DEVELOPING A DEALER CUSTOMER SUPPORT CENTER STRATEGY

by

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ABSTRACT

As the integration of technology and data rises in production agriculture, John Deere dealers in North America are in a constant quest to differentiate themselves and be more than just an equipment provider. Customers with more technologically advanced products are requiring more support from the dealerships. Each dealership has a unique opportunity to provide unprecedented levels of support and each may do it in a slightly different way. This creates a challenge for Deere & Company in providing resources and support to those dealers in their endeavors.

This thesis was requested by Deere & Company (John Deere) to provide the company with information on Dealer Customer Support Centers in North America. In order to provide resources and tools for dealers to be successful, it is necessary to understand what they are currently doing with customer support centers and the barriers to implementing more. An online survey was sent out to the Integrated Solutions Manager at every John Deere Dealer organization in North America. From that survey there were a total of 127 responses.

The two most common forms of customer support systems that dealers are using are having Integrated Solutions Staff members take calls directly from customers and having someone within the dealership answer the phone and manually route the call to the right person for support. Data also shows that some of the less common but more technologically advanced methods of support have been implemented more in the past 12 months. Survey analysis indicates that only a small percentage of dealers have a true

centralized dedicated support center for customers. This subset of dealers is utilizing several different methods to support customers. The two indicative methods are having a 1-800 number for customers to utilize for support and having a dedicated staff to help customers remotely.

Dealers are frequently using several types of tools and resources to help support customers, the most frequently occurring ones include JDLink™ and Data Management Services. Respondents indicated using many other tools to provide value to customers including John Deere Remote Display Access, clinics and optimization sessions and many others. Barriers to implementing more complex forms of customer support are numerous, the biggest of which is the cost of implementation and lack of resources to support a more sophisticated customer support system. With this information, John Deere is better positioned to provide resources and support to our dealer channel facing these challenges.

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CHAPTER I: INTRODUCTION

1.1 Background

Part of what sets John Deere apart from the competition is our unrivaled dealer network that excels in providing equipment, parts and service to customers. John Deere's business spans multiple industries, including construction and forestry equipment, lawn and turf equipment, and the company's mainstay- agricultural equipment. This research focuses on our network of dealers who sell large agricultural equipment. Our dealers and their superior customer support and service are our true differentiator from other ag equipment manufacturers. Some might say that our products and even the technology are becoming commoditized. This forces John Deere and our dealers to find new ways to differentiate ourselves and provide a unique customer experience.

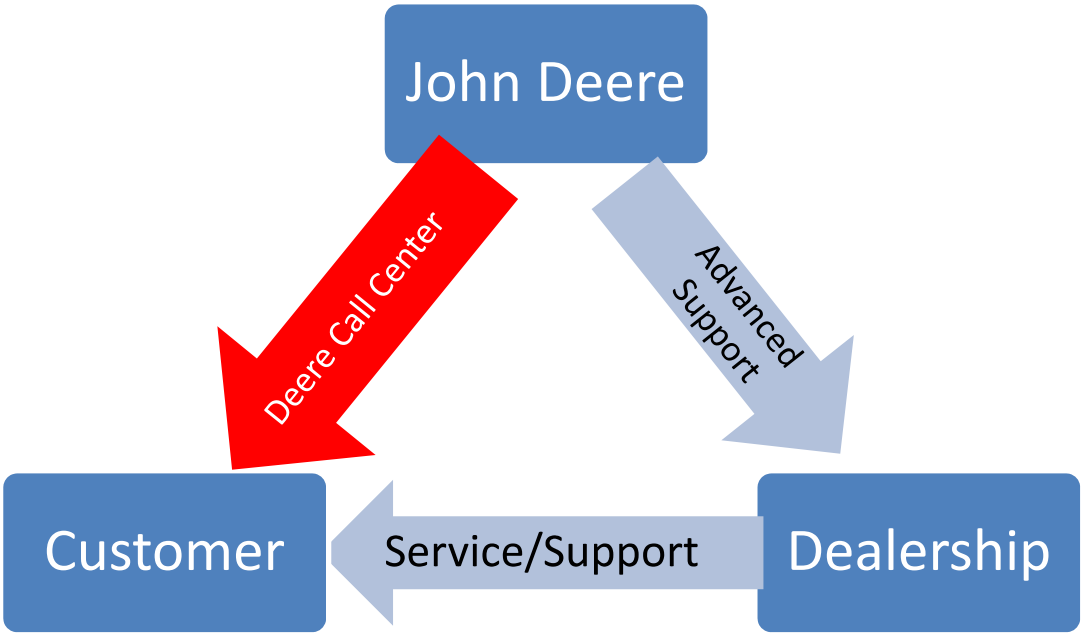
John Deere has developed a new strategy in the past few years to ensure that dealers are providing a unique experience to customers. This is the John Deere FarmSight™ Strategy. It combines equipment, technology and dealer services to provide the complete solution and the ultimate customer experience. Wrapping these services around the machines and technology enables the dealer to be tied closer to the customer while ensuring that the dealer becomes invaluable to them. This also makes sure the customer is getting the most out of their machines and technology.

Dealers have been doing some form of remote customer support for as long as they have had phones. They now have tools such as Remote Display Access (which allows remote viewing of a display in the cab,) JDLink™ (our telematics solution), and now Wireless Data Transfer. All of these tools allow the dealer to be more proactive in solving

customers' problems and supporting them in a timely manner. Other elements as important in remote support include reliable access to phone support. This is where dealers are trying to differentiate themselves. When equipment and technology are hard to differentiate, this support will provide exactly what customers are demanding.

Since John Deere began offering precision ag technology, they've had a call center available to all dealers and customers to provide support on these products. John Deere is now encouraging dealers to be the first point of contact for customers. This is being done by adding a fee for support if a customer would like access to the call center. If they were to remove this flow of support directly from John Deere to the customers, customers would be more reliant upon their dealers for support, thus enhancing the dealer/customer relationship. The dealership should be the customer's first line of support. When customers call their dealership first, if a dealer cannot provide the solution for the customer, the dealer still has access to support from John Deere. (Figure 1.1)

Figure 1.1: Flow of Service to Customers



One more driver of change is the evolving customer. Equipment is becoming more complicated with the addition of more precision ag technology, therefore customers are demanding more support to utilize the machines and technology to their fullest potential and get the most value out of their purchase. Dealers have had to continually add staff to their dealerships to support the precision ag technology. Good dealers are becoming more of a "trusted advisor" than just an order-taker. Some dealers have even gone so far as to deliver agronomic services to their customers.

For the past several years, dealers have been implementing new customer support strategies to respond to their customer's needs more efficiently. Two things result from this, one is increased customer satisfaction and the other is reduced workload on others at the dealership who benefit from a reduction in their call load. For example, a service manager might spend a good portion of his day on the phone with customer with service problems. They know they can call him because he is very knowledgeable and can help them get up and running. The downside is that there is no immediate revenue in helping customers over the phone and a service manager's time is very valuable. Precision ag specialists or those in the "Integrated Solutions" department's time are also very valuable. Many of these consultants spend the majority of their time helping customers with the technology. Deere has been encouraging dealers to make sure that every department in their dealership is profitable. Previously, the dealership supported the precision ag technology for free, but they now are moving from "free" to "fee" by providing services that support this technology.

A dealer customer support center allows some dealers to have a first tier of support to help with any common problems. Complicated issues can be passed onto these Integrated Solutions Consultants to attend to the problem. This approach utilizes entry-level technicians to solve common issues and problems. Customer support centers may hire new graduates from college and use this as a training position before they advance through the dealership. Other dealers have taken highly trained and knowledgeable service technicians and Integrated Solutions Consultants who are either burned out of their current positions, looking for a slower pace or are physically unable or unwilling to turn wrenches in the shop because they are nearing the end of their career. These customer support centers take the approach that the customer's problem should be fixed on the first try by someone who is highly knowledgeable.

