CHAPTER ONE

Modern Management in the 1920s: GM Defeats Ford

Cars, Trucks, and Freedom

During the first half of the twentieth century, the motor vehicle industry best symbolized the genius of American business. Even before World War II began, the car came to be regarded as a necessity, just as televisions, computers, and cell phones later became essentials of modern life.

The first cars and trucks were built in Europe in the1880s and 1890s. By 1899, 30 American firms produced 2,500 cars annually. Because the American market was the richest in the world and expanding rapidly, it furnished the necessary mass market for the automobile manufacturing industry to prosper; by the 1920s it was the largest in the nation. Its connections with suppliers of steel, rubber, and glass, plus its reliance on the oil industry for fuel, lubricants, and service stations made the car the most important product of the twentieth century. By the 1970s about one-sixth of all business firms in the United States participated in some way in the manufacture, distribution, service, or operation of cars and trucks.

American Business Since 1920: How It Worked, Third Edition.
Thomas K. McCraw and William R. Childs.

Meanwhile, governments at the local, state, and national levels played catch-up to promote and regulate the industry. They financed the construction of roads and bridges, registered motor vehicles and licensed operators, installed traffic lights and set speed limits, and expanded police and state trooper forces. Later in the century, governments mandated safety and fuel efficiency standards.

During the 1920s, the car became the center of the national consumer economy, and until the successful Japanese challenge of the 1970s it remained a pre-eminently American-made product. An astounding 80 percent of all cars in the world were made in America by the mid-1920s. There was one automobile for every 5.3 people. In contrast, in Britain and France, there was one car for every 44 people.

The word *automobile* expresses the exhilarating idea of autonomous mobility, and for a great many people everywhere, driving became a means of escape, a way to express personal freedom, and, perhaps, the biggest leap in world history toward a sense of individual freedom.

Trucks, too, were liberating, for both consumers and entrepreneurs. Trucks deliver agricultural products to towns and cities, transport retail goods from assembly plants to department stores, and transfer household goods from one home to another. Entrepreneurs may offer painting or plumbing services or tacos to paying customers right from their trucks, and they always have the option of growing their business by adding more trucks. Today online commerce depends on fleets of trucks of United Parcel Service (UPS), FedEx, and owner-operated trucking firms.

As in the case of most new industries, a few bold entrepreneurs created the mighty US automobile manufacturing industry. These included Ransom Olds, James Packard, the Dodge brothers, and Walter Chrysler. The two greatest giants were Henry Ford, who became the best known manufacturer of anything anywhere, and Alfred P. Sloan, Jr., who built General Motors into the world's largest industrial corporation. The competition between Ford and Sloan in the 1920s and 1930s remains one of the epic stories in the history of business, and a near-perfect example of the superiority of decentralized decision making.

Henry Ford, Mass Production, and Centralized Management

Growing up in Dearborn, MI, Henry Ford (1863–1947) loved to tinker, amusing himself by taking apart watches and putting them back together. At the age of 16 he worked in a Detroit machine shop, and later he became chief engineer at an electric utility. His first two auto making companies failed, but his third one would change the world.

When Ford launched his third company in 1903, other makers were building cars in small numbers of diverse and expensive models. But Ford, now a handsome, self-confident, fit-looking man, instructed one of his partners: “The way to make automobiles is to make one automobile like another automobile, to make them all alike, to make them come from the factory just alike – just like one pin is like another pin when it comes from a pin factory ….” His goals were “to build a motor car for the great multitude … constructed of the best materials, by the best men to be hired, after the simplest designs that modern engineering can devise … so low in price that no man making a good salary will be unable to own one – and enjoy with his family the blessing of hours of pleasure in God’s great open spaces.” Ford’s Model T, brought out in 1908, revolutionized the industry. From that point he stopped work on all other models, and concentrated his efforts on improving the T and reducing its costs of production.

A major step in Ford’s miracle of production was the refinement of the moving assembly line. By 1914 the time of assembly for a Model T chassis had dropped from 12 ½hours to 1 ½. Ford’s incessant focus on improving the assembly process reduced the selling price of the Model T (originally $850 in 1908) to $290 in 1925 (the equivalent of $3,988 in 2016). That year, Ford Motor Company sold its ten millionth car.

