

**MARKET SEGMENTATION TO BECOME  
THE PARTNER OF CHOICE**

by

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## **ABSTRACT**

The agriculture industry has been a dynamic industry exploding with change in recent years. The world has experienced extreme population growth, along with shifts in social status, dietary habits, and consumption patterns that have led to a rapidly growing and changing agriculture industry demanding increasing grain production. The expected pace of production necessary to continue to feed the world has heightened the competition in the agriculture industry.

This study focuses on analyzing how Company XYZ, a strong competitor in the grain and ethanol industry, can leverage the opportunities that the growth of the agriculture industry has provided. In order to maximize opportunities with each customer and remain competitive in new territories, the need is presented to develop a repeatable process. This process will focus on determining how to interpret customer preferences to quickly make the company the first preference of choice for target customers as they grow further into North America and beyond.

This thesis will focus on understanding and operationalizing two components. First, identifying the most desirable customers and what makes them desirable. Secondly, understanding, anticipating, and consistently addressing the needs of customers to address them better than the competition.

To analyze and understand customer habits and behaviors this thesis examines the results of a survey conducted with existing customers. Regression analysis of the overall profitability of a customer to the company and a regression analysis of the customer's ratings of Company XYZ in relation to the competition were used to help identify how

the discrimination and segmentation factors impact each regression. A cluster analysis is also implemented with the survey data to segment customers in order to develop a structured plan that can be implemented within the business practices.

The cluster analysis revealed three dominant clusters that customers can be segmented into. These clusters, in conjunction with the findings from the regression analyses, help identify areas of strength and weakness to develop a plan of action for Company XYZ to implement. The plan, known as the Partner of Choice, directs the focus on implementing market segmentation to leverage customized marketing opportunities, behavioral management alignment, employee incentive opportunities, and a structured training program.

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## **CHAPTER I: INTRODUCTION**

The agriculture industry has been a dynamic industry exploding with change in recent years. The world has experienced extreme population growth during the past century with nearly one billion people added every decade. Along with population growth the world has seen shifts in social status, dietary habits, and consumption patterns that have led to a rapidly growing and changing agriculture industry. International trade of commodities has become more active with these changing consumption patterns and the addition of bio-fuels in recent years. The expected pace of grain production necessary to continue to feed the world has heightened the interest of many in the agriculture industry. The competition for commodities both domestically and globally continues to grow at an extremely rapid pace. With any industry, growth presents immense opportunities but its own challenges as well. The agriculture industry specifically feels these challenges and opportunities presenting themselves now more than ever (Rosegrant, Paisner, Meijer, & Witcover 2001).

With the agriculture industry rapidly advancing and growing it is important for grain companies to stay at the forefront of the marketplace. Many grain companies are experiencing extreme growth through acquisitions or the investment of capital to build facilities to better service the needs of the agriculture industry in the United States. Company XYZ is a rapidly growing diversified agribusiness company. The company operates more than thirty grain facilities and ethanol plants throughout the Corn Belt with a total storage capacity of more than 134 million bushels.

In the past year Company XYZ has acquired new grain and agronomy facilities from existing grain operations, which allowed for further diversification into new geographical territories. The growth presented challenges to understand the depth and

growing needs of customers. As a well-established, reputable company the need was apparent to learn to proactively scale and leverage historical success and strength in providing extraordinary customer service. This needs to be applied to a much larger scope to deliver value in new and larger geographic territories.

Like any competitor in the grain industry, Company XYZ is seeking to leverage the opportunities that the growth of the agriculture industry, and specifically grain industry, has provided. In order to maximize opportunities with each and every customer the need is presented to develop a repeatable process that allows the company to quickly become the first preference of target customers as they grow further into North America and beyond.

This thesis will focus on understanding and operationalizing two components. First, who the most desirable customers are and what makes them desirable. Secondly, what it takes for Company XYZ to become the target customers' first preference by understanding, anticipating, and consistently addressing their needs better than the competitor.

Chapter 2 explores relevant research on understanding customer trends and habits in the agriculture industry. It also analyzes market segmentation strategies and the positive and negative reactions through the implementation both inside the agriculture industry and in other non-related industries. Chapter 3 will further identify the issues for Company XYZ and in the agriculture industry today. It outlines the objectives of the thesis and the data collection process that will be further analyzed to drive results.

Chapter 4 discusses the goals of the full research conducted. It further explains the regression models that will be utilized to analyze the data collected, along with

identifying each variable that will be utilized. Chapter 5 examines the regression results for two separate models and drives discussion towards the results to be implemented. Chapter 6 leverages the data collected further to create and analyze a cluster analysis. The cluster analysis will lead into Chapter 7 which will discuss all results together and develop a plan of action that Company XYZ can implement to address the challenges and remain ahead of the competition in the grain industry. Finally, Chapter 8 will summarize the thesis conclusions.

## **CHAPTER II: LITERATURE REVIEW**

This chapter focuses on providing an overview of market segmentation. Market segmentation focuses on analyzing similarities and trends within different groups to establish customer archetypes. The different methods of market segmentation, such as cluster analysis, are discussed. The chapter also reviews related studies and research. These studies have been conducted both inside the agriculture industry and in un-related industries to result in segmentation along various dimensions.

### **2.1 Market Segmentation**

Market segmentation is a marketing strategy implemented to divide a broad range of consumers into subsets and archetypes along a defined commonality. Typically these subsets comprise consumers who have homogeneous preferences within the subset and heterogeneous needs across segments. Market segmentation is used to achieve a competitive advantage within the market segment (Thomas 2007).

### **2.2 Evolution and Types of Market Segmentation**

Initially market segmentation began at a very basic level with the focus on understanding consumer markets. The first segmentation started at the most basic level with geographic segmentation, where companies focused on a specific geographic area. Second, distribution and media segmentation developed that focused on the outlet for products (small local stores versus supermarkets) and the capability to understand effective means to reach audiences through different media channels. Third, price segmentation became widely employed as markets could be segmented through the use and implementation of price discrimination. Finally, segmentation became more advanced as the focus moved to demographic segmentation. This focuses on understanding gender, age,

income, education, and related demographics that allow companies and brands to target different types of consumers (Thomas 2007).

Psychographic segmentation is arguably the most widely used and highly effective segmentation method in comparison to the geographic segmentation, price segmentation, and other basic models discussed. This type of segmentation analyzes customer behaviors, emotions, attitudes, values, and perceptions. To appropriately segment consumers using psychographic segmentation qualitative research becomes extremely important. This data helps an organization understand and categorize customers through their personality traits and habits by collecting data through surveys, focus groups, or other methods (Yankelovich & Meer 2006).

### **2.3 Cluster Analysis**

A more analytical approach to establishing market segments is the use of cluster analyses. Cluster analysis works with psychographic market segmentation to group customers into clusters that are highly correlated and similar to each other, but are different from the other clusters created. The goal is for objects within the cluster to be highly related to one another and to be unrelated to objects in different clusters.

There are a multitude of clustering techniques that can be implemented. Cluster analysis typically uses the most straightforward methodology of hierarchical clustering, which allows for sub clusters to exist. This method begins with a selection of variables to determine customer behaviors and similarities. Next, these observations are run through a hierarchical algorithm. The algorithm segments similar responses and variables where clusters are determined and distinctive groups are created. The agglomerative hierarchical clustering approach then looks at each point individually and repeatedly merges the two

closest clusters until a single cluster remains. The main input is the measure of distance between the objects being clustered. The distance between objects is attained through the Euclidean distance =  $\sqrt{(X_{A,1} - X_{B,1})^2 + \dots + (X_{A,n} - X_{B,n})^2}$ . The researcher must use their own knowledge and elect a specific data analysis method to help determine the number of clusters necessary (Venkatesan 2007).

Cluster analysis can be further conducted in many different ways from the hierarchical method. Clusters can be overlapping, exclusive, or fuzzy meaning that they can be assigned to exclusively one cluster, overlapping by simultaneously belonging to more than one group or fuzzy where the object belongs to every cluster with a weight provided to each. When starting the clustering process it is important to understand whether you are clustering for understanding or utility. This will then help direct the decisions about cluster methods to determine which method should be implemented. It will ultimately direct the use of different algorithms depending on the desired end result (Tan, Steinbach, and Kumar 2006).

#### **2.4 Pros & Cons of Market Segmentation**

As discussed, there are many different types and statistical approaches to market segmentation that can be used. A business must decide which method to implement and further discover how many market segments to create. With segments created, then the business must determine which segments provide the most opportunity for future business and growth. Segmenting customers does provide its advantages, but also comes with disadvantages as well to threaten the business.

Some of the key advantages to implementing market segmentation in a business are capability to develop more focused and customized marketing efforts, the ability to create more customized services for each segment, and the opportunity to establish more specific,

measurable goals. Despite significant advantages, there are disadvantages that can affect business as well. A few of the disadvantages are the extensive costs that can be associated with researching and building customer segments, use of time to research and establish segments, opportunity to incorrectly classify customers in the wrong segment, and the potential to create incorrect segments due to unreliable information. The information that is typically gathered for research on creating market segments is only as strong as those customers providing the details. It is extremely important to understand the data correctly and determine if and when research will need to be conducted again to maintain accuracy long term (Kime 2013).

The long term potential for utilizing market segments provides some additional analysis. Michael Porter established the Porter's Five Forces Model to help determine the long-run attractiveness of a market segment. The model analyzes industry competitors, potential entrants, threat of substitutes, purchasing power of buyers, and purchasing power of suppliers. These components can all be analyzed to determine the segment's overall attractiveness. However, the company must also analyze and discover their objectives and resources. Some market segments may not align with the company's long-term objectives. Therefore, the company must be willing to insert their bias and opinion by making some decisions on the continuum of possible market segments in order to help guide their targeted market decisions (Kotler & Keller 2012).

## **2.5 Market Segmentation in the Retail Industry**

Best Buy, an electronics leader in the retail industry, began to put a strong focus on creating a customer-centric mentality in 2005. In the early 2000s, Best Buy began to see significant success in the digital realm with their personalized marketing capabilities. The

company grasped the customer segmentation idea from their online success and began to look for opportunities to implement these methods within their retail locations. Best Buy used a variety of demographic, marketplace, and lifestyle information. They were able to gather data from purchase and transaction history to compare and establish trends (Mancini 2009).

Best Buy leveraged the quantitative and qualitative information that they obtained to classify customers into five general market segments. The company “coined” clever nicknames to identify each of the market segments. For example, Buzz characterizes the younger customer focused on attaining the latest technology, Barry represented wealthy, male customers, and Jill signifies the soccer mom typically shopping for children or less involved technology. With customer segments established and defined, Best Buy determined what they could take away from this information and how they could implement this to make a positive impact in their business model.

Best Buy pushed training out to store clerks at their over 1,000 stores nationwide. The training focused on educating employees on specifically how to serve each of the five customer segments. The training indicated a focus on what environment should be created, key products to offer each segment, opportunities to upsell, and ultimately how to serve each individual segment (Mancini 2009). One specific example from Best Buy’s segmentation training was the focus for employees to eliminate intimidating language when talking to the “Jills”. In the technology world, many words like “gigabytes” are overwhelming and confusing to customers new to the industry. Best Buy learned to become more successful by taking the time for education with this market segment and creating an



opportunity to translate technical terms into more user friendly and understandable discussions (Jennings 2005).

Aside from the focus on training, the research and customer segmentation methodology also led Best Buy to invest over \$50 million to renovate 110 stores. For example, Best Buy added leather couches at many stores that had a large presence of “Barrys” to create a comfortable environment for men to experience the flat screen TVs and surround sound systems.

