Enabling the Dealer Network to Deliver Smart Services

Giulio Tosato

1 Company Introduction

John Deere was founded in 1837 and has grown into one of the world's leading equipment manufacturing companies. With more than 73,000 employees working in 125 facilities around the world, the company made a revenue of 39.26 billion dollars and a net income of 3.25 billion dollars in 2019, the second highest in the company's history. The company's financial performance allowed it to make further investments in advanced products, technologies, services, and other growth-oriented projects. For year 2019, John Deere devoted 2.9 billion dollars to research and development and capital expenditures.

John Deere is the world's leading producer of agricultural equipment, offering full lines of tractors; combine, cotton, and sugarcane harvesters; tillage, seeding, nutrient management, and soil preparation machinery; sprayers; hay and forage equipment; and integrated agricultural management solutions. The primary geographical markets for John Deere are the United States and Canada, Europe, Brazil, Russia, India, and China. The global business operations include not only agricultural products but also construction and forestry equipment, lawn and garden, as well as additional supporting businesses such as Intelligent Solutions Group, Financial Services, Power Systems, Parts Services, and Electronic Solutions. John Deere is operating in four geographic regions that were defined by the company based on customer needs and market similarities.

John Deere dealers are fundamental to serve customers globally. They build relationships, sell products, and keep customers up and running by providing parts, service, and advice. Dealers represent the most significant and enduring way to differentiate John Deere in the market. Thus, it is of strategic importance to develop a distribution system that enables John Deere to gain and maintain

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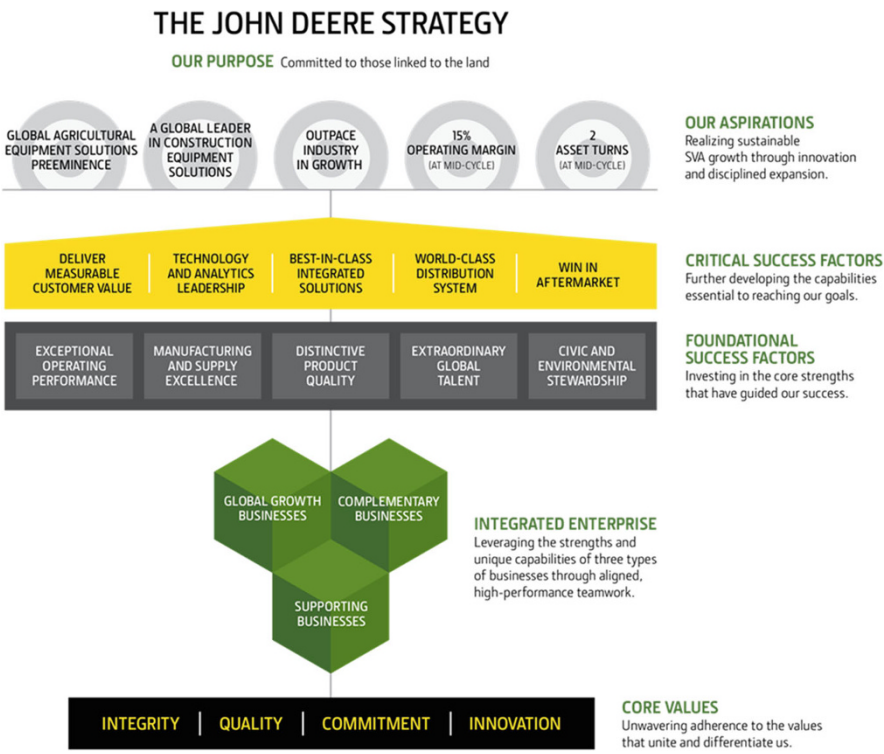

Fig. 1 The John Deere Strategy. Own illustration

preeminence in all markets in which John Deere competes around the world. In agriculture, some dealers will have to serve large, technologically sophisticated customers with tens of thousands of hectares and acres of land under cultivation, as in Brazil and, increasingly, Russia. Other dealers will have to serve many small-hold farmers, each with a few hectares of land and little access to mechanical or biological technology, as in China, India, and sub-Saharan Africa. Similarly, construction equipment dealers will work with customers ranging from large contractors to smaller owner-operators.

The John Deere Strategy grounds on four core values: integrity, quality, commitment, and innovation (cf. Fig. 1). Throughout the company's history, these values have proved crucial to expanding its global presence and providing customers with exceptional productivity and reliable performance for equipment and services.

