Tractor Wars: Plowing through Adversity

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Since the mid-1800s, companies have been developing and manufacturing farm machinery to make life easier and more efficient for the world's farmers. One of the greatest innovations has been the development of the tractor. Since its introduction, many advancements have been made by companies striving to become the market leader.

J. I. CASE AND COMPANY
In 1863, Jerome I. Case started J. I. Case and Company with three young executives. Case wanted to be a pioneer in a new country—the wheat country. This motive led him to manufacture threshing machines. His products were honestly built with great concern for quality. Case refused to have his name injured by a product that did not perform up to standards (Holbrook, 1976, p. 18). In 1892, Case and Company manufactured the first gasoline tractor (Holbrook, 1976, p. 105). Although this was an important breakthrough, the tractor was immediately withdrawn because of problems with its ignition and carbureting devices. Case efforts were then turned to the steam engine.

The first truly successful gas traction engine was manufactured in 1903 by Hart Parr. Co. located in Charles City, Iowa. Hart Parr wanted a name for its gasoline traction engine to distinguish it from the competing steam traction engines. This was how the word “tractor” came into being. It has now been adopted as a generic term for all varieties of traction engines.

By 1907, Hart Parr was making one-third of all the gas traction engines produced in the United States. However, these tractors were extremely heavy and difficult to drive. Maintenance was also a problem since few duplicate parts were made (Holbrook, 1976, p. 168). Hart Parr was unable to overcome these problems and later became part of the Oliver Corporation.

Finally, in 1911, Case felt it had a gas tractor good enough to market:
the Case 30-60. In 1912 it introduced a new lighter model, the Case 20-40, and in 1913, an even lighter model, the 12-25. Case supplemented its new line of tractors with tractor schools. The company was the first in the industry to hold classes which educated farmers in ignition and carburetion (Holbrook, 1976, p. 170).

CASE GETS IN OVER ITS HEAD
Agricultural equipment firms started to develop into full-line companies, making everything in the way of farm machinery and tools, during the early 1900s. International Harvester, formed in 1902 by a merger of several companies, was the first to become a full-line company (Holbrook, 1976, p. 187). J. I. Case joined the full-line trend in 1928. In 1953, seeking to improve its market share, Case introduced a new diesel tractor—the first ever to have power steering (Holbrook, 1976, p. 244). Case's line also included machines that could handle more crop varieties and increased acreage at faster speeds. In 1957, Case developed the Case-O-Matic transmission for its new agricultural tractor line. When problems developed and tractor production had to be held up, Case's response was to expand other operations. It expanded its line of construction equipment to cover operating losses on the agricultural line. However, problems also developed in one of Case's construction lines which placed Case in further financial difficulty. Case had attempted to do "too much too quickly" (Holbrook, 1976).

Case's financial situation had greatly improved by the mid-1960s when it introduced the first four-wheel drive, four-wheel steer tractor to be mass produced (Holbrook, 1976). Following this new development, Case was acquired by Tenneco Inc. in 1967. Tenneco decided Case would stop making the one piece of equipment it was originally known for, the harvesting machine. In 1968, Tenneco turned Case's construction business into a separate division and, in 1969, unveiled the first completely new line of agricultural tractors in 10 years. This new line was an immediate success (Holbrook, 1976, p. 260). It had new features such as fully enclosed cabs, heaters, air conditioners, and AM/FM radios.

JOHN DEERE AND COMPANY
Unlike J. I. Case, which started out manufacturing threshers, Deere and Co. started in the plow industry. Two other important differences between the companies also favored Deere. These were Deere's keen sense of advertising and public relations, and its longtime involvement in agricultural fairs (Broehl, 1984).

Headquartered in Moline, Illinois, in 1869, Deere set up a separate branch house in Kansas City. It established four more sales branches
between 1869 and 1889. These five individual branches took directions from the Moline headquarters; however, they were also individual businesses taking an additional set of orders from a local manager. This sales strategy would prove highly successful.

