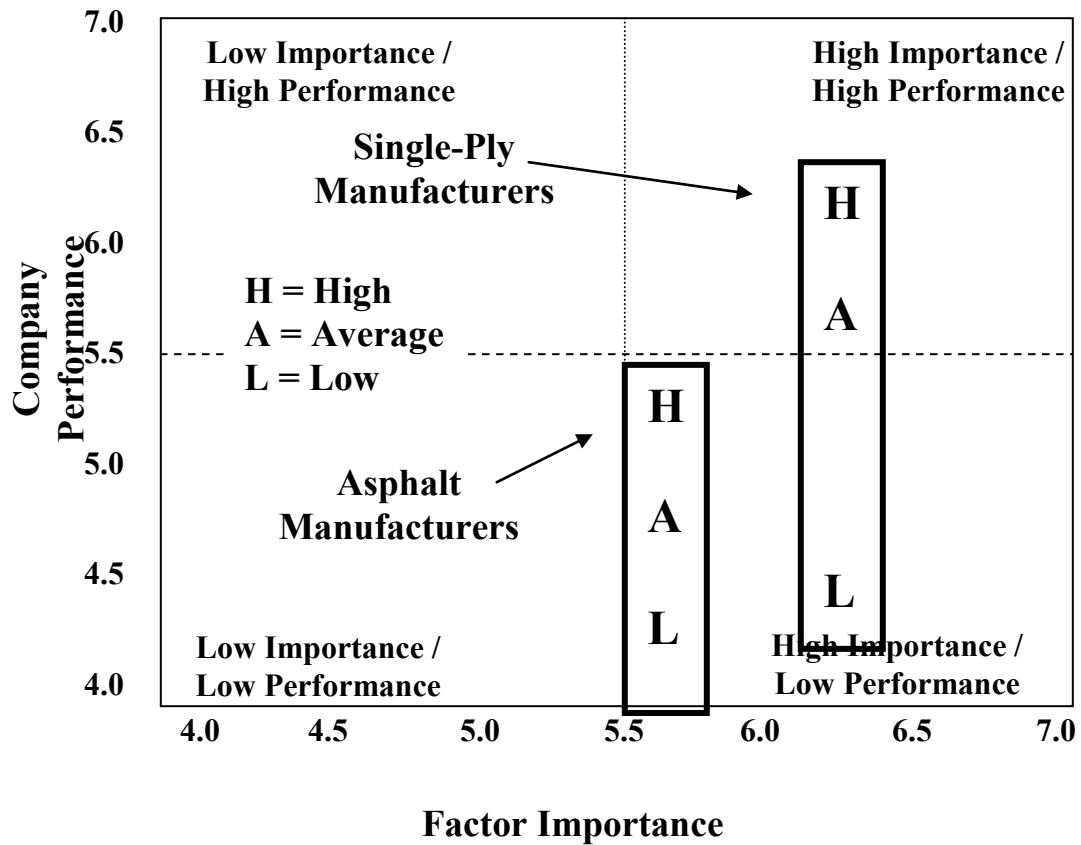
Figure 1	Service / Delivery Factor Composite
Figure 2	Product Factor Composite
Figure 3	Technical Support Factor Composite
Figure 4	Local Sales Rep Factor Composite
Figure 5	Company Factor Composite