Dealer customer support centers are expensive investments, requiring sufficient infrastructure, technology and people to make it work. Some dealers say this expense is just "a cost of doing business" now and swallow the cost in favor of customer satisfaction. Other dealers are charging customers for this service as a subscription or even on a call-by-call basis if they did not purchase a service agreement. Even if they are charging customers for the service, it is still a major cost to the dealer that not all dealers would be able to handle.

Because of the significant investment that a support center requires, the barriers to entry are high, however, the tools available to help customers remotely are available to utilize and there is pressure from the industry to do so. For these reasons, dealers face a difficult decision as to whether or not to implement a customer support center and the level

of sophistication that their market requires of them. These are the factors that have driven the following research objectives.

1.2 Objectives

The overall objective of this research is to create a Dealer Reference Guide to share with our dealers that may be used as a resource to help dealers implement a dealer customer support center. The Dealer Reference Guide will include information necessary to define objectives for a support center, what type is best for their organization and determine what support methods to utilize. This guidance and subsequent implementation of support centers by dealers will increase customer satisfaction in an increasingly competitive marketplace. Specific objectives of this research are as follows:

1. Identify and classify the customer support strategies John Deere Dealers are currently implementing,
2. Determine the principal resources dealers are utilizing to implement their strategies and
3. Identify the principal barriers facing dealers in the implementation of their customer support strategies.

The research has provided John Deere an understanding of what dealers are currently doing with various forms of customer support centers, the most common and which of these approaches are best. For those that haven't implemented, understanding their barriers will lend insight as to how we can help with these. This will lay a foundation that a dealer could use to help them implement a similar strategy of their own.

This objective is driven in part by dealers asking for help in building customer support centers or seeking guidance on how to build them. With the embedded knowledge about customer support center development and operation in the company and information about the operational and financial conditions of the dealerships, this research would be able to provide clear direction or guidance to the dealers in this endeavor. Information about experiences of dealers currently operating customer support centers will also be used in the analyses.

Achieving this objective would provide invaluable direction for John Deere in defining clear paths for the different dealership types in addressing their technical support services. It has been recognized that this is a feature of a Dealer of Tomorrow and will be critical going forward as Deere tries to enable the dealer to be the first line of support.

CHAPTER II: LITERATURE REVIEW

Means of supporting customers have evolved over the past several decades. For most ag equipment dealers, this has shifted from on-farm visits to diagnose problems, to remotely solving problems with a phone call to a mechanic utilizing some tools and resources to solve the problem. As technology and machines and resources available to help diagnose problems remotely have become more popular, customers are demanding more support. Although they're demanding more support, they are demanding it from the dealer instead of directly from John Deere. The Global Support Center that handles customer and dealer cases on precision ag technology has seen a decrease in the number of cases from 2012 to 2013 by 21.3% (Augspurger 2014). This implies that customers are getting support elsewhere, most likely from their dealer, therefore increasing the volume of calls a dealership is handling. This helps explain the steady decline of customer case volumes from 2009-present and the increase in dealer cases from 2010-2012 as dealers started to take on more customer cases themselves (Augspurger 2014).

Most service and product industries utilize a form of phone support to assist customers in several different ways. As many of our dealers are considering shifting their incoming customer calls to a centralized customer support system, it is important to know what the differences are in types of systems, and realize the impact on customer satisfaction that implementation can have.

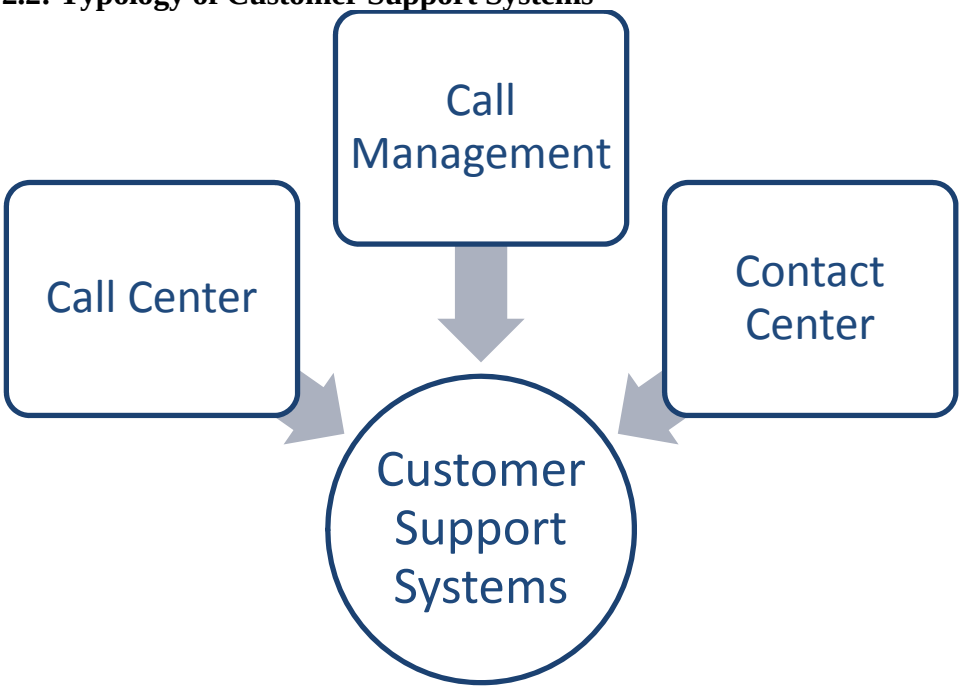
There are numerous articles available that involve the topic of "Call Centers." Much of the information available is very technical in nature, talking about very specific telephony technology, discusses outsourcing, or is written by those selling a product to the customer service industry customers. The literature reviewed in this chapter is not a

complete summary of information, rather a basis of knowledge of which will help make sense of the data collected. Learning about the different types of phone support, industry standards and norms will help to guide the research and help determine feasible approaches to implementing a dealer customer support center. The purpose of this literature review is to identify the different approaches that companies take in implementing forms of customer support and what drives those approaches.

2.1 Typology of Customer Support Systems

There are three different types of customer support systems currently in operation: call management, call centers, and contact centers (Figure 2.1). John Deere dealers may implement any of these different types of systems, depending on the needs of their organization and their resources. It is important to understand the differences between these different types of systems.

Figure 2.2: Typology of Customer Support Systems



A call center is “defined as a place where contacts are made” and is often the “front door” to a business (NAQC 2010). The term “call center” is used when the majority of interactions are carried out by telephone versus other technology, such as emails and chats (NAQC 2010). Aside from just being a place where calls are taken, a call center is “an operation where more than one person is responding to contacts and where an interaction can be handled by anyone within a group” (NAQC 2010).

As better technology becomes available to perform the call center activities, opportunities for different types of interactions other than just an inbound phone call become feasible (NAQC 2010). Some may use the term “contact center” to refer to the physical place where other types of transactions (beyond just inbound calls) happen (NAQC 2010). This type of support center is particularly useful for dealerships, as they have many tools at their disposal to support customers above and beyond just taking inbound calls.

Call management “determines how calls are routed inside a VoIP infrastructure” (Kunwadee Sripanidkulchai 2007). This allows a call to be routed from one dealer location to another if all on the same infrastructure. The use of Voice over IP (VoIP) is growing at a fast pace and this is enabling the use of call management. Call management is a good option if a dealership may not want to invest in the personnel that a dedicated staff would require. However, call management does require a sufficiently sophisticated phone system (such as VoIP) to allow the automated routing of calls. This may be a barrier for some dealerships.

