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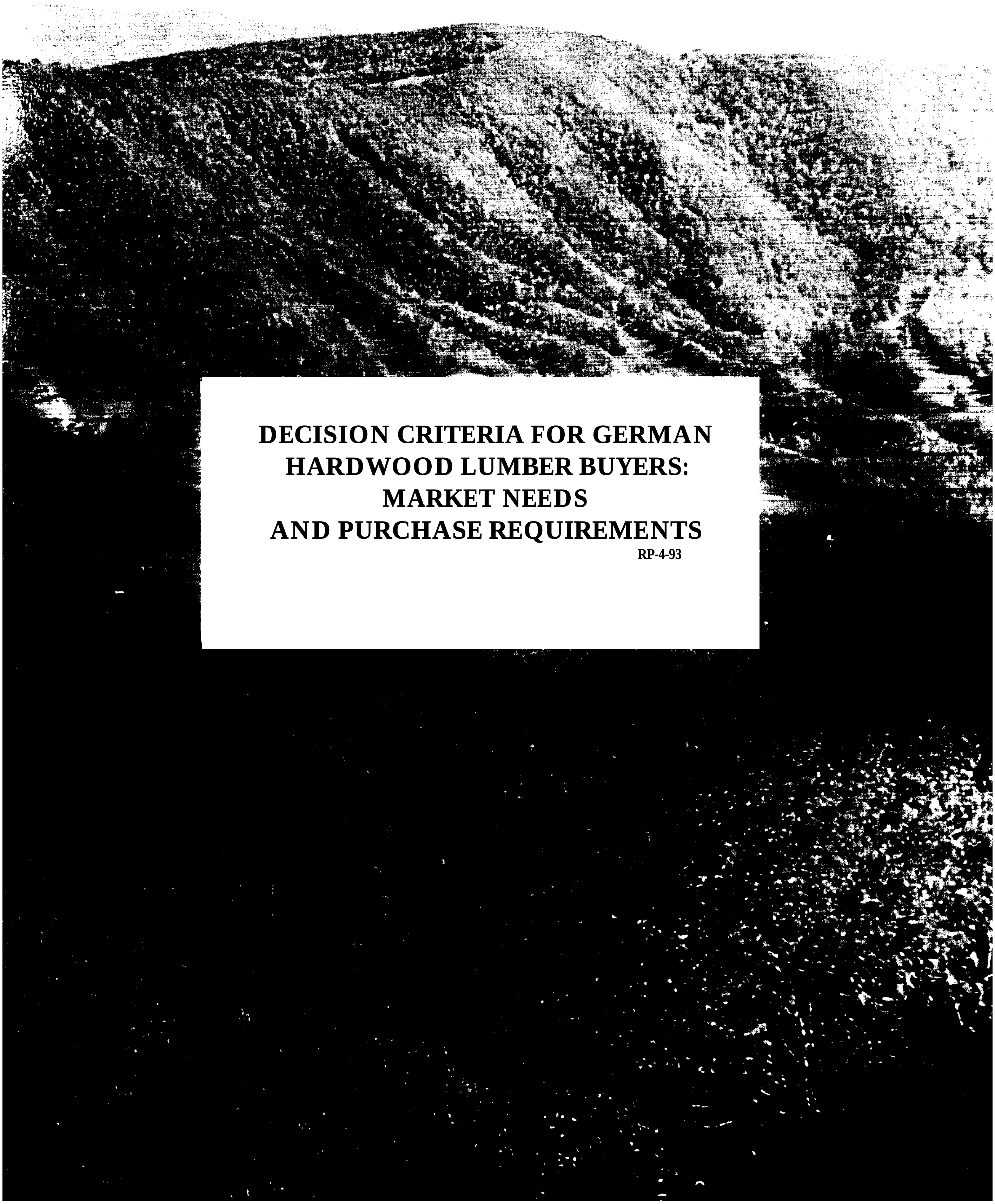

DECISION CRITERIA FOR GERMAN HARDWOOD LUMBER BUYERS: MARKET NEEDS AND PURCHASE REQUIREMENTS

RP-4-93

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Executive Summary

The purpose of this study was to develop a better understanding of hardwood exports to the German market. A mail survey was conducted which resulted in a 47.8 percent rate of response. Of those German hardwood buyers responding to the survey, 71 percent purchased hardwood lumber directly from North America. The analysis of this survey data led to the following significant results:

1. North America supplied the largest percentage of German buyers with hardwood lumber. Europe (including German) was second followed by Southeast Asia, Africa and Central/South America.

2. In terms of volume, 40 percent of the lumber purchased by these German buyers was of North American origin. This amounted to 247,257 cubic meters. Tropical origin lumber accounted for 31 percent of the volume or 191,624 cubic meters. The remaining volume was mostly European (24 percent) origin.

3. Brokers, agents and importers comprised the largest percentage of German businesses purchasing North American hardwood lumber. However, 50 percent of the German sawmill operators/wood processors responding to the survey purchased hardwood lumber directly from North America.

4. Nineteen percent of the hardwood lumber imported was North American white oak. North American ash accounted for 5 percent of the volume while North American hard maple comprised 4 percent. Meanwhile tropical species equaled 31 percent of the total volume purchased by these German buyers.

5. Almost 58 percent of the lumber imported was graded FAS. An additional 13 percent was FAS1F while 16 percent was either Prime or Selects. Organizations that purchased the largest percentage of selects (as measured by the percent of overall lumber purchases) were brokers/agents, wood processors/sawmills and retailers.

6. Product features viewed to be most important when purchasing hardwood lumber were reported to be absence of surface checks, competitive pricing, grading accuracy, service and delivery quality, as well as, overall product quality.

7. Over half (51 percent) of the German buyers thought a commodity brand name identifying the producer and region of origin would be important in their purchase decision.

8. Fifty-three percent of the respondents indicated a willingness to purchase finished hardwood parts from North American suppliers. Parts mentioned in descending order of preference were furniture parts, panels, sanded blanks,

mouldings, parquet parts and dimension component parts.

9. In terms of buyer satisfaction, the German buyers were generally pleased with North American suppliers. However, it should be noted that although the satisfaction ratings were in the acceptable range, the satisfaction being delivered by North American suppliers did not exceed the importance German buyers placed on the various aspects of customer satisfaction. Room for improvement exists.

