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General Motors and the Development of New Industrial Models

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General Motors and the Development of New Industrial Models

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DEDICATION

There are many people to whom I would like to dedicate this work, but one man originally inspired my love of history with his seemingly endless stories about the past. Clifford Bridges Fleet, Sr. brought the past to life, making it a living, breathing entity. I only hope that I can inspire a similar joy in my children for the past, and the same respect for those who have come before us.

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ABSTRACT

The purpose of this thesis is to analyze the growth and development of General Motors from its philosophical beginnings in the Durant-Dort Carriage Company in the 1890s up until the corporate reorganization of the 1920s. These years were important ones not only for the development of the American automobile industry, but also for the wider business community in general.

General Motors' early years were tumultuous ones with the rapid rise and fall of competitors and the fluctuation of demand within the automobile industry. General Motors was able to triumph over this turmoil on the strength of two new concepts that were adopted by the business community after General Motors proved their competence. The first idea was the vision of William Durant for a vertically and horizontally integrated automotive producer. The second idea was the creation of an industrial model to make this vision an effective corporate idea. General Motors made both of these important contributions to the development of the American business community.

General Motors and the Development of New Industrial Models

Introduction

The development of the automobile industry in early twentieth century America provided a major impetus to economic growth and managerial innovation. The automobile industry's spectacular rise from non-existence in 1900 to key national importance by 1930 attracted many bright men who created companies and marques familiar to most Americans today. General Motors emerged as the pre-eminent automobile producer after this initial thirty year span of time. Under the leadership of business legends like Walter Chrysler, Alfred P. Sloan, Charles Kettering and William Durant, General Motors not only led in the development of the automobile industry, but also paved the way for a reorganization of other American industries by pioneering a novel industrial organization plan. Although certainly not the largest American company by 1930, General Motors was undeniably one of the most important for its pioneering work in developing the automobile market and creating a company model new to American business.

What factors aided General Motors in achieving these ends? Several are of significance, but certainly the men leading General Motors were of paramount importance. Through the combination of their collective skills General Motors succeeded where many other companies failed. Ready capital, novel designs, fortunate market upswings, and an expanding market also played key roles. Understanding the multitude of factors contributing to this success is the scope of this paper. From its humble beginnings in the Durant-Dort Carriage Company to the corporate reorganization of the 1920s which catapulted General Motors past Ford in size, General Motors passed over many travails

and tribulations. The effort of solving these problems helps explain why General Motors succeeded where so many other companies failed.

The story of General Motors, however, does not begin in 1908 with its founding by William Durant. The story must begin earlier with Durant himself and the Durant-Dort Carriage Company. William Durant first made his mark in business with the creation of this carriage company that went on to become the largest in the world. At Durant-Dort, Durant honed his business skills and created an industrial vision that he carried over to General Motors. This vision was unique for its vertical and horizontal integration of complementary firms. He then moved into the stock market and subsequently the Buick Motor Company. The first chapter thus relates the experiences at Durant-Dort, the stock market and the Buick Motor Company that shaped Durant's business philosophies, and how their structures and ideas carried over to General Motors.

In 1904 Durant purchased the Buick Motor Company and embarked upon his automotive career. He headed this company for four years until he founded General Motors, which absorbed the assets of Buick. The second chapter relates the founding of General Motors, its spectacular growth in both size and scope, and the problems of Durant's leadership until he was forced to exit the company in 1920. From 1904 to 1920 General Motors grew almost exponentially as Durant purchased hundreds of companies and constantly expanded production. This rapid growth created major managerial and organizational problems within General Motors that were apparent in 1910 and 1920. The chapter thus concludes with an analysis of the managerial chaos that Durant bequeathed to his successors.

In the 1920s a new generation of corporate leader schooled in principles of scientific management assumed control of General Motors. These men, coming from within and outside General Motors, successfully reorganized General Motors to capitalize on the vision of Billy Durant. Billy Durant had correctly perceived the wisdom of a large automobile producer manufacturing a wide variety of products, but had been unable to implement this vision with a successful corporate organization. These men rebuilt General Motors, opening new channels of communication, and created a new industrial model that carefully balanced the tensions of centralization and decentralization. The third chapter analyzes exactly what these men did to catapult General Motors past Ford in sales, and also the significance of their achievement to greater corporate America.

The first thirty years of General Motors were not only crucial to the development of the automobile industry, but also to corporate America in general. Other companies imitated General Motors, hoping to duplicate its successes. Two important concepts emerged from General Motors during this time. The first was the vision of Durant for a vertically and horizontally integrated automotive producer. Not only did this idea prove extremely successful in the automotive industry, but other corporations saw its adaptability to their industries as well. The second idea was the new industrial model created in the 1920s. This model also proved crucial to the automotive field, as well as adaptable to other industries. The first years of General Motors' life thus proved very important to not only the automotive industry, but to the development of wider corporate America. General Motors used the strengths of these two novel ideas to catapult itself to the front of the world automotive industry in 1927.

Chapter 1

The Years Before General Motors

When asked to name American automotive pioneers, most people would quickly respond with Henry Ford and Walter Chrysler. Their prominence is undisputed, for two of the three surviving American automobile producers bear their names. Equally, if not more important than these two men, however, is William Crapo Durant, the founder of the General Motors Corporation. He guided the company from its inception in 1908 until 1920 when he was succeeded by a new generation of corporate leader. Durant, however, laid the foundation of the company as it is known today: as a large manufacturer producing a complete line of cars as well as most of the parts necessary to build these automobiles. Durant thus deserves a place in the annals of automotive history along with such names as the Dodge Brothers, Alfred Sloan, as well as Ford and Chrysler.

Durant's childhood and lineage hardly bode well for his future career. He was born in Springfield, Massachusetts on December 8, 1861. His father, according to Durant's grandfather Henry Crapo was "imbued with a mania for stock speculation" and was inclined to "reckless ventures and wild speculation."[1] At age ten Durant, his mother and siblings, fled his drunkard father and moved to Flint, Michigan to be near his grandfather. The influence from his father seems to have ended, though Durant

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[1]Lawrence H. Gustin, Billy Durant: Creator of General Motors, (Grand Rapids: Eerdmans, 1973), 29.

inherited some of his father's characteristics, including attraction to the stock market. Durant later used stock manipulations to finance General Motors' spectacular growth, and made and lost a fortune many times on the market.[2]

The city of Flint, however, was far away from stock market activities. In the nineteenth century the city drew upon its vast hardwood reserves to create a bustling industrial center that constructed sashes, doors, blinds, hoops, barrels, kegs and furniture.[3] These factories relied upon a strong and well trained labor force that would first aid in the establishment of the carriage industry, and later the Buick Motor Company, which formed the core of General Motors from 1908-1910. In the late nineteenth century the traditional industries of Flint were in decline due to increasing competition from the western portions of the country, so the business leaders of Flint looked for newer investment opportunities. They seized upon carriages, and by 1882 there were five major wagon and carriage makers in town.[4] These and other carriage manufacturers played an important role in the development of the automobile industry.

This was the town and work environment that the young Durant entered into in 1878 after dropping out of high school. He took a wide variety of menial jobs, but soon discovered that he possessed a strong aptitude for sales. He went to work for a cigar manufacturer, and within two days of being hired returned to the factory with an order

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[2]Ibid., 19.

[3]Ibid., 31.

[4]Ibid., 32.

for 22,000 cigars.[5] He had travelled to Port Huron and convinced the merchants to bypass the wholesalers and buy directly from the manufacturer. Durant's soft-spoken nature and likeable personality endeared him to men. He tried to let the product sell itself, and looked for goods that people could recognize as valuable without a strong sales pitch. This selling style proved extremely successful at the Durant-Dort Carriage Company, and later at the Buick Motor Company.

In 1886 Durant's life took a profound turn when he accepted a carriage ride from his friend John Alger. The little two wheeled cart had a seat that swayed from side to side with little bouncing because it was mounted on springs. The design offered a good ride, uncommon for two wheeled carts of the day. This cart was a product that Durant believed could easily sell itself. The very next day he rode seventy-five miles to Coldwater, Michigan where the cart was manufactured. Durant discovered a small shop that produced just two carts a day. He inquired if he could purchase an interest in the company, and was quickly told that for $1,500 he could purchase the whole company, including the design patent. Durant went back to Flint and quickly secured a loan for $2,000; $1,500 for the business, and $500 to move it to Flint.[6]

The problems that Durant now faced were a lack of working capital and manufacturing knowledge. He solved both of these problems by selling a half interest in the company to Josiah Dallas Dort. On September 28, 1886 the two men opened an account in the name of the Flint Road Cart Company, the company later changing its

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[5]Ibid., 34-35.

[6]Ibid., 40-42.

name to the Durant-Dort Carriage Company. Durant concentrated on sales and financing, while Dort's more practical mind dealt with production problems. This partnership worked extremely well until Durant's exit from the company in the early 1900s.[7]

This little shop was extremely important to the formation of the General Motors Company. The Durant-Dort Carriage Company grew to major proportions under Durant's leadership and influenced General Motors in two ways. The carriage company served as a source of capital for the Buick Motor Company and later General Motors. Durant-Dort nearly always obliged Durant's requests for more capital to finance his automotive ventures. Secondly, Durant-Dort provided a model for General Motors. Durant-Dort, like General Motors, eventually provided a variety of products, be it carts or cars, spanning all market segments, and engaged in the production of most of the parts necessary to build these products.

In 1886, however, no one had ever heard of an automobile. Durant threw his energies into building his newly purchased carriage company. He had a few carts already assembled, and he sent one to the Tri-State Agricultural Association's annual fair in Michigan. The Association held a competition between cart producers and awarded prizes based upon the practicality and usefulness of the carts. Durant's cart won a blue ribbon in the competition, an event he later memorialized by giving his whole line of carts the name "Blue Ribbon." Winning the contest bestowed immediate notoriety on

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[7]Ibid., 43.

Durant's cart, and within two weeks he had secured orders for 600 carts.[8] This situation created a major problem for the fledgling manufacturer, for the productive capacity of Durant-Dort was two carts per day.

Durant quickly solved the production problem by contracting out the construction of the carts to Flint's largest carriage manufacturer. W.A. Paterson agreed to build 3,200 carts for Durant at $12 each. This step initially proved very successful for Durant, for in the first year of business he sold 4,000 carts at $22 each. After this first year of success, however, the relationship with Paterson soured. Paterson began delaying shipments to Durant as he attempted to market his own road cart, in direct competition with the model he produced for Durant-Dort. He began shipping a cart similar Durant's, priced at $15, and ceased shipping carts to Durant in an attempt to drive him out of business.[9]

Paterson's plan was unsuccessful, for by this time Durant-Dort had accumulated enough capital to rent an old cotton textile mill and expand their in-house production of carts. Later demand for Durant-Dort carriages again outstripped supply, and Durant was forced to subcontract assembly to Paterson. Instead of delaying shipment as before, this time Paterson went directly to Durant's customers and offered them a lower price on the same cart he built for Durant-Dort. After this point, Durant attempted to avoid subcontracting work.[10]

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[8]Ibid., 45.

[9]Ibid.

[10]Ibid., 46-47.

These experiences with Paterson exerted a strong impact on Durant's vision of a manufacturing concern. The dependency on Paterson for supply of a product had restricted Durant's ability to grow and manage sales. Hereafter, Durant attempted to vertically integrate and bring under his control as many steps in the production process as he could. Durant later wrote:

> Our plan was to manufacture practically every important part of the buggy, and carrying out this idea, we did not stop until we had controlled, or were interested in building a full line of bodies, wheels, axles, forgings, stampings, leather, paint, trimmings, and various other items, even whip sockets; but not until our accessory plants were in operation...did we have a product that had no competition on price in the country. This gave us control of the business in that line as long as carriages were in demand.[11]

Durant planned to vertically integrate to achieve two goals. The first goal was to increase corporate autonomy in long-range planning and growth by freedom from the restrictions of suppliers. The second aim was a reduction in costs by increasing production of the products produced by the suppliers to reap the benefits of economies of scale.

