
Economics of Strategic Management
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**Realizing Economies of Scale in Today's Global Automotive
Industry**

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I. Introduction

The automotive industry of today is a much different than it was 30 years, or even 10 years ago. As the international communities increase trade with one another, many opportunities have arisen that have altered the course of auto manufacturers and in some cases have led them down entirely new and uncharted paths.

With this increasing globalization and lowered entry barriers new competition is around every corner. The three top firms; GM, Ford and Daimler-Chrysler, control a large part of the market, but that is slipping away as the industry becomes more competitive and new firms enter. They have the option of maintaining their current strategy of continued consolidation and global distribution to maintain their market share, or they can aggressively pursue a larger market share by consolidating their organization and distribution (thereby reducing excess capacity), further differentiating their products intra-divisionally instead of inter-divisionally, and continuing to lower their costs which will raise entry barriers.

This group recommends that the large firms pursue the aggressive market expansion strategy.

II. Background

Ford

The first automotive manufacturing firm in the United States was created by Henry Ford in 1903. Producing 1708 automobiles in the first year of manufacturing, Ford realized he had something. In 1908 Ford Motor Company introduced the Model T, which was instantly hailed as “America’s Everyman Car.”

For the past 75 years Ford has steadily grown by internal expansion as well as consolidation of smaller firms. This combination vaulted them to the largest producer of automobiles in the world. But while it was growing as a company, the industry was growing as well. Entry barriers became lower and more manufacturers entered the industry, providing small yet highly competitive geographical pockets which Ford, to

stay at the top of the industry, must compete with, not to mention the other two largest manufacturers, GM and Daimler-Chrysler.¹

General Motors

General Motors Company was started much differently than Ford was. Instead of producing an automobile and then incorporating other manufacturers, GM was formed with the idea of incorporating manufacturers and relying on them for production.

GM was founded in 1908 and incorporated Buick Motor Company the same day. Later the next month, GM bought and incorporated Olds Motor Works, which became Oldsmobile. Slowly but steadily GM grew as it acquired outside firms and vertically integrated as it bought certain aspects of its supply needs. Accompanying this acquisition, throughout the years they expanded to have manufacturing plants and branches worldwide, much as Ford did during the same period. With the vertical integration of many of their suppliers, GM achieved the coveted number one spot for worldwide production of cars and trucks. However, with segregated divisions responsible for themselves problems inevitably show up. With many different divisions, each is responsible for distribution, research and development, and must compete with other divisions of GM as well as the many other manufacturers that began to spring up in the past 10-15 years.²

Daimler-Chrysler

Daimler-Chrysler is a result of the recent 1998 merger of Daimler-Benz AG and Chrysler Corporation. Though these two giants of the automotive industry have different roots in different parts of the world, they came together to create the 3rd largest automobile manufacturer of cars and trucks in the world today.

Gottlieb Daimler and Karl Benz started small auto manufacturers in the late 1800's in Germany. In the past 50 years, Mercedes-Benz has expanded production to create manufacturing plants in Brazil, incorporated one of the largest African car manufacturers,

¹ "History of Ford Motor Company. . . An American Legend;" <http://www.cat.cc.md.us/techstud/auto/FordHistory.html>

² "Corporate History of GM;" http://www.gm.com/company/corp_info/history/gmhis1900.html

and built several new plants in the United States as well. The willingness to become a dominate power in the auto industry lead Daimler-Benz to merge with Chrysler in 1998.³

William P. Chrysler got his start in the automotive industry not by founding Chrysler, but by becoming a production manager of the Buick Motor Company in 1912 (at that time a subsidiary of GM). However, because of differences in the future of the company he resigned from both and was quickly hired by creditors of Willys-Overland which in 1925 becomes Chrysler Corporation.

Over the next 60 years Chrysler and its subsidiaries continued to research and develop new model lines, sharing the benefits of their combined efforts across all of Chrysler's product lines. With the merger, two large companies with a tremendous amount of resources were thrown in the mix together. Now, instead of having one set of distribution lines and dealers they have in essence doubled their numbers, and not necessarily to their advantage. To reap the full benefits of a merger of this size, Daimler-Chrysler needs to focus on their global organization and differentiation of their products to retain their market share when competing with younger, more flexible smaller scale manufacturers.

III. Industry Analysis

Porter Analysis

Entry: Information leaking for manufacturing techniques, increased demand for suppliers leading to entry in those industries, and overall reduction of costs associated with manufacturing reduced barriers for entry. Major players in the automaker industry must compete with increasing entrants by taking advantage of their position and raise entry barriers to reduce new entrants.