The study concluded by outlining some of the marketing implications determined by this research effort. It was generalized that although growth has been experienced in this export market, North American suppliers could become even more competitive by paying close attention to the product and service quality features of their business. These features include providing a reliable supply of hardwood lumber at a competitive price and delivered at the agreed upon time. Moreover, respondents suggested that suppliers make a commitment to exporting, emphasizing long-term buyer-seller relationships. Other areas that North American suppliers should not overlook in terms of importance are the accuracy of sorting, grading and moisture content indicating that proper drying is essential. Thus, it can be concluded that the North American supplier who attempts to provide and assure these characteristics over the long run will be afforded a distinct competitive advantage in serving the German hardwood lumber market.

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INTRODUCTION

Hardwood exporting is a vital entity in the economic structure of the United States. Yet to be effective, exporters require a thorough understanding of the country and market they wish to enter. This is true for markets regardless of the size and proximity to the United States. One country that has been a major importer of U.S. hardwood products through the years has been Germany. Hardwood export statistics indicate that this European trading partner has been a leading importer of U.S. hardwood lumber. This trend should be expected to continue, especially if U.S. hardwood suppliers continue to meet the hardwood needs of German buyers.

To meet these needs, U.S. hardwood exporters must have a thorough working knowledge of product needs and requirements of importers operating in this market. Therefore, the authors have attempted to both identify and qualify the product and market needs of Germans who purchase United States hardwood lumber. The goal of this research effort was to gain a better understanding of the German marketplace as it pertains to the buying and selling of this hardwood lumber.

IMPORTANCE OF THE GERMAN MARKET

In order to understand Germany's role as a trading partner of U.S. hardwood lumber producers, it is first necessary to know a little bit about its demographic makeup and background. With this basic understanding in hand, the importance of Germany as it relates to the purchase and use of hardwood lumber can be analyzed.

Germany represents one of the leading international markets for U.S. hardwood exporters. From January to September of 1991, Germany imported approximately 38.5 million dollars worth of hardwood lumber from the United States (U.S. Foreign Agric. Serv. 1991). This accounts for 6 percent of the total value of U.S. hardwood lumber exports. Among the leading importing countries of U.S. hardwood lumber, Germany ranks seventh. Federal trade statistics indicate this market grew substantially over the past five years (U.S. Foreign Agric. Serv. 1991). The value of hardwood lumber (and all hardwood products) exported from the United States to Germany increased approximately seventy-five percent from 1986 to 1990. Table 1 illustrates the growth and relative importance of the German market to U.S. hardwood lumber exporters.

Table 1
Value of hardwood lumber shipments to the ten leading importers of U.S. hardwood lumber: 1986-1991

Country	1986	1987	1988	1989	1990	Jan-Sep 1991
Canada	70.3	102.3	128.1	116.5	202.2	127.8
Japan	45.5	81.0	132.4	134.1	138.4	104.5
Taiwan	66.4	69.2	60.2	61.4	51.1	52.0
Italy	16.1	30.6	41.3	37.4	49.6	51.8
Un. Kingdom	24.4	34.1	55.5	55.7	68.9	49.0
Belgium	24.3	33.0	48.9	42.9	53.2	47.2
Germany	***23.5***	***29.6***	***38.8***	***37.1***	***41.0***	***38.5***
Spain	8.3	13.3	26.4	28.6	31.4	25.4
France	6.6	7.5	15.7	16.5	25.2	24.1
Mexico	8.0	13.7	21.2	27.2	25.3	20.9
World Totals	**338.2**	**474.8**	**654.5**	**649.0**	**802.2**	**642.2**

Source: U.S. Foreign Agric. Serv. 1991
Value in Million Dollars U.S.

RESEARCH METHOD

This study was conducted through use of a mail survey of German firms identified as potential hardwood lumber buyers. A mailing list was assembled from a variety of sources and outlets. Dr. Pohl was instrumental in developing the final list of potential respondents. The final mailing list consisted of the names of 590 potential German buyers of hardwood lumber. All 590 firms were surveyed.

The survey instrument was designed specifically for this study. The initial questionnaire was pre-tested through the use of extensive personal interviews with 20 German firms who currently imported hardwood products from the United States. Suggestions made by these firms were incorporated into the redesigned survey instrument. After these changes were instituted, the survey was faxed to an additional 20 German firms to pre-test the revised instrument. Again, adjustments were made in the survey instrument to accommodate these additional suggestions. The major finding of the pre-test methodology was the fact that German buyers often could not or did not distinguish between Canadian and United States hardwood suppliers. Instead, they preferred to lump them into one category--North American suppliers. Therefore, to avoid confusion on the part of the respondent, the researchers used the German preferred category of North America throughout most of the survey and this subsequent report.

Following the pre-test, series of mailings were conducted. The mailings consisted of a survey questionnaire, a cover letter, and an addressed, prepaid postage return envelope. A total of three mailings was conducted in the Fall of 1992.

The questionnaire was designed to gather information regarding three broad categories of issues concerning hardwood lumber imports. (1) Information on the size and principal business activities of the importing firm was requested. In addition, information on sales and distribution activities - including exporting - was requested. (2) Questions also addressed the types of products imported and sought to identify the principal sources of those products. This included information on lumber species and grade, as well as the countries of origin for imported hardwood lumber. (3) A series of questions addressed the importance of service and product quality and the degree of buyer satisfaction with American products and suppliers. In addition, buyer preferences for communication with suppliers were addressed.

The original mailing list for the survey contained 590 German firms. A total of 220 questionnaires were completed and returned. An additional 130 surveys were returned by the postal services as undeliverable. Thus, 220 of 460 delivered surveys were returned producing a response rate of 47.8 percent.

Of the 220 returned surveys, 95 firms identified themselves as purchasers of hardwood lumber. Of these, 68 firms purchased hardwood lumber directly from North America.

RESULTS

The purpose of this section is to report the findings of the mail survey. The results are presented as two major topics: product purchases and marketing-related characteristics. These major topics are supported by appropriate subtopics where necessary.

Product Purchases

This section reports the survey results associated with product purchases reported by the respondents. Topics specifically addressed include the number of hardwood lumber suppliers utilized, the volume and species of lumber purchased, as well as the grades of lumber acquired.

Hardwood Lumber Sources

Of the 95 companies responding to the survey and reported here, all (100 percent) purchased hardwood lumber. These respondents indicated they purchased their hardwood lumber from a number of supply sources. The number of sources of hardwood lumber included the geographic regions from which the product was purchased. In this case, responding companies were asked to identify all geographic regions from which they receive and/or purchase their hardwood lumber. As one would expect, most of the respondents (71.6 percent) purchased hardwood lumber from North American suppliers. Europe (including Germany) supplied over sixty percent (61.1 percent) of these respondents while Southeast Asia (Eurasia) supplied over half (53.7 percent). The other regions supplying hardwood lumber to these German companies were Africa (49.5 percent) and Central/South America (21.1 percent). The results of this analysis are shown in Table 2.