After adopting a plan of vertical integration, Durant moved to horizontally expand the Flint Road Cart Company. In 1895 he changed the name of the Flint Wagon Works to the Durant-Dort Carriage Company, and unfolded his plan of expansion. He created two new corporate subsidiaries. The first was the Webster Vehicle Company which was designed to manufacture light spring wagons, and the second was the Victoria Vehicle Company, manufacturing a new line of rigs. These successful products sold in the upper price ranges, so Durant-Dort next went after the lower end of the market with a product

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[11]Ibid., 46-47.

sold for cash only. Durant thought he could profitably conduct this sale by increasing economies of scale in production, and also save money by refusing to extend credit to consumers purchasing this product. This new product was named the "Diamond Buggy," and after it went on sale, Durant-Dort had "an array of horse-drawn vehicles for every showy and utilitarian purpose."[12]

This expansion paid off handsomely for Durant-Dort. By 1901, Durant-Dort was almost completely independent of suppliers, and had its most successful year in corporate history. In fact, the year 1901 was a boom year for the whole town of Flint, for Paterson produced 23,000 carts, the Flint Wagon Works made 35,000, and Durant-Dort produced an impressive 56,000 carriages.[13] Durant-Dort now ranked among the most successful and largest carriage manufacturers in the world. Durant's leadership had worked wonders in turning the small shop into a full-line, vertically integrated industrial concern. The Durant-Dort Carriage Company rose to the top on the strength of Durant's vision: a manufacturing concern selling a broad range of products to a variety of consumers, while concurrently engaging in the manufacture of the parts necessary to create these products.

This model proved very important to Durant's later experiences in the automobile industry. He adapted this model to the General Motors Company when he created it in 1908. Durant's success with a vertically and horizontally integrated concern in the carriage industry convinced him that this model would prove effective in the then

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[12]Ibid., 47.

[13]Ibid., 54.

developing automobile industry, for both industries engaged in the production of vehicles for a wide variety of consumers. General Motors, under Durant's leadership, would expand at its height in 1910 to produce ten different makes of cars (Buick, Cadillac, Oldsmobile, Oakland, Carter, Elmore, Ewing, Marquette, Ranier, and Welch), and two trucks (Rapid and Reliance), while making most of the parts going into these vehicles.[14] Thus the vision Durant had for General Motors was largely an imitation of his earlier success at Durant-Dort.

The success of the Durant-Dort Carriage Company may have bored Durant, for in 1901 Durant abruptly ceased his activity in Flint and moved to New York City. He opened the Durant Securities Company at 53 Broadway, where he carried on with his father's great weakness, stock speculation.[15] Although not much is known about Durant during this time, it is apparent that this experience with the stock market both benefitted and hurt Durant. The benefit was the knowledge gained about stock exchanges and issuances, which was of crucial importance in his later efforts to expand General Motors. The downside was Durant's development of an affinity for the market which later distracted him from more important matters, like the administration of a multimillion dollar automotive concern. Stock exchanges, however, were the primary means by which Durant expanded General Motors, as capital was in short supply for the fledgling automobile industry.

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[14]John B. Rae, "The Fabulous Billy Durant," Business History Review (Autumn 1958, 255-271), 259.

[15]Bernard A Weisberger, The Dream Maker: William C. Durant, Founder of General Motors (Boston: Little, Brown and Company, 1979), 69.

In 1902 Durant tried to merge his expertise in the carriage industry with his new found knowledge of stock activity. Durant proposed a consolidation of some of the country's major carriage manufacturers. He considered more than fifty possible combinations before his plans were shelved due to the inability to reach agreement among the various manufacturers.[16] Despite the inability to achieve his goal, Durant proved that he was thinking in ever expanding terms. He had built the largest carriage maker in the world, but that was not enough. He constantly thought in bigger and bigger terms. In the automotive industry he tried to implement the same vision with the General Motors Company. Durant originally conceived of the company as a consolidation of the country's most successful auto manufacturers, but when other entrepreneurs balked, he tried to go it alone with his company, the Buick Motor Company.

The Buick Motor Company began operations in 1901, and the promise of its success lay in a breakthrough engine design. This design, patented by the company's founder David Dunbar Buick, had a valve in head design that increased both power and efficiency. David Buick, while being an excellent engineer and inventor, proved to be a very poor businessman. In 1903 the Briscoes bought into Buick's struggling company, and then Flint businessman James Whiting bought the company from these people and moved it from Detroit to Flint. In mid December 1903, Buick had only 25 employees manufacturing engines, but finally on August 13, 1904 the Buick Motor Company delivered its first car.[17] By the end of the year the struggling company had produced

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[16]Gustin, Billy Durant, 56.

[17]Ibid., 64.

fewer than 40 cars, and tottered on the edge of insolvency.[18] Flint leaders did not want to lose their toehold in the developing automobile industry, so they searched for someone who could lead Buick to prosperity.

Flint leaders pegged the departed Billy Durant as a good prospect to head the struggling automotive concern. In late August, 1904, Whiting and Durant met. Durant later wrote, "I was not in the least bit interested in managing an automobile concern," but Flint business leaders continued to press their case, hoping Durant could duplicate the success of Durant-Dort at Buick.[19] Durant decided to research Buick by putting one its automobiles through rigorous testing. He was impressed by the car, and agreed to join the Board of Directors of the Buick Motor Company. On November 1, 1904, Durant assumed leadership of the company, the fourth man in three years trying to make a success of the concern.

As Flint businessmen no doubt realized, Durant brought considerable benefits to the Buick Motor Company. Durant was an enigmatic man who quickly made friends. He had the uncanny ability to quickly sell a product, a trait which he rapidly utilized. He also had the experience of expanding a struggling carriage manufacturer. The situation at Buick was very similar, for like the carriage with the clever design, the Buick car had a unique feature Durant could capitalize upon. Durant was the man who could make this technology bear fruit in terms of sales for Buick. Durant's plan for success imitated the one that had worked at Durant-Dort in that Buick expanded at first vertically

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[18]Weisberger, The Dream Maker, 82.

[19]Gustin, Billy Durant, 67.

and later horizontally. This process of expansion was not easy, for Durant had to rely heavily on the town of Flint, and especially the Durant-Dort Carriage Company, for capital and expertise. However unpromising the company looked in the fall of 1904, Durant had big plans for the tiny company.

The ties between Flint businessmen and Buick were very apparent. Durant immediately began to reorganize Buick. On the day of his takeover, Durant raised the capitalization of the company to $300,000 and then two and one half weeks later again raised it to $500,000. Just ten months after that, he increased the value of the company's stock to $1.5 million.[20] Paterson and the Flint Wagon Works supported Durant and Buick by purchasing much of this stock. While these two companies were important, the Durant-Dort Carriage Company was indispensable to Buick. By the end of 1905 Durant-Dort held between one fourth and one third of all outstanding Buick stock. As Durant-Dort officer Fred Aldrich commented, "Within reason our resources were always at his disposal."[21] The relationship between the two companies was close, as Buicks were displayed at Durant-Dort showrooms, and Durant-Dort later manufactured bodies for Buick. Durant-Dort could afford to be generous, for 1906 was its best year yet, although the company was finished by 1917, a victim of the automobile industry it helped create.

By investing capital into the automobile industry, Flint businessmen were repeating an earlier pattern. Previously they had transferred capital from industries like barrel making into carriage manufacture, recognizing the death of one industry and the

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[20]Weisberger, The Dream Maker, 93.

[21]Ibid., 98.

rise of another. In the early twentieth century, some men like Durant recognized that the automobile industry ultimately meant the end of the carriage manufacturers. Flint leaders thus slowly but deliberately transferred their capital from the dying industry, carriages, into the future one, automobiles. This decision paid off handsomely for Flint, already known as the "Vehicle City." Buick and Flint became so intertwined that as the fortunes of Buick went, Flint's followed.

Expanding the capital base of Buick was just the first step of growth for Buick. Durant also had to sell the Buick motorcar, which he seemed to do with comparative ease. Six weeks after moving into the Buick offices, Durant displayed a car at the New York Automobile Show. The response was so enthusiastic that at the end of the show Buick had secured orders for 1,108 cars, or 1,000 more than the output of the preceding year.[22] Rather than subcontract assembly as he had done at Durant-Dort, Durant utilized an idle plant of the carriage company to expand production. Thus, in just a few short months, Durant had greatly expanded the production, sales and capital of Buick, similar to what he had accomplished after purchasing the carriage company.

As the production of Buicks swelled, so did the need for parts. Buick was not a vertically integrated company, for like many other early automobile producers, it assembled cars out of parts made by other companies. The steady supply of parts was critical to the automotive industry, for the lack of one part, such as an axle, prevented the production of any automobiles at all. In the summer of 1905 Buick suffered problems with axle deliveries. The axles of Buicks were manufactured by the Weston-

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[22]Ibid., 93.

Mott Company of Utica, New York, and were shipped to Flint via the railroad. The railroads were not efficiently shipping these axles to Buick, causing stoppages in production and uneven production at the assembly plants. The inefficiency in railroad delivery apparently was common in the automotive industry, as Alfred Sloan, later General Motors' president, dealt with this problem while head of the Hyatt Roller Bearing Company. Sloan solved the problem by sending Hyatt employees with the trains, while Durant utilized another tactic.

Durant envisioned locating supplier and purchaser in the same region to eliminate the need for transportation. On June 5, 1905, Durant wrote a letter to Charles Stuart Mott, head of the Weston-Mott Company. In the letter Durant proposed that Weston-Mott establish a factory in the environs of Flint. He wrote:

> Would you entertain the proposition of moving or establishing a branch factory at Flint, Michigan, provided the business of three or four large companies was assumed for a term of years? Flint is in the center of the automobile industry, a progressive city, good people, with conditions for manufacturing ideal.[23]

Thus Durant wanted to solve his supply problems by following the pattern established at Durant-Dort. He wanted to consolidate suppliers and producers in one area to maximize efficiency. Initially, however, Weston-Mott was to remain an independent concern, as Buick did not have the capital to purchase the company outright.

As things turned out, Durant did not have to purchase Weston Mott to gain a steady supply of axles. Mott's initial response to Durant was less than enthusiastic, but he agreed to meet with Durant in Flint. Mott did not want to open a branch factory in

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[23]Ibid., 102-103.

Flint because the distance from Utica would make supervision difficult. Durant therefore proposed that Mott move the whole company to Flint in return for the entire Buick contract. Mott agreed and construction was begun on a new factory which opened on February 1, 1907. Just two years earlier Weston-Mott had shipped axles to Buick cash on delivery for fear of Buick's imminent demise. Buick certainly had done much to establish itself as a major producer in a short span of time, for in 1906 the company manufactured 1,400 cars and in 1907, 4,641.[24]

The relocation of the Weston-Mott company to Flint was an important milestone in automotive history. For the first time suppliers and producers coalesced together. In Adventures of a White Collar Man, Sloan wrote that it was,

> the first step in the integration of the automobile industry. Thereafter, bit by bit, we were able to see a constant evolution bringing the manufacture of the motor car itself and the manufacture of its component parts into a closer corporate relationship.[25]

Durant had already brought supplier and producer together in the Durant-Dort Carriage Company. He was now trying to accomplish the same feat in the automobile industry. His genius lay in that he was the first man to attempt this consolidation.

Durant's plans seemed to be paying off handsomely for Buick and Flint, but in 1907 an economic crisis caused a sharp decline in the demand for automobiles. Most producers responded by slashing production, but Durant kept the Buick factories running at capacity. Durant stored unsold Buicks in barns and warehouses, convinced that when

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[24]Ibid., 104.