The very standardization that made lower prices possible, however, also led to high turnover rates among the workers. By 1914, to maintain an annual workforce of 15,000, Ford had to hire 50,000. This whopping 300-percent turnover rate derived from the pressures and boredom of assembly-line work and almost complete management centralization. Ford's response was to increase wages to $5.00 a day (twice the prevailing rate) and reduce the length of the workday from nine hours to eight. The combined magic of the assembly line and the five-dollar day made Henry Ford famous all over the world. Indeed, by the 1920s, planners in the Soviet Union studied his techniques carefully.

Increased pay and reduced working hours did not improve shop-floor conditions, but the changes partly compensated workers for the monotony of their tasks. In the 1920s Ford went a step further and shortened the work week from six days to five, without a commensurate decrease in pay. Assembly-line production represented a dramatic contrast with the pre-industrial identification of the craftsman's product with his personal pride and sense of self. Paradoxically, the *ownership* of a car by those who assembled them offered an offsetting sense of autonomy. Ford wanted his employees to be able to buy one of his cars, and many thousands of them did.

But it was Ford's overbearing centralized management style that undermined his attempts to humanize the factory experiment. Perhaps no one has so clearly and insightfully analyzed this aspect of Ford's system as did Upton Sinclair in his novel, *The Flivver King: A Story of Ford-America* (1937). In it, Sinclair recognizes the good in Henry Ford, as well as why so many followed him, but he also shows clearly that Ford never understood how truly debilitating working in his assembly plants was; never understood why workers rejected his attempts to force them to follow his values (an infamous undercover police force spied on the workers' private lives); and never understood why those who worked in the plant wanted to join a union.

This myopia also shaped Henry Ford's business strategies. Ford held to two basic principles: he would produce high-quality cars and sell them as inexpensively as possible. He liked to assert that every dollar he could chop off the price of a Model T would attract at least a thousand new buyers. Many customers, he said in 1916, "will pay $360 for a car who would not pay $440. We had in round numbers 500,000 buyers of cars on the $440 basis, and I figure that on the $360 basis we can increase the sales to possibly 800,000 cars for the year – less profit on each car, but more cars, more employment of labor, and in the end we get all the total profit we ought to make."

Although Ford was one of the richest men in the world, remarks such as these appealed to everyday people, who seemed to admire and trust him as the embodiment of the common man, somebody much like themselves. The Ford Motor Company courted journalists, and Henry was always good copy. Thus, it is not surprising that it was often said that Ford's fortune of more than a billion dollars had been earned "cleanly," unlike the wealth of "robber barons" such as John D. Rockefeller and Andrew Carnegie. Ford himself made no secret of his disdain for some of the trappings of capitalism. He spoke harshly of "financeering." He detested stockholders, whom he described as "parasites."

In 1919, to rid himself of any stockholder influence, Ford bought up all the outstanding shares of his company and took it private. This was a profound and ominous step. At a single stroke, it put the gigantic Ford Motor Company under the absolute control of one erratic "Genius Ignoramus," as biographer David Lewis calls Ford. The centralization of management had now become total. A short time later Ford forced his dealers to buy his cars with cash, which caused many of them to borrow money from banks. So much for hatred of "financeering." And at just that moment, Ford's company was about to confront a formidable competitor, the emerging General Motors Corporation.

Alfred P. Sloan, Jr. and Decentralized Management

The man who became Henry Ford's great rival grew up a city boy in New Haven, CT, for the first ten years of his life. Alfred Sloan's (1875–1966) prosperous merchant father moved the family to Brooklyn in the mid-1880s, and Sloan achieved a splendid academic record at Brooklyn Polytechnic Institute, where he studied electrical engineering. Working "every possible minute, so that I might be graduated a year ahead," he finished his degree at the Massachusetts Institute of Technology in three years.