Table 2
The Number of German Buyers Purchasing Hardwood Lumber from Various Regions of the World

Region	Frequency	Percent
North America	68	71.6
Europe	58	61.1
Southeast Asia	51	53.7
Africa	47	49.5
Central/South America	20	21.1
Other	7	7.4

Regions from which hardwood lumber was purchased were further analyzed by comparing purchases to the respondents primary business activity. As one might expect from the data presented earlier, North America supplied the largest percentage of respondents in each business activity category. As seen in Table 3, the largest penetration of North American suppliers was found in the conglomerate business category where 88.9 percent of those organization purchased North American hardwoods. This was followed closely by brokers, agents, importers and firms categorized as "other." Based on these results, it would seem that wholesalers and retailers offer the most room for market penetration at this time, although all categories show strong promise.

Table 3
Region Supplying Hardwood Lumber Purchases by Primary Business Activity

Business Activity	Frequency (n)	North America	South America	Europe	Africa	Eurasia
Broker/Agent	(14)	78.6	14.3	42.9	42.9	42.9
Importer	(22)	77.3	18.2	36.4	40.9	50.0
Wholesaler	(6)	66.7	16.7	83.3	50.0	66.7
Wood Processor/ Sawmill	(20)	50.0	10.0	60.0	15.0	25.0
Retailers	(3)	33.3	0.0	0.0	33.3	0.0
Conglomerate	(9)	88.9	22.2	100.0	100.0	88.9
Other	(21)	81.0	42.9	85.7	76.2	81.0

Respondents were asked to provide additional information as to what type of organization supplies them with their hardwood lumber products. That is, what member(s) of the channel of distribution interfaced with these German buyers when hardwood lumber was being purchased. As seen in Table 4 below, the majority of German buyers (61.7) purchased their products from a foreign (non-German) exporter. Foreign (non-German) producers and foreign sawmills were also popular (42.6 percent). Meanwhile, German importers were used by 35.9 percent of respondents, German producers/sawmills by 35.1 percent and German brokers/agents by 31.9 percent.

Table 4
Channel Members Utilized When Purchasing Hardwood Lumber

Channel Member Category	Frequency	Percent Utilizing Channel Member
German Broker/Agent	30	31.9
German Importer	33	35.9
German Wholesaler	18	19.1
German Producer/ Sawmill Operator	33	35.1
Non-German Broker/Agent	20	21.3
Non-German Exporter	58	61.7
Non-German Wholesaler	16	17.0
Non-German Producer/ Sawmill Operator	40	42.6

Type of Hardwood Lumber Purchased

The type of hardwood lumber imported by the respondents was also determined. From a domestic perspective, companies were asked to relate the volume of hardwood lumber purchased in 1990 by species. Specifically, respondents were asked to provide the percent of their total purchases (by volume) that were of North American origin, as well as Tropical and European origin. When totaled, North American hardwoods equaled 40 percent of the volume purchased, Tropical hardwoods comprised approximately 31 percent followed by European hardwoods at 24 percent of total volume. An additional 5 percent of the hardwood purchased in 1990 came from "other" hardwood sources. The results of this analysis are shown in Table 5.

Table 5
Volume of Hardwood Lumber Imported
from the Various Regions of Origin

Species Total	Volume in m^3	Percent
N. American Origin	247,257	40.0
Tropical Origin	191,624	30.8
European Origin	148,355	23.7
Other Origin	30,907	4.7
Total	618,143	100.0

As for North American species purchased, white oak (19 percent) was the most popular. This was followed by ash at 5 percent of volume and maple at 4 percent. Other hardwood species purchased often in 1990 were cherry and red oak. Each comprised approximately 2 percent of the total purchase volume reported by these German buyers. The complete results of this question can be found in Table 6. These figures appear to be consistent with the German trend toward purchasing lighter hardwoods.

Table 6
Type of Hardwood Lumber Imported by German Buyers

Species	Volume in m^3	Percent of Total*
North American		
White Oak	117,447	19.0
Red Oak	12,363	2.0
Ash	30,907	5.0
Maple	24,726	4.0
Poplar	8,654	1.4
Birch	3,709	0.6
Cherry	12,363	2.0
Walnut	2,473	0.4
Alder	9,890	1.6
Elm	1,236	0.2
Other N.A. Species	22,871	3.7
Other Regions		
Tropical Species	191,624	31.0
European Species	148,355	24.0
Other Species	30,907	5.0
Total	618,143	100.0

* Percents have been rounded

Volume of hardwood lumber purchased was further analyzed by comparing purchases to the respondents primary business activity. As one would expect, the business categories with the largest number of responding companies, purchased the most lumber. To this end, companies grouped in the "other" category purchased the largest volume, followed by importers, conglomerates and brokers and agents. Conglomerates are those companies which could not delineate themselves as operating in one particular primary business activity category. The complete results of this analysis are displayed in Table 7.

Table 7
Total Volume of Hardwood Lumber Imported by Primary Business Activity

Primary Business Activity	Frequency	Total Volume in m^3	Percent*
Broker/Agent	14	43,920	7.1
Importer	22	113,700	19.0
Wholesaler	6	6,850	0.2
Wood Processor/ Sawmill Operator	20	36,846	6.1
Retailer	3	6,000	0.1
Conglomerate	9	88,085	14.5
Other	20	322,742	53.0
Total	95	618,143	100.0

* Percents have been rounded

Grades of Hardwood Lumber Purchased

Respondents were asked to report the percent of 1990 hardwood lumber purchases (by board feet) in each grade 1990. Not surprisingly, 57.9 percent of the total amount purchased was FAS (First and Seconds). Approximately, 13.6 percent of purchases were graded FAS1F (FAS One Face) while 7.9 percent were Prime and 8.4 Select. Moreover, almost 10 percent (9.3) of the hardwood lumber purchased fell into the Other grade category. The results of the grade purchases are outlined in Table 8.