In support of the strategic plan (cf. Fig. 1), John Deere is placing a particular emphasis on five critical success factors:

- *Deliver measurable customer value:* Customers' demands continue to evolve, and they are relying on advanced technology to run complex operations. John

Deere is in an ideal position to help customers solve problems and add value to their operations.

- *Technology and analytics leadership:* Rapid advances in IoT and analytics are reshaping the equipment industries and requiring John Deere to systematically build new business capabilities to create industry-leading innovation enabled by technology leadership and data analytics.
- *Best-in-class integrated solutions:* While product leadership is critical to the success of an integrated solution, customers will increasingly choose the equipment provided by a company that can deliver the best overall solution by seamlessly connecting machines, people, technology, and insights.
- *World-class distribution system:* The John Deere dealer network must continue to evolve to serve the rising expectations of a diverse customer base by delivering solutions, precision technology, and distinctive support.
- *Win in the aftermarket:* The aftermarket is a critical part of the business both for John Deere and the dealer network in terms of delivering a distinctive customer experience throughout the product lifecycle.

2 After-Sales Service Innovation

Innovation in the after-sales service is recognized by John Deere as a strategic area linked to all five critical success factors previously described. Thanks to service innovation, it is possible to define technological aftermarket solutions that are delivered by a progressive dealer network to satisfy customer needs. Concerning machine field operations, customers want equipment that does the job when it needs to be done, relying on a high level of machine uptime. However, in the field, the unexpected can happen, and when it does, customers need dealer support for quick problem-solving. John Deere Connected Support™ is a customer-focused enterprise initiative that allows John Deere customers to experience new levels of machine uptime and reduced operative cost through the combination of a smart connected product, remote service tools, and proactive dealer support (see Fig. 2). John Deere Connected Support™ enables the dealer network to deliver a new type of smart service—so-called remote machine monitoring—in terms of being able, with customers' consent, to remotely monitor machine condition and preemptively advise the customer on maintenance and repair needs, minimizing field operations disruptions, and also avoiding serious repair costs.

Fig. 2 Elements constituting John Deere Connected Support™. Own illustration

In the context of John Deere Connected Support™, the role of the dealer network is fundamental as a provider of the smart service, ensuring its value to the customer. This is only successful when the necessary organizational capabilities are available at the dealership, which is a precondition that directly impacts the after-sales service organization of the dealers. On the one hand, John Deere Connected Support™ is considered by John Deere as a trigger for organizational innovation and as a source of service differentiation. On the other hand, its implementation requires certain development activities for the dealer service organization in charge and even can challenge some established practices.

3 Dealer Implementation of John Deere Connected Support™

The implementation of John Deere Connected Support™ across John Deere dealers is directly linked to developing the necessary organizational capabilities. The dealer's after-sales service organization needs to ensure dedicated functions and activities for the successful delivery of the remote machine monitoring smart service. Recognizing the importance of developing the necessary dealership capabilities, an exploratory approach was chosen by the customer and product support team of John Deere to identify what factors influence the implementation of John Deere Connected Support™ in the dealer's after-sales service organization for the successful delivery of the smart service.

The exploratory approach was based on a pilot program defined by the collaboration with selected European John Deere dealers among representative markets. For each pilot dealer, the required remote service tools (Fig. 2) were enabled, including dedicated training and support. This allowed the pilot dealers to work with the remote service tools and deliver the remote machine monitoring smart service. The exploratory approach was conducted using a two-step approach. First, an evaluation framework was defined internally by identifying and categorizing the factors that are typically considered for dealer development activities executed by John Deere in the after-sales service. Second, a workshop with the pilot dealers was organized to further analyze and consolidate the factors identified in the first step and to relate them to the practical context of the dealer's after-sales service organization.

Based on the evaluation framework analysis and the workshop, we identified six success factors relevant to the implementation of John Deere Connected Support™ in the dealer's after-sales service organization. Each success factor is presented in the following six subchapters.

3.1 Management Commitment

The evaluation framework of John Deere presumes a visible commitment from dealership managers and company owners to trigger innovation in the service organization. It also requires an entrepreneurial spirit when it comes to capturing

new aftermarket opportunities. Furthermore, managers should not only act as a reference for the John Deere Connected Support™ initiative but also personally involve themselves in the implementation process to take care of possible challenges and to foster a proactive service mindset within the organization. This can be accomplished through a participative approach involving the dealership employees in the definition of the implementation at its early stages.