Figure 1
Gap Analysis:
Service / Delivery Factor Composite



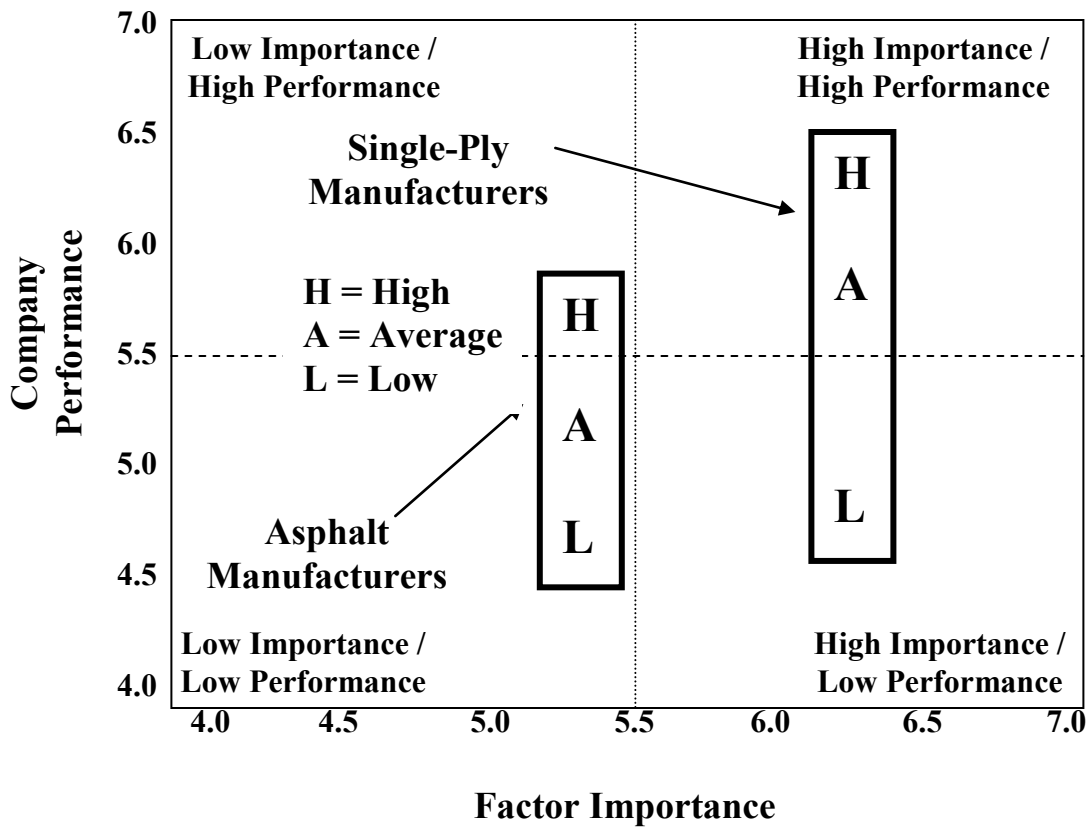
- Service / Delivery Factor Includes:
- 1) Customer Service Responsiveness
 - 2) Complaint Handling
 - 3) Delivery Accuracy
 - 4) On-Time Delivery

**Figure 2
Gap Analysis:
Product Factor Composite**



Product Factor Includes:
 1) Ease of Application,
 2) Lack of Call-Backs
 3) Accessory Value

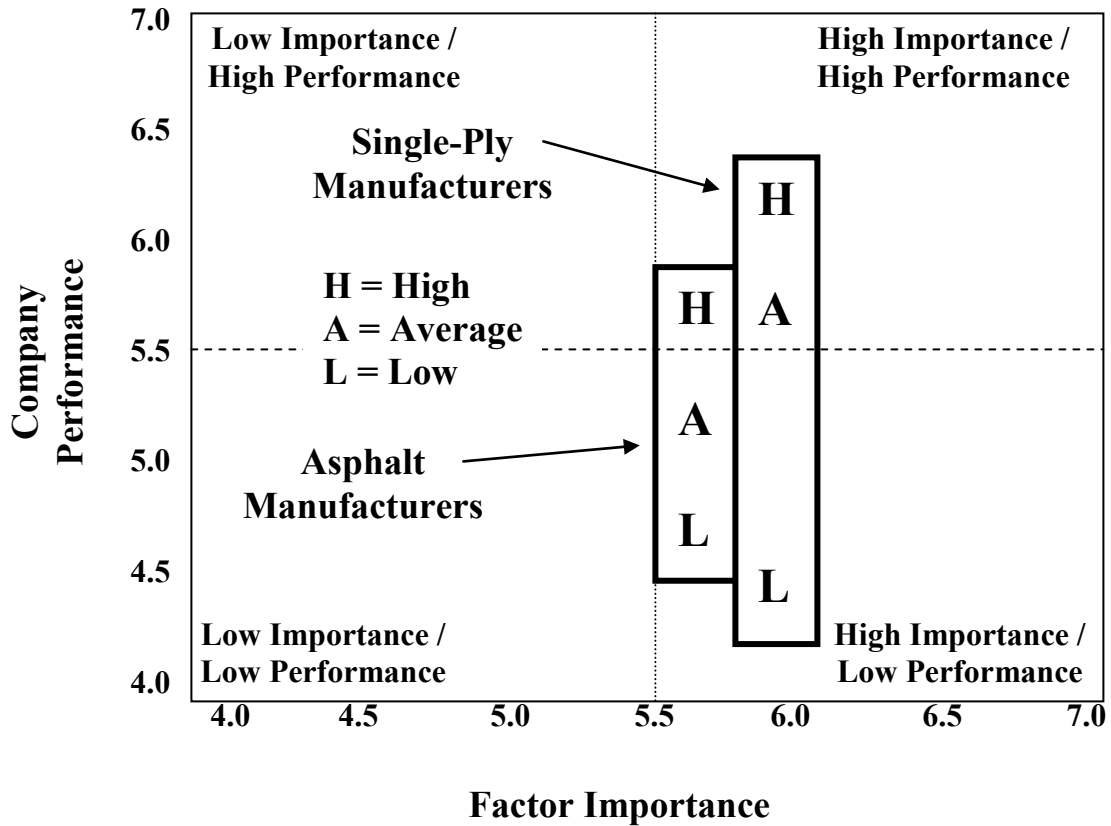
**Figure 3
Gap Analysis:
Technical Support Factor Composite**