[25]Alfred P. Sloan, Adventures of a White Collar Man (New York: Doubleday, Doran and Company, Inc., 1941), 50.

the panic ended demand would quickly return. For this crisis, Durant's plans proved correct. The panic was brief, and when demand returned Buick dealers had cars while competitors did not. On the strength of this demand for its products, the Buick Motor Company became the largest producer of automobiles in the country in 1908.

Durant had conducted a dangerous gamble with his actions in the panic of 1907. Keeping production levels high while sales remained low strained the financial resources of Buick by tying up dangerous amounts of capital in inventory. Durant, however, was aided by the financial strength of Buick, and the generosity of Flint businessmen who allowed Durant some leeway with his bills. Durant ultimately was saved by the brevity of the panic. The panic was brief enough to strain Buick, but not push it into insolvency.

Durant had shown an evident disdain for the business cycle, and this oversight would return to haunt him in 1910 and 1920. Durant apparently believed that business downturns were brief interruptions in the continuing growth of the economy. To a certain extent this fact may be true, but their brevity does not mean they can be ignored. Durant apparently thought only in terms of ever expanding production no matter what the current state of the economy. His experience with the 1907 recession, which proved successful for Buick, led Durant to believe that he could handle all downturns in the same manner. As shall be seen, he could not have been more wrong.

In 1908, however, it appeared Durant could only do right. In four short years he had turned a company with a productive capacity of twenty-five cars a day into the largest manufacturer in the country. He now began thinking in larger terms, and he met

with Benjamin Briscoe to discuss the idea of consolidation in the motor vehicle industry. Durant's idea was similar to the one he had tried to implement with the carriage industry. Weighing heavily on the two men's thoughts was the recession of 1907 which had devastated some producers. Briscoe thought a consolidation could achieve stability in the turbulent industry, while the idea of a bigger company appealed to Durant. Briscoe later wrote:

> In this year of 1908 many of us thought that the industry was beset with difficulties and so came the desire to some of us to form a combination of the principal concerns in the industry, not with the desire to sell all of the automobiles that were to be sold, but rather for the purpose of having one concern of such dominating influence in the automobile industry, as, for instance, the United States Steel Corporation exercises in the steel industry, so that its very influence would prevent many of the abuses that we believed in.[26]

Out of the meetings of these two men came the idea for the creation of an International Motors, an idea whose name was later changed to General Motors.

Durant and Briscoe planned to consolidate the four major producers in the country. Buick and Maxwell-Briscoe, which Briscoe headed, were included, as were Reo and the Ford Motor Company. J.P. Morgan and Company of New York planned to finance the consolidation, but as the meetings progressed difficulties arose with negotiations. Wall Street organizations were still wary of investment in the young automobile industry, concerned that the motorcar might be merely a fad. Morgan was thus leery of the proposed merger, and when Henry Ford requested three million dollars in cash for the Ford Motor Company, instead of a merger through stock exchanges, negotiations became difficult. When Ransom E. Olds demanded a like sum for Reo,

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[26]Weisberger, The Dream Maker, 120.

negotiations became impossible. Prior to 1910 no investment firm was willing to invest six million dollars in an unproven industry.

In the unsuccessful negotiations, Durant revealed his vision of an automotive combination. The design differed sharply from Briscoe's idea. Briscoe envisioned an operating merger, with central departments for purchasing, advertising and sales. Durant, on the other hand, desired to establish a holding company that would merely hold the stock of various automotive concerns. This type of combination would leave company executives relatively autonomous, without the restraints of centralized control. Briscoe summarized the difference between the two men's thoughts with: "Durant is for state's rights, I am for union."[27] Perhaps because of these varying philosophies, the men did not continue their negotiations for merger after the departure of Ford and Olds.

After Durant and Briscoe broke off their talks, there seemed to be no further hope of consolidation. Durant, however, was not going to be stopped by the departure of all the companies planned for the consolidation. He began a search for other prospective companies, and located the floundering Olds Motor Company of Lansing, Michigan.[28] Production at Olds had dropped to just one thousand cars per year, and several major stockholders were attempting to sell their interests.[29] Durant, however, did not doubt his ability to return the struggling Olds to profitability. Durant received an option to

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[27]Ibid., 123.

[28]R.E. Olds founded the Olds Motor Company, but was bought out by other investors who retained the rights to the company name. Olds went on to found Reo, which unsuccessfully negotiated with Buick for a merger. Buick and Olds eventually ended up merging to form the General Motors Company.

[29]Weisberger, The Dream Maker, 131.

purchase 75% of the outstanding stock, and the opportunity to achieve his goal of consolidation around the two automobile companies he owned. The General Motors Company was created to hold the stock of these two concerns, achieving the first consolidation in the automotive industry.

As the growth of General Motors bore out, both men correctly foresaw a successful model of consolidation. When General Motors was finally established in the fall of 1908 by Durant, it was created along the lines of his model. In the end, however, after two decades of growth, restructuring and development, the corporation closely resembled the Briscoe model. This transition does not mean that Briscoe correctly assessed the proper form of consolidation. In 1920 it was apparent that General Motors could no longer exist within the Durant model which had served the company well since 1908. In 1908, however, Briscoe's idea may have proven unsuccessful. The first decade of this century was the age of entrepreneurs, when cars were still the creation of a single inventor. Briscoe's more bureaucratic model may have stifled these engineers.

Durant had entered the automotive industry just four years before, but he had already accomplished much. He built the largest automobile manufacturer in the country, moved supplier and producer into a closer relationship, and also successfully merged two automobile companies. Durant possessed a strength for building successful companies out of floundering, small-scale producers. This ability arose out of his strengths in sales and personality, and his far reaching vision. What he lacked were not yet apparent shortcomings in aptitudes for administration and finance. These faults did not haunt him in a rapidly expanding economy with ever increasing demand for his product. Later, as

growth for automobiles levelled off, these faults would effect General Motors' ability to achieve profitability. In 1908, though, Durant headed the world's largest automotive producer and appeared ready to increase his domination of the automobile industry.

Chapter Two

Durant's Tenure at General Motors

Durant moved rapidly after founding General Motors to implement his vision of a horizontally and vertically integrated automotive combination. On September 6, 1908, the General Motors Company was incorporated in the state of New Jersey. The New York Times made no mention of its incorporation, which is not surprising since General Motors was capitalized at only $2,000.[30] From this inauspicious beginning the company rapidly expanded, buying motor car manufacturers, auto parts suppliers, and tractor and refrigerator makers. By 1919 General Motors captured 19.9% of the market making it the second largest producer of automobiles in the country behind the Ford Motor Company, which produced the phenomenally successful Model T.[31] Durant's vision seemed to be paying off, but in 1920 General Motors underwent a major transformation in corporate control. Durant had successfully forged General Motors through the skillful combination of companies, but lacked the ability to manage General Motors and eventually lost control on December 1, 1920.

The early rapid success of the Buick Motor Company convinced Durant of the potential in the automobile industry. Durant created a strategy that unfolded with the expansion of General Motors to tap into this potentially huge and lucrative market. He

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[30]Theodore F. Macmanus and Norman Beaseley, Men, Money and Motors: The Drama of the Automobile (New York: Harper and Brothers, 1929), 68.

[31]John B. Rae, The American Automobile Industry (Boston: Twayne Publishers, 1984), 50.

proposed to draw on the capital and expertise of the Durant-Dort Carriage Company to create an automobile producer using the same philosophical structure as his carriage company. This structure envisioned consolidating suppliers and producers in the same corporation, while producing a wide variety of automobiles for diverse tastes. He had already begun this process at the Buick Motor Company when he convinced Weston-Mott and Alfred C. Champion, a spark plug manufacturer, to relocate their factories to Flint. Durant was not the only man in the early years of the automobile to have this vision. Benjamin Briscoe shared Durant's idea, and the United States Motor Company was yet another attempt at consolidation. Perhaps because of Durant's experiences at General Motors, the strength of the purchased companies, and pure luck, General Motors was able to survive. As Alfred P. Sloan later observed, only Durant had the courage, ambition, and creative spirit to do something new and different in American industry.

Because Wall Street was wary of investment opportunities in such a new and unestablished industry, Durant developed creative methods to finance General Motors' expansion. The Durant-Dort Carriage Company and Flint businessmen provided much capital, but Durant relied mostly upon stock exchanges to finance expansion. Durant had an intimate knowledge of stock workings, and often relied upon his personality to sell the stock. B.C. Forbes[32] wrote in Forbes Magazine, "it (Wall Street) had been a siren call to Durant luring him, according to all accounts, into tremendously speculative

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[32]B.C. Forbes founded Forbes Magazine and his book on automotive men, Automotive Giants of America, was originally published as a series of sketches in this magazine.

exploits, sometimes extremely profitable, sometimes contributing to his undoing."[33] Stock manipulations certainly aided General Motors' expansion, but they were Durant's undoing in 1920. Durant's fixation with the price of General Motors' stock prevented him from developing the long-term focus necessary to build a strong central management.

Stock market values concerned Durant because he relied upon rising prices to finance General Motors' expansion. Durant bought few companies with cash, for most were purchased through stock deals. A high price for General Motors' stock meant Durant could exchange less of it for more of the purchased companies' stock. This type of expansion was fueled by prospective earnings, not current profits.[34] As long as General Motors remained profitable, and stock prices up, Durant and General Motors were fine. The corporation did not, however, have a financial cushion to rely on in an economic downturn. General Motors' prosperity was tied to the short term stock price, and not to long term profits. Any immediate drop in profits produced panic and a decline in stock prices. This situation occurred in 1920.

General Motors quickly expanded after its creation. Durant realized that any combination had to rest upon strong producers, so he tried to acquire Oldsmobile, Cadillac, Ford, Maxwell-Briscoe and Reo. Within ninety days of General Motors' birth, the fledgling corporation included Oldsmobile, Buick and Oakland. Efforts to acquire Ford and Reo were thwarted by their continuing insistence upon cash instead of stock.

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[33]B.C. Forbes and O.D. Foster, Automotive Giants of America (New York: B.C. Forbes Publishing Company, 1926), 44.

[34]Alfred D. Chandler, Jr., ed., Giant Enterprise: Ford, General Motors, and the Automobile Industry (New York: Harcourt, Brace and World, Inc., 1964), 78.

In 1909 Durant added the successful Cadillac company to General Motors for $4.5 million, a major outlay but one Durant believed justified due to the strength of the company. Just thirty-three days after purchase Cadillac fulfilled Durant's expectations by reporting a profit of $2.2 million, meaning that one half of the purchase price was quickly earned back.[35] In addition to these producers, Durant purchased many automotive suppliers to increase vertical integration. These companies produced bodies, gears, engines, axles, steering systems, and other related automotive components. Durant thus simultaneously pursued a policy of vertical and horizontal integration.

In 1910 the rapid expansion caused a financial crisis within General Motors. Buick was $8 million in debt, forcing the company to transport cash in suitcases to meet payroll obligations, because the money would have been seized if deposited in banks.[36] In the fall of 1910 Durant purchased the Heany Lamp Company for 8,290 shares preferred and 74,775 shares common stock - more stock than that involved in the purchase of Buick and Cadillac combined.[37] Durant purchased the lamp company because of the tungsten light patent it held, a patent later thrown out by the patent office.[38]

These financial strains found the company hopelessly overextended in the

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[35]Richard Crabb, Birth of a Giant: The Men and Incidents that Gave America the Motorcar (New York: Chilton Book Company, 1969), 239.

[36]Ibid., 279.

[37]Ibid., 281.

[38]Alfred P. Sloan, My Years with General Motors (New York: Doubleday and Company, 1964), 9.

economic downturn of that year. Cars no longer sold in enough volume to pay the bills, and there was no financial cushion to rely upon. Sloan attributed the crisis of 1910 to too-rapid expansion, an underdeveloped organization, inexperienced management, and the problems inherent to a new industry.[39] This financial crisis should have alerted Durant to the problems of overexpansion, but he was to repeat them a decade later. Durant's expansion strained financial resources and created organizational difficulties he never addressed.