In the workshop, we identified three main attributes for management commitment: strategic, customer, and organizational. Regarding the strategic attribute, the pilot dealers highlighted the importance of the management being able to define an execution plan with clear targets in the short and long term. In particular, financial support for the implementation activities may be required. Concerning the customer attribute, dealer management has to be committed to understand and embrace the value of John Deere Connected Support™. In this way, it is possible to convey the customer value proposition of the smart service to support machine field operations, especially with key customers. The last attribute (i.e., the management commitment in relation to the organization) explains that managers and company owners shall be capable of clarifying the benefits for the dealership of implementing John Deere Connected Support™, ensure clear communication about the implementation approach, allow the creation of a dedicated team, and promote a stronger collaboration across all dealership departments. In this regard, a clear need has emerged for the dealer management in coping with the necessary organizational changes in the service team to ensure its engagement. It can be demanding to fully involve the service personnel in the early stages because their focus is on the execution of daily service activities (e.g., equipment repair and maintenance), instead of implementing an innovative service approach. This situation can be less impactful for dealerships that are in the process of setting up a new business strategy anyway as this may represent the ideal occasion for the management of all departments (service, sales, and spare parts) to review their operations and become committed to implementing John Deere Connected Support™.

3.2 Organizational Structure

John Deere recognizes the implementation of John Deere Connected Support™ as a trigger for dealers to further develop their organizational structure, meaning the way by which the service delivery activities (service jobs and people actions) are divided, executed, and coordinated. Pilot dealers identified the importance of coordinating the workforce involved in the provision of the remote machine monitoring smart service. One approach proposed by John Deere is the creation of a centralized machine monitoring center at the dealership with the following tasks:

- Monitor the machine condition remotely and in real time.
- Inform the customer in case of any identified technical issue.
- Organize the necessary resources and materials to execute repair activities.

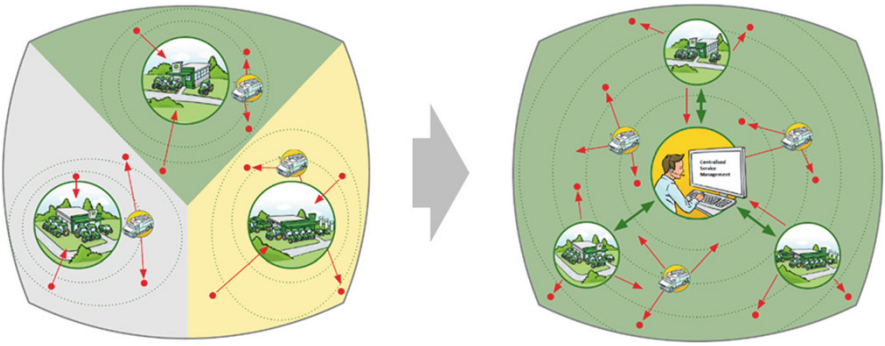

Fig. 3 John Deere Integrated Customer Support Network. Own illustration

- Evaluate other support activities to minimize the impact on customer's operations.

This approach aligns with the dealer organization guideline "Integrated Customer Support Network," provided by John Deere (see Fig. 3 below). It describes the idea of moving from dealer service locations working independently to a coordinated and integrated dealer service network. The decision on the organizational structure—either centralized or decentralized—can depend on the dealership configuration, which relates to the size and existing settings. Large organizations may already have the capabilities to identify and deploy a centralized organizational structure. This entails an integrative approach to ensure co-existence with present organizational practices. Overall, a gradual transition to the new organizational structure was recommended by the pilot dealers, ensuring close collaboration with the concerned teams.

3.3 Operational Structure

The key condition identified both in the evaluation framework and in the workshop relates to the definition of an operating process. Today, the traditional after-sales service is already process-based, and technology-based services like smart services can lead to superior value creation only when the operating processes are designed accordingly. Based on the evaluation framework findings, the characteristics of the dealer process for smart services are:

- Aimed at fulfilling customers' service expectations
- Owned and coordinated from a centralized service team
- Supported by a tight collaboration among dealership departments
- Enabled by a proactive service approach to provide a rapid and effective response
- Characterized by a new level of interactions with the customer

The last two characteristics—proactive service approach and new customer interactions—represent the innovative core elements of the operating process for John Deere Connected Support™. Essentially, by leveraging the remote service tools for machine condition monitoring, the dealer is informed when a machine is facing a technical issue, and he can proactively inform the customer about the necessary service activities to keep the machine operational. In a traditional after-sales service, the customer informs the dealer about a machine problem, who then organizes the required actions following a reactive approach.