When International Harvester came into being in 1902, it did not pose much of a threat to either Deere or Case since its main product was harvesters. However, as the demand for harvesters started to fall, International Harvester became a greater challenge to Deere by moving into product lines that competed head-on with Deere’s products (Broehl, 1984, p. 299). In fact, International Harvester was the leader in tractor manufacturing by 1911. J. I. Case was also a major competitor in tractor production. Deere, on the other hand, did not even launch its first tractor strategy until 1912. It built only one model, and its efficiency was disappointing in field trials (Broehl, 1984, p. 359). By 1914, all further work on this Deere tractor was stopped.

DEERE “BUYS” ITS FIRST SUCCESSFUL TRACTOR
Deere once again entered the tractor market in 1918 with the purchase of the Waterloo Gasoline Engine Company in Iowa which manufactured the Waterloo Boy. The Waterloo Boy was known as “the original kerosene tractor” (Huber and Hughes, 1988, p. 8). Deere thus bought its first successful tractor. The decline of the Waterloo Boy came after World War I and was offset by the first commercially viable Deere-made tractor, the Model D, which was introduced around 1922. The development of the Model D took into consideration the safety, comfort, and convenience of the operator. It was the first John Deere tractor to be produced in substantial quantity and remained in the line 30 years longer than any other Deere tractor (Huber and Hughes, 1988, p. 19). The John Deere General Purpose tractor did not replace the Model D; it simply provided farmers with greater versatility. First marketed in 1928, it was designed to accommodate integrally mounted equipment and was copied by many of John Deere’s competitors (Huber and Hughes, 1988).

DEERE DISTRIBUTION DOMINATES
A major shift in market positions occurred during the 1920s. Full-line companies were picking up increasing percentages of the market. This put Deere and International Harvester in the two most dominating positions. These two companies controlled the market through their distribution centers (Broehl, 1984, p. 490). They possessed great strength in their branch houses and dealer organizations, enabling them to develop strong relationships with both dealers and farmers. These companies could also take advantage of lower selling costs through economies of scale (Broehl, 1984).
Deere had an additional advantage in that it had always been attuned to the needs of the farmers and was able to instill this attribute in its dealers. According to historian Wayne Broehl, "It was the farmer who would be the ultimate arbiter of success for the company" (1984, p. 490). Deere also exhibited its customer concern through advertising and by promoting quality products. Sales forces in both the branch offices and dealerships were knowledgeable about its products and dedicated to a close relationship with the farmer. By the end of the 1920s, Deere emerged as the leader.

During the 1950s, innovation in tractors centered on increased horsepower. This encouraged Deere to move from the two-cylinder to a four-cylinder tractor. Deere’s 40-50-60-70-80 models were upgraded to the 20 series. Along with increased horsepower, refinements were made in hydraulics, the fuel system, and engine design. This allowed several models to establish new fuel economy records (Broehl, 1984, p. 642). Operator comfort, convenience, and styling were also improved.

The number of farm tractors in the United States peaked at 4,787,000 in 1965 and fell to 4,324,000 in 1980 (Broehl, 1984, p. 735). The trend in the country was towards fewer but larger tractors with higher horsepower. Deere responded to this demand by introducing seven additional tractor sizes, all above 100 horsepower. Deere’s Generation II tractors, also known as the 30 series, were introduced in 1972 and strengthened the company’s position in medium sized row-crop tractors. The 40 series in 1977 strengthened Deere’s position even more. By 1981, Deere held a 45 percent share of the U.S. row-crop tractor market (Broehl, 1984, p. 736).

The “icing on the cake” came in 1982 with the new 50 series. This series provided the link between innovation and new field demands. The benefits of this new series included increased horsepower, mechanical front-wheel drive, a new 15-speed power shift transmission, and the new caster/action which shortened the tractor’s turning radius.

HIGH REPUTATION IN CONSUMER’S MIND
By 1982, Deere had established an impressive reputation. The New York Times stated that: The truly great American companies, those most respected and effective offshore as competitors, are not players of funny money games. Rather, enterprises like Caterpillar, John Deere, Procter and Gamble, and Eastman Kodak single-mindedly dedicate themselves to deepening their product lines, improving their product delivery and support systems, manufacturing more efficiently, and adapting to evolving world market conditions. (Broehl, 1984, p. 775) Other well-known publications commended Deere for always looking towards the future (Broehl, 1984, p. 775).