Technical Support Factor Includes:

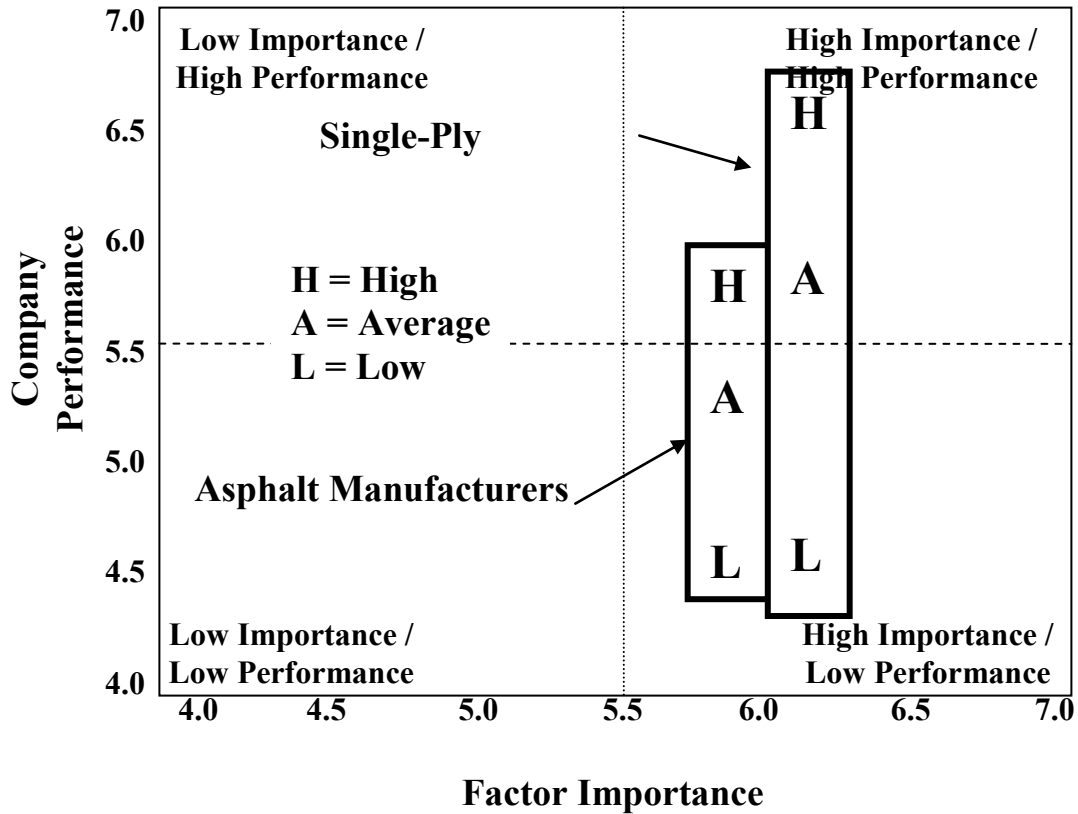
- 1) Inspections
- 2) Technical Advice
- 3) Training

Figure 4
Gap Analysis:
Sales Rep Factor Composite



Sales Rep Factor Includes:
 1) Professionalism
 2) Responsiveness
 3) Technical Expertise

**Figure 5
Gap Analysis:
Company Factor Composite**



- Company Factor Includes:
- 1) Financial Stability
 - 2) Brand Name
 - 3) Track Record