The crisis of 1910 forced General Motors to turn to outside financing for the first time. The financial situation demanded a substantial outside source of capital to pay off overdue debts and meet payroll obligations. Durant journeyed across the country, but was unable to locate a source for this capital. The September 19, 1910 announcement by the Board of Directors that it had no idea exactly what General Motors's obligations were certainly hindered Durant's efforts.[40] Bankers were already wary of investment opportunities in the automobile industry, and also did not want to involve themselves with a corporation that lacked good accounting, financial controls, and market projections. Durant's search for outside financing was unsuccessful, and it appeared General Motors would join the countless automobile producers that vanished each year.

General Motors had to convince bankers that it was a viable corporation that would quickly return to profitability. Durant could not achieve this end, so in a meeting which lasted all night, Henry Leland attempted to save General Motors, and more

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[39]Ibid., 41, 85.

[40]Crabb, Birth of a Giant, 286.

specifically his family's Cadillac company.[41] Leland correctly presumed that bankers were looking at dissolving General Motors by selling off its assets. He asked the bankers to adopt a different view:

> I told them if they could only reorient their thinking in the direction of how GM could be saved, rather than why it should be dissolved, they would find many good portents of success. After all, Cadillac alone was earning almost two million a year and GM had made 10 million. Surely 15 million was not such a great sum to loan a business earning at that rate.[42]

Leland's argument won the bankers over. They agreed to loan General Motors $15 million, with their fee being $2,250,000. The bankers also received 4,169,000 shares of General Motors' preferred stock, and two million shares of common stock. This investment signified Wall Street's growing awareness that the automobile industry was established. Automotive producers were rapidly outgrowing their ability to locate capital locally, and needed this new infusion of funds from larger financial markets to respond successfully to increasing demand.

The bankers insisted on removing Durant as president of General Motors. Leland convinced them of General Motors' long term profitability, but they remained unpersuaded that Durant could successfully manage the company to this profitability.[43] The investors appointed new corporate managers who stripped Durant of his presidency, but allowed him to retain his seat on the board of directors. This style of corporate

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[41]Merril Denison, The Power to Go (New York: Doubleday and Company, 1956), 180.

[42]Crabb, Birth of a Giant, 284.

[43]Federal Trade Commission, "Report on the Motor Vehicle Industry," (Washington D.C.: U.S. Government Printing Office, 1939) reprinted in Alfred D. Chandler, Jr., ed., Giant Enterprise, 64.

intervention followed patterns established at other companies and industries, like railroads and steel. Bankers would often intervene in managerial affairs if they possessed a substantial investment in the company in order to protect their investment.

The new management effected a few changes, but the basic structure of the company, or lack thereof, remained intact. The Ranier, Carter, Marquette and Welch divisions were dissolved. The Heany Lamp Company was also liquidated after the patent for which Durant had paid dearly was thrown out. In addition, the bankers ordered Buick to cease production of the Model 10, which came out in 1907. Durant had developed this light car with a four cylinder engine to compete with the Model T from Ford in the low cost segment of the market. Although Durant had successfully identified this emerging market segment, the new managers failed to capitalize on this perception as they were more interested in quickly returning General Motors to profitability. The investors perceived going head to head with Ford on a product that did not have a high profit margin as a waste of already limited resources. The bankers achieved their goal of profits, and General Motors' stock responded accordingly, going from $24 a share in 1910 to $264 in 1915.[44]

Despite the interference of the new management, Durant did not abandon his dreams of entering the low-priced market segment, or of regaining the presidency of General Motors. The next five years bore out Durant's genius with the stock manipulations that had enabled him to expand General Motors from 1908-1910. Durant

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[44]W.A.P. John, "That Man Durant," Motor (January 1923) reprinted in Alfred D. Chandler, Jr., ed., Giant Enterprise, 56.

organized two new auto manufacturers: the Little Motor Company, which sold a light car priced around $650, and the Chevrolet Company, which sold a six cylinder car priced from $2,500 and up.[45] Within four years Durant had built the Chevrolet Company into a nationwide organization with several assembly plants and wholesale offices throughout North America.[46] Durant's new companies were so successful that he purchased the Buick factories idled after production of the Model 10 ceased.[47] In 1912 Durant ended production of the Chevrolet car and applied the name to the low-priced Little automobile, hoping to capitalize on the Chevrolet name and consolidate production and resources around the most profitable car.

This managerial decision established a strong base for Durant to work from. Durant now aimed to recapture control of General Motors, and in early 1913 he began to purchase General Motors' stock through Chevrolet. He quietly continued this practice, because he wanted the stock price to remain low and his plan a secret. In 1915, just before the banker's trust over General Motors was to expire, Durant went public with his plans. He offered to exchange five shares of Chevrolet stock for every share of General Motors stock. Public response to this offer was enthusiastic. A.M. Bentley of Avosso, Michigan travelled to New York City to turn over a suitcase full of General Motors' stock. Chevrolet stored stocks in bushel baskets, unable to process them as fast

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[45]Federal Trade Commission, "Report on the Motor Vehicle Industry," 57.

[46]Sloan, My Years with General Motors, 9.

[47]Crabb, Birth of a Giant, 323.

as they arrived.[48] At a General Motors Director's meeting Durant announced that his Chevrolet Motor Company, capitalized at $20,000,000, had a controlling interest in the $100,000,000 General Motors Company. On October 13, 1916, this fact was officially verified: of the 825,589 outstanding shares in 1915, Chevrolet held 450,000 of them.[49] Durant had reasserted control over General Motors through the Chevrolet Motor Company.

After reassuming control of General Motors, Durant implemented a corporate restructuring to remedy some of the weaknesses of 1908-1910. On October 13, 1915 Durant created the General Motors Corporation of New Jersey to absorb the old assets of the General Motors Company of Delaware. The purpose of this move was to limit the autonomy of corporate divisions by changing General Motors from a holding company to an operating concern. Former operating companies, like Buick, Cadillac and Champion, now became corporate divisions with each general manager becoming a vice-president and member of an Executive Committee.[50] The Executive Committee was designed to serve as the central governing body of the corporation. General Motors could now be referred to as one company, instead of a collection of companies. While this plan seemed to provide a central means of coordination, overcoming the tradition of divisional autonomy proved to be an extremely difficult process.

The re-emergence of Durant also marked the entrance of the duPonts into General

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[48]Ibid., 327.

[49]Ibid., 331.

[50]Ibid., 339.

Motors. John J. Raskob, a DuPont corporate official, had earlier identified General Motors as a potential company for DuPont investment. The choice was logical for the automobile industry consumed many of the products of the DuPont Chemical Company, and Raskob believed that a financial interest in General Motors would secure a large and reliable market for DuPont products including Fabrikoid, Pyrallin, paint and varnish.[51] The duPonts thus provided financial support to Durant, expecting that through him they would have access to General Motors, a potentially major consumer of their products.

The duPont's investment strategy was also the springboard to managerial influence. Durant would manage General Motors' daily and long term operations, while DuPont, through John J. Raskob, who joined General Motors' Board of Directors in 1915, would oversee the corporation's financial affairs through the Finance Committee.[52] The corporate reorganization and DuPont influences would hopefully compensate for the weaknesses of Durant. The reorganization would ideally result in more centralized control, while Raskob's presence would establish the much needed financial stability. Neither of these measures proved adequate, and the duPonts eventually had to exert even more control in 1920.

In 1916 General Motors' long term prospects looked favorable, but the manufacturer soon ran into difficulties again. The corporation returned a profit of $28,812,287.96 for that year, and with the changes profits were expected to grow.[53]

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[51]Opinion of Justice William Brennan, United States v. DuPont, 353 U.S. 602 (1956).

[52]Sloan, My Years with General Motors, 13.

[53]Crabb, Birth of a Giant, 69.

The corporate changes though, had not ameliorated another one of Durant's weaknesses: his propensity to purchase companies, a practice which resumed in 1916. This new expansion, unlike the 1908-1910 one, focused more on vertical rather than horizontal combination. In 1916 Durant purchased manufacturers of roller bearings, rims, radiators, horns and starting, ignition and lighting systems.[54] A few months after he had regained control, he also purchased the Hyatt Roller Bearing Company of New Jersey which brought its president, Alfred P. Sloan, into the corporate fold.

The 1916-1919 expansion, which led General Motors into such non-automotive fields as tractors and refrigerators, was "enthusiastically supported" by Raskob and the Finance Committee.[55] Raskob did nothing to curb Durant's appetite for expansion, which was again financed primarily through stock exchanges. As Durant's purchases of other companies accelerated, General Motors once again became financially overextended and vulnerable, and prone to another economic downturn like that of 1910. In 1920, following the end of World War I, the nation experienced a brief but sharp recession with grave consequences for Durant and General Motors.

The recession of 1920 brought a rapid decline in automotive purchases which created another crisis within General Motors. In January of 1920, General Motors sold 34,313 units, and this figure rose to 45,479 in July. Thereafter, General Motors' sales rapidly declined. By September sales had fallen to 28,796, in October to 18,302, and

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[54]Chandler, Giant Enterprise, 52.

[55]Sloan, My Years with General Motors, 13.

in November they had plunged to a dismal 12,798 units.[56] General Motors' stock plummeted along with its sales, from a high of 42 to a low of 12 and 3/4.[57] Durant plunged into the market in a futile attempt to prop up the price, forming two consortiums to purchase General Motors' stock. The stock price kept declining and Durant found himself on the verge of bankruptcy. In the fall of 1920 the duPonts stepped in with the aid of J.P. Morgan and Company to protect their substantial interest in General Motors. They agreed to take 60% of Durant's stock in General Motors, while he retained 40%.[58] In addition, Durant was forced to resign the presidency of his automotive empire.

The similarities of 1920 to 1910 were striking. Once again Durant had led General Motors into a period of rapid expansion to fulfill his vision of an automotive empire. In both cases, he failed to anticipate and plan for the inevitable market downturn by adopting reasonable and prudent plans for expansion and growth. Durant had to resign the presidency of General Motors twice for his inability to provide sound corporate leadership. General Motors' organizational and administrative difficulties would have to be dealt with by a new corporate leadership.

As in 1910, the 1920 crisis revealed structural weaknesses within the corporation caused by a lack of central control. Divisions continued to spend large amounts of

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[56]Lawrence H. Seltzer, A Financial History of the American Automobile Industry (Boston: Houghton Mifflin Company, 1928), 199.

[57]Arthur Pound, The Turning Wheel: The Story of General Motors through Twenty-Five Years (New York: Doubleday, Doran and Company, Inc., 1934), 203.

[58]Crabb, Birth of a Giant, 69.

money building inventories and automobiles, even after they were ordered by the Inventory Allotment Committee to curtail purchases.[59] Division general managers did not respond to the directives of the central office, which prevented General Motors from reacting to the crisis. General Motors also faced a cash flow problem, a seemingly improbable situation for a corporation that regularly earned millions of dollars. Raskob had not brought the financial control necessary to manage a large corporation, and the rapid expansion further exacerbated the capital shortage and mismanagement. The crisis within General Motors once again related to Durant's inability to organize, control and lead what he had assembled. Not only did General Motors use its limited resources unwisely, but also failed to centralize control in such important areas as finance, product policy, testing and inventory.

Durant had attempted to centralize control around the Executive Committee, but it proved an ineffective governing body. Division general managers, or corporate vice-presidents, formed this committee and were expected to coordinate the various parts of General Motors to maximize both production and profits. The problem was that division managers had the interests of their division, and not the larger corporation, in mind. Executive Committee members were primarily divisional executives, and secondarily officers of General Motors. Sloan thought this corporate structure policy foolish when he wrote, "only general executives (can) be a policy group detached from the interests of specific divisions."[60] The Executive Committee, observed Sloan, exerted more

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[59]Chandler, Giant Enterprise, 71.