Table 8
The Percent of Hardwood Lumber Purchased by Grade

Lumber Grade	Percent by Volume
FAS (First and Seconds)	57.9
FAS1F (FAS One Face)	13.6
Prime	7.9
Selects	8.4
Commons	0.2
No. 1 Common	1.5
No. 2 Common	1.2
Other Grade	9.3
Total	100.0

To analyze this finding further, the purchase of graded lumber was compared to the companies' primary business activity. In other words, it was determined which type of company purchased the various grades of hardwood lumber. As seen in Table 9, First and Seconds were the preferred grade of lumber purchased by all categories of German buyers. Meanwhile, FAS1F graded lumber was second most purchased grade by importers (26.2 percent) and respondents grouped in the "other" category. At the same time, the brokers/agents (17.3 percent) and wood processors/sawmill operators (21.1 percent) made selects their second largest grade purchased. These results appear to be consistent with German buyers demand for higher quality products, including grades of lumber. However, it should be noted, that demand for most grades of lumber existed to some extent in each user category. This would indicate that suppliers of hardwood lumber products may have a demand for a variety of graded lumber products in the German market.

Table 9
Companies Primary Activity by
Type of Graded Lumber Purchased

Primary Business Activity	FAS	FIF	Prime	Selects	Commons	No.1 Comm	No.2 Comm	Other Grade
Broker/Agent	59.0	6.8	12.7	17.3	0.0	4.1	0.0	0.0
Importer	50.0	26.2	10.8	4.8	0.8	0.2	0.2	6.8
Wholesaler	52.0	2.0	2.0	2.0	0.0	2.0	16.0	24.0
Wood Proc/ Sawmill	56.7	11.1	0.0	21.1	0.0	0.0	0.0	11.1
Retailer	85.0	0.0	0.0	7.5	0.0	7.5	0.0	0.0
Conglomerate	84.5	2.2	5.6	5.6	0.0	2.2	0.0	0.0
Other	48.0	20.0	10.4	2.0	0.0	0.3	0.0	19.3

Product Distribution

The purpose of this section is to report the findings as they relate to respondent's distribution of hardwood lumber purchased. That is, where is the hardwood lumber sold or to whom is it distributed once the respondent has finished adding value. To address this issue respondents were asked to identify what type of organizations received the hardwood lumber after the respondent handled or processed it.

In this case, it was requested that those being surveyed identify each type of organization that receives the hardwood lumber after it was handled or processed by the respondent. As seen in Table 10, most respondents sell the processed lumber to a wholesaler (58.1 percent). Also, more than half of those responding to the survey sold their processed product to either furniture manufacturers (53.8 percent) or joinery manufacturers (52.7 percent). Other organizations receiving processed lumber from the respondents were retailers (30.1 percent), importers (22.6 percent) and finished parts producers (22.6 percent). Meanwhile, almost one-fifth sold their processed lumber to cabinet manufacturers (19.4 percent) while flooring manufacturers were served by 16.1 percent of the respondents. From these results, it can be ascertained that the hardwood lumber imported by these German buyers is processed and sold to a wide variety of organizations.

Table 10
Organizations Receiving Hardwood Lumber After
Processed/Handled by the Respondent

Type of Organization	Frequency	Percent Responding Yes
Agent or Broker	8	8.6
Importer	21	22.6
Wholesaler	54	58.1
Furniture Manufacturer	50	53.8
Cabinet Manufacturer	18	19.4
Joinery Manufacturer	49	52.7
Flooring Manufacturer	15	16.1
Finished Parts Producer	21	22.6
Retailer	28	30.1
Other	17	18.3

Distribution of the processed product was analyzed further. This was done by comparing the primary business activity of the responding company to the type of organization receiving the processed or value-added products. As seen in Table 11, most of the organizations delivered their product to furniture manufacturers. Other entities receiving value-added products from the respondents were joinery manufacturers, wholesalers and retailers. A smaller percentage of respondents delivered their products to finished parts producers, cabinet manufacturers and flooring manufacturers. The complete breakdown of this distribution process can be seen in Table 11.

Table 11
Companies Primary Business Activity
by Organizations Receiving the "Value-Added" Product

Type of Organization	Primary Business Activity: Broker/ Agent	Import	Whole-saler	Saw mill	Retail	Conglo-merate	Other
Agent/Broker	7.1	13.6	0.0	5.0	50.0	11.1	4.8
Importer	64.3	18.2	0.0	5.0	50.0	11.1	23.8
Wholesaler	64.3	72.7	40.0	40.0	100.0	33.3	66.7
Furn. Manf	50.0	54.5	80.0	50.0	100.0	55.6	47.6
Cabinet Manf	0.0	22.7	20.0	15.0	0.0	33.3	28.6
Joinery Manf	7.1	45.5	80.0	50.0	100.0	88.9	66.7
Flooring Manf	14.3	22.7	0.0	20.0	0.0	11.1	14.3
Fin Parts Prod	28.6	18.2	20.0	15.0	0.0	33.3	28.6
Retailer	21.4	13.6	40.0	25.0	50.0	55.6	42.9
Other	7.1	18.2	0.0	30.0	0.0	22.2	19.0

Marketing-Related Characteristics

Marketing involves a variety of interrelated issues that are strategically designed to satisfy the needs of the intended buyer. To this end, marketing strategies are built upon the notion of understanding buyer needs as well as the emphasis the buyer places on the various features of the product/service designed to meet those needs. Since those being surveyed were already involved in the product (hardwood lumber) market, the researchers sought to ascertain how well North American suppliers were meeting the needs of their German buyers. To accomplish this task, respondents were asked a series of questions related to the products being purchased, the level of satisfaction attained from their current suppliers, brand naming, willingness to purchase finished parts, and the most appropriate method to communicate with these buyers.

Importance of Product and Supplier Characteristics

Using a buyer's perspective, the German companies included in the study were asked to respond to several product- and supplier-related issues. That is, respondents were asked to rate a variety of issues related to the purchase of hardwood lumber products on a scale of one (not important) to five (very important) as they relate to choosing a hardwood supplier. Specifically asked were questions related to the product features (attributes), product supply as well as product and service quality.

Table 12 provides the ten most important product-related attributes as rated by the German companies responding to the survey. The *absence of surface checks* was rated as the most important product attribute. This was followed by *meeting grade specifications* and *accuracy of grading.* Clearly, German buyers of hardwood lumber are concerned with the grading of the lumber they purchase.

Uniformity of lumber thickness, general cleanliness, lumber straightness, and *uniformity of color* were found to be very important attributes. Also found to be important to buyers were *accuracy and uniformity of moisture content* and the *absence of chipped grain.* The remaining product-related characteristics included in the study were not considered to be as important as those mentioned. In particular, the attributes that rated the lowest in importance were *presence of a trademark or logo, square end trimming* and *lumber end coating.*

It should be noted that end coating may be more important than indicated if it serves to prevent end splits. Also, trademarks (which were not considered to be important by German buyers) can be worthwhile if they help develop brand loyalty. It should be realized that the importance buyers place on the attributes discussed throughout this report should not be substituted for a supplier's knowledge of the specific needs of a particular customer. They do, however, help to define the general needs of the German market for North American hardwood lumber and provide a guide that can be especially useful to the exporter with no experience in the German market.