Best Buy’s market segmentation has proved successful. The company increased in-store profits by 8.4% in the first quarter after implementation. One store specifically saw an incredible 30% increase in revenue. The new atmosphere and environment created in the 110 stores nationwide also proved effective as the renovated stores experienced growth of 9% in revenue (Mancini 2009).

## **2.6 Implementing Segmentation in the Agriculture Industry**

The retail industry has most heavily utilized market and customer segmentation to better understand the buying patterns and needs of their consumers. Many other industries have begun to research the potential benefits to implementing customer segmentation. The agriculture industry specifically poses the opportunity for many different market segments to exist with a dynamic set of consumers and a rapidly changing marketplace.

In 1999, Gloy and Akridge completed a full analysis titled “Segmenting the Commercial Producer Marketplace for Agricultural Inputs”. The study completed a cluster analysis to develop a market segmentation of commercial grain and livestock producers in the United States. The agriculture sector can pose many challenges in understanding buying trends as farms vary drastically in size, production practices, management styles, and more.

The heterogeneous nature of the farm sector challenges the potential to align homogenous producers within segments.

Gloy and Akridge focused on identifying groups of producers with similar traits and habits in their reaction to marketing choices. To accurately segment customers a survey was distributed to collect data directly from producers. Gloy and Akridge completed their data collection in April 1998 with a 16.4% response rate and approximately 1,700 results. The research leveraged the hierarchical clustering methodology and selected a clustering algorithm to assess the data.

From the data analysis Gloy and Akridge developed four segments for commercial producers. They segmented all producers buying decisions into the categories of balance, convenience, performance, and price. Balance was identified as the largest segment with many sophisticated, technologically advanced producers. Convenience was the smallest segment with typical characteristics of older, smaller farming operations. Performance buyers typically were a more educated group that assessed the specifics of each product and maintained high brand loyalty. Price fell as a close second to the Balance category, characterized by large farms with less need for custom services.

These market segments were developed to help companies understand the characteristics and groups of producers, to identify those that highly desire the products each company offers. This segmentation analysis can help companies identify their “ideal customer” and refine their focus on specific marketing campaigns and efforts. The four segments identified in the results help depict the diversity and complexity of the agriculture industry and specifically the commercial producer (Gloy & Akridge 1999).

## **2.7 Additional Research**

The agriculture industry hosts a variety of consumers and consumer needs. Many additional agricultural studies have focused on segmenting a variety of producer populations in other aspects of agriculture. Various studies in other aspects of agriculture have helped the commercial segmentation process evolve. For example, in 1991, Rosenberg and Turvey segmented Ontario swine producers to determine responsiveness to extension services (Rosenburg & Turvey 1990). In 2013, Feeney and Berardi researched the seed industry in Argentina to segment producers based on buying habits (Feeney & Berardi 2013), similar to the study completed by Gloy and Akridge (Gloy & Akridge 1999).

Since Gloy and Akridge's completed research, to better understand and segment commercial producers based off of purchasing habits, many similar studies have been conducted. It appears that many individuals are interested in understanding commercial producer's buying habits; however no research attempts have been made to segment producers on the sales side of their business. Producers all earn their profit through the sale of their physical grain and commodities to various processing facilities, coops, elevators, etc. No studies have been conducted to improve the understanding of how and why producers make their grain marketing decisions. It appears that no published attempts exist to develop market segments for agriculture grain companies focusing on originating grain and serving commercial producers with risk management opportunities.

## **CHAPTER III: METHODS**

### **3.1 Issue Identification**

The agriculture industry is rapidly advancing and growing with the increased need to provide for a growing world population. This immense growth in the agriculture industry begins to create heightened competition in all aspects. Particularly, end users and grain handling facilities need to evolve. Over the past ten years we have experienced a significant evolution in the demand for grain. The ethanol boom in 2006 rapidly changed the domestic consumption patterns and the recent drought in 2012 also radically shifted consumption patterns across the globe.

Company XYZ is a strong, diversified agribusiness organization that is rapidly growing. The organization puts a strong emphasis on customer relationships to drive profitability. As the company continues to grow at a rapid pace it becomes more challenging to maintain a consistent approach across geographical locations with customer service. The growth in the company has increased the need for hiring new talent and onboarding new employees quickly to understand Company XYZ's vision about providing extraordinary service to customers. The rapid growth pace and increased talent acquisition and management has provided the company with new challenges, to become more effective and efficient in consistently servicing customers.

### **3.2 Objectives**

The objective of this thesis is to develop a method to proactively scale and leverage the historical success of Company XYZ and the strength in providing extraordinary customer service to a much larger scope, by delivering value in new and larger geographic territories. Company XYZ must discover a way to deliver consistent service by all employees – tenured, early in career, or newly acquired.

In order to address these challenges and to maintain a position as a market leader, there is a need to develop a solution to create a program that maintains Company XYZ as the Partner of Choice for their customers. The Partner of Choice program must be a repeatable process that allows Company XYZ to quickly become the first preference of target customers as growth expands further into North America and beyond. In order to develop a repeatable procedure, it is important to understand who the most desirable customers are and what makes them desirable to the organization. Secondly, it requires an understanding of what is necessary to become the target customers' first preference – understanding, anticipating, and consistently addressing their needs better than competitors.

This effort to work towards becoming the Partner of Choice is not just an analytical process. Employees must use the data and analytics appropriately to understand and anticipate customers evolving needs. Customer-facing employees then can address those needs consistently with Company XYZ's motto of extraordinary service to earn the customer's business.

The final objective in developing the Partner of Choice process will be to design a repeatable process that uses quantitative and qualitative analyses, training, and incentive-alignment for customer-facing employees to deliver on the strategic mandates of successfully becoming the Partner of Choice.

### **3.3 Data Collection**

To accumulate quantitative data Company XYZ conducted an in depth customer survey to gain valuable information that will validate assumptions and assess how Company XYZ ranks in comparison to competitors on important value factors.

The data were collected by sending an electronic survey to recipients who were actively conducting business with Company XYZ at any geographical location in excess of

20,000 bushels per year or who had previously done business with Company XYZ over the past five years by delivering 20,000 bushels or more per year.

The company elected to conduct the survey entirely electronically. Therefore, the last qualifying piece of information was to sort out customers that did not have a valid email address. Through applying these filters, the survey was emailed to 1,700 customers. Each customer was offered an incentive for their response. The customer could select from the choice of a \$25 VISA gift card or a \$25 donation to the United Way, Red Cross, or Salvation Army in return for their response. There was also the opportunity to opt out and select no compensation for completing the survey.

A total of 430 completed surveys were received, which was approximately a 25% response rate. The response rate was higher than the standard biannual customer satisfaction survey conducted, that typically receives a 20% response rate. Both response rates on the conducted surveys are higher than the industry standard. The agriculture industry standard has been identified as a 10%-15% survey response rate according to the Colorado Department of Agriculture and a variety of studies conducted (Lipetzky 2012).

The survey contained a total of nineteen questions that are shown in Appendix A. The information requested included customer's demographics: size of their farm, age of producer, and other relevant information. Customer values were identified in an attempt to better understand the wants and needs of each individual customer. This was understood by asking producers to select which items were of priority to them. Finally, the customers rated Company XYZ in comparison to the competition.

## CHAPTER IV: THEORY

### 4.1 Objectives

To reach the final objective to apply behavioral management theories and develop customized marketing strategies for individual customers or market segments, the focus is on understanding consumer behavior and trends. In the survey, customers were asked a variety of questions. They were asked to select five items that were the most important to their farming operation with a range of choices from price, relationships, flexibility, market expertise, etc. For each selection they were then asked to rate Company XYZ in relation to the competition for each item. The ratings were from inferior to superior.

Utilizing the data from the individual customer's opinion of Company XYZ in relation to the competition, along with the profitability Company XYZ generates from each customer, trends in habits and demographics can be identified from responses to better understand customers and what drives the results. Table 4.1 presents all the independent variables in both regressions and their expected signs which will be further discussed in this section. These variables were extracted from the customer survey and are categorized by discrimination factors and segmentation factors which will help generate a cluster analysis to produce results.

**Table 4.1 Regression Expectations and Results**

<i>Independent Variables</i>	<i>Dependent Variables</i>			
	<b>Profitability</b>		<b>Rating vs. Competitor</b>	
	<b>Expected Sign</b>	<b>Result</b>	<b>Expected Sign</b>	<b>Result</b>
<b>Discrimination Factors</b>				
Share of Wallet	N/A	N/A	+	+
Openness to Technology	+	+	-	+
Grower Size	N/A	N/A	-	-
Attitude Towards Growth	+	+	+	-
Age	+	+	+	+
<b>Discrimination Factors (Dummy Variables)</b>				
Michigan	-	-	-	-
Indiana – W	+	+	-	-
Indiana – E	+	-	-	-
Illinois	+	-	+	+
Nebraska	-	-	-	-
<b>Segmentation Factors (Dummy Variables)</b>				
Best Possible Price	-	-	-	+
Relationships	+	-	+	+
Basis/Market Management	+	-	+	+
Market Expertise	+	+	+	+
Payment	-	-	-	+
Fairness	+	+	+	+
Flexibility	-	-	+	+
Experience at Elevator	-	-	+	+
Fees	+	+	-	-



The first regression will focus on profitability, which will be the dependent variable. The regression will include independent variables of Openness to Technology, Attitude toward Growth, and Age. It will also include independent variables of Michigan, Ohio, Indiana – W, Indiana – E, Illinois, and Nebraska as dummy variables to identify a customer's location. Finally, it will include independent variables to represent the customer's value selection of Best Possible Price, Relationships, Basis/Market Management, Market Expertise, Payment, Fairness, Flexibility, Experience at Elevator, and Fees as dummy variables.

The second regression will focus on the customer's rating of Company XYZ in relation to the competition, which will be the dependent variable. The regression will include independent variables of Share of Wallet, Openness to Technology, Grower Size, Attitude towards Growth, and Age. It will also include independent variables of Michigan, Ohio, Indiana – W, Indiana – E, Illinois, and Nebraska as dummy variables to identify a customer's location. Finally, it will include independent variables to represent the customer's value selection of Best Possible Price, Relationships, Basis/Market Management, Market Expertise, Payment, Fairness, Flexibility, Experience at Elevator, and Fees as dummy variables.

The survey provided questions focused on attaining demographic information that customers were asked to answer in order to better understand the discrimination variables. Appendix A contains a copy of the full survey that was electronically sent to customers. All demographic questions were provided as multiple choice responses, with designated ranges for customers to select where they fall.

## **4.2 Discrimination Factors Definition and Hypotheses in Profitability Regression**

### *4.2.1 Share of Wallet*

The first independent variable, Share of Wallet, represents the customer's response to the percentage of business they award to Company XYZ. This would be the respondent's estimate of the total grain production, across all commodities, which they deliver through Company XYZ. The Share of Wallet variable will be left out of the profitability regression because of potential issues with correlation to the dependent variable. The more business Company XYZ does with a specific customer, the higher the customer's profitability will likely be to the business. The increased volume in turn generates increased profits. In understanding the Share of Wallet variable with the ratings against competitors, one would expect that individuals who are awarding more business to Company XYZ will likely find Company XYZ superior to the competition. Therefore, one would expect Share of Wallet to be positively related to Ratings against Competition. If a customer awards a high percentage of business to Company XYZ it could be assumed that this is because of their satisfaction in working with the company.

### *4.2.2 Openness to Technology*

Openness to Technology was another question referenced in the survey that is an independent variable in the regression. Company XYZ is focused on continuous improvement and delivering new solutions with enhanced technology as the world and industry are rapidly changing. It is important to understand the channels of communication from which customers are comfortable receiving communication and how willing customers are to new offerings that Company XYZ may provide. The survey asked customers to select their level of interest in new solutions and technology, rating on a scale of extremely interested to not interested at all. One would expect customers open to

technology would tend to have a positive coefficient in terms of profit. Customers willing to innovate and grow with Company XYZ will likely be more profitable. In relation to competitors, Company XYZ is slower to adapt to changes in technology and be a market leader in providing new solutions to consumers. Therefore, one would expect a negative coefficient on the openness technology variable in the ratings against competitor's regression.