2.2 Drivers of Change in Customer Support Systems

Technology infrastructure (such as online phone system like VoIP) is a crucial piece of a dealer's investment. Many of our larger dealer organizations have grown organically, acquiring smaller dealerships as they become available over time. This often results in these dealerships having many locations with varied technology infrastructure as well as capacity to economically introduce new technologies. For example, it is not uncommon to have a large dealership with one brand new store location and several other locations with 30-year-old phone infrastructure. Some of these locations may be close to urban areas, providing them with a greater access to more bandwidth while others may be very remote with poor access. These locational constraints may pose significant economic challenges to the adoption of new technology even when the leadership of the dealership appreciate the value of such investments. When such is the case, it is not surprising to have multiple solutions across the dealership's locations.

The purpose of any investment in customer support system is to increase customer satisfaction and enhance customer loyalty, allowing the dealership to differentiate itself through service. The Aberdeen Group conducted a survey in 2011 of 150 service organizations indicated that effective resolution of support requests in the contact center is extremely vital to competitive differentiation (Dutta and Pinder 2011). The study also emphasized the importance that these service organizations place on their contact centers. Contact Center improvement is important to them given the significant impact that effective call handling in the contact center has on key customer-facing and financial metrics (Dutta and Pinder 2011). The Aberdeen Group's survey data show that "not only are service leaders looking at excellence in the contact center as a means to improve the

customer experience and drive down costs, but they are also looking to leverage contact center superiority to differentiate their brand in an already crowded business marketplace" (Sumair Dutta 2011, p. 5). An effective call center, the survey found, was more important in its contribution to customer satisfaction and retention (loyalty) than service revenue. The survey also found that improvements in customer service centers are being driven by customers rather than by service providers need to generate new sources of revenue.

Given the importance of customer satisfaction resulting from these investments, Ryder (2009) notes that a major influence on a customer's satisfaction at a support center is the knowledge level of the agent who takes their call. (Ryder 2009). Ryder observes that maintaining or increasing the cumulative knowledge of service agents is critical to service quality, and call management or routing can help achieve this objective.

2.3 Technology Utilization

Dealers may be utilizing many different tools within their dealership to provide the level of support they want to achieve. Others in the customer service industry are utilizing Self Service Technologies (SSTs) as an "economical alternative to customer service" (Thomas 2009). This includes web-based SSTs that provide online tech support boards, live chat sessions, user forums and other tools for customers to self-help (Thomas 2009). It has been found that resolution of novel problems can be challenging and human interactions are the preferred method of resolving these as a solution does not yet exist in a knowledge-base and information needs to be collected (Thomas 2009). This concept of utilizing SSTs may benefit dealerships as they build a knowledge-base of customer issues and common problems.

Many industry support centers also employ Interactive Voice Response (IVR) systems that guide a caller though touch tones or voice commands (Thomas 2009). This will prompt the customer to gather more information and route their problem to the right technician (Thomas 2009). This can effectively route call records and customer information directly to the customer support representative to save time in resolving the problem (Thomas 2009). This may be very helpful when tied in with a Customer Relationship Management system that also has customer information readily available.

The resources studied provide insight on several of the objectives. This includes how a call center can impact the level of support a customer receives and why a John Deere dealership may choose to do this, as well as different types of technology they may choose to employ that are popular in the customer service industry.

CHAPTER III: DATA COLLECTION AND ANALYTICAL METHODS

The literature review in the preceding chapter established the importance of customer support to customer loyalty and satisfaction. Given its importance, this research focused on identifying the different ways in which John Deere dealerships are supporting their customers so that they may be provided the appropriate resources to enhance their performance with their customer support initiatives. The best approach to identify these different methods was to go directly to the dealers and ask them how they handle this part of their business.

A survey was sent to all John Deere dealers in North America selling agricultural equipment.[1] The target of response for the survey was the Integrated Solutions Manager at the dealership. This person is often responsible for advanced precision technology support, and hence, has a very good knowledge about the dealership's customer support activities. To ensure the appropriate person was responding to the survey, the survey instrument requested respondents to identify the title of their role at the dealership. This provided confidence about the responses and facilitated the interpretation of the results. Prior to the survey being sent out, the investigator sent out an email to all respondents alerting them about the survey. This was done to enhance responses to the survey by assuring respondents that they were indeed responding to a John Deere initiative.

3.1 Data Collection

The survey was conducted using Qualtrics, an electronic survey instrument used by the research community at Kansas State University. The survey was conducted from

[1] See Appendix I.

February 20 through March 6, 2014. The invitation email included a URL link to the electronic survey instrument which respondents could click on to gain access to the survey. The invitation email requested recipients to forward the email to the appropriate person at the dealership to answer these questions if they did not deem themselves qualified to respond to the survey. A couple of reminders were also sent to respondents over the period over which data was collected to encourage response.

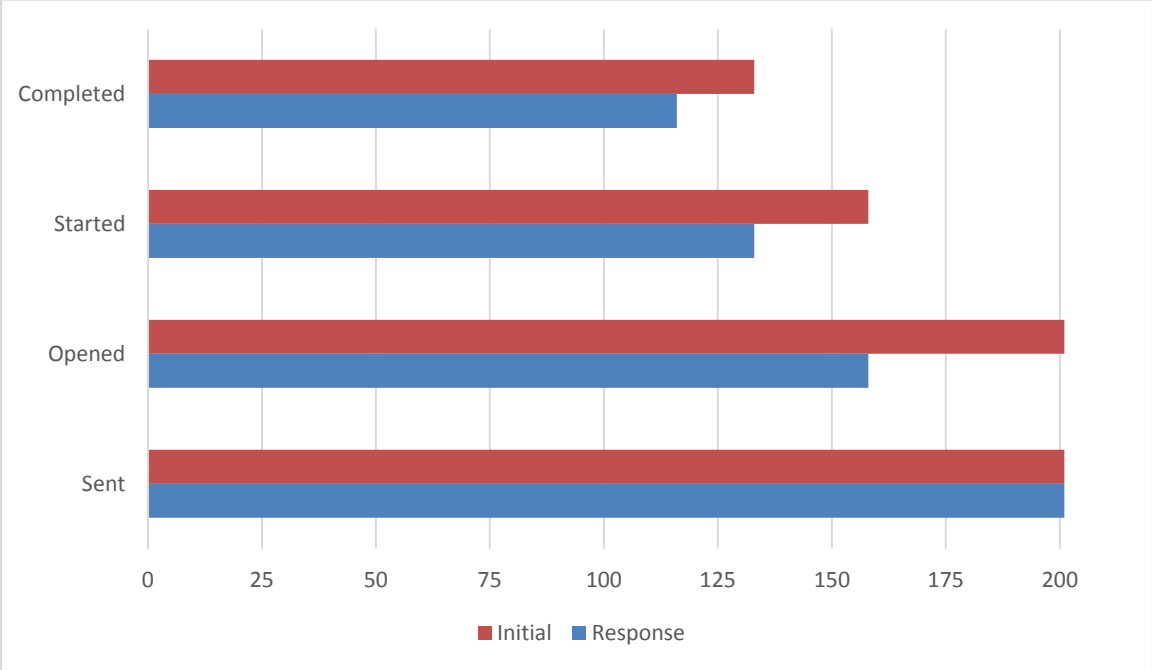
Figure 3.1 shows the survey response profile. It shows that the 201 emails of dealers were successfully sent of which 158 (78%) clicked through to the survey. In other words, none of the invitations went into respondents' junk mail box. Of the 158 that opened the survey, 133 (84%) started to complete the survey instrument. Of this number, 116 (87%) completed the survey. The effective response rate, based on the number of invitations, is estimated at 57.7%, much higher than the average online surveys which have been as low as 2% (Petchenik and Watermolen 2011).