According to the pilot dealers' feedback, the definition of a specific operating process is positively impacting the working efficiency of the service organization. Improvements are especially seen in organizing the assistance of customers' machines. The delivery of remote machine monitoring smart service allows the dealer to have detailed information about the machines' technical issues, including the most appropriate resolution, and to schedule the service job for service technicians accordingly. This results in improved working conditions for service technicians, as well as increased labor productivity enabling the dealer to satisfy customer service needs, especially during high-demand periods like the harvesting season.

The workshop discussions identified the importance of ensuring clear communication not only with the workforce involved but also with the customer while executing the operating process. The type of information ranges from the description of the operating process to a tracking system for the service execution. The latter helps keep customers informed on the smart service delivery status, a condition that is especially important for the first delivery experience.

3.4 People

Pilot dealers recognized people as the most relevant factor, delineating its importance for the dealer implementation of John Deere Connected Support™. Both the evaluation framework and the workshop discussions identified three attributes: required skill set, recruitment of desired personnel, and provision of training.

Regarding the required skill set of the workforce involved in the smart service delivery, all pilot dealers envisaged the need for new talents, but did not specify the type of skills and especially the desired behavior supported by every skill, mainly due to the innovative character of John Deere Connected Support™. The evaluation framework, hence, provides more precise indications of the desired professional behavior. It is an open attitude of the employees to adapt to a different job environment characterized by new technologies and work situations that can change quickly. Going beyond technical skills and working conditions, a key competency is the ability to understand the customer's entire business operations to identify service needs and fulfill them proactively and successfully with a dedicated solution. This results in the ability to strengthen the customer relationship.

The innovation brought by John Deere Connected Support™ in evolving the service people skill set is reflected by recruiting the necessary workforce. The

workshop discussions highlighted the potential need for new resources, and pilot dealers mentioned that a manager and a specialist for John Deere Connected Support™ are the required people. In some scenarios, specialized personnel may represent higher salary costs compared to the traditional service technicians, and in other situations, there is no immediate need to recruit new employees as a large team is already employed in the dealer service department, and resources can be reallocated. It might also be difficult to find qualified personnel in the short term, highlighting the importance of defining a new job description for the required staff. John Deere indicates that a machine condition monitoring specialist is a new important role in the service team. This member will typically be located at the main dealership location where, based on the customer's consent, the condition and performance of the machines are remotely monitored. When technical anomalies are identified, the specialist will proactively address them in collaboration with the responsible outlet service manager.

Concerning the third attribute—provision of training—the focus group discussions identified the need for training mainly in three areas. The first one is about technical training, which is delivered to the service team to develop the capabilities to use the remote service tools in different working scenarios. This helps ensure that the service staff can explain to customers the importance of John Deere Connected Support™ and its benefits for their machine field operations. The second area addresses people-oriented training to develop the skills according to the job position and level of responsibility. The last category relates to the organizational training mainly targeted at the dealer management as it is responsible for developing the required dealership capabilities for John Deere Connected Support™.

3.5 Service Culture

The innovative character of John Deere Connected Support™ drives the development of a strong service-oriented and customer-focused environment. These are two relevant attributes of a service culture, identified as one of the six implementation factors. Both attributes are reflected by the findings of the evaluation framework and the pilot dealers' workshops.

John Deere relates the service orientation to the cultural transition from a product to solution-oriented thinking, where the people's attitude is developed accordingly. To achieve this, it is important to adapt the dealership values and mission, as well as to further develop the existing service culture through supportive managerial behavior and internal marketing to promote a clear understanding of the smart service derived from John Deere Connected Support™. It is important to communicate and inform employees about the cultural transition. This can be accomplished through team events, field demonstrations, and a revision of the dealership's operating policies. All three ways represent a tangible approach to share the values of an innovative service culture in the practical context of John Deere dealers. Team events and field demonstrations offer employees the possibility to share their

feedback and to build a common understanding of John Deere Connected Support™.

The other attribute of service culture development is customer focus. Findings from both sources of information show that the delivery of a remote machine monitoring smart service can influence the customer's perception of the machine service received. The traditional service approach expects the customer to request a service like machine maintenance or repair. Through this smart service, a new level of customer experience is achieved since the John Deere dealer becomes more embedded in the customer's field operations, moving from a transactional basis where machine service activities are executed as single events to a relationship basis where proactive customer service is delivered throughout the product lifecycle. The pilot dealers raised the importance to first demonstrate to customers the advantages of a proactive service approach enabled by John Deere Connected Support™. This facilitates a new mindset among customers, which is something that needs to evolve gradually, regardless of the type and size of the customer. A vital aspect is to ensure a solid collaboration between the customer and the dealer in realizing the value of John Deere Connected Support™. It can be initiated when the customer provides his consent for the machine data processing, required for remote machine monitoring. On this occasion, the dealer can explain how this smart service works, illustrating its values for customer field operations.