By reducing excess capacity and consolidating their organization and distribution firms can realize economies of scale in various departments (i.e. manufacturing, distribution, extension of product life cycle, etc). The advantage of scale economies increases the cost to enter the industry and also creates a cost advantage for incumbent firms. In the auto production industry, other significant entry barriers that the early entrants posses are brand recognition (which in turn leads to the creation of a switching

³ "The History of Daimler-Benz;" http://www.daimlerchrysler.com/history/epochen_e.htm

cost barrier), the learning curve barrier (which incumbent firms can raise by putting additional funds into R&D which newly entering firms cannot afford) and vertical integration of suppliers (which if done right could can prevent entrants from obtaining key supplies, or force them to search for alternatives which uses extra resources).⁴

Buyer Bargaining Power: Buyer bargaining power in the automotive industry is small. Essentially domestic firms collude on prices for similar models and incentives (i.e. the latest rash of 0% APR financing). Overall buyer bargaining power is very small; however when foreign firms and new entrants enter domestic markets the price collusion is disrupted as domestic producers lower prices to compete with new threats.⁵ Increasing incentives (such as 0 down, 0% APR) and lowering prices to compete with new entrants increases entry barriers into new geographical areas already controlled by the incumbent firms.

Where buyers do have bargaining power is in their ability to switch from one product to the next. For small entrants this is a problem because they don't have many established brands. Ford, GM and Daimler-Chrysler suffer from buyer switching to a much lesser degree because of their past and present consolidations of other manufactures make it likely that in the event a buyer does switch products, they might switch to another subsidiary of the same company (i.e. switching from a Camaro to a Firebird).

Supplier Bargaining Power: Depending on the size of the firm, suppliers can have large bargaining power. Small firms and new entrants have less bargaining power with suppliers, and thus suppliers can demand a higher price. Much as large firms realize scale economies in production, suppliers realize scale economies for large firms when they order supplies. A recent announcement by Daimler-Chrysler, Ford and GM outlines a plan to combine the \$240 billion purchasing power of all 3 companies to 1 entity to reduce supplier costs.⁶ The larger the company the larger the bargaining power the company has with supplying firms, as can clearly be seen by the three largest firms

⁴ McAfee, *Competitive Solutions* pgs 11, 12

⁵ Ramratton, *American Economist Vol XXXXV*; "Dealership Competition in the US Auto Industry" pg 35

⁶ Upham, *Automotive Industry & Production*; "The Auto Industry & the Internet: Better Late than Never"

combination of resources. Large firms can also consolidate by vertically integrating certain aspects of production and supplying. By buying suppliers they can reduce bottlenecks in the production cycle, and can also lock up resources that other manufacturers need. GM is a prime example of this because it has over the years vertically integrated several key suppliers in its manufacturing process, from glass-makers for windows to electrical manufacturing companies for electronic components.

Both of these strategies which rely on consolidation or vertical integration result in raised entry barriers that new firms find very hard to compete with. With high costs from no supplier bargaining power to a lack of resources from large firms locking up suppliers, new entrants find it hard to be competitive.

Substitute Products: Substitutes for the automotive industry are far and few between, but are on the rise. From public transportation in the form of busses, to taxis and even newly built trams (Dallas/Ft. Worth DART rail system) are direct substitutes for metropolitan driving. Airplanes, busses (Greyhound), trains and boats are also substitutes for long distance travel. However, with the occurrence of September 11th, airline travel and train travel have significantly fallen, strengthening the option of cross-country driving. A drop off in the substitute of a product results in an increased demand for the original product.

Rivalry: From a worldwide perspective, the automotive industry is very competitive. Price wars between international companies and entry of new firms such as Kia and Daewoo are prime examples of a competitive industry. From dealership to dealership firms are competitive, even though dealerships on average make a decent profit on automobiles (MSRP – Invoice) not taking into account the recent decline in sales due to reduced consumer spending.⁷ However, stepping back and looking at the industry picture, firms aren't as competitive because one parent company can have several subsidiaries that sell in similar markets. What might look like stiff competition between a Buick and Chevrolet dealership for large sedan sales, GM sees as sales from its subsidiaries. From past consolidations of other car manufacturers and from

⁷ www.Edmunds.com

differentiation of their products, large firms can reduce rivalry by selling multiple products in one market segment, which is something that new entrants can't accomplish.