#### *4.2.3 Grower Size*

Grower Size represents the size of the farming operation in terms of acres as an independent variable. Again, customers were provided with general ranges of farm size to select from. Similar to Share of Wallet, the Grower Size variable was omitted from the profitability regression to avoid issues with correlation to the dependent variable. This is because the larger farm size in turn creates higher commodity production and could potentially create higher deliveries to Company XYZ, which reflects as a more profitable customer. One would expect the coefficient on Grower Size to have a negative sign in the ratings against competitor's regression. Many large producers are being solicited for grain business not only by Company XYZ, but a variety of competitors. Therefore, it would be expected that producers larger in size will be more critical of Company XYZ's service in relation to the competition.

#### *4.2.4 Attitude toward Growth*

Attitude toward Growth represents the response from the survey in regards to a producer's growth strategy as an independent variable in the regression. The question helps understand if a producer is actively growing their business and farm size or looking to retire and exit the industry. One would expect the coefficient for the Attitude toward Growth variable to be positive in terms of profitability. As producers grow their operation

larger this in turn would increase the volume of business available to conduct with Company XYZ, making them a more profitable customer to the business. In rating Company XYZ against the competition one would also expect a positive sign. Company XYZ started as a family owned company, similar to many producers, that it is likely producers who have a positive attitude towards growth would see the strong opportunities to partner and grow with Company XYZ.

#### *4.2.5 Age*

Age is an independent variable that represents the age of the individual who completed the survey, selecting from a variety of age ranges. Age is a very unique demographic for Company XYZ to assess. As mentioned, Company XYZ began as a smaller family owned company. It provided grain elevators, along with stores as a “one stop shop” for the producers delivering grain to Company XYZ's facilities. All facilities and employees were very local and heavily involved in supporting the community. As the company has progressed over the years from family owned to publically traded and more recently entering new markets through acquisitions, the perception of Company XYZ has changed and does tend to vary with age. One would expect that the variable for age would have a positive sign in both the profitability and ratings against competitor's regression. The older customers have likely been doing business with Company XYZ longer. Therefore, these customers likely utilize more of Company XYZ's trading programs and award a larger Share of Wallet. It could also be expected that many of the older customers remember the smaller, family-owned business style of Company XYZ rather than the corporate vibe that many competitors tend to give.

#### *4.2.6 Location*

Another demographic variable that was obtained from the customers that completed the survey was the location of their farming operation. The survey was sent to existing and/or previous customers of Company XYZ that conduct business by delivering directly to one of Company XYZ's physical grain assets and ethanol facilities or delivering through Company XYZ in a flexible delivery and trading program. Therefore, with extensive delivery outlets for each customer the location information was simplified to general offices that are represented and customers who fall in that territory, rather than by delivery location. Location is an independent dummy variable with the areas of Michigan, Illinois, Ohio, and Nebraska each represented individually as independent dummy variables since one central office is operated in each of those regions. Indiana operates two separate offices, one for grain facilities and an ethanol plant on the west side of the state and another for grain facilities and an ethanol plant on the east side near the state line. Therefore, Indiana was broken into two independent dummy variables, Indiana-W and Indiana-E.

In both models, with the use of multiple dummy variables to denote location, the model is at risk to fall into the dummy variable trap. The issue of perfect multicollinearity is likely to occur, which is a perfect linear relationship between the independent variables for location. In order to address this issue the models need to reference one location as a base. This can be done by dropping one of the independent dummy variables for location. Therefore, the models will use Ohio as the base location since Ohio was the original location that founded the company and is still the largest operating point today for facilities in the general area.

In terms of profitability, the dependent variable, one would expect that the territories in Indiana-W, Indiana-E, and Illinois would all have a positive sign. This would

indicate that customers in those areas would overall be more profitable to Company XYZ and would be more profitable in relation to the base location of Ohio. Company XYZ has maintained a strong footprint in these areas since the company started and therefore has earned the business of many customers in these areas. These territories represent strong utilization of Company XYZ's marketing tools that generate income from fees accrued.

The facilities in Nebraska at the time the survey was sent out in January 2013 were the newest facilities that Company XYZ had acquired. Entering a new market can be challenging and it is currently a slow process to develop strong customer relationships and build business. Therefore, one would expect the coefficient for the variable representing Nebraska to be negative, indicating customers located in that territory tend to be less profitable to Company XYZ and are less profitable than the base variable of Ohio. The location in Michigan, although well-established, has been slower to develop habits focused on servicing customers through the company's marketing products. Therefore, one would also expect the coefficient for the variable representing Michigan to be negative indicating customers tend to be less profitable than the base variable of Ohio.

In the regression using the dependent variable, ratings of Company XYZ against the competition, each area will likely be different based on the concentration of competitors and what specific competitors operate in that territory. Company XYZ is headquartered out of Ohio which is also the location of the original grain elevator that the company was built around. In Ohio, with the heavy involvement of Company XYZ throughout the communities, one would expect customers in Ohio to rank Company XYZ superior to competitors. Since Ohio is referenced as the base variable location, all other location variables will be reflective of the Ohio location.

In Nebraska and Indiana, Company XYZ's facilities tend to operate in areas with a heavy concentration of end users. Therefore, with the Nebraska, Indiana-W, and Indiana-E variables one would expect a negative coefficient because there are more outlets for customers in these territories to deliver their grain and a significant amount of competitors that are continually soliciting a customer's business. Also, with the facilities in Nebraska being the newest to Company XYZ, one would expect that customers there would rate Company XYZ lower than the competition against Ohio, the base location that has a well-established customer base.

Illinois operates a very large grain facility that Company XYZ designed and built. The facility is one of the best in terms of operations and ease for customers, providing them with a very positive experience at the elevator. Although there is heightened competition in Illinois for grain, strong relationships have been established with customers in the area. The Illinois office also handles specialty grain to source for food ingredient outlets in the area, which provides an additional service to customers. This would lead to the expectation that the sign on the coefficient will be positive. A positive sign would reflect that customer's conducting business in the Illinois territory would rate Company XYZ superior to the competition against the base location of Ohio.

Michigan has less commercial grain competition in the territories surrounding the facilities, but does have heightened competition with seed corn companies looking to contract acres for seed production rather than commercial production. However, comparing Company XYZ to other commercial grain competitor's one would expect a negative sign. This indicates that customers in Michigan would rate Company XYZ lower than their competitors in comparison to customers in Ohio, which is the base location.

### **4.3 Segmentation Factors Definition and Hypotheses**

In the survey customers were asked to select five items from a list of fourteen items to indicate which were the most important to their farming operation. The question attempts to understand what customers value the most and how Company XYZ provides service in relation to those values. Of all questions provided on the survey, this directly allows Company XYZ to understand customer tendencies, preferences, habits, and styles. Therefore, these are all independent dummy variables since the customer either selected or did not select the variable as one of their top five. Also, producers were not required to choose five, but were limited to a maximum of five responses.

#### *4.3.1 Best Possible Price*

Best Possible Price refers to receiving the highest price for the commodity being sold. Price consists of two components, both futures and basis. These two components can require separate management in understanding how to maximize the best possible price. Customers who selected best possible price as one of the items most valuable to their farming operation indicated that the value to them is attaining the best possible flat price rather than managing the components of price separately. One would expect that a customer who is focused on attaining the best possible price would be less profitable to the organization because the customer will likely not utilize Company XYZ's trade programs and services, which help generate profit. Also, one would expect the customers focused on attaining the best possible price will likely be more critical in comparing competitors. One would also expect that these customers conduct more "price-shopping" and would therefore rank Company XYZ inferior to competitors.



#### *4.3.2 Relationships*

Company XYZ is focused on providing customers with extraordinary service. In order to do so, Company XYZ has been focused on establishing strong, long-term relationships with customers. Those customers who selected relationships as an item of value to their farming operation indicated that they value a more involved grain trading relationship rather than a focus based on economics. One would likely expect that the variable for relationships would have a positive sign for both the profitability and competition regression as Company XYZ has a strong emphasis on developing strong relationships with customers. Customers valuing a relationship with Company XYZ would in turn likely lead to rating Company XYZ superior to the competition. Also, the customers valuing relationships with Company XYZ likely award a higher Share of Wallet to the company, therefore making them a more profitable customer to Company XYZ.

#### *4.3.3 Basis/Market Management and Market Expertise*

Basis/Market Management and Market Expertise are similar variables that focus on different components of the markets. Basis/Market Management focuses on a customer's interest in value of understanding the local market and managing basis values at the multiple delivery points. Market Expertise focuses on knowledge and management for the futures market. Both work similar to provide a net overall cash price, but basis and futures are viewed as separate components to the net cash price attained. One would likely expect that customers who selected Basis/Market Management or Market Expertise would be more profitable customers to Company XYZ as the customers are likely leveraging more of Company XYZ's services and relationships available. In turn, one would likely expect that customers would rate the company superior to competitors for both variables if they value the Basis/Market Management and the Market Expertise the customer is likely more

focused on establishing a partnership with Company XYZ to leverage the market information provided.

#### *4.3.4 Payment*

Payment refers to the methods available, timeliness, and ease for customers to receive payment from Company XYZ. One would likely expect in the regression for customers who elect payment as one of the most valuable items to their farming operation, the variable would have a negative sign, indicating the customer is less profitable to Company XYZ. Customers focused on payment are likely less focused on developing a strong relationship with Company XYZ which suggests a smaller Share of Wallet for Company XYZ. This also would lead one to expect that customers valuing payment would rate Company XYZ inferior to competitors.

#### *4.3.5 Fairness*

Fairness refers to providing fair service in all aspects of the grain business – price, grades, discounts, delivery periods, and handling personal situations. A customer that selected fairness as an item of value to their farm operation will likely be more profitable to Company XYZ. One would likely expect a positive sign on the variable for fairness in the profitability regression because those customers who value fairness likely understand and accept what Company XYZ provides. Overall, one would expect that customers who selected fairness will rate Company XYZ superior to the competition to reflect a positive sign on the variable.

#### *4.3.6 Flexibility*

Flexibility refers to the capability to establish a strong partnership where the customer and Company XYZ work together and can accommodate the needs of the customer. Company XYZ offers a flexible delivery program that allows ultimate flexibility

in contracting for customers to conduct business with Company XYZ but deliver to other competitor's facilities. The flexibility for commodity pricing, delivery location, and delivery period in this model would lead one to believe that the sign on the variable for fairness in the profitability and ratings against competitor regressions will be positive. Customers who value flexibility likely are involved in Company XYZ's flexible delivery program, which in turn makes them more profitable to Company XYZ by handling more of the customer's grain. Very limited grain companies allow the flexibility with delivery to facilities outside their organization; therefore one would expect that Company XYZ will likely be rated as superior to the competition.

#### *4.3.7 Experience at Elevator*

Experience at Elevator refers to the service from the operations staff at the elevator and the ease to deliver grain to the facility. One would likely expect that the Experience at Elevator variable will have a negative sign in the profitability regression. Customers that are focused on the experience at the elevator are likely smaller customers who are focused on friendliness and time rather than price and market management. One would likely expect the variable to have a positive coefficient in the regression for rating Company XYZ against the competition. Company XYZ takes pride in service and has focused on investing capital to upgrade and maintain the facilities.