This response profile is not atypical in most surveys. There is always some degree of attrition between the number of people receiving the survey and the number who complete the whole survey. The reasons for this may be as follows:

- The survey instrument begins with general questions and progresses into particular questions that often require specific or specialized knowledge. As respondents get to these questions, they discover they do not have the knowledge or the information to respond adequately and so they drop out.
- Respondent fatigue sets in as respondents progress through the survey, dropping out or abandoning the survey when their fatigue reaches a critical level.

- Respondents get distracted after they start the survey and do not return to it despite their good intentions to do so.

Figure 3.1: Response Profile to Survey Instrument



3.2 Analytical Methods

The principal analytical method employed in this thesis was statistical analysis using Microsoft Excel and STATA®. The statistical analysis was used in developing an overview of the survey results, providing indications of respondents by their location and their responses to the different questions. This analysis contextualized the results and provided a foundation for interpreting them to enhance the insights. For example, it allowed us to determine the effect of the location of respondents on their responses to specific questions.

STATA® was used to conduct a more in-depth assessment of the data, evaluating statistical differences between different groups in the survey. This analytical method contributed to our confidence in specifying that any observations were statistically

significant in fact. This is important when it comes to the development of corporate strategy to support these dealerships, allowing Deere and Company to segment its dealerships with in-depth information about their potential response to such support.

CHAPTER IV: RESULTS AND DISCUSSION

The following presents results of the survey and their implications. The first segment of the section provides a summary of the respondents and their dealerships. It also reports the characteristics of the respondents' dealerships. The second section presents the analysis of the dealer support systems and their relationships to dealership types. The final section presents the results of the barriers to adoption of the customer support system. We determine if there are any statistical differences among the different dealership types given their customer support systems and the barriers that confront them. This provides the foundation for framing how John Deere may structure its support for the different dealership types in their adoption and implementation efforts.

4.1 Typology of Responding Dealerships and Respondents

As noted in the literature review, dealerships may have a challenge of implementing innovative solutions to their customer support systems if they have numerous stores scattered across locations with diverse infrastructure. Figure 4.1 shows the distribution of respondents by their number of stores. The majority (23.7%) of respondents worked in dealerships that have between four and five and between six and seven stores respectively. Less than 6.0% of respondents worked in dealerships with fewer than two stores. The foregoing suggests that about 25.4% of respondents had fewer than four stores while 49.2% had fewer than six stores. However, 15.3% of respondents worked in dealerships with 10 or more stores.

Figure 4.1: Distribution of Respondents by Number of Dealership Stores

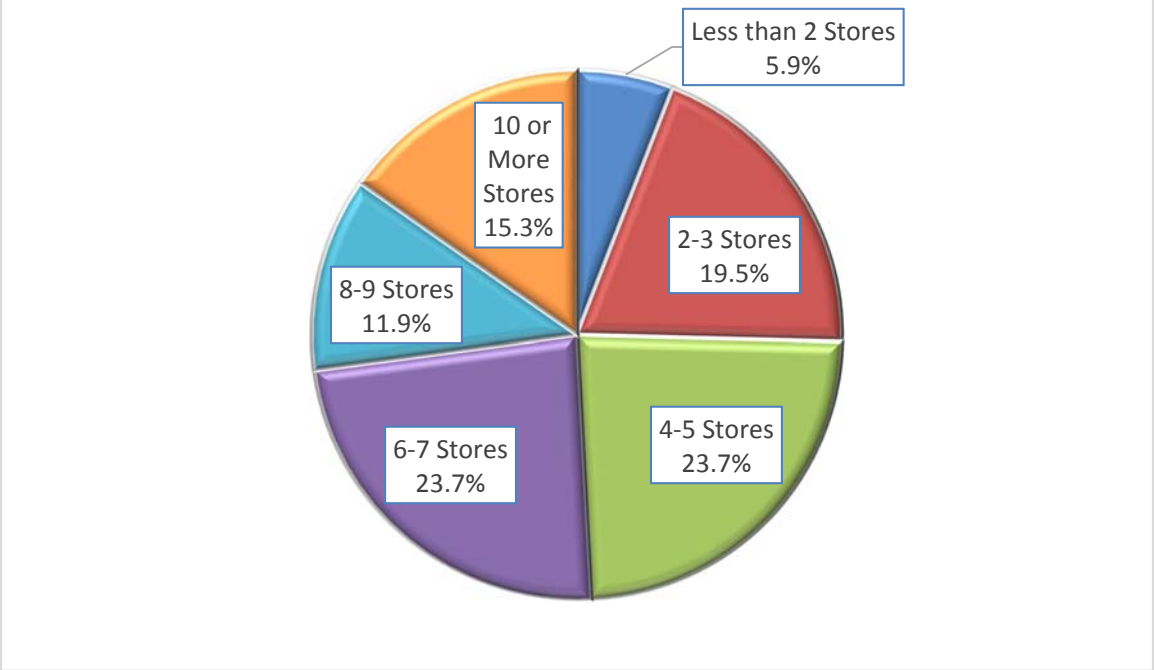
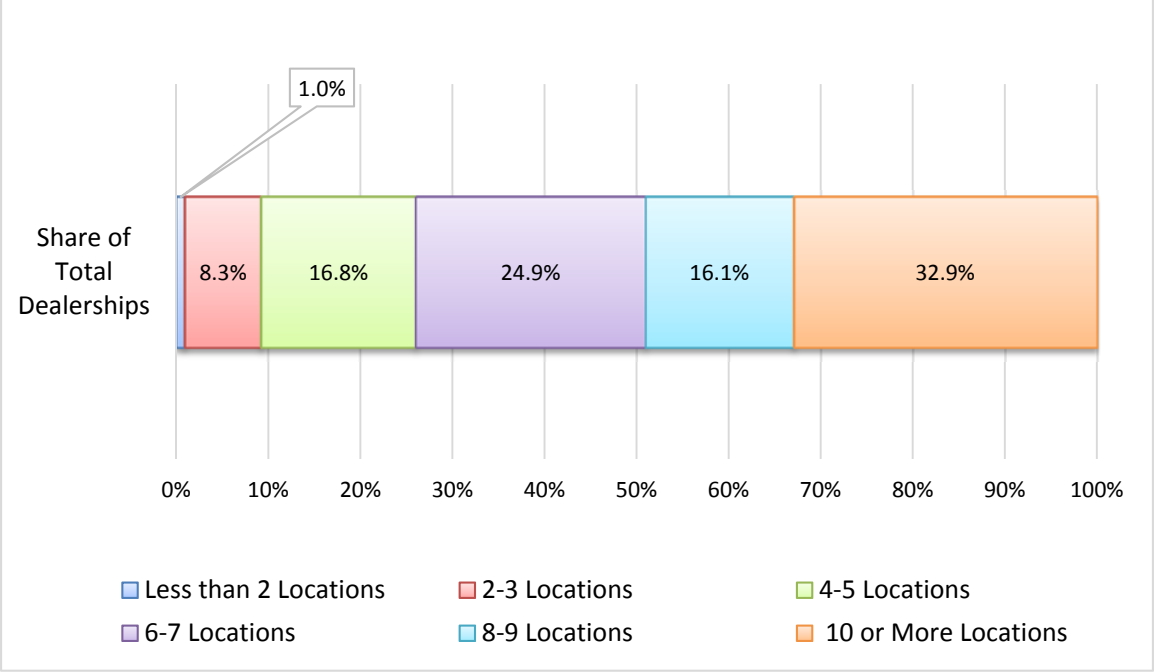


Figure 4.2 shows the distribution of the dealership groups by their share of total leadership in the survey. It shows that dealerships with 10 or more stores accounted for about 32.9% of the total number of stores compared to 1.0% for the dealerships with fewer than two stores. This suggests that just about a third of the dealership locations in the survey belong to large dealerships with 10 or more stores. About a quarter (24.9%) of total number of stores is owned by the dealerships with six or seven stores. The foregoing provides an indication of the potential for these dealerships to install the level of precision ag customer support systems that are being promoted by the company.