Table 12
Importance of Product-Related Attributes

Attribute	Mean Score*
Absence of Surface Checks	4.81
Meeting Grade Specifications	4.74
Accuracy of Grading	4.74
Uniformity of Thickness	4.63
General Cleanliness	4.61
Lumber Straightness	4.60
Uniformity of Color	4.56
Accuracy of Moisture Content	4.56
Absence of Chipped Grain	4.55
Uniformity of Moisture Content	4.51

*1 = Not Important, 5 = Very Important

Respondents were also asked to indicate the importance of various features relating to the hardwood lumber supplier. Table 13 provides the importance of these attributes.

The ability of the supplier to *fill mixed species orders* was considered to be the most important attribute in this category. The *ability to provide protective packaging, fill small orders,* and *provide a variety of species* were also considered to be important. The ability to *arrange credit* and *provide planed lumber* ranked below average in importance. None of the supplier-related attributes were considered to be as important as the product-related attributes discussed previously. However, caution should be exercised in interpreting these results as they are averages. The importance of a particular attribute may vary from buyer to buyer.

Table 13
Importance of Supplier-Related Attributes

Attribute	Mean Score*
Ability to Fill Mixed Species Orders	3.88
Ability to Provide Protective Packaging	3.71
Ability to Fill Small Orders	3.44
Ability to Provide a Variety of Species	3.43
Ability to Provide Rough Dimension Products	3.30
Ability to Fill Large Orders	3.10
Ability to Arrange Credit	2.75
Ability to Provide Planed Lumber	2.47

*1 = Not Important, 5 = Very Important

The last set of product and supplier characteristics analyzed were those features related to the quality of the product and service being offered. As seen in Table 14, most of the features related to quality were viewed as quite important by the respondents. With the exception of *supplier's activity at trade shows,* all of the attributes in this category were rated as more important than the supplier-related attributes in Table 13.

Not surprisingly, *competitive pricing* was viewed as the most important product and service quality attribute. *Quick response to inquirers* and *rapid delivery* were also very important. German buyers apparently attempt to reduce the risk of a purchase by developing relationships with suppliers - both *previous business with supplier* and *personal relationship with supplier* were rated well above average in importance.

As mentioned, *supplier's activity at trade shows* was considered to be very low in importance. However, this does not suggest that promotion of the generic product (i.e., North American or Appalachian hardwoods) at trade shows is ineffective.

Table 14
Importance of Product and Service Quality Attributes

Attribute	Mean Score*
Competitive Pricing	4.78
Quick Response to Inquirers	4.60
Rapid Delivery	4.48
Providing Technical Information	4.45
Previous Business with Supplier	4.23
Personal Relationship with Supplier	4.12
Supplier's Reputation	4.06
Supplier's Activity at Trade Shows	2.12

*1 = Not Important, 5 = Very Important

Product and Supplier Characteristics Compared Across Markets

It is informative to compare the importance of product and supplier characteristics in the German market for hardwood lumber (as discussed in the previous section) to the importance of the characteristics in other markets. Table 15 provides the importance of product-related characteristics to German, U.K., and U.S. buyers. Complete comparisons are not possible as not all attributes were investigated in all the markets.

Overall, German hardwood lumber buyers resemble U.S. buyers more than U.K. buyers in terms of product-related attribute importance. The top three product-related attributes in the U.S. and German markets each include *absence of surface checks, accuracy of grading,* and *thickness uniformity.* The three least important product-related attributes *(presence of a trademark or logo, square end trimming,* and *presence of end coating)* were also the same for both the U.S. and German markets. The largest differences between the two markets occurred on the attributes of *general cleanliness* (which was considered relatively more important in the German market) and *absence of wane* (which was relatively more important in the U.S. market). However, these differences were not large and might be explained by the potential importance of attributes that were not included in the U.S. study.

U.K. lumber buyers differed from buyers in the other two markets in that they rated *lumber straightness* more highly. A variety of explanations for this difference can be hypothesized. The difference may result from differences in uses of the material, differences in the types of lumber purchased, or result from straightness problems with previous purchases that have elevated the importance of the attribute in the minds of the respondents. *Square edges* were also rated as relatively more important by U.K. buyers. German and U.K. buyers also differed in that the latter placed more importance on *absence of wane,* and *absence of stain* and less importance on *general cleanliness* and *meeting grade specifications.* This finding concerning grade specifications may reflect greater familiarity with U.S. grading practices among U.K. buyers.

Table 16 compares supplier-related attribute importance across the three markets. The largest difference in the ratings was based on the attribute of *ability to fill large orders.* U.S. buyers rated this as the most important of the attributes listed. In contrast, German and U.K. buyers rated *ability to fill large orders* as relatively less important. The ability to provide *rough dimension products* was less important in the U.S. market as compared to the German market. This difference probably results from German buyers' lower familiarity with U.S. producers. In other words, domestic buyers have less need for a supplier who can provide a wide range of products as they may be aware of producers of each product type.

Table 15
Importance of Product-Related Attributes
in the German, U.K., and U.S. Markets

Attribute	Rank[1]		
	U.S. Market[3]	U.K. Market[2]	German Market
Absence of Surface Checks	3	3	1
Meeting Grade Specifications	N.A.	5	2
Accuracy of Grading	1	N.A.	2
Uniformity of Thickness	2	4	3
General Cleanliness	7	11	4
Lumber Straightness	4	1	5
Uniformity of Color	N.A.	9	6
Accuracy of Moisture Content	6	8	6
Absence of Chipped Grain	10	10	7
Uniformity of Moisture Content	5	7	8
Absence of Stain	N.A.	2	9
Absence of End Splits	8	7	10
Uniformity of Length	11	13	11
Absence of Wane	9	6	12
Square Edges	12	7	13
End Coating	14	14	14
Square End Trimming	13	12	15
Trademark or Logo	15	15	16

1 A rank of 1 was assigned to the most important attribute. Ties received the same rank.
2 Data from a 1991 study of timber importers in the U.K. Only responses from those importers that purchased North American hardwoods are included.
3 Data from a 1989 study of several segments of the U.S. hardwood lumber market

Table 16
Importance of Supplier-Related Attributes
in the German, U.K., and U.S. Markets

Attribute	Rank[1]		
	U.S. Market[3]	U.K. Market[2]	German Market
Ability to Fill Mixed Species Orders	N.A.	N.A.	1
Ability to Provide Protective Packaging	2	3	2
Ability to Fill Small Orders	3	1	3
Ability to Provide a Variety of Species	4	2	4
Ability to Provide Rough Dimension Products	7	6	5
Ability to Fill Large Orders	1	5	6
Ability to Arrange Credit	5	4	7
Ability to Provide Planed Lumber	6	7	8

1 A rank of 1 was assigned to the most important attribute. Ties received the same rank.

2 Data from a 1991 study of timber importers in the U.K. Only responses from those importers that purchased North American hardwoods are included.