#### *4.3.8 Fees*

Fees reference the cost of conducting business with Company XYZ. Fees are charged for the company to maintain futures and options positions for a customer, to participate in specialty trade programs, cancellation and unpricing costs, and related items. One would expect that the variable for Fees would have a positive sign in the regression for profitability. Customers that value fees are likely to utilize programs and services Company

XYZ provide, which in turn directly correlates to higher profitability for Company XYZ. Customers tend to be very critical of fees that are charged and many local cooperatives and elevators can tend to provide limited services with cheaper fees. Therefore, one would expect the variable for fees in the ratings against competitor's regression to have a negative sign.

#### **4.4 Deriving Market Segments**

The data from the collection of customer responses through the survey includes a significant amount of discrimination data with information about a customer's location, age, farm size, etc. It also provides significant information about customer habits, preferences, and values. This information can be leveraged to provide further segmentation opportunities.

As discussed earlier, market segmentation is a marketing strategy implemented to divide a broad range of consumers into subsets and archetypes along a defined commonality. The segmentation theory can allow for the implementation and utilization of a variety of different economic theories. It allows businesses to understand and leverage competitive advantages, along with implementing price discrimination to different customer segments.

In order to derive market segments a cluster analysis will be performed to group customers based upon similar characteristics and values. Excel offers an add-in tool, Marketing Engineering, which allows the application of analytical marketing concepts. This tool will be utilized to perform the cluster analysis, as it works to assess real world situations and interpret output to answer business specific questions. The cluster analysis will help the company answer some questions such as: What do customers value? How can

personalized marketing strategies be implemented? Which locations struggle to provide value to the customers? The cluster analysis can help answer these questions. The analysis will drive business practices that can be implemented across Company XYZ's organization to provide more consistent, streamlined service and personalized opportunities to customers.

## CHAPTER V: REGRESSION ANALYSIS

### 5.1 Interpreting Profitability Regression Model Results

The regression model for profitability attempts to understand how each of the discrimination factors such as age, location, or attitude towards growth potentially correlate with a customer that is overall more profitable to Company XYZ's business. The value factors utilized as the segmentation factors are also included to derive a general understanding of what customer habits tend to lead to more profitable results for Company XYZ. Overall, the model did not prove to be extremely valid with the regression results generated.

The profitability number was generated with information provided by the company on total dollars that were earned by the company from conducting business with an individual customer. The profitability per bushel is out of the customer's control. However, customers who provide more business to the company will generate more profit with an increased volume of bushels handled. The profitability component could be considered to be out of the scope of the analysis since all other information was provided by the customer and can be changed directly by the customer. Therefore, one would expect weak results and relevance in the model.

The profitability regression model generated an  $R^2$  value of 0.05516. The  $R^2$  reflects the overall goodness of fit for the model. This value explains the amount of variability in the dependent variable that is explained by the model. The  $R^2$  values range from 0 to 1. Therefore, the value from this model represents a very weak  $R^2$  indicating that this model does not explain a significant amount of variation in the dependent variable.

In analyzing each of the independent variables further the model also shows that most of the variables are not significant. Table 5.1 shows the coefficients and t-stats for all independent variables in the model. Most of the independent variables carry a small t-value which indicates a higher likelihood that the coefficient is significantly different from zero.

The t-stats also indicate whether or not a variable is found significant in the model. Overall, this model displays only two variables that were significant - Openness to Technology and Best Possible Price. In Table 5.1 the significance levels are denoted in the far right column with the asterisk. The statistical significance of each independent variable does not prove the theoretical validity or indicate economic importance for each variable. Therefore, it is still extremely important to run additional regressions and further analyze the model based upon the hypotheses generated about the coefficient sign for each variable.

The expected signs for each coefficient were predicted prior to running the model and discussed previously. The results are also referenced in Table 4.1 that was discussed previously. In analyzing the discrimination variables, Age and Openness to Technology were as expected with strong positive correlations. Openness to Technology was found significant in the model which explains that those customers who are open to technology tend to generate more profit for Company XYZ. The Attitude toward Growth variable did hold a positive sign on the coefficient, but the size of the coefficient was much smaller than expected and the variable was also not significant in the model. Overall, customers actively growing and expanding their farm operation are typically highly sought after by competitors.

Analyzing the profitability data in relation to each location the results showed that the variable for Indiana-West holds the only positive coefficient. The base location utilized

was Ohio because of the expectation that this location will likely show results as the highest profitability per customer to the company and customers ratings the strongest in rating Company XYZ superior to the competition. All other locations, Indiana-East, Illinois, Nebraska, and Michigan all generated a negative sign on the coefficient. However, none of the location variables in the profitability regression model were found to be significant.

The segmentation variables, where customers were asked to select the items of most value to their farming operation, indicated that a majority of these values are not positively correlated with profitability. Overall, the independent segmentation variables matched the hypothesis of the expected sign for most variables. In the hypotheses that were referenced in Table 4.1, one would likely expect that Relationships and Basis/Market Management would have a positive coefficient to positively impact the profitability of a customer to Company XYZ. However, the model proves the hypothesis for both of these variables to be false. This could be explained by misguided opportunities or lack of understanding and interpreting a customer's needs and wants to drive them to the right risk management tool that Company XYZ provides.

The profitability regression model was not extremely valid in analyzing the results. The low  $R^2$  value and insignificant variables in the model does not create a reliable model that will be implemented in the future for further studies within Company XYZ. However, the goal of the data analysis process is to identify areas of weakness, strength, opportunity, and so on to better understand the customer's habits as well as interpreting their needs and wants. Although the model did not provide significant statistical data it did however provide significant opportunity to analyze the data and specifically recognize the gap in



misguided sales efforts and misaligned opportunities that ultimately drives profits for Company XYZ.

**Table 5.1 Profitability Regression Model Results**

<b>Dependent variable: Profitability, using observations 1-430</b>					
	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-stat</i>	<i>p-value</i>	
<b>Const</b>	13186.2	28702.7	0.4594	0.64618	
<b>Openness to Technology</b>	6530.79	3776.29	1.7294	0.08448	* <sup>1</sup>
<b>Attitude Toward Growth</b>	308.359	5501.7	0.056	0.95533	
<b>Age</b>	4108.57	4096.15	1.003	0.31643	
<b>Best Possible Price</b>	-18102.4	6919.36	-2.6162	0.00922	*
<b>Relationships</b>	-5339.19	6041.04	-0.8838	0.37731	
<b>Basis/Market Management</b>	-9339.31	6259.88	-1.4919	0.13648	
<b>Market Expertise</b>	2269.85	6194.28	0.3664	0.71422	
<b>Payment</b>	-6050.28	6194.82	-0.9767	0.32931	
<b>Fairness</b>	5683.6	6024.08	0.9435	0.34599	
<b>Flexibility</b>	-4188.52	6383.42	-0.6562	0.51209	
<b>Experience at Elevator</b>	-7818.31	6763.48	-1.156	0.24837	
<b>Fees</b>	2638.92	7184.45	0.3673	0.71358	
<b>Michigan</b>	-3129.94	9279.03	-0.3373	0.73605	
<b>IN-W</b>	14051.4	9274.81	1.515	0.13054	
<b>IN-E</b>	-8398.34	9156.25	-0.9172	0.35956	
<b>Illinois</b>	-2377.4	10764.9	-0.2208	0.82532	
<b>Nebraska</b>	-16745.2	10283.3	-1.6284	0.10421	

<b>Mean dependent var</b>	20712.54	<b>S.D. dependent var</b>	58222.3
<b>Sum squared resid</b>	1.37E+12	<b>S.E. of regression</b>	57749.5
<b>R-squared</b>	0.05516	<b>Adjusted R-squared</b>	0.01617
<b>F(17, 412)</b>	1.414873	<b>P-value(F)</b>	0.125
<b>Log-likelihood</b>	-5315.414	<b>Akaike criterion</b>	10666.8
<b>Schwarz criterion</b>	10739.98	<b>Hannan-Quinn</b>	10695.7

<sup>1</sup> Asterisk (\*) in Table 5.1 denotes significant variables identified in the regression model.

## 5.2 Interpreting Ratings vs. Competitors Regression Model Results

The regression model assessing the ratings vs. competitors focuses on understanding how each variable correlates with the customer's view of Company XYZ's business and services in relation to the competition. The discrimination factors such as age, share of wallet, location, etc. will indicate specific customer traits that tend to favor or dislike Company XYZ. The segmentation factors were also included in the regression to develop an understanding of which items customers value most and overall if customers tend to view Company XYZ superior or inferior to the competition for each individual value item. This will be effective in identifying the organization's areas of strength and weakness.

Overall, the model for ratings vs. competitors generated more informative results and a better model. The regression model generated an  $R^2$  value of 0.225595. The  $R^2$  reflects the overall goodness of fit for the model, which ranges from 0 to 1. This explains that approximately 22% of the variability in the dependent variable is explained by this model. Furthermore, each variable will be analyzed and all variables were assessed at the 5% significance level.

The Share of Wallet variable generated a positive sign on the coefficient as expected, indicating that customers who award more of their business to Company XYZ tend to rate Company XYZ superior to the competition. However, the coefficient is very small and the variable was found to be not significant. Grower size generated a negative sign on the coefficient, indicating that as customers increase their farm size they tend to view Company XYZ inferior to the competition. The variable was also not significant in the model. These results present an opportunity for Company XYZ to analyze the services

and relationships that they are providing to their larger customers and reflect on different tiers of customers to develop customized marketing strategies.

Openness to Technology indicated a positive sign on the coefficient and was significant. One would expect the coefficient to be negative due to challenges with staying at the forefront of technology to offer innovative products to customers. However, the positive coefficient indicates that customers open to technology view Company XYZ superior to the competition. Age was another variable with a hypothesis for a positive coefficient which was validated in the results; however the variable was not significant. Overall this indicates that customers who are older in age tend to rate Company XYZ superior to the competition. Attitude toward Growth was discussed previously in the profitability regression model results. It was not significant in either model. This indicates that customers who are looking to grow their farm operation typically would rate Company XYZ inferior to the competition.

The discrimination variables for location all reference the base location of Ohio for the ratings vs. competitors' model. To avoid the issue of perfect multicollinearity the model referenced one location as a base. Ohio was the original location that founded the company. Therefore, customers in Ohio have been familiar with Company XYZ for over 70 years. One would expect that customers in Ohio would likely rate Company XYZ superior to the competition over any other location.

Analyzing the results the hypothesis was valid for most of the locations. Michigan, Nebraska, Indiana-West, and Indiana-East all have negative signs on the coefficient indicating that customers from these territories tend to rate Company XYZ not as strongly as customers in Ohio. This indicates that these customers rate Company XYZ inferior to

the competition based off the Ohio rankings as the most superior. These locations also were not significant in the model. However, Illinois did generate a positive sign on the coefficient and was significant in the model. The Illinois location was the first elevator in the US loading 100-car unit trains built by Company XYZ in the 1960s. This allowed Company XYZ to become well established with customers and communities to provide them with immense opportunity and outlets to sell their grain. Therefore, the positive sign reflect that customer's conducting business in the Illinois territory do rate Company XYZ superior to the competition and rate Company XYZ higher than the base location of Ohio.

Analyzing the segmentation variables most variables generated a positive sign as hypothesized. Relationships, Basis/Market Management, Market Expertise, Fairness, Flexibility, and Experience at Elevator all were expected to generate a positive sign on the coefficient indicating that customers tend to rate Company XYZ better than the competition for each of these items. In the model all of these variables did generate a positive coefficient and were also significant. The segmentation variable for Fees was expected to generate a negative sign on the coefficient as customers tend to be more critical of costs to their farming operation. The sign on the coefficient was negative as hypothesized, but the variable also was not significant in the model.