Figure 4.2: Distribution of Stores by Size of Dealership



Dealers are divided into sales regions. Three sales regions are represented in the respondent pool, the Eastern region, Western region and Canada. The dividing line between the Eastern and Western regions spans from Wisconsin's eastern border, Iowa's eastern border, divides Missouri and Arkansas, and traces Texas' eastern border. There were 45 respondents from the Eastern region, 61 from the Western region, and 20 respondents representing Canada.

Respondents were asked to define their position to provide a context of their responses. Upon analysis, respondents' position titles were classified into two groups: (1) those that have direct responsibility for Integrated Solutions; (2) those who are not. Those in the second group may be sales managers, training or aftermarket managers. As expected, 81.1% or 103 of the 127 respondents had direct responsibility for Integrated Solutions. This provides confidence that the positions targeted for the survey were reached.

4.2 Types of Customer Support Systems

The survey identified seven different types of customer support systems and respondents were asked to identify which of them were being used to support precision technology customers and select all that applied. A dealership's Integrated Solutions staff may be taking calls from customers on their cell phones to answer questions (Integrated Solutions Staff). Other dealership staff (other than Integrated Solutions department) may take the same types of calls to their cell phones to support customers remotely (Non-Integrated Solutions Staff). Some dealerships may have a dedicated centralized phone number (such as a 1-800 number) that customers can use to reach any number of people to help them solve problems remotely (Toll-Free Number), or an automated phone system that will route the customer to the right person based on certain parameters (Automated System Transfers). They may employ a dedicated staff that addresses customers' technology questions remotely (Dedicated Staff). Dealerships may also be supporting customers as they may have been for years by having customers call into a store location for a receptionist or other staff member to manually transfer the call to the right person (Human Call Transfers) or they may let each store location handle their own type of remote support (Independent Multi-Location Systems).

Table 4.1 provides the summary of the choices that were made by respondents among the seven customer support systems. The table shows that about 88.2% of respondents indicated using an Integrated Solutions Staff Contact system, with a standard deviation of 32.4%. This system was by far the most popular customer support system selected. Of these dealers, almost half of them represent the Western sales region. Slightly less than one third of these dealers represent the Eastern sales region with the remaining dealers representing Canada. The next most popular system was Human Call Transfers,

selected by 61.4% of respondents, with a standard deviation of 48.9%. Automated System Transfers was the least employed approach, selected by only 6.3% of respondents, with a standard deviation of 24.4%. About 21.3% of respondents indicated using a Dedicated Staff Support System while 34.6% of them indicated using Independent Multi-Location Systems.

Table 4.1: Proportion of Respondents Indicating Using Customer Support Systems (N=127)

Variable	Mean	Std. Dev.
Integrated Solutions Staff	88.19%	32.40%
Human Call Transfers	61.42%	48.87%
Non-Integrated Solutions Staff	43.31%	49.75%
Independent Multi-Site Locations	34.65%	47.77%
Toll Free Number	27.56%	44.86%
Dedicated Staff Support	21.26%	41.08%
Automated System Transfer	6.30%	24.39%

The foregoing distribution when analyzed by number of stores and compared pairwise based on the categories used in Figure 4.1. The results did not show any statistical difference in all 15 pairwise comparison of the means. This would suggest that the distribution of choices is not statistically different between the size groups to which respondents belonged. Thus, the distribution would be described as stable across dealership size (measured by number of stores).

The different dealerships have different names for their customer support systems. In order to ensure consistency across the dealerships, respondents were asked to indicate which of the customer support systems terms identified above that they used to describe their system. Of the 127 respondents, nearly 71% indicated calling their Integrated Solutions Staff contact system a Call Management system (Table 4.2).

Table 4.2: Distribution of Description for Integrated Solutions Staff Contact System by Respondents (N = 127)

Integrated Solutions Staff Contact Description	Frequency	Percent	Cumulative
Call Management	90	70.87	84.25
None	17	13.39	13.39
Customer Support Center	11	8.66	100
Contact Center	5	3.94	91.34
Call Center	4	3.15	87.4

The literature reviewed suggests that a phone system that automatically transfers calls to the right people based on parameters would be classified as a Call Management System. However, only 24% of respondents indicated that they would call this method Call Management. Over 50% of respondents did not use any of these names to describe this type of system (Table 4.3).

Table 4.3: Distribution of Description for Automated System Transfer by Respondents (N = 127)

Automated System Transfer Description	Frequency	Percent	Cumulative
None	64	50.39	50.39
Call Management	30	23.62	74.02
Call Center	17	13.39	87.4
Contact Center	11	8.66	96.06
Customer Support Center	5	3.94	100

In comparison, when asked to describe a system where a customer calls a store location and a receptionist or other staff member manually transfers the call, over 55% of respondents would describe this method as Call Management. The second most popular description of this system was Contact Center, which over 11% of the dealers used to describe this method of support. Less than 8% of respondents would use Call Center or Customer Support Center to describe this type of support (Table 4.4).

Table 4.4: Distribution of Description for Human Call Transfer by Respondents (N = 127)

Human Call Transfer Description	Frequency	Percent	Cumulative
Call Management	70	55.12	81.89
None	34	26.77	26.77
Contact Center	14	11.02	96.06
Customer Support Center	5	3.94	100
Call Center	4	3.15	85.04

Many of the survey respondents indicated that they use other methods than those listed in the survey to provide support for customers. Some of the most common methods include:

- Customer clinics
- Training
    - Internal for dealership employees to mainstream technology knowledge
    - External for customers, in a group setting or per customer
- On-farm visits to proactively teach customers and simultaneously decrease the chances that they might need help later
- Sales professional field most questions on technology and for more advanced problems
- Integrated Solutions department help with complex issues
- Service agreement for customers to provide pre-season or in-season support for a fee
- Dedicated web portal for customers to get information and contact them

4.3 Experience with Implemented Customer Support Services

Respondents were asked to indicate how long they have been implementing each of the customer support services they indicated using. The duration was grouped into six categories: (1) Less than 12 months; (2) 12 to 23 months; (3) 24 to 35 months; (4) 36 to 47 months; (5) 48-59 months; and (6) 60 or more months. Table 4.3 shows the frequency of respondents by these durations. The table shows that the Integrated Solutions (IS) Staff Contact system is the most common and the oldest system in operation across respondents' dealerships. Of the 127 respondents, 110 of them use the system and 80.0% of those using it have used it for 60 or more months. Indeed, only 1.8% or two respondents indicated having used the Integrated Solutions Staff Contact system for less than a year. The second most common method of support is the Non-Integrated Solutions Staff Contact method with 84 using this type of system and 51% of those using it have been for 60 or more months. The least popular system was the Automated System Transfer method with only 36 respondents using it. However, the survey does suggest that this method may be gaining popularity as over 66% of the 36 who are utilizing it have implemented this within the last 12 months. This is a similar scenario with the implementation of a Toll Free Number system where 31 of the 59 that have implemented this system or close to 53% have implemented a Toll-Free number within the last year. This may indicate that these two methods of support are becoming more popular as demand for support from customers continues to grow.