[60]Sloan, My Years with General Motors, 113.

theoretical than real control.[61]

The lack of centralized control was obvious as inventories soared in 1920. In the annual report of 1922, President of General Motors Pierre S. duPont commented:

> It was therefore unfortunate that the rulings of the Executive and Finance Committees and their cautions remained unheeded. As a result, inventories reached a total of $209,000,000 at the end of October 1920, exceeding by $60,000,000 the allotments of the Executive and Finance Committees.[62]

The Executive Committee could and did tell divisions to curtail spending, but each division retained the power of appropriation. Division managers counted on an increase in sales, and tied up a dangerous amount of capital in inventory. These inventories were often taken as a total loss as the drop in sales worsened.

Besides the Executive Committee, the only other institution of central control was Durant. The central office of General Motors consisted of Durant and a few personal secretaries.[63] He had attempted to centralize General Motors' operations around his person, but as General Motors grew, Durant's ability to oversee all facets of the operation became increasingly difficult. In Adventures of a White Collar Man, Sloan wrote:

> In bringing GM into existence, Mr. Durant had operated as a dictator. But such an institution could not grow into a successful organization under a dictatorship.[64]

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[61]Ibid., 28.

[62]Seltzer, Financial History, 198.

[63]Arthur J. Kuhn, GM Passes Ford, 1918-1938 (University Park: Pennsylvania State University Press, 1986), 34.

[64]Sloan, Adventures of a White Collar Man, 107.

When General Motors consisted of Buick, Oldsmobile and Cadillac, Durant's small central staff had fewer difficulties controlling the company. By 1920, however, General Motors was a multifaceted corporation which overwhelmed Durant's capacity to imprint his personal managerial style on the corporation.

In 1908 Durant had explained his managerial philosophy to Benjamin Briscoe.[65] Despite the formation of General Motors Durant believed, "that there should be no change or interference in the manner of operating, that the different companies should continue exactly as they were."[66] Durant never envisioned powerful central control to integrate the purchased companies. The reorganization of 1916, during which purchased companies became corporate divisions, did not change this fundamental philosophy. Referring to a later period, but equally applicable to all of Durant's years at General Motors, Sloan commented on Durant's lack of organization when he wrote:

> I was particularly concerned that he had expanded General Motors between 1918 and 1920 without an explicit policy of management with which to control the various parts of the organization.[67]

Sloan's concerns were justified when the corporation's organization could not respond to the crisis of 1920.

Durant's attempts to be the sole agent of central control created tensions with other corporate executives. Walter Chrysler, who headed the highly profitable Buick

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[65]Benjamin Briscoe also desired to build an automotive producer like General Motors. His company, Briscoe-Maxwell, formed the core of another combination, the United States Motor Company. This company went into receivership in 1912.

[66]Kuhn, GM Passes Ford, 39.

[67]Sloan, My Years with General Motors, 26.

division of General Motors, came to New York from Michigan at the request of Durant. He waited an entire week outside of Durant's office and eventually left without ever seeing Durant.[68] Sloan later related that, "often when he called an executive meeting in Detroit, the ten or fifteen of us who gathered there would wait all day for the chief."[69] This inefficient use of time, and cavalier use of divisional heads, led Walter Chrysler to resign and Alfred Sloan to consider resignation.[70] The demands on Durant's time and energy were too great; General Motors needed a centralized structure to cope with the problems that Durant could not.

General Motors' central staff even lacked the ability to control cash flows within the corporation. Each division retained control of its own finances, while the treasurer of General Motors had to figuratively beg for funds from the various divisions.[71] The relatively autonomous divisions prevented the central financial staff from knowing how much liquidity General Motors had at any given moment, and thus the amount of money necessary to raise to finance capital improvements. Division managers continued to spend capital lavishly and their requests for more money from the center were almost always met. The net result was overruns on capital from the center of General Motors

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[68]Kuhn, GM Passes Ford, 39.

[69]Sloan, My Years with General Motors, 115.

[70]Walter Chrysler left General Motors to join the Maxwell Motor Company. After leaving that company he founded Chrysler Motors, which later purchased the Dodge Motor Company to become one of the Big Three.

[71]Kuhn, GM Passes Ford, 114.

to the periphery, while individual divisions concealed the amount of cash they held.[72] The Buick division, which financed much of General Motors' expansion with its high profits, became especially adept at manipulating its books to hide its true assets.[73]

Durant's central administration responded to these problems by setting production schedules for each division. Durant hoped to limit capital expenditures by restricting the number of cars produced. This attempt at control proved futile, for, as Sloan noted, the "division managers still failed to stay within their authorized limits on inventory of capital expenditures."[74] Division managers still responded to the needs of their own divisions without reference to the well being of the larger corporation. Sloan thought it "decentralization with a vengeance."[75] Each division benefitted from maximum capital expenditures and production, even if this approach harmed the corporation as a whole.

The placement of product testing with the developer was another example of decentralization under Durant's leadership.[76] Automotive engineers would optimize tests to make their products appear better than they actually were. Developers of cars would leave Michigan and head west, cabling back reports of their progress and the status of "their" car. Corporate officials had no way of knowing if the reports were accurate, or if the developer had informed friends to cable back reports of progress,

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[72]Sloan, My Years with General Motors, 28.

[73]Ibid., 122.

[74]Ibid., 30.

[75]Ibid.

[76]Ibid., 111.

while he and the car remained in Michigan. Sloan commented on these procedures with:

> A new car would come out, there was no yardstick set up for determining the various performance characteristics of either car which we were in competition (with)....Mr. Durant did not think in terms of those kind of things.[77]

Resources would thus be inefficiently allocated into products not ready for sale, or even marketable. A more efficient organizational structure would have set up independent testers to critically evaluate each product. After Durant's tenure, General Motors adopted this testing procedure.

Coupled with the failure to control testing was the absence of a corporate product policy. Durant seemed more concerned with the expansion of facilities rather than the formation of a rationally defined product line.[78] He created General Motors out of mostly mid-priced car companies, and after consolidation the divisions continued to compete in the same price classes. Sloan thought this policy mistaken, because:

> There was practically no coordination of planning of the products in relation to the then existing market. The cars were brought into existence sometimes, it seemed to me, in a very haphazard way; there was no proper engineering coordination between the various parts of the corporation.[79]

To prevent internecine rivalry Durant should have placed each division in a specific price class. This practice would have spread General Motors' products across the entire price range and maximized sales and profits. Instead, there was wasteful competition between divisions, as is revealed in the following meeting:

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[77]Direct testimony in deposition of Alfred P. Sloan, Jr., in the DuPont-General Motors anti-trust case, April 28, 1952, reprinted in Alfred D. Chandler, Jr., ed., Giant Enterprise, 149.

[78]Chandler, Giant Enterprise, 145.

[79]Testimony of Sloan as appears in Chandler, Giant Enterprise, 149.

> one executive committee meeting at which one division manager said to another, "I see you raised your price $150 the other day." The other said "yes" and the first one said, "I guess I'll do the same thing tomorrow."[80]

The divisions obviously were not conducting their operations within a long range plan for the corporation.

Besides failing to coordinate the activities of the various division, Durant often neglected to use resources to their full potential. In 1919 General Motors made plans to build a new corporate headquarters. After Sloan recommended a location in northern Detroit, Durant determined on the amount of land the company would need in an unorthodox manner. As Sloan recalled:

> He started at the corner of Cass Avenue, paced a certain distance west on West Grand Boulevard past the old Hyatt Building, which had become the United Motors building.[81] Then he stopped, for no apparent reason, at some apartment houses on the other side of the building. He said that this was about the ground we wanted, and turned to me and said, as well as I can remember, "Alfred, will you go and buy these properties for us and Mr. Prentis will pay you whatever you decide to pay for them."[82]

Durant had conducted no study to determine how much property would be required to construct the new building and more property eventually had to be purchased. If a site analysis had been conducted this waste of time and money would not have occurred.

Furthermore, delegating the purchase of the property to Sloan was a poor managerial decision. Sloan had no training in real estate values and did not know what

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[80]Kuhn, GM Passes Ford, 113.

[81]United Motors was a company created by Durant to purchase automotive suppliers after 1915. This company originally purchased the Hyatt Roller Bearing Company, and was subsequently headed by Sloan. In 1918 United Motors was bought by General Motors and its executives, including Sloan, joined General Motors.

[82]Sloan, My Years with General Motors, 26.

constituted a fair price for the property. Sloan believed that there should have been someone in the corporation "giving all his thinking to problems in that category."[83] General Motors probably paid more than a fair price for the property, but Durant did not ever seem concerned about paying too much for a purchased item.

Durant's management style troubled Alfred Sloan because it seemed to lack a sound basis in research and careful thought. Durant made too many important decisions by his "gut" rather than rationally upon solid evidence. Sloan wrote:

> From the time I became president of United Motors, I saw a great deal of Mr. Durant. I was constantly amazed by his daring way of making decisions....Mr. Durant would proceed on a course of action guided solely, as far as I could tell, by some intuitive flash of brilliance. He never felt obliged to make an engineering hunt for the facts.[84]

When General Motors bought the refrigerator maker Frigidaire, Durant's instincts proved correct. When Durant purchased the Heany Lamp Company, General Motors was nearly bankrupted. Heany Lamp, like many of the companies Durant purchased, proved worthless and had to be divested. Sloan observed that, "many costly errors would have been avoided had his practice been to make decisions on a comprehensive analysis of all facts and circumstances."[85] Durant never undertook a sound expansion because he never knew the corporation's actual financial situation, and thus constantly placed the corporation in dangerous positions subject to market downturns.

Durant's role in managing the Durant-Dort Carriage Company had been a

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[83]Ibid., 115.

[84]Sloan, Adventures of a White Collar Man, 103-104.

[85]Ibid., 104.

success, so his failure at General Motors is thus curious. Durant tried to fill two different roles at each corporation. At Durant-Dort Durant acted as head of sales and finance, leaving the administration of production and organization to Dort. At General Motors Durant tried to fill both roles. Durant always reached for bigger and better things, constructing huge corporations and contracting large sales. He never seemed interested in day to day management and administrative duties. At Durant-Dort this lack of interest was not a problem for Dort made up for Durant's weaknesses. At General Motors there was no Dort. The duPont's hoped that Raskob could serve as a similar check, but Raskob was a financial planner, not corporate administrator. Durant thus went on dreaming by purchasing companies, while no one took control of the companies that he purchased. In the 1920s steps were finally taken to organize the amalgamation known as General Motors.

> Summing up Durant's role in creating and leading General Motors, Sloan wrote:
>
> Mr. Durant was a great man with a great weakness - he could create but not administer -and he had, first in carriages and then in automobiles, more than a quarter of century of glory before he fell.[86]

Durant's vision of an integrated automobile and parts producing corporation ultimately proved to be a correct one; General Motors eventually captured over 50% of the U.S. automobile market, and surpassed Ford in sales just seven years after Durant left the company. Durant was a visionary and speculator who never exercised effective organizational, managerial, or administrative procedures for his creation. By 1920 General Motors needed new leaders providing organizational control, men who were

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[86]Sloan, My Years with General Motors, 4.

automobile manufacturers. Alfred Sloan led this new generation of corporate leader. Roger B. Smith, chairman of General Motors from 1981-1990, summed up the differences between Durant and Sloan with these words: "Durant had the genius to create General Motors, but Sloan had the genius to run it."[87] Sloan was certainly crucial, but not alone, in the cadre of men who reorganized the empire Durant had assembled.

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[87]Roger B. Smith, Building on 75 Years of Excellence (Detroit: General Motors Corporation, 1984), 15.