Deere’s dealer organization has truly been one of its major strengths. It sur-
vived the recession of the early 1980s and emerged even stronger (Broehl, 1984). A final advantage Deere has enjoyed throughout the century has been the financial situation of its competitors. Like Tenneco’s Case which overextended in the 1960s, many of Deere’s competitors experienced financial troubles which prevented them from competing head-on with Deere.

**CASE BUYS INTERNATIONAL HARVESTER**

By the 1980s, Case had fallen behind both Deere and International Harvester in the farm equipment market. Deere and Company was the market leader in the farm equipment industry with a 42 percent market share. International Harvester was second with 18 percent, and Case third with 16 percent (Reiff, 1989, p. 27). This left 24 percent to be divided among a few low-volume competitors such as Massy-Ferguson, Duetz-Allis, and White-New Idea. In 1985, Case bought out International Harvester and poured $1 billion into making J. I. Case a strong number two to Deere with 37 percent market share (Reiff, 1989, p. 27). Case would not be doing as well as it is today without the purchase of International Harvester. Case acquired Harvester’s assets at a low cost. Harvester also gave Case the sales volume and economies of scale it needed to modernize plants and develop new products. However, the most important benefit from the acquisition was the strong runner-up position Case gained in the farm equipment oligopoly. In 1986, Deere and Case combined dominated three-fourths of the market in big two-wheel drive tractors. This posed a serious threat to the low-volume competitors.

**PROBLEMS STILL REMAINED**

Case-IH still had some problems that needed solving, however. Costs needed to be cut, and there was still a significant quality gap between Deere and Case-IH. J. I. Case Chief Executive James Ashford stated that his objective was to “produce such a quality product that customers and dealers won’t flinch when [Case] raises prices on new models or refuses to sell [its] machines for less than the comparable John Deere models” (Reiff, 1989, p. 27).

Case-IH is Deere’s strongest and, in point of fact, only competitor. As noted earlier, the other companies in the agricultural tractor market are small and of little threat to the two “giants,” especially Deere. These small competitors now include Fiat-Ford-New-Holland-Hesston, as well as Duetz-Allis and White-New Idea (Schroeder, 1992). A major concern, especially to Case-IH, may be foreign competitors. N.H. Geotech dominates the European market, controlling double the share of its nearest competitor (Waterloo Weekly News, 1992). Another foreign competitor that may have some impact is Same from Italy.
PAST STRATEGIES FOR WAR
It is hard to determine what type of strategy each company was taking in the earliest years of the tractor industry. Almost all seemed to be pursuing a defensive strategy. Everyone was coming out with new innovations. Once these were incorporated into a new tractor line, the old line was phased out. No one seemed to be focusing on a specific niche; nevertheless, some successful strategies were implemented.

Hart Parr Co. used a flanking attack with its 1903 introduction of the first gasoline traction engine. Although this attack led to the development of the generic term “tractor,” the engine itself was widely copied by other companies and, as a result, was unable to advance Hart Parr very far in the market.

Once International Harvester took the lead in the tractor industry around 1911, Case took a long time to develop offensive strategies. It was not until 1953 that Case introduced its new diesel tractor with power steering. Case also tried to attack International Harvester head-on in the mid-1960s when it developed the first four-wheel drive, four-wheel steer tractor to be massed produced. These two attacks slightly improved Case’s market share. However, they were not enough for Case to take over the leading position held then by International Harvester.

Deere began in a bad position. It did not get into the tractor market until the other companies had established their names and products. Once the full-line companies came into power, however, Deere was able to move ahead. Deere used a flanking strategy with its unique distribution system and branch houses which eventually enabled it to pass Case and International Harvester. Deere’s focus on quality, inventory control, and the consumer also helped it to become the leader in the industry in the past few decades.