When Sloan graduated from college in 1895 ("I was thin as a rail, young and unimpressive"), he took a job at the Hyatt Roller Bearing Company, a small New Jersey firm with 25 employees and $2,000 in monthly sales. Sloan's father helped finance the firm's survival in hard times, and then its expansion. Sloan came to know the car industry well as Hyatt marketed its products to more and more manufacturers. He sold roller bearings to Ransom Olds and William C. Durant, and his best customer was Henry Ford.

"Blue-eyed Billy" Durant, a business visionary, had put together the General Motors Corporation in 1908, the same year the Model T first appeared. A wheeler-dealer, Durant enjoyed buying and selling whole companies. General Motors continued to grow, but it remained a loose group of separate firms that often competed with one another! Buick, the best of the lot, made money that Durant then dissipated among the less successful companies. Buick's leaders, Charles Nash and Walter Chrysler, became so angry with this mismanagement that they walked away and set up their own auto firms. Alfred Sloan summed up the problem: "Mr. Durant was a great man with a great weakness – he could create but he could not administer."

Still, Durant envisioned what others had not: the car industry's future lay in combining within one big firm all the diverse elements involved in the production of cars: engine and parts manufacturers, chassis works, body companies, and assemblers. Only through this kind of "vertical integration," bringing together all manufacturing and assembly steps from raw materials to finished product, could a reliable flow of mass-produced output be achieved. Exploiting these economies of scale would increase output and lower the cost of each car. Durant and Ford, then, held similar obsessive commitments to vertical integration. While Ford developed them from within his firm, Durant did so by buying related companies and integrating them into General Motors.

Hyatt Roller Bearing was a company Durant wanted to include in a group of accessory firms, which he called United Motors. By 1916 Hyatt had grown into a prosperous enterprise with 4,000 employees, and Sloan and his family now owned most of the company. Durant paid $13.5 million (the equivalent of almost $300 million in 2016) for Hyatt and named Alfred Sloan president of United. Two years later Durant merged United Motors into General Motors and made Sloan a vice-president and member of the GM Executive Committee. A stockholders' revolt in 1920 forced Durant out. Pierre du Pont, a major investor in GM and one of the shrewdest business executives in the country, assumed the GM presidency and made Sloan his chief assistant.

Forty-five years old and at the peak of his abilities, Sloan faced daunting problems. Internally, GM remained an organizational mess, and Durant's maneuvers had put the firm in bad financial shape. Externally, and worst of all, the economic depression of 1920–1921 was threatening to kill the company. As Sloan later wrote, "The automobile market had nearly vanished and with it our income."

With some difficulty, GM weathered the short depression, and in 1923 Sloan became president of the entire firm. He turned out to be a very different kind of businessman from either Bill Durant or Henry Ford. Whereas Durant and Ford wooed the press and welcomed media coverage, Sloan shunned personal publicity. He did not have much of a private life, seemingly uninterested in any subject other than the welfare of General Motors. In what is arguably one of the most brilliant performances in the history of business, Sloan proceeded to turn GM around and build it into the largest company in the world.

As a writer in *Fortune* described him, Sloan "displays an almost inhuman detachment from personalities [but] a human and infectious enthusiasm for the facts. Never, in committee or out, does he give an order in the ordinary sense, saying, 'I want you to do this.' Rather he reviews the data and then sells an idea, pointing out, 'Here is what could be done.' Brought to consider the facts in open discussion, all men, he feels, are on an equal footing. Management is no longer a matter of taking orders, but of taking counsel." Unlike Henry Ford, Sloan valued the contributions of the many supervisors to whom he delegated major responsibilities. An associate compared Sloan's style to the roller bearings he once sold: "self-lubricating, smooth, eliminates friction and carries the load." By rejecting self-aggrandizement and empowering his junior associates, Sloan led General Motors to a very advantageous position.

General Motors Versus the Ford Motor Company: The Triumph of Decentralized Management

At the time Henry Ford took his company private, he also embarked on an expensive construction project at his River Rouge manufacturing complex near Detroit. These costs, coupled with the recession of 1920–1921 and Ford's dislike of banks, led him to force his dealers to buy his cars with cash. In contrast, Alfred Sloan established a subsidiary of GM called General Motors Acceptance Corporation. This financial agency enabled GM dealers to finance bulk purchases and customers to buy cars and trucks on credit. The use of the installment plan (which Ford never embraced) empowered consumers and entrepreneurs alike. And it helped GM weather the recession.