3 Data from a 1989 study of several segments of the U.S. hardwood lumber market

Table 17 compares the U.S., U.K., and German buyers based on the product and service quality attributes. Clearly, *competitive pricing* is important in all three markets. *Quick responses to inquiries* is also important in the U.K. and German market, more important than even *rapid delivery* and a *supplier's reputation. Personal relationships with the supplier* are more important in the domestic market, perhaps reflecting increased ease of developing such relationships. *Technical information* is more important in the German market than the U.S. and U.K. markets - perhaps reflecting greater familiarity with U.S. species and products among U.S. and U.K. buyers.

Prior to conducting the study, it was hypothesized that the *supplier's reputation* would be more important in export markets due to a need to reduce risk and because of decreased availability of secondary information about a supplier. Surprisingly, this was not the case in the German market. *Supplier's reputation* is considered relatively more important in the domestic market as compared to the German market.

Table 17
Importance of Product and Service Quality Attributes in the German, U.K. , and U.S. Markets

Attribute	Rank[1]		
	U.S. Market[3]	U.K. Market[2]	German Market
Competitive Pricing	1	2	1
Quick Response to Inquiries	N.A.	1	2
Rapid Delivery	4	4	3
Providing Technical Information	6	7	4
Previous Business with Supplier	5	6	5
Personal Relationship with Supplier	3	5	6
Supplier's Reputation	2	3	7
Supplier's Activity at Trade Shows	N.A.	8	8

1 A rank of 1 was assigned to the most important attribute. Ties received the same rank.

2 Data from a 1991 study of timber importers in the U.K. Only responses from those importers that purchased North American hardwoods are included.

3 Data from a 1989 study of several segments of the U.S. hardwood lumber market

Determinant Product and Supplier Characteristics

While the importance data provided in the previous section provides useful guidance for marketing hardwood lumber to German buyers, it does not provide the entire picture. Individual companies seeking a competitive advantage in the market may wish to differentiate their company by concentrating on attributes that are both important and are not provided by all suppliers. Such attributes can be termed, determinant.

To identify determinant attributes, respondents were asked to rate the attributes discussed in the previous section a second time using a scale that ranged from 1 (small difference between suppliers) to 5 (large difference between suppliers). Using this information, a composite score can be formed for each attribute that incorporates both the importance and difference ratings. There are several ways in which a composite score can be calculated. In this report, scores were calculated as the product of importance and difference. Importance and difference were weighted equally. The determinant scores resulting from this calculation range from one to 25. Table 18 shows, the attributes that received the highest determinance scores.

Competitive pricing was the most determinant of the attributes included in the study. Quick response to inquiries was second in determinance and meeting grade specifications was tied with rapid delivery for third place. The attributes that were lowest in determinance were ability to arrange credit, ability to provide planed lumber, supplier's trademark or logo, and supplier’s activity at trade shows (in decreasing order of determinant score).

It is interesting to note that, while the top three attributes in determinance were considered important by German lumber buyers, none was the most important attribute. The most important attribute, absence of surface checks, fell to seventh in determinance. This suggests that providing lumber free from surface checks is a requirement when exporting to the German market. Since all companies are expected to meet this requirement, providing lumber free of surface checks will not serve as a primary method of differentiating a producer in the German market. Companies must look at other attributes when searching for a way to obtain a competitive advantage in the German market.

One attribute that can help in developing a competitive advantage is quick response to inquiries. Developing excellence in this area should be both quicker and easier than in the areas represented by attributes of similar importance (competitive pricing, meeting grade specifications and rapid delivery). Therefore, a first step toward becoming more competitive in the German market is to ensure that employees quickly follow-up on leads and inquiries from German buyers. This action should be followed by ensuring that the company is meeting buyers expectations in terms of grading, delivery times, and cleanliness. Finally, producers may wish to review their pricing policies to ensure that they are as competitive as possible while meeting the goals of the company.

Table 18
Determinant Scores for Product and Supplier Attributes

Attribute	Mean Score*
Competitive Pricing	18.5
Quick Response to Inquiries	17.6
Meeting Grade Specifications	16.9
Rapid Delivery	16.9
General Cleanliness	16.8
Accuracy of Grading	16.8
Absence of Surface Checks	16.7
Uniformity of Color	16.6
Uniformity of Thickness	15.7
Providing Technical Information	15.7
Uniformity of Moisture Content	15.1
Supplier’s Reputation	15.0
Absence of Stain	14.9
Lumber Straightness	14.8
Accuracy of Moisture Content	14.8

* Scores are the product of importance and difference. The possible range is one to 25 with 25 representing the maximum determinance.

Buyer Satisfaction

If one is to implement a buyer's perspective toward the marketing of products, the natural result of this process is to determine the outcome in terms of buyer satisfaction. In other words, how well did the product supplier meet and satisfy the needs of the intended buyer. Since this perspective is applicable to the buying and selling of hardwood lumber products, the researchers attempted to address the issue of buyer satisfaction. Toward that end, the study of buyer satisfaction was designed to get a better perspective on how well North American suppliers have been able to meet the needs of German hardwood buyers.

In order to gain this perspective, only those German buyers who purchased hardwood lumber directly from a North American supplier were asked to respond to these buyer satisfaction issues. Of the 95, 68 bought directly from North American suppliers. These 68 respondents were asked to indicate their satisfaction with North American suppliers on a variety of issues relating to the purchase of hardwood lumber. Ratings were made using a five point scale (1 = not satisfied to 5 = very satisfied). As with the questions concerning importance, these questions were designed to determine buyer satisfaction as it relates to product-related features, supplier-related features and product and service quality features.

Table 18 lists the product-related attributes that were included in the satisfaction questioning. Of these attributes, buyers were least satisfied with the *absence of surface checks* in the North American lumber they purchase. This attribute received a mean satisfaction rating (3.22) that was just slightly above the neutral response of three. In other words, respondents were slightly more satisfied than dissatisfied with North American hardwood lumber on this attribute.