Table 4.5: Frequency Distribution of Respondents by Service Implementation Duration

Duration Class	IS Staff Contact	Non-IS Contact	Toll Free Number	Human Call Transfers	Automated System Transfer	Dedicated Staff Support	Independent Multi-Site Locations
Less than 12 month	2	5	**31**	6	**24**	**18**	9
12-23 months	4	12	10	5	3	12	5
24-35 months	4	6	5	5	3	6	4
36-47 months	5	5	6	6	2	5	0
48-59 months	7	5	1	3	0	1	2
60+ months	**88**	**51**	6	**65**	4	16	**40**
Total	110	84	59	90	36	58	60
Mean	5.50	4.74	2.22	5.11	1.97	3.12	4.68
Std. Deviation	1.17	1.78	1.67	1.61	1.68	2.04	2.01
CV	21.3%	37.5%	75.3%	31.5%	85.3%	65.2%	43.0%

Table 4.5 shows the average duration for each of the customer service systems identified. The average for Integrated Solutions Staff Contact system is more than five years compared to Automated System Transfer, which has less than two years' duration across the respondents. Of those respondents who have a Toll-Free Number and a Dedicated Staff for support, the average length of time they've had these systems is just over two years and just over three years, respectively. These average durations are relatively short, indicating that although Automated System Transfers, Toll-Free Numbers and Dedicated Staff Support are the least popular forms of support, they are more recent additions to a dealerships' arsenal of support.

Standard deviation measures the variation of the numbers from the mean, or how spread out the numbers are. The coefficient of variation (CV) measures the extent of

variability in relation to the mean, or the degree of variation. The methods of support with the widest variance from the mean or largest standard deviation were the Dedicated Staff Support and Independent Multi-Site Locations methods, each with a standard deviation slightly over 2. The Integrated Solutions Staff Contact method had the lowest standard deviation with 1.17. This method also had the lowest CV with 21.3% which indicates that it had the lowest relative variability of all the options. The method with the highest variance was the Automated System Transfer method with a CV of 85.3%.

How experienced are the employees at the dealerships who are working on customer support services? The mean experience of customer support services employees was determined to be about 6.42 years, with a standard deviation of 5.06 years. The median experience was 5 years while the most experienced employee has 33 years of experience. Table 4.4 shows the summary statistics of employee experience by the number of store locations. Those with 2-3 locations had the highest average level of employee experience with 7.75 years, followed closely by those with 6-7 locations that had an average experience of 7.23 years. Dealers with 4-5 locations had the lowest average experience with 4.88 years. The number of locations a dealership has did not appear to indicate the level of experience they had for those employees handling customer support. Although Table 4.4 shows differences in the experience by the number of stores, these differences were not statistically significant.

Table 4.6: Summary Statistics of Employee Experience Years by Number of Store Locations

Employee Experience Over	Mean	Std. Err.	[95% Confidence Interval]	
			Lower	Upper
1 Location	6.57	1.84	2.93	10.21
2-3 Locations	7.75	1.18	5.41	10.09
4-5 Locations	4.88	0.61	3.67	6.10
6-7 Locations	7.23	1.04	5.16	9.30
8-9 Locations	6.27	1.50	3.29	9.25
10 or More Locations	5.13	0.62	3.90	6.35
Total	6.42	0.48	5.47	7.36

4.4 Resources and Tools Used in Customer Support Services

Four tools or resources were identified as being used to support the customers operating precision technologies by respondents: (1) Case Management Tracking; (2) Customer Relationship Management Tracking; (3) Data Management Services; (4) JDLink; and (5) Other Support Systems. The Case Management tool is used to track all problems and resolutions that come into the dealership. This ensures that problems get resolved and resolutions are saved in a database that they can refer to later if a similar problem should arise. This kind of tracking is common in the call center industry. The Customer Relationship Management (CRM) system tracks each customer inquiry or problem similar to the Case Management tool, but the CRM system is tied throughout the dealership and can be viewed and shared by all departments. The sales department may use a CRM system to keep data on customers, an updated list of equipment and to track any contacts made to the customer. Data Management Services are becoming increasingly popular. This can be any service in a broad range of complexity from helping to set machines and implements properly to collect good data, facilitating the transfer of data on and off the machine, or cleaning and organizing yield data to share with a trusted agronomic advisor. Some dealers may even provide agronomic recommendations and advice. JDLink™ is John Deere's

telematics solution utilized by customers to manage their machine performance and logistics. Many dealers have offered JDLink monitoring as a service to customers who may be too busy to monitor these machines on their own. The dealer may receive alerts from the machine indicating potential problems or machine-down issues. This allows a dealer to provide proactive support before the customer even knows there is a problem.

Table 4.7 presents the summary statistics of the resources and tools used to support customers operating precision technologies across the respondents. The results show that less than 20% of respondents were utilizing a CRM system to track customer contact within the dealership. This tool also had the lowest standard deviation with a narrow distribution of responses. The most popular tool or resource listed in the survey was JDLink monitoring with over 56% of respondents offering this type of support. Data Management Services were the second most frequently used with almost 45% of respondents utilizing this to support customers. These two most prevalent tools had the highest standard deviations of over 49%.

Table 4.7: Summary Statistics of Support Resources/Tools in Use (N=127)

Variable	Mean	Std. Dev.
Other Support Systems	63.0%	48.5%
JDLink	56.7%	49.7%
Data Management Services	44.9%	49.9%
Case Management Tracking	22.8%	42.1%
Customer Relationship Management Tracking	19.7%	39.9%

The effectiveness of these tools was also explored. Table 4.6 shows the frequency table of the effectiveness scale for each of them. The results show that while nearly 47% of respondents considered the effectiveness of support center data management as very good

to excellent, only 26.9% of them considered customer relationship management tracking in the effectiveness same category. JDLink received the most responses but was ranked very good to excellent by about 38.1% of respondents while 26.2% ranked it poor to fair in its effectiveness as a customer support tracking tool/resource. This may be due to the number of customers with telematically enabled machines that they are monitoring. The more machines they have to track, the higher the likelihood of this monitoring resulting in increased machine uptime due to proactive problem resolution.

Table 4.8: Frequency Distribution of Assessment of Tool/Resource Effectiveness

Effectiveness	Poor	Fair	Good	Very Good	Excellent	Total
Case Management Tracking	9	10	19	11	6	55
Customer Relationship Management Tracking	9	10	19	11	3	52
Support Center Data Management	7	11	22	29	6	75
JDLink	2	20	30	22	10	84
Other Support Systems	4	18	29	26	13	90

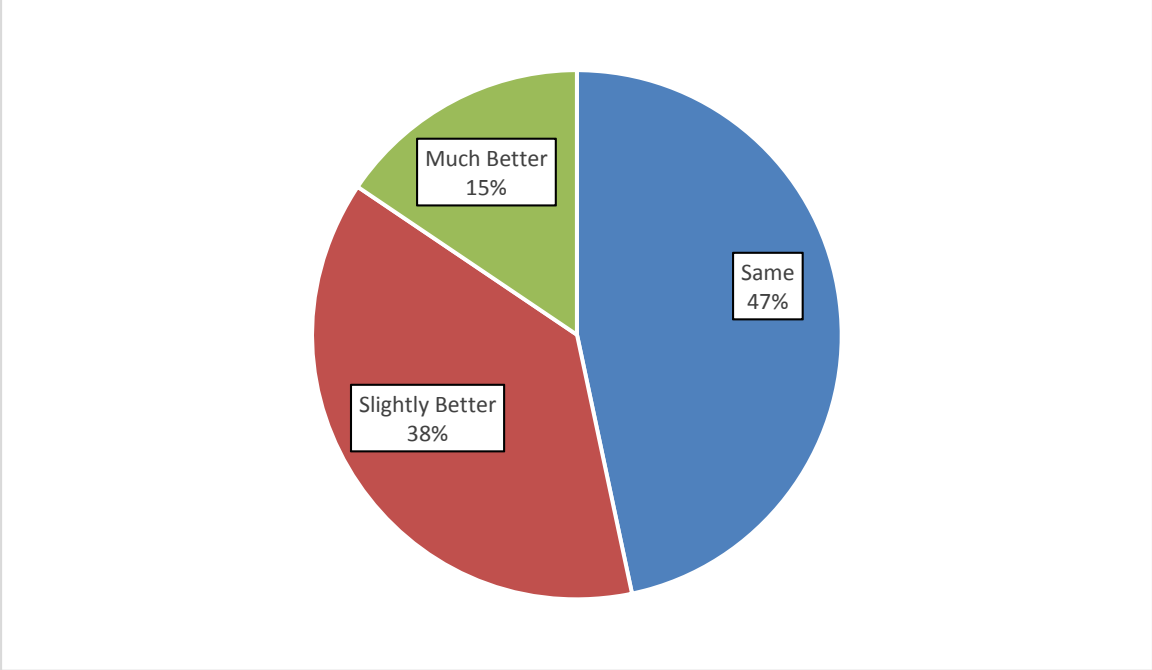
About 58.0% of 112 respondents indicated using other support tools/resources other than the ones specified above. These tools include:

- John Deere's Remote Display Access
- Training and optimization sessions
- Text messages
- Emails
- Mobile applications
- Video chat
- Videos for training
- Agronomic services
- John Deere's Dealer Technical Assistance Center
- Wireless Data Transfer
- Social Media
- Quick Reference Guides

It is expected that these alternative tools would be at least no worse than the ones that are specified if the dealerships are going to use them. Therefore, the extent to which the other system utilized by the respondent's dealership is superior is presented in Figure 4.4. Only 45 respondents provided an assessment of their alternatives against the options offered above. The figure shows that slightly less than half of those responding indicated that their alternative tools were about the same as the ones presented above while about 15% indicated that their alternatives were much better. Almost all of the 45 respondents that provided the assessment of alternatives were also utilizing at least one of the other tools from the survey. The combination of the tools listed along with the other resources they might utilize is most likely more effective than using any one method alone. For example, those that monitor JDLink for customers and also utilize text messaging capabilities can be more effective when they combine the monitoring and customer alert tools to provide support. Dealers will choose the right combination of tools and resources to be the most effective in supporting technology remotely. This may vary from market to market as customer needs differ.

Charging for support is the new direction that dealerships are moving in. This seems to be advancing because 92.2% of 115 respondents indicated that they do charge for providing customer service support. However, only 43.1% of 102 respondents indicated that they charge enough to cover the cost of providing the support services. This implies that nearly 57% of dealerships are not recovering their costs of providing these support services. There is an opportunity for dealerships to invest in strategies in their service offerings that allow them to transform this activity into a profit center.

Figure 4.3: Distribution of Effectiveness of Alternative Tools/Resources Assessment



4.5 Barriers to Adopting Innovative Customer Support Services

We noted in the introduction that certain characteristics of the dealership might prevent them from adopting some of the tools and resources to provide superior customer support services for precision technology customers. In Table 4.7, the respondents indicated if the following barriers were not a barrier, a minor barrier or a major barrier. These barriers listed in the survey included the cost being too high or having a lack of resources to implement, a lack of knowledge, not seeing the value, customers not demanding the next level of support, and not feasible at their current scale. The most frequently indicated as a major barrier was the cost or lack of resources to implement more with almost 32% of the respondents choosing this level as opposed to almost 50% of respondents indicating that this as a minor barrier. The lack of knowledge or customers not seeing value were the least frequent major barriers with only 14% of the respondents listing

either of these two barriers as major. When asked about the feasibility at their current scale, over 49% indicated that this was not a barrier.

Table 4.9: Extent to Which Barriers Impede Implementation of Support

Barriers	Cost of Implementation	Lack of Knowledge	Customers Are Not Demanding	Don't See Value	Not Feasible for Scale
None	21	35	44	47	56
Minor	56	63	41	51	34
Major	36	16	27	16	24
Minor + Major	**92**	**79**	**68**	**67**	**58**
Total	113	114	112	114	114

When comparing the responses based on the number of dealer locations, there was not a statistically significant difference between those with 10 or more stores and those with fewer than 10 stores. There was, however, a difference in responses from those who were serving the dealership in an Integrated Solutions Manager (ISM) capacity and those that were not. Table 4.9 shows the distribution of responses for each barrier for the ISM group and the Non-ISM group. There were 92-94 responses from the ISM group and 20 responses from the Non-ISM group to each barrier question. Of 93 that responded, 82.8% of the ISM's indicated that cost or lack of resources is a minor or major barrier. Only 75% of Non-ISM's listed this as a minor or major barrier. None of the Non-ISM's responded that not seeing the value was a major barrier. Over 17% of ISM's indicated this was a major barrier and less than 40% said it was not a barrier at all, as opposed to 50% of the Non-ISM's indicating that this was not a barrier. If only ISM's are viewing this as a major barrier and 50% of the Non-ISM's listed this as a minor or no barrier, the Non-ISM group must see value in implementing additional methods of customer support. There were significant differences in responses between the groups when asked about the barrier of

customers not demanding additional support. Less than 29% of ISM's listed this as a major barrier as opposed to 5% of Non-ISM's. In contrast, 55% of Non-ISM's indicated this was not a barrier whereas almost 36% of ISM's said this was not a barrier. This discrepancy between the groups could be due to the fact that those who are not the Integrated Solutions Managers may not be as closely tied to the pulse of customer demands for technology support.

Table 4.10: Responses to Barriers from ISM and Non-ISM Groups

Barriers	Cost		Knowledge		No Value		No Demand		Not Feasible	
	Non-ISM	ISM	Non-ISM	ISM	Non-ISM	ISM	Non-ISM	ISM	Non-ISM	ISM
None	5	16	3	32	10	37	11	33	11	45
Minor	11	45	13	50	10	41	8	33	6	28
Major	4	32	4	12	0	16	1	26	3	21
Total	20	93	20	94	20	94	20	92	20	94

CHAPTER V: SUMMARY AND CONCLUSION

Due to the advancement of technology, commoditization of equipment and customer demands, dealers must provide more a higher level of support than they have in the past. Going forward, it is imperative that John Deere provide the necessary knowledge, tools, and support to dealerships to increase their effectiveness and capacity to provide more advanced customer support. This will enable John Deere's dealer network to continue to be a competitive differentiator in the ag equipment industry.

The objective of this thesis was to gather preliminary data and information on what John Deere dealers in North America are currently doing to support their customers with precision ag technology. A survey was sent to all dealers in North America. The respondents answered questions on the approaches to customer support their dealership takes, the resources they use to support customers as well as barriers that they face in implementing more complex forms of customer support. With a response rate of 57.7% it is a good indicator of what the majority of dealers are doing.

5.1 Summary

From the literature reviewed, it is clear that there are many different types of customer support centers and ways to manage customer's calls. The importance of supporting customers is rising in service industries. Remote support has a big impact on customer satisfaction.

It was found that very few dealers are using methods characteristic of a true call center, although many may label these other methods as such. To determine exactly how many dealers are implementing a true call center, further investigation by the field team would be necessary.

Dealers employ many types of resources to aid them in supporting customers. The effectiveness of these resources varies greatly from dealer to dealer as many of their customers and markets are different. For those who have methods characteristic of a call center, these dealers appear to be providing more than just phone support, extending into machine telematics monitoring and data management services. Further studies would need to be done to determine to what extent customer segments have an impact on the resources dealers use.

5.2 Conclusions

Survey results indicated that the most popular method of customer support was the Integrated Solutions Staff taking calls from customers on their cell phones. The least popular method was the Automated System Transfer where a customer gets automatically routed to the right person based on parameters. The duration of this type of support did show that of those who use this method, it was recently implemented and may have the potential to grow as a method of support for more dealers in the future. The same observation is true for the Toll-Free Number as many of the respondents who had that type of support have recently implemented it. There were very inconsistent results as to what terms they used to describe each type of customer support and they were not equivalent with the definitions found in the research. Of the 106 responding dealers that are charging customers for support, only 41.5% of those are charging enough to cover the costs of providing support.