Among other ways in which Sloan out-managed Ford in the 1920s and 1930s, he recognized that a fast-changing situation in the automobile industry demanded more sophisticated management:

> There was no awareness of the used-car market. There were no statistics on the different cars' market penetration; no one kept track of registrations. Production schedules, therefore, were set with no real relationship to final demand. Our products had no planned relation to one another or to the market. The concept of a line of products to meet the full challenge of the market place had not been thought of. The annual model change as we know it today was still far in the future. The quality of the products was sometimes good, sometimes bad.

Well before Henry Ford, Sloan saw that the industry was becoming a trade-in business. Eventually, used cars would account for three units out of every four sold. Additionally, Sloan realized that Americans viewed the purchase of their cars as status symbols of their progress up the income scale. He responded by diversifying GM's product line, starting with Chevrolet, which was designed to compete with Ford's Model T. At progressively higher prices to imply higher social status, GM created Pontiac, Oldsmobile, Buick, and at the top, Cadillac. Its advertising touted "a car for every purse and purpose." Significantly, by the mid-1920s, GM's cars and trucks equaled and sometimes surpassed Ford's in styling, basic engineering, and production qualities.

Henry Ford stuck to his simpler approach: building a better version of one car in one color (black) and continually cutting costs. While successful in the early years, this strategy wilted in the relentlessly changing market of the 1920s and 1930s. In 1921 Ford's share of the domestic market stood at 56 percent; by 1925 it had dropped to 40 percent. Meanwhile, GM soared from

13 percent to 20 percent. In 1929 each firm produced 1.5 million cars. By 1937 GM's market share had shot up to 42 percent while Ford's slumped to 21 percent. Meanwhile, the Chrysler Corporation took over second place with 25 percent of the market.

Ford resisted the changes of the new economy of the 1920s. He was slow to respond to consumer demand for "closed cars" that protected riders from the elements, for different styles in different colors, and for annual model changes. After shutting down the River Rouge plant for nearly a year to retool, Ford finally produced the Model A in 1928. While it was clearly superior to the Model T, it was only one model. A second model produced in 1929, the Lincoln, did not compete effectively with Cadillac. Only in 1933 did Ford begin to bring out yearly models, and not until 1938 did the firm offer a new mid-sized car (the Mercury) to compete with GM's higher-income lines of Pontiac, Oldsmobile, and Buick.

Internally, chaos reigned at Ford Motor Company. Information flows grew confused and irregular. Managers could not seem to identify problems or pinpoint responsibilities. Budgeting procedures fell so far behind that overburdened accountants actually began using scales to weigh piles of invoices rather than add up the numbers written on each sheet. The company had become a victim of its own success: It had grown too large to manage in the way Henry Ford insisted on managing it.

Not surprisingly, Ford's once-stellar management team disintegrated. Long before turning 70 in 1933 Henry Ford had become a rigid, peevish, and arbitrary chief executive. His autocratic management style pushed young executives out, and an emerging commitment to decentralized management at GM and a few other companies drew them to other opportunities. What saved the Ford Motor Company from going under completely in the 1930s were the brand name and its high quality of manufacturing, as well as the fact that Sloan purposely kept GM's share of the market under 45 percent in order to avoid anticipated antitrust action.

While Sloan developed engineering and marketing strategies to meet the demands of the new consumer economy, he would not have been successful without forging a better management structure to implement them. The tradition in business before the 1920s was to organize a large firm not according to its *products*, but according to just three *functions*: purchasing of raw materials, manufacturing, and selling. The executives who oversaw these functions had responsibility for all of the company's products, no matter how many or diverse they were. When things went wrong with a product under such a system, it was impossible to pinpoint how to respond.

In answer to the demands of the new consumer economy of the 1920s, Sloan devised the decentralized, multidivisional management structure. Consumer choices led to the diversification of product lines, which led to the creation of separate product divisions, each one headed by a semi-autonomous chief executive. Each executive had "bottom-line responsibility" for the operation of his division. This meant that he oversaw purchasing, manufacturing and marketing of the division's product.