Uniformity of Color and Lumber Straightness received the next lowest mean satisfaction ratings (3.35 and 3.44, respectively). Of the attributes included in this portion of the study, respondents were most satisfied with *Moisture Content Accuracy* (3.70). Respondents were slightly more satisfied than dissatisfied with *Overall Product Quality* (3.52).

Respondents' satisfaction ratings of various supplier-related attributes are shown in Table 19. Within this group of attributes, respondents were least satisfied with the *supplier's ability to fill small orders* (3.21). The *ability to provide dimension products* in addition to lumber and the *ability to fill mixed species orders* received the next lowest mean satisfaction ratings. This finding suggests an opportunity for a hardwood producer to better serve the German market through more flexible distribution. This flexibility might be achieved by maintaining inventory in Germany (either at a company-owned facility or, indirectly, by utilizing a stocking distributor) or by consolidating small shipments where possible.

Table 18
Satisfaction with Product-Related Attributes

Attribute	Mean Score*
Absence of Surface Checks	3.22
Uniformity of Color	3.35
Lumber Straightness	3.44
Grading Accuracy	3.49
Uniformity of Thickness	3.61
Moisture Content Accuracy	3.70
Overall Product Quality	3.52

* 1 = Not Satisfied, 5 = Very Satisfied

Among the supplier-related attributes studied, German buyers were most satisfied with the supplier's *Ability to Arrange Credit* (3.55). *Overall Service Quality* received a mean rating of 3.53 - indicating that, overall, buyers were slightly more satisfied than dissatisfied.

The final elements of buyer satisfaction examined were those related to the quality of the product and service being provided. As with product features discussed previously, the German buyers were generally satisfied (i.e., >3.0) with features representing product and service quality. As noted in Table 20, the factors receiving the lowest satisfaction rating were the *Supplier's Activity at Trade Shows* (3.09), *Delivery Time* (3.39), and *Competitive Pricing* (3.44). It is important to note that even though each of these ratings are in the favorable range, many are below average in importance.

Table 19
Satisfaction with Supplier-Related Attributes

Attribute	Mean Score*
Ability to Fill Small Orders	3.21
Ability to Provide Dimension Products	3.33
Ability to Fill Mixed Species Orders	3.35
Ability to Fill Large Orders	3.47
Use of Protective Packaging	3.47
Ability to Arrange Credit	3.55
Overall Service Quality	3.53

* 1 = Not Satisfied, 5 = Very Satisfied

Table 20
Satisfaction with Product and Service Quality Attributes

Attribute	Mean Score*
Supplier’s Activity at Trade Shows	3.09
Delivery Time	3.39
Competitive Pricing	3.44
Supplier's Commitment to Exporting	3.54
Providing Technical Information	3.66

* 1 = Not Satisfied, 5 = Very Satisfied

Commodity Brand Naming

Forty-seven (47) of the German buyers (51.1 percent) thought a commodity brand name identifying the producer and country/region of hardwood origin would be important in their purchase decision. Of those 47 buyers preferring a commodity brand, most (42.5 percent) indicated it would help to identify product, quality and consistency. Others (27.3 percent) said it would assist their purchase by identifying the region from which the hardwood lumber was provided. An additional 9.1 percent believed commodity branding would help build customer preference through brand loyalty. The remaining 2.1 percent offered a wide array of benefits from the ability to compare prices to not being sure how they would utilize a commodity brand in making their hardwood purchase decision.

Further analysis of the commodity branding concept considered the preference of branding by the respondents primary business activity. As seen in Table 21, agents/brokers (71.4 percent) , conglomerates (66.7 percent), importers (59.1 percent) and organizations categorized as "other" (52.4 percent) seemed to have the greatest preference for the commodity branding concept. Meanwhile, wholesalers (25.0 percent) and sawmill operators (26.3 percent) were not as enthusiastic in their need for hardwood commodity branding. Wood flooring manufacturers and dimension stock producers indicated no need to utilize a commodity brand on hardwood lumber products. At the same time, retailers had a mixed reaction to this concept.

Table 21
Commodity Branding Importance By Primary
Type of Business Activity

Primary Business Activity	Total Number of Respondents by Activity	Percent Preferring Commodity Brand
Broker/Agent	14	71.4
Importer	22	59.1
Wholesaler	6	25.0
Wood Processor/ Sawmill Operator	20	26.3
Retailer	3	33.3
Conglomerate	9	66.7
Other	21	52.4
Total	95	

Willingness to Purchase Finished Parts

Respondents were asked to indicate their willingness to purchase finished hardwood parts. Surprisingly, most (53.3 percent) said they would be interested in purchasing finished parts. The finished parts mentioned by these respondents in descending order of preference were furniture parts (26.5 percent) panels (16.3 percent), sanded blanks, (14.3 percent), mouldings (14.3 percent), parquet parts (10.2 percent) and dimension or component parts (8.2 percent).

As for the type of organization interested in purchasing these finished parts, agents and brokers (92.3 percent), conglomerates (66.7 percent) and wholesalers (60.0 percent) were the most receptive organizations. Additional business activity categories indicating a willingness to purchase finished hardwood parts were those companies grouped as "others" (57.1 percent) importers (45.5 percent) and wood processors/sawmill operators (31.6 percent). The complete results of this analysis can be seen in Table 22 below.

Table 22
Willingness to Purchase Finished Hardwood Parts
By Primary Type of Business Activity

Primary Business Activity	Total Number of Respondents by Activity	Percent Preferring Finished Parts
Broker/Agent	14	92.3
Importer	22	45.5
Wholesaler	6	60.0
Wood Processor/ Sawmill Operator	20	31.6
Retailer	3	0.0
Conglomerate	9	66.7
Other	21	57.1
Total	95	

Promotion of Hardwood Products

Promotion comprises the communication aspect of a marketing strategy. As such, it is important that the reseller communicate effectively if his marketing program expects to achieve success. With this in mind, the research focused on the most effective method(s) for communicating with German hardwood lumber users. Again, taking a buyers perspective, those being surveyed were asked to rate a variety of communication methods in terms of preference. Using a five-point scale (1 being least preferred and 5 being most preferred) respondents rated each of the following methods in terms of preference for receiving information on product and/or supply shipments. As seen in Table 23, the method of communication receiving the highest preference rating was facsimile or FAX (3.99). Other methods of communication in descending order of preference were a telephone call (3.20), a personal sales call (2.52) and a letter (2.31). The least preferred method of communication mentioned by these buyers was information received via telex (1.76) and product fliers (1.88).