3.6 Service Quality

The remote machine monitoring smart services, as well as traditional services, are equally influenced by different dimensions of service quality, which need to be considered to ensure successful and sustainable service delivery. High service quality is critical for promoting a proactive service approach and meeting customer expectations. We identified two attributes in this regard: performance measurements and delivery competencies.

The pilot dealers highlighted two practical aspects concerning performance measurement. First, customer satisfaction is considered as a key metric that can be measured by comparing the satisfaction of customers who are benefitting from a proactive service approach versus those customers who have not yet experienced the value of John Deere Connected Support™. Second is the definition of a metric to quantify the service delivery rate. Specifically, it is necessary to assess the validity of the smart service delivered to the customer by monitoring the efficiency of the operating process and its consistency. This metric relates to the second attribute of service quality.

The delivery competencies were considered during workshop discussions as playing an important role in ensuring the desired service quality. The typical service delivery is characterized by a face-to-face approach, ensuring the physical appearance of the service received and, thus, the customer's quality perception. The provision of a remote machine monitoring smart service includes the use of technologies implying a remote servicing setting with a decrease in human contact,

especially in the initial stages. In this scenario, it is even more important to ensure customers get the expected perceived quality, avoiding that a misleading interpretation of the service setting may cause a customer's hesitance. To ensure a high level of service quality, even in a remote service scenario, specific delivery competencies are developed by the pilot dealers. In this regard, three main areas are identified: first, ensure a solid knowledge level and background within the service workforce through dedicated training; second, establish a checklist to ensure consistency in the smart service delivery; and last, leverage service administration applications to manage the entire service delivery process.

3.7 Summary

The results of the evaluation framework and workshop discussions were presented and discussed in the previous chapters according to the six success factors identified for the dealer implementation of John Deere Connected Support™. To provide a comprehensive overview, all resulting factors and attributes are reported in Table 1.

Table 1 Factors and attributes for John Deere Connected Support™ implementation

Factors	Attributes
Management commitment	• The personal involvement of managers in the implementation • Execution plan definition • Customer value proposition • Support the necessary organizational changes
Organizational structure	• Coordination of the service workforce • Creation of a centralized service team • Integration with the existing service practices
Operational structure	• Definition of a specific operating process • Cooperation among all dealer's departments • Gains in working efficiency • Information-sharing on service activities executed
People	• Innovation in the required skill set • Recruitment of dedicated service personnel • Provision of technical and non-technical training
Service culture	• Service orientation as a solution provider • Information about the cultural evolution • The customer experience of smart service received
Service quality	• Performance measurements for customer satisfaction and operating process efficiency • Service delivery competencies

Source: Own research

4 Conclusion

The exploratory approach defined and conducted by John Deere has been instrumental for the successful implementation of John Deere Connected Support™ across the John Deere dealer network. Specifically, the evaluation framework created by John Deere ensured an initial exemplification of the implementation factors, providing robust guidance to start exploring this new space. During the workshop discussions, the pilot dealers consolidated the success factors by identifying attributes that are relevant to relate the success factors to the service setting and the practical context of the dealer's after-sales service organization. Indeed, the driving considerations for the actual implementation of John Deere Connected Support™ at the dealer level emerged mainly from the workshop discussions. Three key considerations are, therefore, derived.

First, even though the agricultural equipment industry is still approaching the actual provision of smart services to the end-customers, John Deere dealers already have the necessary business confidence and capabilities to continue their implementation.

Second, exploring the implementation of smart services should go beyond the equipment manufacturer's service organization and focus on all actors involved in the service network, like John Deere dealers. This should be done to foster a collaborative approach and support activities with the ultimate goal of delivering value to the end-customers.

Third, the identified success factors delineate more organizational aspects and less technical or technological aspects. Thus, the dealer implementation of John Deere Connected Support™ relates primarily to developing the necessary organizational competencies. This setting represents an opportunity for John Deere dealers to further leverage their capabilities, pioneering into the mentioned space.

As John Deere is transforming from a machinery company to a smart technology company, it is fundamental to continue the after-sales service innovation, which has been triggered by the John Deere Connected Support™ initiative. It includes the sales force engagement, and further integration of customer needs as smart services represent a new level of service experience for John Deere customers.