Best Possible Price was the most highly selected item of value in the dataset. Therefore one would expect customers to be critical of Company XYZ in relation to price, which indicated the hypothesis of a negative sign on the coefficient. The regression model generated a positive sign which indicates that customers tend to rate Company XYZ superior to the competition in the category of price. However, the variable was found to be not significant in the model. Payment was also hypothesized to have a negative sign on the

coefficient. The variable refers to the methods available, timeliness, and ease for customers to receive payment from Company XYZ. Again, the expectation of customers rating Company XYZ inferior to the competition was disproved and Payment generated a positive coefficient indicating Company XYZ was superior to the competition. The variable was statistically significant in the model.

**Table 5.2 Ratings vs. Competition Regression Model Results**

<b>Dependent variable: Ratings vs. Competitor, using observations 1-430</b>					
	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
<b>Const</b>	2.37365	0.344902	6.8821	<0.00001	* <sup>2</sup>
<b>Share of Wallet</b>	0.00136031	0.0245493	0.0554	0.95584	
<b>Openness to Technology</b>	0.158569	0.0453399	3.4973	0.00052	*
<b>Grower Size</b>	-0.0611489	0.0316285	-1.9333	0.05388	
<b>Attitude Toward Growth</b>	-0.0051988	0.0667822	-0.0778	0.93799	
<b>Age</b>	0.0946139	0.0486011	1.9467	0.05225	
<b>Best Possible Price</b>	0.0999466	0.0821293	1.2169	0.22433	
<b>Relationships</b>	0.335311	0.0721374	4.6482	<0.00001	*
<b>Basis/Market Management</b>	0.213107	0.0749581	2.843	0.00469	*
<b>Market Expertise</b>	0.332079	0.0736512	4.5088	<0.00001	*
<b>Payment</b>	0.153445	0.0734911	2.0879	0.03742	*
<b>Fairness</b>	0.185902	0.0718813	2.5862	0.01005	*
<b>Flexibility</b>	0.318924	0.0758384	4.2053	0.00003	*
<b>Experience at Elevator</b>	0.248848	0.080746	3.0819	0.0022	*
<b>Fees</b>	-0.143909	0.0855191	-1.6828	0.09318	
<b>Michigan</b>	-0.0546411	0.110284	-0.4955	0.62054	
<b>IN-W</b>	-0.0803981	0.110364	-0.7285	0.46674	
<b>IN-E</b>	-0.199356	0.109235	-1.825	0.06873	
<b>Illinois</b>	0.369642	0.127999	2.8878	0.00408	*
<b>Nebraska</b>	-0.0944141	0.122554	-0.7704	0.44151	

<b>Mean dependent var</b>	3.789884	<b>S.D. dependent var</b>	0.760955
<b>Sum squared resid</b>	192.3726	<b>S.E. of regression</b>	0.684983
<b>R-squared</b>	0.225595	<b>Adjusted R-squared</b>	0.189708
<b>F(19, 410)</b>	6.286254	<b>P-value(F)</b>	2.91E-14
<b>Log-likelihood</b>	-437.2081	<b>Akaike criterion</b>	914.4162
<b>Schwarz criterion</b>	995.6919	<b>Hannan-Quinn</b>	946.5096

<sup>2</sup> Asterisk (\*) in Table 5.2 denotes significant variables identified in the regression model.

## **CHAPTER VI: CLUSTER ANALYSIS**

### **6.1 Overview**

Customer segmentation is an analytic technique that focuses on interpreting data to compare and group customers based upon common characteristics. The segmentation variables in this analysis are the common characteristics that customers can be clustered upon to help assess similarities between survey respondents. The survey asked customers to select the top five items that their farm operation valued most. These values comprise the segmentation variables. Along with the segmentation variables there are discrimination variables that affect the results of the cluster analysis. Discrimination variables help identify and group customers based on external variables. These discrimination variables include more of the demographic items such as age, grower size, location, etc.

(Balakrishnan 2010).

The cluster analysis was implemented as an agglomerative hierarchical analysis. This cluster analysis approach begins from the bottom and builds up the data into clusters by individually analyzing each customer. The cluster analysis was run through the Marketing Engineering add-in for Microsoft Excel. The program collects two types of data segmentation and discrimination variables. The analysis is first run with the segmentation variables. Once clusters have been formed based upon the segmentation variables the program then attempts to discover differences among the clusters through demographic information. The demographic information is contained with the discrimination variables.

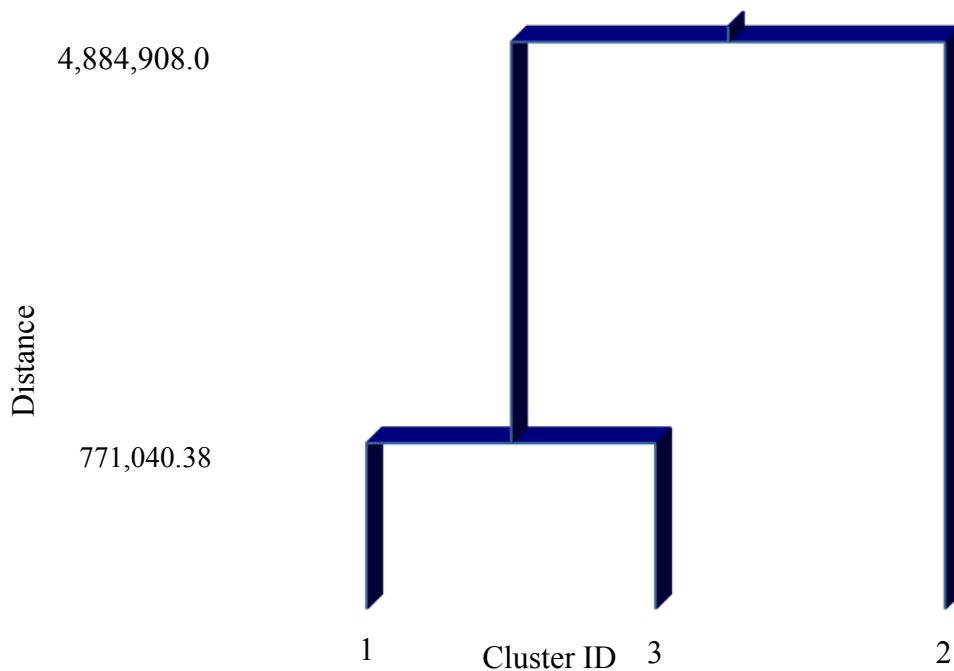
### **6.2 Identifying Segmentation Results**

To help interpret the segmentation results a dendrogram is created to understand cluster creation. Dendograms provide a visual and graphical view of the information by

representing the loss of information that is generated through grouping customers together into segments. Figure 6.1 shows the dendrogram for the data set created from the responses to the customer survey. The top section of the dendrogram represents one extreme with all customers surveyed grouped into one cluster, maximizing the loss of information with no differentiation. The bottom of the dendrogram represents the other extreme with customers divided into small clusters. These customers were clustered based upon similarities to one another.

A dendrogram provides a quick, simple graphical representation of the clustering output. The numbers on the left provide the distance to show the loss of information and jump in distance as more clusters are added. Dendrograms can ultimately be helpful in driving decisions to the number of clusters to be implemented (Balakrishnan 2010).

**Figure 6.1 Cluster Analysis Dendrogram**





As the dendrogram indicates, the data collected from the customer survey can best be segmented into three clusters. The program can select the ideal number of clusters by analyzing the  $R^2$ . The program does so automatically by looking for improvements in goodness of fit in the model as the number of clusters increase. Eventually there will be a point that the  $R^2$  will see small improvements. This is called an “elbow” and identifies the ideal number of clusters for the model.

Cluster 1 contains 76 customers which is 18% of survey respondents. Cluster 2 is the largest cluster containing 187 customers which is 43% of survey respondents. Cluster 3 was not far behind containing 167 customers which is 39% of survey respondents. Table 6.1 displays the Segmentation Variables Mean by Cluster, which provides the average mean for each variable in each segment. It also provides the overall mean for each variable across all observations, which helps determine and establish clusters.

**Table 6.1 Segmentation Variables Mean by Cluster**

<b>Segmentation variable / Cluster</b>	<b>Overall</b>	<b>Cluster 1</b>	<b>Cluster 2</b>	<b>Cluster 3</b>
Best Possible Price	0.728	0.75	0.738	0.707
Relationships	0.591	0.618	0.583	0.587
Basis / Market Management	0.567	0.539	0.572	0.575
Market Expertise	0.442	0.382	0.449	0.461
Payment	0.449	0.474	0.433	0.455
Fairness	0.447	0.382	0.487	0.431
Truck Turn Time	0.407	0.408	0.422	0.389
Flexibility	0.349	0.289	0.337	0.389
Experience at Elevator	0.3	0.342	0.273	0.311
Fees	0.216	0.263	0.214	0.198

In analyzing the survey statistics, which are referenced in Appendix B, Best Possible Price was the most commonly selected item of value to each farming operation with 313 survey respondents selecting Best Possible Price as an answer. Relationships were

selected frequently as well, with 254 survey respondents selecting Relationships as an item of value to their farming operation. In looking at the three clusters we can see that the mean for Best Possible Price and Relationships are high among all three clusters with a majority of the respondents selecting these answers, creating a higher mean in each individual cluster. Since the segmentation variables are all dummy variables (assigned a value of one if selected or zero if not selected), the mean is higher with the more respondents that selected the item of value. Therefore, in assessing and analyzing the clusters it is important to compare the mean of the entire data set in comparison to the mean within the cluster.

Customers in Cluster 1 had a variety of items that appeared to be of value to them. The mean for Best Possible Price in Cluster 1 was just above the mean of the data for Best Possible Price, which indicates that individuals in Cluster 1 were more focused on attaining a higher cash price than the average survey respondent. Cluster 1 also had the highest mean for Relationships across all three clusters, which in turn indicated that the mean for Cluster 1 was also higher than the mean for the dataset. Payment, Experience at Elevator, and Fees were the other segmentation variables that also scored with a higher mean in Cluster 1 for each variable in comparison to the average of the dataset. These comparisons help identify the top five selections for Cluster 1 displaying that producers in this cluster value Best Possible Price, Relationships, Payment, Experience at Elevator, and Fees.

Customers in Cluster 2 selected very different responses from Cluster 1. The focus still remained on Best Possible Price as the mean for the Best Possible Price variable in Cluster 2 was above the average for the dataset, but was just slightly below the mean for Cluster 1. Survey respondents in Cluster 2 selected both Basis/Market Management and Market Expertise as items of value to their farming operation. The average mean for these

variables was higher in Cluster 2 than the average mean for the overall dataset for the Basis/Market Management and Market Expertise variables. Customers in Cluster 2 also selected Fairness as an item of value in comparison to the overall survey respondents.

Cluster 3 reflects some similar values with both Cluster 1 and Cluster 2. Customers in Cluster 3 tended to more frequently select Basis/Market Management, Market Expertise, Payment, Flexibility, and Experience at Elevator. Cluster 3 maintained the highest average mean for the variables of Basis/Market Management and Market Expertise. Cluster 2 also represented these variables as items of value to their farming operation. However, Cluster 3 contains more survey respondents that selected these answers than Cluster 2. Payment and Experience at Elevator were also variables that were frequently selected by customers in Cluster 1 and Cluster 3. These variables were frequently selected in Cluster 3 as they both maintain an average mean that is higher than the dataset, but the mean for both Payment and Experience at Elevator was highest in Cluster 1. Flexibility was unique to Cluster 3 with survey respondents more frequently selecting Flexibility as a variable of value to their operation, displaying an average mean for Cluster 3 that is higher than the average mean for Flexibility in the dataset.