Chapter Three

General Motors Creates a New Organization

The eminent business historian Alfred D. Chandler Jr. sees three types of enterprises in American history. The first was a single function, single product company which predominated prior to 1850. This concern typically engaged in one economic activity, be it mining, shipping, or manufacturing. After 1850, however, businesses combined different activities related to the production of one product. They integrated vertically to become multi-function, single product enterprises. After 1900, the multi-function, multi-product industry arose. These concerns produced a variety of products; DuPont Chemical, for example, made goods from chemicals to explosives. In the automobile industry, General Motors was the multi-function, multi-product example, engaging in the manufacture of tractors, automobiles, and refrigerators, as well as the various components to produce these products.[88]

Each type of enterprise requires a different type of administration. DuPont and General Electric perfected the multi-function, single product structure prior to World War I.[89] Corporations tried to adopt this model to increasingly complex business enterprises, but it was difficult to find a balance between centralization and decentralization. Traditionally the multi-function, single product company was highly

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[88]Stanley Coben and Forest G. Hill, eds., American Economic History: Essays in Interpretation (Philadelphia: J.B. Lippencott Company, 1966), 543.

[89]Alfred D. Chandler, Jr., The Visible Hand: The Managerial Revolution in American Business (Cambridge: Belknap Press, 1977), 463.

centralized with all efforts geared toward the production of one good. As these businesses expanded to manufacture a variety of products this centralization hampered ingenuity and innovation, and prevented the corporations from responding to the market demands for each product. Too much decentralization, however, hampered designs to coordinate the corporate parts towards the good of the entire company. DuPont diversified in the second decade of the twentieth century and found its centralized administration unable to manage the changing corporation. General Motors moved in the opposite direction. As it expanded in the same decade the holding company central administration of Durant proved too decentralized to manage the corporation.

As a result, DuPont and General Motors created a new corporate organization in the 1920s. The new organization was built around a policy creating center, with divisions administering this policy. This organization created a balance between centralization and decentralization. The new structure proved very successful for both corporations. Both companies concurrently adopted the model because there were linked through stock holdings and corporate officials. Ever since Raskob had identified General Motors for investment, DuPont had gradually been increasing holdings of General Motors' stock. The alliance between the companies was cemented when Pierre S. duPont became General Motors' president in 1920, succeeding Durant. DuPont brought a host of DuPont Chemical executives with him, in hopes of bringing order to the managerial mess that Durant had bequeathed. The new management rapidly began organizing the sprawling corporation.

Durant welded the purchased companies together with his personality, not

business controls or organization. He was extremely personable, but not a businessman. The new managers, led by Mott, Donaldson Brown, duPont, Raskob and Sloan, could not have been more different. Many of these men were trained within the DuPont organization and were familiar with Frederick W. Taylor's principles of scientific management. Taylor had installed a cost accounting system at the Steel Motor Company, which was later purchased by the DuPont Powder Company.[90] The DuPont Company later broadened Taylor's principles, which mostly pertained to the efficient use of manpower and machinery,[91] to include a measure of overall efficiency.[92] In addition, duPont learned from Taylor the necessity of a rational basis for organizational and managerial control.[93] In the 1920s General Motors' executives implemented this scientific management and cost accounting system for the first time on a widespread scale in the automobile industry.[94]

Although DuPont and General Motors concurrently implemented the new organization, General Motors led in creating the new model because of its weak position. In 1919 General Motors held 19.9% of the automobile market, but by 1921 its share had

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[90]Daniel A. Wren, The Evolution of Management Thought (New York: Doubleday and Company, 1964), 26.

[91]Witt Bowden, The Industrial History of the United States (New York: Burt Franklin, 1970), 402.

[92]Wren, Evolution of Management Thought, 203.

[93]Ibid., 205.

[94]Bowden, Industrial History, 402.

fallen to 13%.[95] More importantly, however, General Motors lost control of inventory expenditures. The problem was divisional control of expenditures. Divisions counted on increased sales in 1920 due to record sales in 1919. Inflation rapidly increased in the first half of 1920, so divisions stockpiled inventories at inflated prices. Since much of this inventory was liquidated as a total loss, the situation cemented the need for managerial innovation to bring the divisions under central control.

General Motors' new corporate executives essentially created the new organization from scratch. Not only did they create a new industrial model, but they constructed a new central administration within General Motors.[96] There were four main areas of action: inventory control, organizational structure, product policy and financial reform. The executives attacked these problems by reforming, and in some cases creating, three staff areas: operations, advising and financial. Personal contacts within the corporation were replaced with institutional ones. Channels of communication were opened to increase efficiency and divisional cooperation. The new executives tried to preserve the benefits of decentralization, namely market responsiveness and executive responsibility, while increasing central control to improve coordination and overall corporate efficiency.

The urgency of the crisis demanded a strong center to control the corporation. Pierre duPont established a four man executive committee to create policy and reform the corporation. Besides himself, the committee included Raskob, Sloan and J. Amory

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[95]Ralph C. Epstein, The Automobile Industry: Its Economic and Commercial Development (Chicago: A.W. Shaw Company, 1928), 351.

[96]Chandler, The Visible Hand, 459.

Haskell. DuPont and Haskell came from the DuPont organization, though duPont had served on General Motors' board of directors for several years. Raskob had originally been with DuPont, but had moved to General Motors as the DuPont interest increased in World War I. Sloan was the only "automobile" man on the committee. He had been president of the Hyatt Roller Bearing Company until Durant purchased it in 1916. Hyatt provided many of the early automobile producers with bearings, so Sloan knew most of the automotive pioneers. In addition, Sloan was the central executive most familiar with existing General Motors' management. Consequently, his suggestions for improvement were critically important.

The Executive Committee realized it could not reform General Motors by itself. Using Sloan's knowledge of automotive men, General Motors recruited men from other automotive concerns. By 1924 General Motors had automotive veterans like Harry Basset, the Fischer Brothers, William S. Knudsen, Charles Kettering, Norval Hawkins, C. S. Mott and DeWitt Page. Two of the best recruits were Hawkins and Knudsen, who arrived from Ford. Hawkins had been Ford's sales manager, and he headed the new Sales Analysis and Development Section at General Motors. Knudsen came to General Motors in February of 1922 after being Ford's production manager. He headed the Chevrolet division, and was instrumental in leading Chevrolet's sales past Ford's in 1927.

These men used Sloan's 1920 "Organizational Study" as a guide in reconstructing General Motors. Sloan submitted this study to Durant to address the lack of central control within the corporation. Durant accepted the plan, but either through lack of

interest or distraction because of the 1920 crisis, failed to implement it. The study was based around the following, apparently contradictory, principles:

> 1. The responsibility attached to the chief executive of each operation shall in no way be limited. Each such organization headed by its chief executive shall be complete in every necessary function and able to exercise its full initiative and logical development.
> 2. Certain central organization functions are absolutely critical to the logical development and proper control of the Corporation's activities.[97]

These principles created a center setting broad corporate policy, with individual divisions administering this policy. Divisional heads would find their authority restricted, but each would retain responsibility for the performance of his division. The center would set broad policies regarding price ranges of products, define acceptable capital expenditures, and evaluate divisional performance, but the divisions would be free to operate within these guidelines. The hope was that the new plan would preserve the responsiveness and executive responsibility of decentralization, while concurrently increasing central control to improve integration and efficiency. The executives had no idea if it would work, for nothing like it had been previously attempted.

The first step involved organizing the companies Durant had assembled. Sloan proposed dividing the corporation into four parts: Car, Accessories, Parts and Miscellaneous. The Car segment would consist of the automobile producing divisions: Chevrolet, Oldsmobile, Buick, Oakland, Cadillac, Scripps-Booth and Sheridan. The Accessories group would consist of divisions that sold 60% of their output outside General Motors. In 1921 the Hyatt Roller Bearing Company sold only 18.1% of its

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[97]Chandler, Giant Enterprise, 75.

output to General Motors, while 40% went to Ford so it would be included in this group. The Parts group would consist of divisions selling 60% of their output within the corporation. The Miscellaneous group would consist of the Samson Tractor Division, General Motors Acceptance Corporation (GMAC), the Export group and Frigidaire.[98] President duPont largely agreed with the plan except for the Miscellaneous group. He placed GMAC under the financial staff, dissolved the tractor division, put Frigidaire under Accessories, and made the Export group an independent concern.

A group executive supervised the Car, Accessories and Parts groups. He had no day-to-day duties, not did he have line authority. He could advise, but not order. The division, or general, managers retained authority over their divisions, being responsible for daily management and individual performance. DuPont and Sloan thought it important that each group executive remain detached from day-to-day concerns to be objective and free from divisional influence.

The new central organization, built around a new Executive Committee, also was designed to be free from divisional influence. Durant's old Executive Committee consisted of the divisional heads. Each general manager worried about divisional, not corporate, problems, and thus took actions in their own division's interest. Sloan, "believed in principle that the top operating committee should be a policy group detached from the interests of specific divisions."[99] Initially the Executive Committee consisted

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[98]Alfred D. Chandler, Jr., and Stephen Salsbury, Pierre S. duPont and the Making of the Modern Corporation, (New York: Harper and Row Publishers, 1971), 495.

[99]Sloan, My Years with General Motors, 113.

of Haskell, Brown, Sloan and duPont, but was later expanded as the crisis subsided. At some points divisional heads were seated on the Committee, but in principle separation from divisional influence was preserved.

Under Durant the Executive Committee was the supreme policy making body, and this power was preserved. The Executive Committee supervised the entire operations side of the corporation, meaning the operating and advisory staffs were under its control. Executive Committee deliberations and study determined broad corporate policies. The Committee did not concern itself with the day-to-day affairs of the corporation. It was designed to provide a central cohesive force and give direction to General Motors' operating divisions. The lack of direction was apparent in General Motors' car lines.

General Motors had to reorganize its car lines to return to profitability. Sloan commented that under Durant, "there was in General Motors no established policy for the car lines as a whole."[100] This judgement is clearly reflected in the prices of General Motors' cars for 1921:

Chevrolet 490	$790-1375
Chevrolet FB	$1320-2075
Oakland	$1395-2065
Olds 4cyl	$1445-2145
6cyl	$1450-2145
8cyl	$2100-3300
Scripps-Booth	$1545-2295
Sheridan	$1695
Buick	$1795-3295
Cadillac	$3790-5690[101]

[100]Ibid., 59.

[101]Ibid.

It was difficult to remain profitable with this price lineup. There were too many entries in the middle-priced field, and none in the low-priced market. General Motors' automobiles competed with one another, instead of complementing each other. The problem was that Durant's central administration did not dictate within which price class each division should operate. Divisions thus produced cars in the price class they wanted to, even if General Motors already had an entry there. Chevrolet, for example, competed with all other car divisions except Cadillac.

The solution was to design a product lineup that would make money. A committee was appointed to analyze the automobile market, and it made several recommendations to the Executive Committee. The first was that the corporation should produce a full line of cars from the low-priced field up to, "a strictly high-grade, quantity production car." The steps in the line should not leave wide price gaps, and none of the cars produced by the corporation should compete with one another.[102] The committee identified six price categories in the market: $450-600, $600-900, $900-1,200, $1,200-1,700, $1,700-2,500 and $2,500-3,500. General Motors planned to place each product at the top of each price range,

> and make them of such a quality that they would attract sales from below that price...and attract sales also from above that price, selling to those customers who would see the price advantage of a car of close to the quality of higher priced competition.[103]

General Motors would thus compete on a quality basis with the cars below, and a price

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[102]Ibid., 65.

[103]Ibid., 72.

basis with the cars above. The Executive Committee quickly implemented the new plan. Sheridan was sold in 1921, Scripps-Booth was dissolved and the hierarchy became: Chevrolet, Oakland, a new Buick 4, Buick 6, Oldsmobile, and Cadillac.