Big Three Competitive Advantages

- Partial vertical integration that allows less holdup of supplies to production facilities
- Scale economies over smaller firms and new entrants in a variety of fields
- All Multidivisional firms which allow “sub-managements.” This enables each division to make decisions about production, distribution, etc on their own.
- Brand Recognition

Big Three Weaknesses

- Large production facilities and variety of quality levels can hinder specialization of specific lines.
- Double costs and overlapping for distribution channels
- Divisional competition for customers and resources inside parent company
- Often excess capacity with consolidation

Big Three Product Positioning

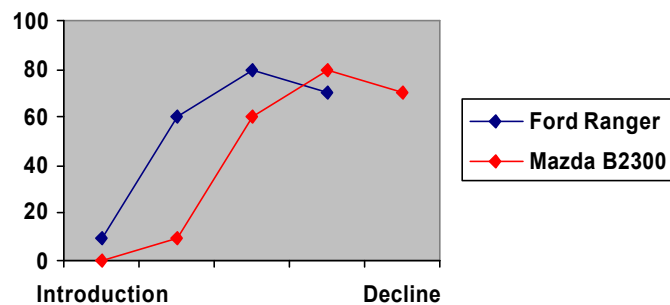
GM, Ford and Daimler-Chrysler have consolidated and grown into global production firms over the past century. They have positioned themselves as industry leaders by offering different product lines under different divisions of the parent company. This strategy has given them the opportunity to diversify their customer base, offering a wide spectrum of automobiles, from cars to vans and trucks, as well as amenities and a host of other options that are specifically put in place by manufacturers to differentiate their products from that of their rivals, or even to distinguish some models above their own more basic models. The differentiation of both quality and variety⁸ is very important in the auto industry. To be successful automakers have to have two

⁸ McAfee, *Competitive Solutions* pg. 62

dimensions to their production lines. Producing different quality levels, be it either different trim levels within one manufacturer (i.e. HX, LX and EX Honda Civics) or different quality levels within the parent firm (i.e. Honda Civic vs. Acura RSX) serve to attract different levels of customers, thus broadening customer reach and market share. The larger firms, especially those who have been in the industry for some time and have the ability to produce different levels of quality, have a huge advantage in this respect in regards to small firms with limited production facilities who only produce one trim level. However, large firms have to be wary in this regard because a new entrant can specialize of one particular trim or quality level and realize scale economies more so than a large firm. The same can be said for the variety of production lines. Firms that have the capability of producing many types can capture a larger overall market share from different consumers, but they have to be wary because small firms can specialize in building a particular type of vehicle and can quickly gain a foothold in that market. By differentiating their products, large firms can take advantage of gains in the product life cycle.

Product Life Cycle: Large manufacturers who consolidate different types of car producers can have a distinct advantage in producing automobiles and can actually use the scale economies they realize from production to extend their product life cycle. By differentiating models and using one core model for several different lines across their different brands serves to extend that model’s life cycle. For example Ford uses the Ford Ranger platform for the production of the Mazda B2300 Truck as well. By using essentially the same parts for two

different brands they can easily realize scale economies in production, capture different portions of the market segment (i.e. people loyal to Mazda and people loyal to Ford), but most importantly they can extend the product lifecycle of the Ranger platform. Also by staggering the introduction of the two



models, all of the stages can be extended. Use of multiple platforms reduces costs in R&D, thus providing more funds for future research to keep it ahead in the industry. However using multiple platforms can also “steal” business away from one division to another division.

Organization, Division and Globalization

Ford, GM and Daimler-Chrysler are all producers of multiple product lines. GM is a multidivisional firm that has separate divisions, each practically operating as a separate entity with the exception of sharing production facilities and platforms as well as R&D.⁹ Ford and Daimler-Chrysler also operate similarly, sharing mostly R&D, facilities and platforms from one division to another. Large firms that are capable of using a platform for multiple lines across different divisions need to consolidate divisions. If, instead of making a Ford Ranger and a Mazda B2300 truck, there were to be one truck, then the sub-divisions would not need to compete for resources or customers. There would essentially be a total reorganization of the company; linking similar divisions together instead of brands together (i.e. Ford has a truck division, sedan division, and sports car division). By internally consolidating divisions, competition would be reduced between each other and distribution could be streamlined as well. No longer would divisions compete for resources or customers. This would also allow a greater degree of diversification of the product because they would all be produced by one division. Instead of having a bottom end and top end family sedan, there could be several packages that would appeal to a greater segment of the market, thus being able to raise prices because the product is closer to what the consumer wants.

Vertical integration is also a large part of these top firms. By controlling certain suppliers they can corner the market on certain materials, effectively raising costs for other firms while lowering their own. A disadvantage to multidivisional platforms and vertical integration is that often time’s divisions within a parent company will compete for the same resources, be it customers or materials. Once again, for firms to solve the problem and aggressively compete in the market they need to integrate competing models. If integrated, there would be no competition for resources, other than between

⁹ McAfee, *Competitive Solutions* pg 161

the new model divisions, which are greatly reduced than competition for resources between not only divisions, but model production lines within those divisions.