### **6.3 Identifying Discrimination Results**

The discrimination variables focus on the demographic characteristics for each cluster. The survey presented a variety of multiple choice questions asking customers to select one response. The responses for each variable were then scored to create a systematic scoring system, which is shown in Table 6.2. Share of Wallet, Openness to Technology, Grower Size, Age, and Ranking vs. Competitor were all scored on a scale of one to four. Attitude toward Growth was scored on a scale of one to three.

**Table 6.2 Scoring System for Discrimination Variables**

<b>Share of Wallet</b>	<b>Score</b>
No Answer	0
0-25	1
26-50	2
51-75	3
76-100	4
<b>Attitude Towards Growth</b>	<b>Score</b>
Grow	3
Stay the Same	2
Get Smaller/Exit	1
<b>Openness to Tech</b>	<b>Score</b>
Extremely Interested	4
Somewhat Interested	3
Slightly Interested	2
Not Interested	1
<b>Grower Size</b>	<b>Score</b>
No Answer	0
0-500	1
501-1000	2
1001-2000	3
2000 acres or higher	4
<b>Age</b>	<b>Score</b>
<29	1
30-45	2
46-60	3
61+	4

Profitability was provided from the company in regards to each specific customer and was not scored. The variables representing each location were dummy variables, creating either a response of one or zero. Table 6.2 displays the Discriminant Variable Means by Cluster, which shows the average mean of each discriminant variable by cluster and for the entire

dataset. This analysis of discriminant variables derives a general image of the size, age, profitability, etc. of customers in each cluster. Similar to the example mentioned earlier about Best Buy’s customer segmentation, these discriminant variables can help employees perform a quick analysis to determine which segment type each customer belongs.

**Table 6.3 Discriminant Variables Mean by Cluster**

<b>Discriminant variable / Cluster</b>	<b>Overall</b>	<b>Cluster 1</b>	<b>Cluster 2</b>	<b>Cluster 3</b>
Share of Wallet	1.374	1.092	1.439	1.431
Openness to Tech	3.126	3.092	3.128	3.138
Grower Size	2.656	2.605	2.684	2.647
Attitude Towards Growth	2.647	2.724	2.658	2.599
Age	3.005	2.803	3.059	3.036
Profitability	20,712.54	31,179.73	15,695.01	21,567.47
Ranking vs. Competitor	3.794	3.804	3.794	3.788
Michigan	0.177	0.184	0.166	0.186
Ohio	0.181	0.145	0.187	0.192
IN – W	0.193	0.224	0.187	0.186
IN – E	0.191	0.158	0.219	0.174
Illinois	0.114	0.184	0.091	0.108
Nebraska	0.133	0.105	0.128	0.15

The dummy variables that were included as Discriminant Variables to identify where a customer was located and the office that they did their business with Company XYZ through did not provide any large trends in each cluster. Overall, each location experiences and possesses customers that fall into each cluster. Therefore, the location specific data will not be included in the identification and analysis of clusters. This data will be addressed further in the results and can be supportive once clusters have been established to identify location specific opportunities and needs.

Customers in Cluster 1 were identified as the youngest cluster with most customers falling in the age range of thirty to forty-five years old. This cluster was the smallest cluster

with only 18% of survey respondents falling in this category, as the average age of producers tends to be higher. Customers in Cluster 1 on average were farming between 1,000 and 2,000 acres and were interested in maintaining their farming operation, while continuing to grow larger in size. On average they were somewhat open to technology and changes in the industry related to technology. As the results from the survey display, it appears that customers in Cluster 1 are currently only awarding Company XYZ 25% of their business, which presents significant opportunity for the company to grow the relationship. Customers in Cluster 1 also had the overall highest ranking of Company XYZ in comparison to the competition. The general consensus throughout the entire survey was positive with the average of all survey respondents ranking Company XYZ superior to the competition. However, Cluster 1 had a higher mean for the Ranking vs. Competitor discriminant variable than the mean for the dataset. Finally, Cluster 1 also possessed the highest average profit with customers in Cluster 1 generating \$31,179.72 on average.

Customers in Cluster 2 show many of the same general demographic responses as customers in Cluster 1. Customers in Cluster 2 were also on average were farming between 1,000 and 2,000 acres and were interested in maintaining their farming operation, while continuing to grow larger in size. On average they were somewhat open to technology. Customers in Cluster 2 were in an older age range than those in the first cluster discussed with the average customer in Cluster 2 falling between the ages of forty-six and sixty. Customers in Cluster 2 responded that they were awarding 25% - 50% of their business to Company XYZ. With all the survey respondents indicating positive feedback in ranking Company XYZ superior to the competition, Cluster 2 held a mean that is equal to that of the entire dataset. Cluster 2 also held the lowest average profitability of the three clusters

with each customer averaging \$15,695.01 of profit to Company XYZ. Cluster 2 was the largest cluster in size with 43% of survey respondents identified in the cluster.

Customers in Cluster 3 were virtually identical to the customers discussed in Cluster 2 with a few discriminant variables slightly different. Cluster 3 was the second largest cluster with 39% of survey respondents identified in the cluster. Customers in Cluster 3 were on average somewhat open to technology. Also on average these customers were farming between 1,000 and 2,000 acres and were interested in maintaining their farming operation, while continuing to grow larger in size. Customers in Cluster 3 again fell in the older age range with the average customer falling between the ages of forty-six and sixty. Customers in Cluster 3 also responded that they were awarding more of their business to Company XYZ in the range of 25% - 50%. Cluster 3 also held a mean near the mean of the entire dataset that on average rated Company XYZ superior to the competition. Cluster 3 held a higher average profitability than that of Cluster 2, but was not as high as Cluster 1 with each customer averaging \$21,567.47 of profit to Company XYZ.

#### **6.4 Analyzing Clusters with Segmentation and Discrimination Variables**

Combining the analysis of the segmentation and discrimination variables together can identify a general image of the type of customer that fits each cluster. Table 6.3 shows the scores and results for each variable by cluster and for the overall data set. Each cluster presents general habits and likely behaviors that will be further analyzed. Eventually, this analysis will lead to driving results that can be implemented to best service, grow, develop, and maintain each segment of customers.

Cluster 1 will be referred to as “Modern Mike”. This cluster represents a younger group of producers that are growing their farm operation and seeking opportunities with

risk management and technology. These customers present the most opportunity for Company XYZ with high profitability overall and significantly more business to be attained from these individuals. These younger individuals do care about attaining the best possible price to keep their farming operation successful, but are likely more well-rounded and not solely focused on price. They value building a relationship as many of these individuals will become long-term, loyal customers but may still be seeking the company that provides the best overall fit for them to help manage their risk management and develop the long-term relationship with. “Modern Mikes” also value Payment, as they want to ensure that they receive payments in a timely manner. Experience at the Elevator also is valued by “Modern Mikes” because they value service so that the producer or other individuals employed by the farm operation have a pleasant experience at the elevator.

In managing the operation costs these customers also value competitive fees because they are likely looking to conduct more advanced marketing. Overall, the “Mike’s” profitability to Company XYZ was the highest of any cluster. The profitability data includes a margin per bushel handled, but also includes any fee income that is generated from customers participating in Company XYZ's pricing programs or trading futures and options with the company. Therefore, this high profitability number would suggest that these customers are likely already utilizing Company XYZ's risk management services and trading opportunities. The lower Share of Wallet score for these younger customers indicates the potential to grow the profitability, fee income, and relationships significantly.

Cluster 2 will be referred to as “Price Shopping Pete”. This cluster represents a group of customers that are well-established in their farming operation based upon the average age. These individuals selected Best Possible Price as the item of most value to



their farming operation. They were overall the least profitable cluster to Company XYZ and with their heavy focus on attaining the Best Possible Price they are likely cash customers and price shoppers. The low profitability would suggest that these individuals are not utilizing Company XYZ's risk management services to generate any fee income for the company. They are also likely customers that focus their efforts on attaining the best cash price by calling every elevator in the area to price shop before selling any grain. The “Pete’s” also selected fairness as an item of value, so this would also attest to the heavy focus on seeking out the best price to ensure they are being treated fairly.

The “Price Shopping Pete’s” did not select Relationships as an item of value therefore they are likely not attached to working with any one company exclusively. However, the customers in this cluster did also select Basis/Market Management and Market Expertise as items of value to their farming operation. These individuals likely are seeking to become more market savvy and grow outside of their comfort zone in selling cash grain. Therefore, these customers do present opportunities for Company XYZ to teach and challenge these customers with new opportunities, but remain aware that they likely are not the most loyal segment of customers.

Finally, Cluster 3 will be referred to as “Savvy Steve’s”. These customers are well-rounded based upon their value selections. The results suggest that their farm operation is more well-established and they are comfortable conducting business with Company XYZ. Customers in this cluster are likely long-term, loyal customer to Company XYZ. They produce an average profitability that is higher than that of the previous cluster discussed while both clusters awarded the same Share of Wallet. The “Steves” selected Basis/Market Management and Market Expertise as two of the most important items of value. Along

with the overall profitability, this suggests that these customers are likely more market savvy. They are likely practicing solid risk management through the utilization of some of Company XYZ's trading programs and tools. However, they are lower profit than the first cluster discussed therefore one would expect that these market savvy customers may conduct some of their own trading in a personal brokerage account.

This cluster is well rounded with customers also valuing payment and a positive experience at the elevator. It is likely that these customers operate larger farm operations that employ individuals who typically will haul grain into the elevator. Therefore, these customers do value their employee's opinion and seek to provide them with an opportunity for a positive Experience at the Elevator. The "Savvy Steve" cluster was the only group to select Flexibility as an item of value. Company XYZ is one of the only grain companies that offer a flexible hedging program. The program specifically offers delivery capabilities to both the company's physical assets and competitor's facilities. Customers in this cluster likely utilize the flexible delivery program and appreciate the services that Company XYZ provides. One would expect that these individuals didn't select Relationship as an item of high value because at this point they are well-established, loyal customers that have already established a strong relationship with Company XYZ and are focusing on opportunities to better manage their risk through opportunities in trading basis and the futures markets.

**Table 6.4 Scores and Results by Cluster for Each Variable**

Cluster Number	Overall		Cluster 1		Cluster 2		Cluster 3	
Cluster Name	Full Dataset Scores		Modern Mike		Price Shopping Pete		Savvy Steve	
% of Respondents	100%		18%		43%		39%	
Variables	Score	Result	Score	Result	Score	Result	Score	Result
Share of Wallet	1.374	25%-50%	1.092	0%-25%	1.439	25%-50%	1.431	25%-50%
Openness to Technology	3.126	Somewhat	3.092	Somewhat	3.128	Somewhat	3.138	Somewhat
Grower Size	2.656	1000-2000	2.605	1000-2000	2.684	1000-2000	2.647	1000-2000
Attitude Toward Growth	2.647	Stay the Same/Grow	2.724	Stay the Same/Grow	2.658	Stay the Same/Grow	2.599	Stay the Same/Grow
Age	3.005	46-60	2.803	30-45	3.059	46-60	3.036	46-60
Profitability	\$ 20,712.54		\$ 31,179.73		\$ 15,695.01		\$ 21,567.47	
Ranking vs Competitor	3.794		3.804		3.794		3.788	
Values				Best Possible Price		Best Possible Price		Basis/Market Management
				Relationships		Basis/Market Management		Market Expertise
				Payment		Market Expertise		Payment
				Experience at Elevator		Fairness		Flexibility
				Fees				Experience at Elevator

## **CHAPTER VII: ACTION PLAN**

### **7.1 Objectives**

Company XYZ continues to experience an immense amount of growth as the agriculture industry continues to excel and the world turns their attention to the agriculture community to increase production to feed a rapidly growing world population. These specific issues of consistent service, understanding customers, training employees, and so on have been identified by the company and many others in the agriculture industry.