The idea of having semi-autonomous product divisions within one big company sounds simple today, as does the idea of an assembly line. But in the 1920s it was an intellectual breakthrough of the first order, and it took Sloan some time to work out the particulars. Years later, he realized that the puzzle of centralization versus decentralization "is the crux of the matter," and "interaction … is the thing." Centralization had to be mixed with decentralization in order for the firm to prosper.

The multidivisional structure made such a mixture possible. Among its other virtues, the new structure in effect turned a large company into groups of smaller-scale entities. It provided incentives for numerous managers to work together in a spirit of cooperation as they moved up the corporate ladder. Sloan fostered this behavior when he established cross-divisional committees, and made sure that executives served on several of them at one time. This ensured that important decision makers communicated with one another and helped reconcile the goals of "decentralization with coordinated control."

Coordinated control came primarily through financial reporting and capital allocations. Sloan worked hard on these issues, and GM soon became one of the most sophisticated of all American companies in its use of budget targets and financial ratios such as inventory turnover, fixed versus variable costs, and profit as a percentage of sales. This was difficult to pull off, and GM did not always do it well. Managers made continual adjustments along the production lines based on what the numbers were telling top executives at headquarters. Sloan summed it up: "From decentralization we get initiative, responsibility, development of personnel, decisions closest to the facts, flexibility. … From co-ordination we get efficiencies and economies. It must be apparent that co-ordinated decentralization is not an easy concept to apply."

Lessons Learned

What can we learn from the battle between Ford and GM in the 1920s and 1930s? For one thing, "first-mover advantages" that Ford enjoyed, while powerful, do not ensure permanent supremacy. The market punishes those who will not or cannot adapt.

Henry Ford understood part of the relentlessness of change, particularly the creative destruction on the manufacturing side. "Not a single item of equipment can be regarded as permanent," he wrote. "Not even the site can be taken as fixed. We abandoned our Highland Park plant – which was in its day the largest automobile plant in the world – and moved to the River Rouge plant because in the new plant there could be less handling of materials and consequently a saving. We frequently scrap whole divisions of our business – and as a routine affair."

Ford, however, did not translate this insight to marketing. He refused to see that marketing, in every aspect from product policy to styling to advertising to sales, is as important to success as is manufacturing. He had little respect for the tastes of consumers, whom he (correctly) regarded as fickle. Ford thought he knew what they needed. He could not bring himself to admit that in a market economy the consumer really does reign supreme, and that for an organization to act otherwise is to invite disaster.

The car wars also reveal that in the modern economy how decision making takes place looms as a key to continued success. If all decisions are made at the top of the organization, as they were at Ford, then sooner or later two things will happen. First, the quality of decision making will deteriorate as the business grows larger. There is too much to know and much of that is changing constantly. Second, employees not directly in touch with the process of decision making will grow bored with routine, their potential contributions lost to the organization. Just moving decision making down the organizational chart is not the answer, however, for such a course will lead to faltering cooperation and anarchy.

The car wars, then, reveal that the pivotal challenge of modern management lies in finding the right balance between centralization and decentralization, and in continually adjusting the mix in response to changing circumstances. Fixing the decision making at the point at which the best information is available requires the right design of the organization. And the answer for GM in the 1920s and 1930s, and after World War II for thousands of other firms, was the multidivisional, decentralized management organization.

The contrasts between Henry Ford and Alfred Sloan illuminate a characteristic irony in American business and in the national culture as a whole. Many strands of American cultural traditions romanticize the solitary hero and underrate the necessity for cooperation through structured organization. *Individualism* is prized, while *bureaucracy* remains a dirty word. While Henry Ford – the unschooled solo genius and bombastic opinionated billionaire – was perhaps the more typically "American" personality, Alfred Sloan – the quiet, persuasive engineer and systematic organization man – better epitomizes most successful American business leaders of the twentieth century.

But the main lesson of the car wars is the relentlessness of change. American car manufacturers eventually fell victim to better managed Japanese auto manufacturers. Later still, the family firm of Ford Motor Company would make a stunning recovery while GM had to be bailed out by the government. Relentlessness of change, indeed.