For the first time General Motors planned to assault Ford's hold on the low priced field. Ford dominated this class by using high volume to reduce the unit cost of production. He passed this savings on to the consumer. Going head to head with Ford was suicide because, as Sloan said, "no conceivable amount of capital short of the United States Treasury could have sustained the losses to take volume away from him at his own game."[104] Instead, General Motors placed the dynamic Knudsen in charge of Chevrolet and attacked Ford from above, producing a slightly higher priced car with more features. This strategy paid off. In 1921 Chevrolet sold 64,375 cars, but Ford sold thirteen times as many. By 1926 the gap had closed, Ford selling 1,368,283 cars to Chevrolet's 589,00. In 1927 Chevrolet finally passed Ford 749,998 to 356,188.[105] Ford lost his economies of scale, and admitted defeat by closing his factories to tool up for the Model A.

After repositioning the car lines the prices for 1926 were:

Chevrolet	$525-775
Oldsmobile	$875-1115
Oakland	$975-1295
Buick	$1125-1995
Cadillac	$2995-4485[106]

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[104]Ibid., 69.

[105]Crabb, Birth of a Giant, 390.

[106]Chandler, Giant Enterprise, 151-152.

General Motors' executives recognized two gaps in the line. The first was between Chevrolet and Oldsmobile, and the second between Buick and Cadillac. In 1926 General Motors introduced the Pontiac car at $825, and later introduced the LaSalle automobile slotted right below Cadillac. The Pontiac car shared many components with Chevrolet, yet was produced by Oakland. The LaSalle was built off of the Cadillac chassis to take advantage of economies of scale and reduce development costs. The LaSalle and the Pontiac cars proved to General Motors' executives that different cars could be produced from the same parts. Sloan remarked, "mass production of automobiles could be reconciled with variety in product."[107]

The Executive Committee never dictated what kind of car to produce. The central organization dictated the price classes in which each division should compete, and also the technical standards the cars would have to meet. It was up to the divisions to develop, test. produce and market the cars. This management style illustrates the new concept of centralization of policy with decentralization of its administration. The Executive Committee set the goals and standards, but it was up to each division to reach those goals. Each division manager thus retained responsibility for the performance of his division.[108]

General Motors' executives also studied whether the company should produce basic commodities like rubber, glass and steel. The Ford Motor Company did produce

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[107]Sloan, My Years with General Motors, 158.

[108]C.S. Mott, "Organizing a Great Industrial," (Management and Administration Vol. 7, no. 5, May 1924), 524.

these commodities at its River Rouge plant, but after careful analysis General Motors decided not to. Most of these products were available from a wide variety of efficient producers. General Motors did not believe it could produce these commodities at a lower price. In addition, buying additional companies would spread executive talent even thinner and complicate the organizational restructuring already underway. Instead of concentrating on further expansion, General Motors turned its efforts towards improving internal efficiency.

The Executive Committee also established new organizational relationships between divisions. duPont felt a division should sell products to another division at cost, but Sloan sharply disagreed with this policy. He felt interdivisional billing should be handled on a profit basis. Divisions should interact with each other just as independent companies would. Divisions should bill each other at the going market price for products. Sloan's practice, which was adopted, allowed independent evaluation of each division. If the price charged for a product was higher than the market price, then there was inefficient production. If a division purchased externally what it could purchase internally, then it had to give an explanation to the Executive Committee. The new pricing policy drew sharper distinctions between divisions and let the financial controls of Donaldson Brown have greater effect.[109]

The development of financial reform and control was another area of focus in the corporate restructuring. For the first time the center adopted scientific management for

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[109]Alfred D. Chandler, Jr., Start Bruchey, and Louis Galambos, eds., The Changing Economic Order: Readings in American Business and Economic History (New York: Harcourt, Brace and World, Inc., 1968), 430.

the entire corporation. Standardizing cost-accounting procedures allowed the appraisal of each division using the same standards. Each division could now be evaluated to see whether they earned a good return on investment. Financial controls also allowed administrative surveillance of important areas like inventory, purchasing, and production. The new financial manager, grounded in Taylorism and the rigid DuPont management style, and led by Brown and Raskob, quickly moved to correct the lack of financial control existing under Durant.

The Finance Committee oversaw the financial aspects of the corporation. Its members, "included several of the ablest bankers in New York," like George F. Baker Jr. of First National Bank, Seward Prosser of Banker's Trust Company, and E.R. Stettinus of J.P. Morgan and Company.[110] Just as the Executive Committee remained detached from divisional influence, the Finance Committee remained independent from corporate affairs. The Committee's chief purpose was the approval of large capital expenditures defining the character of the corporation. These expenditures could include the construction of new plants, or entrance into new fields of business.[111] The Committee had nothing to do with the actual operation of the corporation, with the exception of 1920 when it temporarily assumed inventory control.[112]

An important aspect of financial reform was the establishment of a clear appropriations policy. Under Durant's management the divisional heads retained the

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[110]Forbes, Automotive Giants, 244.

[111]Kuhn, GM Passes Ford, 167.

[112]Sloan, My Years with General Motors, 124.

authority to authorize almost any capital expenditure. This policy changed to a new three tiered structure. Large appropriations shaping the character of General Motors were approved by the Finance Committee. Somewhat smaller expenditures were handled by the Executive Committee. The division managers retained the power to authorize small expenditures, but their actions were constantly scrutinized by the center. An Appropriations Committee oversaw the process, making sure requests went to the right place and were in the right form.[113]

Division managers lost the authority to control cash. Under Durant each division retained its own bank account. The central administration had to request funds from divisions to pay dividends and purchase new companies. A new cash control system using the advantages of the Federal Reserve System eliminated these problems. All incoming funds were deposited in accounts established in "some one hundred banks" around the country. The divisions could not withdraw funds from these accounts without the approval of the central financial staff. There were several advantages to this system. Interdivisional billing no longer involved cash; it was now handled by intra-corporate settlement certificates. When deposits in an account exceeded a pre-set limit, funds were automatically transferred to another account using the Federal Reserve System. By establishing good working relationships with a variety of banks, General Motors increased its base of available capital, and the surplus cash reserves were invested in short term government securities.[114]

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[113]Mott, "Organizing a Great Industrial," 527.

[114]Sloan, My Years with General Motors, 123.

Brown and the financial staff also attacked the important area of inventory. In 1920 all shipments of inventory were stopped until the financial staff could review each divisional situation. This measure alleviated the immediate problem of excessive inventory, but the corporation instituted a variety of forecasting procedures to control long run inventory and production.

The first forecast initiated in each division and was due in the central office by the twenty-fifth of each month. Each division estimated its sales for the next four months, as well as the estimated materials and payroll necessary to meet the projected production.[115] The central financial staff carefully scrutinized these forecasts, made any necessary changes based on past performance and projected demand, and then approved them. The financial staff prevented the divisions from accumulating excessive inventory by setting production levels. Divisions were allowed to purchase the inventory necessary to meet their pre-set production limit. This control reduced inventories from the September 1920 level of $215,000,000 to $94,000,000 in June of 1922.[116]

The second projection was a yearly one. It also initiated in the divisions and was due in December. The forecast presented an outline of each division's plans for the next year, and included estimates of sales, earnings and capital requirements. The divisions included it in three forms: pessimistic, conservative and optimistic. The pessimistic projection was a worst case scenario; the conservative projection was a likely occurrence; and the optimistic projection gave the division's maximum production capability. This

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[115]Ibid., 125.

[116]Ibid.

forecast was combined with the more definite monthly forecast by the central staff to project capital requirements, production, employment and earnings. These forecasting procedures had not been implemented on a corporate wide level before.[117]

The financial staff used four factors to evaluate projections.[118] They included projected growth of the automobile market; seasonal variation of demand (37.5% of sales occurred in March, April and May[119]); the general condition of business; and competition. For the first time in the automobile industry a corporation projected potential demand and placed production in line with this demand. Statistical analysis and market study now became corporate tools. Projections were not, of course, always accurate, but they allowed the corporation to respond to demand fluctuations more quickly than prior to 1921, when no projections existed.

The financial staff provided objective information on each division. Durant could not evaluate divisional performance since there were no standardized financial controls. Brown addressed this problem by standardizing accounting procedures. Divisions were now evaluated under the same criteria, and for the first time divisional performance could be accurately gauged by the center without the influence of each division's accounting methods. No longer could divisions operate inefficiently, or hide their unprofitability. The central financial staff could now see where capital delivered the highest rate of

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[117]Donaldson Brown, "Pricing Policy Applied to Financial Control," (Management and Administration Vol. 7, no. 4, April 1924), 196.

[118]Albert Bradley, "Setting up a Forecasting Program," (New York: American Management Association, Annual Convention Series, no. 41, 1926), 3.

[119]Ibid., 11.

return.

It took another crisis in 1924 to determine the final shape of the new statistical tools. General Motors, like all car companies, counted cars sold when delivered to dealers, and not the actual consumer. In 1924 sales again declined, but General Motors responded slowly to the demand change because of a lack of data on sales by dealers to consumers.[120] General Motors recognized the drop in demand when Sloan journeyed to dealers and witnessed the lots full of overstocked cars firsthand. As a result of this second crisis, every ten days the car divisions received from the dealers the actual number of cars delivered to consumers, the number of new orders taken, the total orders on hand, and the number of new and used cars on hand.[121] General Motors now had statistical information on demand for cars, divisional performance, and inventory. This information provided the center with the data necessary to effectively set corporate policy with regards to production, inventory allotments, capital expenditures, and divisional relationships.

In addition to the reformation of the operational and financial staffs, General Motors created an advisory staff. The advisory staff was designed to facilitate the exchange of interdivisional information by opening channels of communication. It provided a variety of services at the request of the divisions. An advisory staff member could never give an order to a member of either the operational or financial staffs. The variety of advisory staff sections included: patent, real estate, office building, housing,

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[120]Chandler, Pierre S. duPont, 553.

[121]Bradley, "Setting up a Forecasting Program," 13.

sales, research, advertising, purchasing, power and construction, factory, traffic and industrial relations.[122] In all of these matters the advisory staff operated as a consulting service, as each division could choose to undertake these operations independently.

The most important area of the advisory staff was the Dayton Electric Light Company (DELCO) in Ohio, headed by Charles Kettering. This division developed unleaded gasoline, Duco paint, and other major automotive advances. In 1921 Kettering proposed the corporation produce a low-priced car with an air cooled engine. Most automotive engines at the time were water-cooled, but Kettering thought the inherent simplicity of the design, which used fins to cool the engine instead of a radiator, would reduce production costs. Chevrolet put the engine into production in 1923, but it was almost immediately canceled after only 759 cars were produced.[123]

Although the program was canceled due to quality problems, the development and production of the engine revealed problems with General Motors' new organization. The initial development and production of the engine was assigned to Kettering's research group in the advisory staff, but the final testing and mass production was delegated to the operations staff.[124] The advisory staff pushed for mass production of the engine, and the Executive Committee responded by forcing Chevrolet to produce the engine. Sloan attributed part of the program's failure to the lack of corporate communication. He felt if communication channels had existed between operations and research, the

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[122]Mott, "Organizing a Great Industrial," 526-526.

[123]Sloan, My Years with General Motors, 51.

[124]Ibid., 76.

program might have been a success. Kettering would have responded to the concerns of divisional executives, and the divisions possibly could have aided in product development.

Those problems indicated a concern of General Motors' executives. They noted a lack of interest by divisional executives towards the advisory staff. In addition to the air-cooled engine problem, the divisions did not listen to Hawkins' ideas regarding sales.[125] Line managers thought the advisory staff too theoretical, while the advisory staff believed line management cared only for production.[126] This tension needed resolution.