After collecting data from the survey distributed to customers of Company XYZ the data was further analyzed, as discussed. The survey statistics were interpreted, regression models for both profitability and ratings vs. competition were established, and market segmentation opportunities were analyzed through a cluster analysis. From all these mechanisms, Company XYZ seeks ways to gain insight into their customer's habits. The goal is to address the current issues that are being experienced with the rapid pace of growth for the organization, while also developing a process that is repeatable for future use in other aspects of the company and agriculture industry for Company XYZ to quickly become the first preference of target customers as growth expands further into North America and beyond.

The final objective in developing the Partner of Choice process and completing the objectives that were discussed previously will be to design a repeatable process that uses (1) market segmentation, (2) establishes a structured training program, (3) incorporates behavioral management practices, and (4) focuses on incentive-alignment for customer-facing employees to deliver on the strategic mandates of successfully becoming the Partner

of Choice. Each of these will be discussed in more detail to understand the separate components.

## **7.2 Implementing Market Segmentation**

Market segmentation provides significant opportunities for Company XYZ to offer customers with customized opportunities, deploy personalized marketing strategies, and focus on cost savings. In order to leverage these opportunities the data obtained from the cluster analysis needs to be formed into a manageable method that is easy for employees to relate with and understand the application.

As discussed previously the cluster analysis derived three market segments: Modern Mike, Price Shopping Pete, and Savvy Steve. By creating names with alliterations the goal is for the name of each segment to catch on faster with employees, rather than asking employees to remember a generic market segment title. Appendix C contains cluster summaries that will be distributed to all employees to develop a general understanding of how each cluster is identified by common characteristics and traits. The cluster template references common do's and don'ts, along with Value Added services that are recommended for each cluster.

The focus on personalized Value Added services will allow Company XYZ to better identify the right opportunities for a group of specific customers, rather than pushing the same market campaign to all customers. A generic market campaign costs the company in wasted time and materials. For example, when Company XYZ releases a new risk management tool that provides a long-term pricing program "Price Shopping Pete" will likely not have any interest. These campaigns can be customized to offer to "Savvy Steve" or even a shortened version for "Modern Mike".

The personalization opportunities will be endless for pricing programs, options strategies, crop insurance add-ons, technology upgrades, and even general marketing campaigns. These segments will be implemented into the customer relationship management portal for all Account Representatives to identify the segment type. The plan will be to implement weekly updates on opportunities for each market segment that will be relevant to the current marketplace at the time.

### **7.3 Training Program**

One of the biggest challenges Company XYZ faces is a limited talent pool to fill new positions. The talent within the organization today is extremely well rooted and understands the company philosophy and vision. However, as new businesses and facilities are acquired new talent is consistently moving into Company XYZ with a lack of understanding and awareness to the mentality and mission of Company XYZ. As this has occurred over the years, the organization has leveraged their existing talent pool to provide true company insight and training to the new employees. At the rapid pace of growth it is becoming more and more challenging to backfill employees that move to new locations and do so quickly.

The regression results in analyzing Company XYZ against the competition showed that customers in Nebraska tended to rank Company XYZ inferior to competitors. With the facilities in Nebraska being the newest facilities to the company at the time of the survey this specifically proves the idea of the issues the company faces when integrating new assets.

Therefore, this indicates that the Partner of Choice program also needs to focus on a training aspect to train new individuals that may join the company through mergers and

acquisitions or general new hires. In order to train employees consistently they need to be provided with grass roots experience on the farm, in the office, and at Company XYZ's headquarters.

The training program for new employees to Company XYZ will be a month long rotational program to cycle employees through the important aspects of the business. First, employees will spend a week in at the company headquarters to learn the basics of grain buying and be exposed to the immense amount of talent within the company headquarters. For the second week of the program the trainee will spend one week at one of Company XYZ's ethanol facilities to increase their network and understand the ethanol side of the grain business. The third week will be spent at a grain elevator to gain similar knowledge, but more focused on rail delivery points as the end user. Finally, the last week of the training program will be spent in Maumee, at the company headquarters to review more in depth details spending time understanding the risk management tools Company XYZ offers to customers.

By experiencing these different environments firsthand this will put new employees on the fast track to understanding Company XYZ's vision and service to customers. With employees from a variety of locations cross-training this will help employees establish a strong network in the company. Today, challenges continue to arise with the idea of sharing best practices across locations. So, this program will also help those ideas to be shared across the company.

The regression results from the model analyzing the ratings of Company XYZ against the competition generated a positive correlation for a majority of the segmentation factors, indicating that overall the organization tends to rank superior to the competition.

The regression results however did identify challenges for Company XYZ. The demographic characteristics of Attitude toward Growth and Grower Size both generated negative coefficients in the model, which indicate that they rank Company XYZ inferior to competitors. Both variables indicate challenges for employees at Company XYZ to work effectively with producers of large size and those that are looking to grow their farm operation. These results also spark the need for higher level training for existing employees. With heavy focus on on-boarding new employees and developing relationships with new customers it is extremely important to maintain the existing customer relationships with larger producers.

In order to address these challenges and overcome the competition, it is important for Company XYZ to implement a series of training courses for each level of Account Representative to complete. These training courses will be tiered to focus on a variety of service levels and opportunities to grow with the customers into the future. The courses will present service aspects to incorporate more active risk management plans for producers of all farm sizes.

#### **7.4 Incorporating Behavioral Management Practices**

Once segments are identified and employees are established through training programs to best service customers of Company XYZ, the follow through is left to each individual. Each sales manager will work with their employees to establish a “customer deck” for the employee to work with and service. Today, each office has multiple levels of talent to disperse to their needs. Most offices typically consist of at least one Executive Account Representative, Senior Account Representative, Account Representative, and Purchasing Representative and additional staff at each level as needed. Each of these roles



all work together as a team to meet the end goal of buying grain for the physical assets of Company XYZ. The talent and market knowledge varies greatly across these job titles, which in turn affects the customer service and depth of customer relationships at each level.

In order to leverage the competitive advantages of employees at each level, implementing behavioral management practices will help each individual office become more successful as they maximize their talent. Each employee will be required to complete the DISC profile when starting with Company XYZ. The DISC profile is a behavior assessment tool that identifies fifteen patterns. Figure 7.1 shows the patterns that fall under each category Dominance, Inducement, Submission, and Compliance which comprise DISC.

**Figure 7.1 DISC Profile Assessments**



The personality assessment will be required to be completed by all employees. The structure of each office can take shape based upon the personality types of the employees to best match the personality of the customers that they are serving. This opportunity will need further analysis into the market segments to understand the behavioral patterns and the composition of personalities with employees in our organization.

However, an immediate result that can be implemented at each location is focusing on assigning the correct level Account Representative to the right market segments in order to maximize their time to best service the customers. For example, Price Shopping Pete is typically looking to talk about prices and move on to the next location to find his best market before making a decision. These customers can be best serviced by Purchasing Representatives who can assist in making phone calls to give price updates. If a Senior Account Representative is spending extensive time contacting the Price Shopping Pete to discuss marketing strategies and promote risk management tools it is likely wasting time for both the employee and the customer. Therefore, aligning market segments with level of employees can maximize opportunities.

Another specific example would be the Executive Account Representatives; at each location these individuals are the most senior members of the originations team. Typical characteristics are deep customer relationships, very market savvy, well-versed in trading futures and options, and focused on aiding their customer's growth. In looking at the service this level of employee provides, it best matches with the Savvy Steve customer segment. These customers value Basis/Market Management and Market Expertise which can be best provided by the Executive Account Representatives.

### **7.5 Incentive Alignment**

The goal for the regression analysis of profitability was to identify the opportunities to direct the focus toward customers that return the highest profit to Company XYZ. The regression did discover that customers who are older in age and open to technology tend to generate higher profits to Company XYZ. The cluster analysis further identified that the young market segment of Modern Mike generated significantly more profit for Company

XYZ than any other market segment. This market segment clearly values the services and risk management opportunities that Company XYZ offers. These services and opportunities not only achieve the business of the customer to handle the grain, but also accrue a fee income for participation in the programs.

In order to entice employees to more strongly build and manage the ideal relationships, incentive compensation will be established. The incentive compensation piece can ultimately help drive and fuel how employees prioritize and focus on customer relationships moving forward. The first incentive to establish would be a general incentive per bushel originated. This will entice employees to attain more business from the customers they are currently servicing, as well as seeking the opportunity to attain new customers. The Modern Mike and Savvy Steve segments are profitable, loyal customers that utilize many of Company XYZ's tools. Therefore, addressing the behavioral management issues by designating the Purchasing Representatives and specific level of Account Representatives to work with appropriate segments will establish best practices.

Although Company XYZ is focused on earning profits and servicing strong established relationships, it is also part of the company's vision to help their partners grow and succeed. Therefore, Company XYZ does need to also incent Account Representatives to grow their existing customers and further educate and assist these customers to advance their farming operation. Figure 7.2 shows a general trend to the growth of customer relationships with Company XYZ. Each chevron represents the percent of business likely attained from the customer and the details in the model represent a specific growth pattern. The growth pattern shows the advancement of a customer's risk management strategy and their integration with the company's tools and services. For account representatives that can

grow and move customers along the trend will receive incentive for further developing relationships and growing the business. Each level will establish a different level of compensation to incent employees towards the pattern of growth and expanding existing and new customer relationships.

**Figure 7.2 Customer Relationship Growth Trend**



## **CHAPTER VIII: CONCLUSION**

The agriculture industry has been a dynamic industry exploding with change in recent years. The world has experienced extreme population growth along with shifts in social status, dietary habits, and consumption patterns that have led to a rapidly growing and changing agriculture industry demanding increasing grain production. The increasing pace of production and trade to maintain with the growth throughout the world has heightened the competition in the agriculture industry.

The focus of this thesis was to understand customer habits and preferences to generate a repeatable model that can help Company XYZ stay ahead of the competition and become the Partner of Choice across the country. Overall, the results focused on interpreting and understanding the opinions about Company XYZ and the habits and values for customers. The focus first and foremost remains on understanding customers to better serve their needs. However, the thesis also analyzed profitability to understand what demographic characteristics, items of value, or geographical regions tend to lead to higher profits for Company XYZ based upon each customer.

The regression models and cluster analysis conducted in the thesis led to a variety of results that helped generate action items for the company to implement. The biggest result generated focused on implementing Market Segmentation with three strong segments identified from the survey data. This customized approach can feed down into multiple other components of the business to implement personalized marketing strategies, develop risk management tools for specific segments, establish office structures based upon the concentration of segments in each area, trigger behavioral management practices within the company, and derive the incentive compensation for employees.

The results provided significant information to help the organization better understand customer habits and areas of strength and weakness. Overall the action plan led to the implementation of market segments. In order to help employees understand and work with each market segment the need for a strong training program is imminent. In order to entice employees for focus on the right opportunities and market segments incentive compensation for customer-facing employees should be implemented to align the company's goals of customer service.

In order to improve the study further a stronger survey could have been conducted. Rather than providing customers with choices to answer each question the opportunity to gather individual information would have enhanced the results. For example, in asking a customer's age requiring them to answer with their individual age rather than selecting from a range would have provided more accurate results. Many of the demographic results such as age, number of years farming, total acres farmed, level of education received, and so forth could have been answered directly and specifically by each individual customer.

Another enhancement to the survey would have been to simplify or better define the values to ensure that all survey participants were answering based upon the same idea and logic. For example, Basis/Market Management could have been defined as specifically providing full analysis of the basis opportunities within the area while Market Expertise focused on the company's knowledge and ideas about the futures and options market.