JDLink monitoring and Data Management services were the most popular tools and resources used by the respondents with over 56% and almost 45%, using these, respectively. The least utilized tool is the CRM tool with less than 20% of dealers utilizing this to track customer contacts. Dealers are getting more creative with the resources they

use to support customers. Over 63% of dealers indicated they were utilizing other support tools and gave examples such as Remote Display Access, video chat, text messaging, web portals and apps.

Barriers dealers face are large in number and relatively consistent across both regions of the US and Canada. Two of the biggest barriers are that it is costly in terms of money and resources and that their customers aren't demanding that next level of support. Not seeing value in providing more support was one of the lowest barriers with almost 86% of dealers rating this as a minor or no barrier.

The data collected will serve as a great insight to help develop tools and resources to support John Deere's dealer channel. From this information, help can be provided to mitigate some of the barriers to implementation, as well as support utilization of the most popular resources that dealers employ to support customers.

5.3 Further Research and Next Steps

There is an opportunity to gain a better understanding of how dealers are supporting customers with technology. One-on-one discussions to learn more about their unique method of support would provide additional data on what tools and resources they use as well as what is working and what they have tried that did not work. Additional pulse surveys may capture changes that are happening in this rapidly-evolving space at dealerships. The discussion and curiosity around dealer customer support centers has increased over the past year and will continue to challenge dealers to implement more sophisticated forms of customer support for their customers with precision technology.

Using the information from the survey and data available to John Deere about specific dealer's profitability, sales volumes and customer types, there is an opportunity to drill down to specific identifying information on each respondent and their survey

indications. This will provide a better picture of what types of customer support systems, tools, and resources are working for particular types of dealers.

Work being done by John Deere around customer segmentation may be utilized in the future when the ability to identify the types of customers in a dealer's market is available. This customer information can drive the type of recommended support that a dealership may need to implement based on the demands of those segments in which they serve. Different types of customers may demand very different types and levels of support and service from their dealership.

The further research using dealership information and metrics will provide a framework in which to develop a Dealer Reference Guide (DRG). A DRG around Developing Strategies for Customer Support Center Implementation will allow a dealer to input characteristic information and will provide a recommended approach, tools and resources specific to their market and needs to help them implement a more advanced customer support system.

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APPENDIX I: SURVEY INSTRUMENT

Q1 Name

Q2 Dealership

Q3 Position at Dealership

Q4 Which of the following approaches do you currently use in supporting your customers who are operating precision technologies? (Select all that apply).

- ❑ AMS or Integrated Solutions staff take calls made directly to their cell phones from customers
- ❑ Other dealership (non AMS or Integrated Solution) staff take calls made directly to their cell phones from customers
- ❑ Dealership has a dedicated centralized phone number for customer support (1-800-#)
- ❑ Customers call a store location, a receptionist or staff member answers and the call gets transferred to the right person for support
- ❑ Our automated system routes customer calls to the right person to provide the necessary support.
- ❑ We have a dedicated staff that addresses customers' technology questions remotely
- ❑ We have multiple store locations and each of them handles its own customer support

Q5 In what other ways do you provide support to your customers operating precision technologies?

Q6 Which of the following terms do you use to describe the customer service approaches you selected above?

	Call Management (1)	Call Center (2)	Contact Center (3)	Customer Support Center (4)
AMS or Integrated Solutions staff take calls made directly to their cell phones from customers (x1)	❍	❍	❍	❍
Other dealership (non AMS or Integrated Solution) staff take calls made directly to their cell phones from customers (x2)	❍	❍	❍	❍
Dealership has a dedicated centralized phone number for customer support (1-800-#) (x3)	❍	❍	❍	❍
Customers call a store location, a receptionist or staff member answers and the call gets transferred to the right person for support (x4)	❍	❍	❍	❍
Our automated system routes customer calls to the right person to provide the necessary support. (x5)	❍	❍	❍	❍

We have a dedicated staff that addresses customers' technology questions remotely (x6)	❍	❍	❍	❍
We have multiple store locations and each of them handles its own customer support (x7)	❍	❍	❍	❍

Q7. Why did you implement your chosen customer service support approaches?

Q8 How long have you been providing each type of customer support service you selected?

	Less than 12 months (1)	12-23 months (2)	24-35 months (3)	36-47 months (4)	48-59 months (5)	60+ months (6)
AMS or Integrated Solutions staff take calls made directly to their cell phones from customers (x1)	❍	❍	❍	❍	❍	❍
Other dealership (non AMS or Integrated Solution) staff take calls made directly to their cell phones from customers (x2)	❍	❍	❍	❍	❍	❍
Dealership has a dedicated centralized phone number for customer support (1-800-#) (x3)	❍	❍	❍	❍	❍	❍

Customers call a store location, a receptionist or staff member answers and the call gets transferred to the right person for support (x4)	❍	❍	❍	❍	❍	❍
Our automated system routes customer calls to the right person to provide the necessary support. (x5)	❍	❍	❍	❍	❍	❍
We have a dedicated staff that addresses customers' technology questions remotely (x6)	❍	❍	❍	❍	❍	❍

We have multiple store locations and each of them handles its own customer support (x7)	❍	❍	❍	❍	❍	❍

Q9 Which of the following tools/resources do you currently use in supporting your customers who are operating precision technologies? (Select all that apply).

- ❑ We utilize a case management tool to keep track of all problems and solutions
- ❑ We tie each case to our customer relationship management system to track each customer's inquiries, sharing these with their sales professional, etc
- ❑ We provide data management services within this support center
- ❑ We provide JDLink monitoring within this support center
- ❑ We provide other forms of support other than over the phone. (Text messaging, video conferencing, etc.)

Q10 Please rank the effectiveness of the different customer support solutions you indicated using?

	Poor (9)	Fair (10)	Good (11)	Very Good (12)	Excellent (13)
We utilize a case management tool to keep track of all problems and solutions (x1)	❍	❍	❍	❍	❍
We tie each case to our customer relationship management system to track each customer's inquiries, sharing these with their sales professional, etc. (x2)	❍	❍	❍	❍	❍
We provide data management services within this support center. (x4)	❍	❍	❍	❍	❍
We provide JDLink monitoring within this support center. (x5)	❍	❍	❍	❍	❍
We provide other forms of support other than over the phone. (Text messaging, video conferencing, etc.) (x6)	❍	❍	❍	❍	❍

Q11 In addition to the above, do you use any other tools to support your precision technology customers?

- ❍ Yes
- ❍ No

If No Is Selected, Then Skip to Q14

Answer If In addition to the above, do you use any other tools to support your precision technology customers?; Yes Is Selected

Q12 Could you please describe any other tools or resources you use to support customers operating precision technologies in the space below?

Q13 Overall, to what extent are the other tools and resources you identified more effective in providing the support your customers who are operating precision technologies need than the ones presented in the list prior?

- ❍ Same
- ❍ Slightly better
- ❍ Much Better

Q14 Do you charge customers for support services?

- ❍ Yes
- ❍ No

If No Is Selected, Then Skip to Q16

Q15 Are you charging enough to cover the cost of providing the support services?

- ❍ Yes
- ❍ No

Q16 What is the average experience level of the employees staffing your precision technology customer support services? [Drag the slider to the appropriate number of years of experience.]

_____ Average Years of Experience of Support Service Staff

Q17 Please indicate the extent to which the following factors act as barriers to your adoption of more advanced customer support approaches for your precision technology customers.

	Not a barrier (1)	Minor barrier (2)	Major barrier (3)
Cost is too high/lack of resources to implement (1)	❍	❍	❍
Lack of knowledge (2)	❍	❍	❍
Don't see the value (3)	❍	❍	❍
Customers aren't demanding the next level of support (4)	❍	❍	❍
Not feasible at my current scale (5)	❍	❍	❍

Q18 Please list any other major barriers that were not included in the previous question.