STRATEGIES TODAY
Deere focuses on the high price niche which helps it keep its number one position. Deere equipment may cost a little more, but many consumers feel the quality that goes into a Deere is worth the cost. Case-IH is never going to succeed if it tries to sell its equipment at the same price as Deere’s. Deere already holds this position in the consumer’s mind. Case-IH needs to focus on some other offensive attack.

The defensive strategy taken by Deere is a successful one. Deere is good at phasing out old models and replacing them with new advancements and new models. Many tractors of a Deere series may look similar, but they are different in significant ways. The only real problem Deere faces now is its capacity. When the market for farm equipment started to rise after the recession in the early 1980s, Deere assumed it would continue to do so.
Therefore, it built the enormous Waterloo Works to increase output to 200 tractors per day. Soon after, production dropped to 30 tractors per day. Now this plant only produces about 70 tractors per day, yet Deere is still paying for all the fixed costs (Schroeder, 1992). To overcome this problem, Deere has used the empty space in the facility to make parts for other companies. This was never very profitable and is no longer done (Schroeder, 1992). Instead of making parts for other companies, Deere may be able to lease its excess capacity to companies in order to help pay for fixed costs. Today, however, excess capacity still remains a serious problem.

The other companies in the industry are having a tough time trying to catch Deere. These companies have been combining forces for years hoping to become big enough to compete. By merging, these companies attempted to increase their market share; however, they have not been successful in catching Deere (Schroeder, 1992).

Deere, on the other hand, is the only company that has not merged with anyone. This may be the result of a strategy that contradicts some of Ries and Trout’s beliefs. Deere competes in a variety of markets including heavy industrial equipment, lawn and garden equipment, and agricultural equipment. Its credit company is also profitable, as are its insurance and health care programs (Schroeder, 1992). This diversity allows Deere to support its poor performing divisions with the profits from other divisions. If tractors had stayed the strong market they once were, this diversity may have actually hurt Deere. The company would not have been able to invest enough into its tractor division to keep it going strong. Instead, Deere would have had to support other divisions. However, since the tractor market has greatly slowed down, this strategy actually is helping Deere stay on top.

Deere has created a good name and position for itself in the agricultural industry. Considering Deere’s strength in this market, it is going to be tough for any rival to catch up. The only real competitor Deere has is Case-IH. However, in order for Case-IH to threaten Deere it must start following an offensive strategy. Case-IH needs to find a weakness in the leader’s strength and mass its forces to attack this weakness (Ries and Trout, 1986). This weakness may be the diversity that originally took Deere to the top. Case-IH could become a specialist in one type of farm machinery, instead of producing everything, and become the market leader in that one piece of equipment. This would cause Deere’s market share to drop slightly. If Case-IH is successful in this strategy, it may be able to gain on Deere; however, it is unlikely to surpass the mighty leader.

It is going to be almost impossible for any of the smaller companies to catch Deere. Even catching up with Case-IH is going to take more resources than many of these companies have to spend. The smaller companies such
as Fiat-Ford-New Holland-Hesston, Duetz-Allis, and White-New Idea should follow a flanking or guerilla warfare strategy. Both these strategies require a narrow focus with concentrated forces. Market segments should be small enough to defend and chosen niches should be uncontested (Ries and Trout, 1986). These strategies would allow smaller companies to become the leader of a small segment of the tractor industry, or to dominate a specific niche. Since Deere already holds the high-price niche, a smaller company could focus on a low-price niche or a specific geographic area.

CONCLUSION
Deere and Company is a highly respected, well organized company that is going to be hard to beat. It climbed to the top by contradicting Ries and Trout and diversifying into many different products. However, Deere and Company now practices a strong defensive strategy which has been successful in fighting off the competition. Even with the acquisition of International Harvester, Case-IH is going to have to come up with a much better offensive strategy than it has to date to take the top position away from Deere. Ironically, this offensive strategy may include attacking the diversity philosophy that originally made Deere the market leader. Even though Deere and Case dominate this industry, there is still room for the smaller companies. These companies should not try to get larger in order to compete with Deere or Case, but should find their own niches and strive to become the leader of those niches—not of the whole industry. Although Deere is clearly the leader in the tractor industry, the other companies can also have a profitable future if they use the correct marketing warfare.

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