The corporate officers believed in the soundness of the organization so they proposed improvement rather than change of the structure. The Executive Committee suggested the establishment of corporate committees to bring together staff, line, advisory and general personnel.[127] The committees set no policy and exerted no authority; they served as a forum for the exchange of ideas. Sloan and other general executives hoped the committees would create economies of scale in the use of ideas about product design, marketing, and plant engineering. Ideally, advantages pioneered in one division would spread through the committees to other divisions.[128] Problems in the air-cooled engine development could have been decreased by communication between DELCO and

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[125]Chandler, Pierre S. duPont, 526.

[126]Chandler, The Visible Hand, 462.

[127]Ibid., 462.

[128]Chandler, Pierre S. duPont, 549.

divisional engineers.

A variety of committees were established, with the president of General Motors sitting on each one. Membership gave him the ability to observe the workings of each division without the filter of the general managers. The other members of the committees were all executives or engineers below the level of the Division Manager. Committee purpose determined its composition. The General Technical Committee discussed technical matters affecting the corporation, and its members included divisional engineers and advisory staff from the research and patent departments.[129] The Advertising Committee promoted the corporation and helped the divisions coordinate advertising campaigns. The Committee on Appropriations Requests handled capital expenditures, and the General Sales Committee developed strategies for the marketing of automobiles. The Power and Maintenance Committee and Works Managers Committee dealt with the efficient use of General Motors' plants. The divisions still operated as separate companies after the establishment of these committees, but were, "coordinated by the functioning of certain committees and the advisory staff."[130]

By 1925 General Motors' executives hoped they had created a model resolving tensions between centralization and decentralization. Excessive decentralization under Durant led to competition between divisions, cost overruns on inventory, lack of divisional cooperation, and duplication of mistakes by divisions through lack of communication. The new central staff set corporate policy, the advisory staff helped

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[129]Chandler, Giant Enterprise, 122.

[130]Ibid., 122.

disseminate new ideas, the committees opened new lines of communication, and the financial tools facilitated evaluation of division and investment performance. The divisions, however, retained accountability for their performance, profitability and products. Divisions were responsible for adapting new technologies, improving efficiency, and remaining profitable. The major difference was that divisions now operated within parameters set by the central staff. C.S. Mott, General Motors' vice-president, explained the new model in an article written for Management and Administration:

> Generally speaking, each division is in charge of a General Manager, who has the entire responsibility for the success or failure of his operation, subject only to the clearly formulated policies of the corporation as a whole.[131]

General Motors tried to decentralize control while at the same time taking advantage of the strength, resources, and experiences of the whole corporation. They had successfully given both direction and structure to the vision of General Motors' founder, William Durant.

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[131]Mott, "Organizing a Great Industrial," 524.

Conclusion

After the corporate restructuring of the early 1920s General Motors' sales rapidly accelerated. After 1921, when General Motors sold 214,799 vehicles, deliveries rose to 456,763 in 1922, 798,555 in 1923, 587,341 in 1924, 835,902 in 1925, and 1,234,850 in 1926.[132] During those same years market share rose from 13% to 27.9%.[133] Even more important was General Motors' 1926 eclipse of Ford as the largest automobile manufacturer. General Motors' line of automobiles spanning the market made Ford's Model T obsolete. A variety of factors caused this rapid corporate turnaround and growth in sales.

The transformation of the automobile market in the 1920s from a mass market to a mass-class market was of paramount importance.[134] The prosperity of the 1920s created demand for higher priced automobiles with more features, greater power, and closed bodies. The corporation's traditional strength lay in the mid to upper price ranges, so as consumers demanded something better than the Model T, General Motors benefitted. General Motors encouraged this trend by giving generous trade-in allowances and developing installment credit through GMAC. The move upscale allowed the company to remain profitable while restructuring and seemed to vindicate the plans of the new managers.

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[132]Epstein, The Automobile Industry, 328.

[133]Ibid., 351.

[134]Sloan, My Years with General Motors, 195.

The new corporate organization allowed the company to respond to the changing nature of the marketplace. The new structure enabled the company to read the new market demands and respond with corresponding products. The new financial controls placed capital where it would earn the highest rate of return. In the 1920s this allocation meant the development of higher priced automobiles like the LaSalle and Oldsmobile produced Viking. Other companies produced but one or two vehicles, while General Motors could put a vehicle into almost every market niche.

The vision of Durant had paid off handsomely and was the first important contribution of General Motors to American business. Durant had originally envisioned General Motors to be a great automotive combine producing a variety of products, and although General Motors aspired to be this company under Durant, it achieved this end in the 1920s. The legacy of the Durant-Dort Carriage Company carried on and received its best manifestation in this new General Motors. In the 1920s General Motors finally positioned its car lines to span the entire market, and developed the centrality and direction to work as one corporation. It is to Durant's credit that other automobile companies eventually adopted his vision for a vertically and horizontally integrated automobile producer. Ford came out with the Mercury and purchased Lincoln, while Chrysler responded with Plymouth and the purchase of Dodge.

Apart from the contribution of Durant's vision, General Motors' second key contribution during these years was the development of the new industrial model. This new model organized Durant's vision by giving it structure, direction and purpose. The model gave the corporation market responsiveness and integrated the various parts in a

meaningful and profitable way. Leaders of other industries noted General Motors' success. In the 1920s American corporations were diversifying to produce a wide variety of products and needed a new organizational model to administer this new type of corporation. General Motors' success convinced many executives that its new model would prove effective in other industries. Consequently, a wide variety of corporations adopted General Motors' structure. These companies included Allied Chemical, Union Carbide, International Harvester, General Electric and the Ford Motor Company.

Much debate centers on responsibility for the development of the new industrial model. General Motors assembled many talented men. Kettering pioneered engineering firsts such as leaded gasoline and the self starter. Knudsen's strong hand led Chevrolet past Ford. Hawkins' advertising spread information about General Motors' products, while Brown's financial tools led to more efficient allocation of capital. duPont provided needed stability and executive experience, and Sloan's history at General Motors allowed him to identify areas needing improvement. The leaders of the restructuring were, however, duPont and Sloan. duPont lent his long executive experience at DuPont and Sloan his expertise in automobile manufacturing. They did not create the new General Motors by themselves, but placed men where they could do the most good. This policy meant placing Knudsen at Chevrolet, Kettering at DELCO and Brown in finance. The new industrial model thus arose out of the combined efforts of a variety of men.

The development of this model was a two step process. If not for the vision of Durant based upon his experiences at the Durant-Dort Carriage Company, there would have been no General Motors and hence no model. All of the men of the 1920s, though

they were extremely skilled in business, were organizing the creation of another man, William Durant. Durant, however, seems to have faded from the historical picture, perhaps because of his ignoble exit from the automobile industry. After 1920 he went on to found other companies based on the same vision, but he never could recapture the glory of Durant-Dort and General Motors.

The significance of this study therefore rests upon the development of two ideas. The first was Durant's and his vision of a vertically and horizontally integrated automobile producer. Nearly every automobile producer today has adopted some form of this vision. The second is the creation of a new industrial model that largely set the modern organization of corporate America. Although this model has been further refined and developed, its development is noteworthy for it allowed American business to expand successfully beyond the earlier monolithic model. This model has been successfully applied in other industries, but its development is tied directly to the vision of Durant. The early history of General Motors must therefore be viewed as a continuum, flowing naturally from the small cart shop through the rise of a multi-billion dollar producer.

Bibliography

Printed Primary Sources

Bradley, Albert. Setting up a Forecasting Program. New York: American Management Association, Annual Convention Series, no. 41, 1926.

Brown, Donaldson. Centralized Control with Decentralized Responsibilities. New York: American Management Association, Annual Convention Series, no. 57, 1927.

"Pricing Policy Applied to Financial Control." Management and Administration, vol. 7, no. 4 (April 1924): 195-201.

Chandler, Alfred D., Jr., ed. Giant Enterprise: Ford, General Motors and the American Automobile Industry. New York: Harcourt, Brace and World, Inc., 1964.

Epstein, Ralph C. The Automobile Industry: Its Economic and Commercial Development. Chicago: A.W. Shaw Company, 1928.

Forbes, B.C. and O.D. Foster. Automotive Giants of America. New York: B.C. Forbes Publishing Company, 1926.

John, W.A.P. "That Man Durant." Motor (January, 1923) 244-252.

Macmanus, Theodore F. and Norman Beaseley. Men, Money and Motors: The Drama of the Automobile. New York: Harper and Brothers, 1929.

Mott, C.S. "Organizing a Great Industrial." Management and Administration Vol. 7, no. 5 (May, 1924): 524-527.

National Automobile Chamber of Commerce. Facts and Figures of the Automobile Industry. New York: National Automobile Chamber of Commerce, 1922-1927.

Sloan, Alfred P. Adventures of a White Collar Man. New York: Doubleday, Doran and Company, Inc. 1941.

_____. Speech given at a dinner in appreciation to the manufacturing executives of Chevrolet Motor Company and Fischer Body. Detroit: General Motors Corporation, 1929.

_____. My Years with General Motors. New York: Doubleday and Company, 1964.

Smith, Roger B. Building on Seventy-Five Years of Excellence. Detroit: General Motors Corporation, 1984.

Government Documents

Federal Trade Commission. "Report on the Motor Vehicle Industry." Washington D.C.: U.S. Government Printing Office, 1939.

General Motors Corporation. The Development and Growth of General Motors, a statement by Harlow H. Curtis, President, General Motors, before the Subcommittee on Anti-trust and Monopoly of the U.S. Senate Committee on the Judiciary. Washington D.C.: U.S. Government Printing Office, 1955.

Opinion of Justice William Brennan. United States v. DuPont, 353 U.S. 602 (1956).

Secondary Works

Bowden, Witt. The Industrial History of the United States. New York: Burt Franklin, 1970.

Chandler, Alfred D., Jr. The Visible Hand: The Managerial Revolution in American Business. Cambridge: Belknap Press, 1977.

Chandler, Alfred D., Jr. and Stephen Salsbury. Pierre S. duPont and the Making of the Modern Corporation. New York: Harcourt, Brace and World, Inc., 1968.

Coben, Stanley and Forest G. Hill, eds. American Economic History: Essays in Interpretation. Philadelphia: J.B. Lippencott Company, 1966.

Cole, Robert E., ed. Industry at the Crossroads. Ann Arbor: University of Michigan Press, 1982.

Crabb, Richard. Birth of a Giant: The Men and Incidents that Gave America the Motorcar. New York: Chilton Book Company, 1969.

Cray, Ed. Chrome Colossus: General Motors and its Times. New York: McGraw-Hill Book Company, 1980.

Denison, Merril. The Power to Go. New York: Doubleday and Company, 1956.

Gustin, Lawrence H. Billy Durant: Creator of General Motors. Grand Rapids: Eerdmans, 1973.

Kuhn, Arthur J. GM Passes Ford, 1918-1938. University Park: Pennsylvania State University Press, 1986.

McGraw, Thomas K., ed. The Essential Alfred Chandler: Essays Toward a Historical Theory of Big Business. Boston: Harvard Business School Press, 1988.

Pound, Arthur. The Turning Wheel: The Story of General Motors through Twenty-Five Years. New York: Doubleday, Doran and Company, 1934.

Rae, John B. The American Automobile. Chicago: University of Chicago Press, 1965.

_____. The American Automobile Industry. Boston: G.K. Hall and Company, 1984.

_____. "The Fabulous Billy Durant." Business History Review. (Autumn, 1958.)

Seltzer, Lawrence Howard. A Financial History of the American Automobile Industry. Boston: Houghton Mifflin Company, 1928.

Smith, Phillip Hilleyer. Wheels within Wheels. New York: Funk and Wagnalis, 1968.

Weisberger, Bernard A. The Dream Maker: William C. Durant, founder of General Motors. New York: Newcomen Society of the United States, 1984.

Wren, Daniel A. The Evolution of Management Thought. New York: John Wiley and Sons, 1979.

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