Distribution

When industry leaders consolidate and incorporate firms into their own, the inevitable problem of distribution and marketing arises. If done right, the refinement of distribution and marketing channels can dramatically reduce costs and parent firms can realize scale economies. However, if ignored these are sources of dramatic cost increases and a loss of profits.

In today's technological market, automotive manufacturers need to take advantage of the new opportunities that have come about in the past few years. Such innovations as factory direct sales over the internet can greatly reduce costs for firms. By having a firm website that lists information on all available vehicle lines offered, and by having an ordering option where the customer can build a car to their own specifications and order it without having to leave the comfort of their own home, manufacturers could be realizing a great reduction in costs. By having factory direct internet sales, they bypass the dealers completely, and can cut a variety of costs. From cutting the size of dealership lots, to sales personnel reductions, firms can reduce the "brick and mortar" investments and can streamline dealership costs. By enabling people to order via the internet, they are also reducing inventory costs by switching to a just in time inventory system, which has helped companies like Dell reduce manufacturing costs. By adopting a system such as this, large companies such as Ford, GM and Daimler-Chrysler can reduce costs on a variety of fronts

Whenever a company has a large amount of divisions acquired over time, an ungainly amount of varied distribution channels and dealerships can arise, and often time end up competing directly with other divisions of the same parent company. These distribution channels and marketing channels would be greatly reduced in costs if instead of grouping dealerships by brand (i.e. Ford, Mazda, Jaguar, etc) they grouped dealerships instead by type of car. For example, if a customer were in the market for a new truck, Ford could set up franchised dealerships whereby all of their subdivisions that produce trucks were at one dealership. This is actually being tested by Ford in Europe by having

multi brand showrooms.¹⁰ Essentially, these multi-brand showrooms would bring the separate divisions of a parent company under one roof, combining them instead into different market segments. Multi brand showrooms would also help reducing ship because, if on a large enough scale, parent firms can simplify their distribution by sending their different vehicle lines to one showroom. If they chose, they could combine multi brand showrooms with factory-direct internet sales, and could further lower inventory costs by having models of all their different vehicle lines at one dealership, and then by having access to internet at the dealerships to custom order the vehicle they ultimately decide to purchase. Once again a firm leader (Volvo) is experimenting with factory-direct internet sales. . This would also greatly scale down the different distribution costs for each division, creating a simplified distribution channel.

Problems arise when large firms attempt to do this, though. Manufacturers typically franchise out dealerships because it diversifies risk and shares the risk of sales with the dealerships. Also, gains from specialization can be recognized because firms focus on production where as dealerships focus on selling the product. Also, with multi brand showrooms parent companies have to be cautious that they don't rely on pricing incentives too much. If Mazda trucks and Ford trucks were to be sold in the same showroom for the same price, it could be construed as collusion.

IV. Conclusion

With new technologies reducing production costs, reduction of the learning curve, and specialization smaller firms are able to enter the automobile production industry and can actively compete (and in some cases steal customers from) with large firms that have been in the industry. To stay competitive GM, Ford and Daimler-Chrysler must adopt a strongly competitive strategy, and must differentiate their products and consolidate their organization/distribution globally. By accomplishing this, they will raise entry barriers and lower costs which will preserve current automotive manufacturer's market share.

¹⁰ *"Changing Channels in the Automotive Industry The Future of Automotive Marketing and Distribution;"*
<http://www.pgmba.com/index.htm>

References

- *The History of Ford Motor Company . . . An American Legend*
<http://www.cat.cc.md.us/techstud/auto/FordHistory.html#Postwar>
- *GM Corporate History: 1900 – 2000*
http://www.gm.com/company/corp_info/history/gmhis1900.html
- *The History of Damiler-Benz*
http://www.daimlerchrysler.com/history/epochen_e.htm
- *The History of Chrysler*
http://www.daimlerchrysler.com/history/epochen_e.htm
- R. Preston McAfee. “Competitive Solutions” © 2002 Princeton University Press. Princeton NJ
- Ramrattan, Lall B. Spring 2001. “Dealership Competition in the U.S. Automotive Industry.” *American Economist Vol XXXV: 33-44*
- Carlton, Dennis. Perloff, Jeffrey. “Modern Industrial Organization” © 1990 Scott, Foresman & Company. Glenview IL
- http://www.pgmba.com/strategy/page1_1943.html
- Automotive Design and Production
<http://www.automfg.com/columns/upham/0500ind.html>
- Deloitte Consulting Automotive Industry Focus
http://www.deloitte.com.au/auto/auto_issues.asp