Table 23
Preferred Method of Communication

Communication Method	Mean Rating*
Fax	3.99
Telephone Call	3.20
Personal Sales Call	2.52
Letter	2.31
Trade Show Communications	1.98
Product Flier	1.88
Telex	1.76
Other	1.33

* 1 = Least Preferred, 5 = Most Preferred

Respondents were also asked to indicate how often they would prefer to be updated on changes occurring in the services being offered by hardwood suppliers. As noted in Table 24, a majority (51.7 percent) of German hardwood lumber buyers preferred a monthly update. Meanwhile, over one fifth of those surveyed (21.3 percent) would like to be updated on a quarterly basis while another group (13.5 percent) preferred weekly updates. Surprisingly, a small percentage (5.6 percent) indicated they did not wish to be updated on supplier-related information. Of those not wishing to be updated, most classified themselves as primary wood processors or sawmill operators.

Table 24
Respondent Preference for Periodic Updates
of Supplier-Related Information

Update Interval	Percent
Monthly	51.7
Weekly	13.5
Quarterly	21.3
Semi-annually	3.4
Yearly	1.1
Other	3.4
Not At All	5.6

CONCLUSIONS

The results of this study lead to a wide range of marketing implications. These implications can be develpoped along three marketing directions. The directions include competition, products and promotion. Marketing and the subsequent implications as related to these three areas will be discussed in the following sections.

Competition

The results of this research indicate that the responding German buyers purchased their hardwood lumber from a wide variety of sources. However a majority bought hardwood lumber directly from North American sources. This would indicate that North American suppliers are operating in a global marketplace replete with competitive suppliers from all over the world. Fortunately, the German market has demonstrated a focus on North America since a plurality of its hardwood lumber is purchased from this region. Therefore, although competitors are worldwide, a large number of competitors are located in either the United States or Canada. This would indicate that to be successful in the short run, United States suppliers must meet or exceed the product/service quality provided by their global supplier counterparts. In the long run, success will hinge on exceeding German supplier expectations as well as those of buyers from other parts of the globe.

Suggestions made by respondents to accomplish this long run.

objective were to make a long-run commitment and form a buyer-seller relationship with their German buyers. It was also suggested that North American suppliers respect the needs of their German buyers as they relate to sorting, grading, measurement, straightness, checks and stain. To meet these suggested goals, the suppliers would be required to make a long term commitment to the concept of exporting as well as to the buyer(s) being served. Respondents also suggested that buyers and suppliers improve communication. This would mean listening to each other and empathizing with the problems each is attempting to overcome. The bottom line is commitment and flexibility. If United States suppliers adhere to these concepts, long term buyer-seller relationships can be formed and competition from other regions and sources can be successfully addressed.

As for meeting the needs of German hardwood lumber buyers, suppliers should focus their attention on several areas of importance. These include providing a reliable supply of hardwood lumber at a competitive price, delivered at the agreed upon time. Moreover, respondents suggested that suppliers quote delivered prices and consider storage facilities in Europe (e.g. forward vertical integration). Other areas that United States suppliers should not overlook in terms of importance are the accuracy of sorting, grading and moisture content-meaning proper drying is essential. Thus, superior product and service quality can be used as distinct advantage by the supplier who attempts to provide and assure these characteristics over the long run.

German hardwood lumber buyers are reportedly rather satisfied (but not overly satisfied) with the quality of products and services now being provided by suppliers from North America. Yet these suppliers could improve their position and their marketplace advantage by addressing the features mentioned above. That is, German buyers would like to see their North American suppliers improve their product quality through more accurate sorting, grading and moisture content reporting as well as providing cleaner and straighter lumber. These buyers would also like to see an improvement in the overall service quality by having North American suppliers enhancing the reliability of the lumber being supplied, having it delivered on time and being more competitive in terms of price. Working to improve each of these features could result in long-term benefits for those United States firms supplying hardwood lumber to German buyers.

Product Features

The results of the study indicate that the North American suppliers maintain a significant share of the hardwood lumber being supplied to the German market. This advantage is most obvious in the purchase of white oak, ash and maple. Astute marketers should concentrate their efforts on penetrating the demand for these particular lumber species. Yet markets also exist for North American supplied red oak, cherry and to some extent alder and yellow-poplar. These markets would need to be nurtured. Thus, a long-term commitment to market development could lead to further growth in the export of these species to Germany.

It was interesting to note that although most German buyers preferred the highest grades of lumber, some had a tendency to purchase grades lower than FAS or FAS1F. This would indicate a subtle need for lower grade lumber in the German market. Firms purchasing grades of lumber lower than Selects were mostly channel intermediaries, including brokers/agents, retailers and wholesales. Targeting these particular organizations as potential markets for lower grade lumber could prove advantageous to the export supplier.

A market for finished hardwood parts also appears to exist among German buyers. Over fifty percent of those responding to the survey indicated an interest in purchasing finished hardwood parts. These buyers indicated the most interest in furniture parts, panels, sanded blanks and mouldings. Potential markets for parquet, dimension stock and/or component parts also appears to exist.

As for the type of organization willing to purchase these finished parts, the most interest was shown by brokers/agents, conglomerates and wholesalers. German importers, organizations groupee as "other" and German sawmills/wood processors also indicated a willingness to purchase these parts. This would lead one to conclude that members of each organizational type mentioned here could prove to be a vital partner in the marketing of finished hardwood parts to the German market.

Promotion

Brand loyalty can play a major role in the development of promotional strategies. Therefore, it was interesting to find that although a suppliers trademark was viewed to be unimportant when selecting a supplier, a commodity brand found preference among a majority of the respondents. Brokers/agents, importers and conglomerates seemed to have the greatest preference for the commodity branding concept. Some retailers, wholesalers and organizations grouped as "other" also indicated a preference for instituting a commodity brand. However, the majority of retailers and wholesalers indicated no need to utilize a commodity brand on hardwood lumber products. To this end, the commodity brand concept should be analyzed more thoroughly before instituting this type of program.

Meanwhile, promotional activities were qualified to ascertain the optimal form of communication. It was found that German hardwood lumber buyers tended to prefer monthly or to some extent quarterly updates on supplier-related information. Ideally these updates should be made via facsimile, personal sales calls or telephone sales call. Being updated by telex, product fliers and trade show communications appear to be less effective methods of business communication by these respondents. Therefore, marketing communication should be focused on these preferred methods and times for communicating supplier-related information to these German buyers.