A further expansion on this study could also add in the factor of time to analyze and scale profitability. Currently the study focuses on understanding how profitable a customer is to the company, however it does not account for time. A customer or specific market segment may be extremely profitable to the company, but if they require a significant

amount of time over the other customers or segments this could lead to a different end result and behavioral implications. Therefore, accounting for the time spent working with each customer or customer segment to create a scale that generates net profitability would enhance the opportunities of the survey further to more accurately guide employee behavior.

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## APPENDIX A

### Partner of Choice

Grain Customer Survey

#### Page Header: Welcome!

Welcome to the Partner of Choice customer survey, where we are interested in hearing from you! We understand your time is valuable to you, so we promise the survey will take less than 15 minutes. Your responses will be kept confidential and not be shared.

Thanks again for your efforts.

1. How long has your farming operation been working with Company XYZ?

- Less than 6 months
- 6 months – 1 year
- 1-2 years
- 3-5 years
- 5-10 years

2. Overall, how satisfied are you with your experience with Company XYZ?

- Very Satisfied
- Satisfied
- Dissatisfied
- Very Dissatisfied

3. Company XYZ provides a wide array of services for the agriculture industry including commodity and risk management, futures, options, etc. Do you receive these types of services from a company other than Company XYZ?

- Yes
- No

Comments:

If yes, continue.

If no, skip to question 6.

**Page Header: Competition**

4. While Company XYZ is extremely interested in earning all of your farming operation business, we understand some of you may work with our competitors. Roughly what percentage of your business do you currently award to Company XYZ?

- 0 – 25%
- 26 – 50%
- 51 – 75%
- 76 – 100%
- I'd rather not answer

5. Compared with other options, has doing business with Company XYZ helped your farming operations create value, or save time and money?

- Yes
- Sometimes
- No

Comments:

**Page Header: What's important to you?**

Which area is most important to your farming operations? (Choose up to five)

- Basis / Market Management
- Best Possible Price
- Counter Party Risk
- Experience at Elevator (if applicable)
- Expertise
- Fairness
- Fees
- Flexibility
- Online / Virtual Resources
- Payment
- Products (i.e. crop insurance / pricing tools)
- Relationships
- Timeliness of Freight (if applicable)
- Truck Turn Time (if applicable)
- Other (please specify)

**Page Header: Please rate us**

	Superior	Better	The Same	Worse	Inferior
Item #1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Item #2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Item #3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Item #4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Item #5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Page Header: Our Commitment**

7. Company XYZ is committed to continuous improvement and delivering new solutions such as market updates via text messaging, etc. How interested are you in learning about a new solution, technology, or product development from Company XYZ?

- Extremely Interested
- Somewhat Interested
- Neutral
- Slightly Uninterested
- Not Interested

8. Are there areas where doing business with Company XYZ may have cost your farming operations time, trouble, or money?

- Yes
- Sometimes
- No

Comments

**Page Header: Tell Us About Your Farming Operations**

9. How large is your farming operations?

- 0 - 500 acres
- 501 - 1000 acres
- 1001 - 2000 acres
- 2001 - 5000 acres
- 5000+
- I'd rather not answer

10. What is your business's future growth strategy?

- Grow Our Business
- Stay the Same
- Get Smaller
- Exit the Industry
- I don't know

11. What was your adjusted gross income last year?

- \$0 - \$100,000
- \$100,001 - \$249,999
- \$250,000 - \$500,000
- \$500,001 - \$1 million
- More than \$1 million
- I'd rather not answer

12. What percent of your income comes from:

	0-25%	25-50%	50-75%	75-100%
Grain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Livestock	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other Job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Custom Farming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Page Header: Tell Us About Yourself**

13. How old are you?

- 29 or younger
- 30 - 45
- 46 - 60
- 61 or older
- I'd rather not answer

14. What is the highest level of school you have completed or the highest degree you have received?

- Less than high school degree
- High school degree or equivalent (e.g., GED)
- Some college but no degree
- Associate degree
- Bachelor degree
- Graduate degree or higher
- I'd rather not answer

**Page Header: Help Us Improve**

15. Do you feel that Company XYZ demonstrates a commitment to your success?

- Always
- Usually
- Sometimes
- Rarely
- Not at All

16. Can you suggest areas where Company XYZ can improve or help your business?

Comment box:

17. As a "thank you" for completing this survey, we are giving each of our customers a \$25 gift.

Which method of payment would you like to receive?

- Please send me a \$25 Visa gift card
- Please donate \$25 to the United Way
- Please donate \$25 to the Salvation Army
- Please donate \$25 to the Red Cross
- Opt Out; I prefer no compensation

If opt out is selected, exit the survey.

If donation is selected, answer #18.

If Visa gift card is selected, please answer #19.

18. To ensure your community receives the donation, what is your ZIP code?

19. To mail your gift card, please provide information on the fields below:

Name:

Company:

Address:

Address 2:

City/Town:

State:

ZIP:

Email Address:

Phone Number:

**APPENDIX B**

<b>Partner of Choice Survey Statistics</b>		
<b>Share of Wallet</b>	<b># of Responses</b>	<b>% of Total Respondents</b>
No Answer Selected	183	42.6%
0-25	55	12.8%
26-50	87	20.2%
51-75	58	13.5%
76-100	47	10.9%
<b>Attitude Towards Growth</b>	<b># of Responses</b>	<b>% of Total Respondents</b>
Grow	294	68.4%
Stay the Same	120	27.9%
Get Smaller	2	0.5%
Exit/I don't know	14	3.3%
<b>Openness to Tech</b>	<b># of Responses</b>	<b>% of Total Respondents</b>
Extremely Interested	140	32.6%
Somewhat	230	53.5%
Slightly	34	7.9%
Not Interested	26	6.0%
<b>Grower Size</b>	<b># of Responses</b>	<b>% of Total Respondents</b>
0-5000	70	16.3%
501-1,000	107	24.9%
1,001-2,000	129	30.0%
More than 2,000 acres	124	28.8%
<b>Age</b>	<b># of Responses</b>	<b>% of Total Respondents</b>
29 or younger	19	4.4%
30-45	88	20.5%
46-60	222	51.6%
61 or older	101	23.5%
<b>Profitability</b>	<b># of Responses</b>	<b>% of Total Respondents</b>
>20,001	86	20.1%
7,501-20,000	103	24.1%
5,001-7,500	44	10.3%
1-5,000	160	37.5%
0	34	8.0%
<b>Values</b>	<b># of Responses</b>	<b>% of Total Respondents</b>
Best Possible Price	313	72.8%

Relationships	254	59.1%
Basis/Market Management	244	56.7%
Market Expertise	190	44.2%
Payment	193	44.9%
Fairness	192	44.7%
Flexibility	150	34.9%
Experience at Elevator	129	30.0%
Fees	93	21.6%



## APPENDIX C

### Cluster 1: Modern Mike



Cluster Summary	
Goals & Insights	
Customer Count:	_____
Total 2012 Rev (\$)	\$ ____ MM
% of Total Profit:	____%
Penetration:	_____
Strategy:	_____

Mike is 30-45 years old and is college educated; he is a younger producer that is likely farming with other relatives or growing his own farm operation. He is seeking opportunities to develop relationships within the industry and become well established.

He operates a large farm operation. Mike is more conservative and maintains low risk while growing the farm operation.

Things to consider: Mike is looking for a partner to direct and educate. He is interested in becoming more market savvy but has little experience today. He likes to take advantage of new opportunities: technology, risk management tools, market opportunities, etc.

DEMOGRAPHICS	
Age:	30-45
Education:	Bachelors Degree
Gender:	Male
Tech:	Open
Acres:	2,000+
ATTRIBUTES	
Relationship	Transactional
Ambitious	Conservative
Mkt. Savvy	Inexperienced
Low Risk	High Risk

#### Value Added Solutions

- Online Access** – market information, bids, account management
- Marketing Plan** – present ideas and build a marketing plan together
- Open Orders** – get them comfortable with leaving offers
- Risk Management Tools** – crop insurance, hedges, pricing programs

#### Key Needs or Pain Points

- Needs access to online resources
- Wants a relationship
- Needs to be challenged with new market ideas and opportunities
- Wants a partner that can educate him and help grow his operation

#### When We Engage

- DO Make directive suggestions
- DO Ask for business
- DO Drive to technology
- DO Contact him frequently
- DON'T Let him get lost in the conversation
- DON'T Leave out other members of the operation

Customer for: [check box]

Grain
  Ethanol
  PNG
  Rail
  Retail
  T&S

### Cluster 2: Price Shopping Pete



Cluster Summary	
Goals & Insights	
Customer Count:	_____
Total 2012 Rev (\$)	\$ ____ MM
% of Total Profit:	____%
Penetration:	_____
Strategy:	_____

Pete is 45-60 years old and is likely educated; he comes from a lifetime of farming and agriculture and is a well established producer.

He operates an average size farm operation. Pete has not established partnerships within the industry yet. He is seeking the best deal at the right time for him.

Things to consider: Pete is typically shopping around the marketplace for the best bid in the area before selling any grain. He would like to become more market savvy, but lacks the knowledge, experience, and guidance today. Focused on more transactional conversations and not establishing relationships.

DEMOGRAPHICS	
Age:	45-60
Education:	High School/ Bachelors Degree
Gender:	Male
Tech:	Somewhat Open
Acres:	1,000
ATTRIBUTES	
Relationship	Transactional
Ambitious	Conservative
Mkt. Savvy	Inexperienced
Low Risk	High Risk

#### Value Added Solutions

- Interested in one time deals**
- Simple execution** – typically cash contracts
- Timing** – understand his needs to identify opportunities at the right time
- Education** – try to teach him new marketing ideas or trends to watch

#### Key Needs or Pain Points

- Needs access to cash prices
- Wants efficient information
- Wants a partner that can provide him with the "best deal"
- Cares about being treated fairly

#### When We Engage

- DO Call him with basis opportunities
- DO Deliver his information efficiently
- DO Challenge him with market ideas
- DO Teach him about the markets
- DON'T Be pushy with ideas
- DON'T Expect loyalty

Customer for: [check box]

Grain
  Ethanol
  PNG
  Rail
  Retail
  T&S

## Cluster 3: Savvy Steve



### Cluster Summary

#### Goals & Insights

Customer Count:	_____
Total 2012 Rev (\$)	\$ ____ MM
% of Total Profit:	_____ %
Penetration:	_____
Strategy:	_____

Steve is 45-60 years old and is well educated; he comes from a lifetime of farming and agriculture and will be a producer for his entire career.

He operates a very sizable and efficient farm operation. Steve recognizes and embraces opportunities in agriculture and is looking to maintain his operation while growing.

Things to consider: Steve is well in tune to the markets and an established producer. He is likely on every merchandisers radar. Loyal because of the relationship, marketing tools, and flexibility that we have provided over the years.

DEMOGRAPHICS	
Age:	45-60
Education:	Bachelor's Degree
Gender:	Male
Tech:	Somewhat Open
Acres:	2,000+
ATTRIBUTES	
Relationship	Transactional
Ambitious	Conservative
Mkt. Savvy	Inexperienced
Low Risk	High Risk

### Value Added Solutions

1. **Risk Management** – market opportunities, tools, structure
2. **Ease of doing business** – reliable and relationship
3. **Paint the picture** – for their farm in conversation
4. **Flexibility** – opportunities to leverage flex delivery programs

### Key Needs or Pain Points

- Needs access to an Account Rep
- Wants touches, market info, and wants to know you care (relationship).
- Needs increasing structure to marketing.
- Wants a vendor partner that can adapt to his farm with market information.

### When We Engage

- DO Bring risk management, ideas, opinions
- DO Follow through – do what we say.
- DO Personalize it.
- DON'T Be pushy or put him under pressure.
- DON'T Waste time

Customer for:

Grain

Ethanol

PNG

Rail

Retail

T&S