

Competing Supply Chains: Explaining the Automotive
Parts Retail Industry

An Honors Paper for the Department of Economics
Douglas Hayes

Bowdoin College, 2004

©2004 Douglas Hayes

Introduction

When something goes wrong with a car, a consumer has two options for repairing it. S/he can either buy the part and fix the problem, or pay a mechanic to make the repair for them. In either case, a replacement part is needed. Whether it is original equipment, or aftermarket, the part needs to travel from the manufacturer to the consumer. The automotive parts retail industry services this need. Today, there are thousands of retail stores across the United States, acting as the link between the manufacturer and the consumer. There are several major retail firms, and many small, independent shops. Since there are two groups of consumers, the “Do-it-yourself” (DIY) people and the “Do-it-for-me” (DIFM), two sub-markets have evolved. The interaction between these two markets, and the competition between the firms is an interesting example of competition between parallel markets. There is little economic literature on this industry. Thus, this paper serves to provide some insight into how retailers, suppliers, and consumers interact in the industry, with the hope to create a model to describe the important aspects within the automotive parts retail industry.

History

When the car was first invented, not many people knew much about how the cars worked. Consumers had to rely on dealers to fix even the smallest breakdown. Slowly, people began to want to repair their cars themselves. Little shops, serving both as scrap yards and as parts resale centers began to pop up across the country. In 1915, one of the major players in today’s automotive parts industry, J.C. Whitney, was founded in Chicago. This company began as a scrap yard, but quickly saw the increase in demand for automotive parts. By the 1930s, the company built a new store, dedicated to selling

damage could result in a more knowledgeable person buying a new car rather than fixing the one s/he owns.

Based on the above analysis, the model appears to provide a thorough description of the automotive parts retail industry. The graphs successfully represent the relationships between each player in the market. The results of each scenario are consistent both mathematically (when possible) and intuitively with what happens in the market. Additionally, the four scenarios discussed represent all of the typical automotive repair decisions that a consumer has to make. There are several other possible scenarios that exist through the graph. These, however, are not discussed because they are not realistic scenarios within this industry.³¹

CONCLUSION

Through the rise of the automobile, the automotive parts retail industry has evolved into a unique, and complex market. Major firms, such as AutoZone, Advance Auto, and Pep Boys have come to dominate the consumer-oriented side of the market. Carquest and NAPA, on the other hand, have become the familiar faces of the traditional chain, concentrating on supplying mechanics with every part they need. The distinction between the “Do-It-Yourself” consumers and the “Do-It-For-Me” consumers adds an interesting aspect, as the firms compete within their own market (retail or traditional) for

³¹ The other situations that exist are not considered because the consumer’s decisions are not consistent with what happens in reality. For example, there is a scenario where the least capable consumers do the repair themselves, while the most capable bring the car to a mechanic. Intuitively, this is not consistent with reality.

one set of consumers, and then attempt to draw marginal consumers away from the other market.

Examining vertical integration helps to explain the advantages and disadvantages that each firm has within the industry. Product differentiation provides a better understanding of the competition both within and between the sub markets. Location has also played an important role in the industry, as retail firms use a different strategy than traditional firms. Finally, the model presented by Spiegel and Yehezkel provides a very useful platform when beginning to closely examine the industry.

The model presented in the paper helps to provide further understanding of the industry. It captures the major players (retail stores, traditional stores and mechanics), how consumers chose where to shop, and what conditions need to hold for various scenarios where consumers need to decide what to do with their car.

There are some shortcomings of the model, which could be resolved with more work. Further research could be done into some empirical evidence on whether or not the model truly explains the market place. Perhaps a price index from each store would be useful to create an average price at the retail stores and the traditional stores. Alternatively, one could price out particular jobs, such as oil changes or brake work, and test the model to see how the graph changes based on the project. Additionally, there may be more to examine when considering what goes into a consumer's decision on where to purchase automotive parts. A survey of consumers and a regression could be performed to see what characteristics consumers use to decide where to go.

Additionally, there needs to be greater clarity in regards to θ . Right now, it encompasses two different aspects of consumer characteristics that are not necessarily

correlated. Not all consumers with high automotive capability and knowledge have a low opportunity cost for doing repairs, and similarly, not all consumers with low automotive capability have a high opportunity cost for doing the repair. By splitting these two aspects up, perhaps by adding another dimension to the graph, the model would provide a more thorough representation of the consumers within the market.

Finally, the model should eventually include a fourth player, the OEM parts. As dealerships improve their parts departments, more consumers may be turning to original parts instead of aftermarket parts for their auto repair needs. As mentioned earlier, OEM parts are becoming more popular as dealerships refine their parts and service department. Adding another utility curve capturing OEM would be useful in fully understanding the marketplace. Unlike the mechanic, though, if a consumer goes to the dealership for a repair, they can only buy OEM parts. Both this relationship between OEM and dealership service, and its impact on the market place could prove to be a very interesting situation to examine.