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▸ Shortsighted managements often fail to recognize that in fact there is no such thing as a growth industry.

MARKETING MYOPIA

By Theodore Levitt

Every major industry was once a growth industry. But some that are now riding a wave of growth enthusiasm are very much in the shadow of decline. Others which are thought of as seasoned growth industries have actually stopped growing. In every case the reason growth is threatened, slowed, or stopped is *not* because the market is saturated. It is because there has been a failure of management.

Fateful Purposes

The failure is at the top. The executives responsible for it, in the last analysis, are those who deal with broad aims and policies. Thus:

¶ The railroads did not stop growing because the need for passenger and freight transportation declined. That grew. The railroads are in trouble today not because the need was filled by others (cars, trucks, airplanes, even telephones), but because it was *not* filled by the railroads themselves. They let others take customers away from them because they assumed themselves to be in the railroad business rather than in the transportation business. The reason they defined their industry wrong was because they were railroad-oriented instead of transportation-oriented; they were product-oriented instead of customer-oriented.

¶ Hollywood barely escaped being totally ravished by television. Actually, all the established film companies went through drastic reorganizations. Some simply disappeared. All of them got into trouble not because of TV's inroads but because of their own myopia. As with the railroads, Hollywood defined its business incorrectly. It thought it was in the movie business when it was actually in the entertainment business. "Movies" implied a specific, limited product. This produced a fatuous contentment which from the beginning led producers to view TV as a threat. Hollywood scorned and rejected TV when it should have welcomed it as an opportunity — an opportunity to expand the entertainment business.

Today TV is a bigger business than the old narrowly defined movie business ever was. Had Hollywood been customer-oriented (providing entertainment), rather than product-oriented (making movies), would it have gone through the fiscal purgatory that it did? I doubt it. What ultimately saved Hollywood and accounted for its recent resurgence was the wave of new young writers, producers, and directors whose previous successes in television

had decimated the old movie companies and toppled the big movie moguls.

There are other less obvious examples of industries that have been and are now endangering their futures by improperly defining their purposes. I shall discuss some in detail later and analyze the kind of policies that lead to trouble. Right now it may help to show what a thoroughly customer-oriented management *can* do to keep a growth industry growing, even after the obvious opportunities have been exhausted; and here there are two examples that have been around for a long time. They are nylon and glass — specifically, E. I. duPont de Nemours & Company and Corning Glass Works:

Both companies have great technical competence. Their product orientation is unquestioned. But this alone does not explain their success. After all, who was more pridefully product-oriented and product-conscious than the erstwhile New England textile companies that have been so thoroughly massacred? The DuPonts and the Cornings have succeeded not primarily because of their product or research orientation but because they have been thoroughly customer-oriented also. It is constant watchfulness for opportunities to apply their technical know-how to the creation of customer-satisfying uses which accounts for their prodigious output of successful new products. Without a very sophisticated eye on the customer, most of their new products might have been wrong, their sales methods useless.

Aluminum has also continued to be a growth industry, thanks to the efforts of two wartime-created companies which deliberately set about creating new customer-satisfying uses. Without Kaiser Aluminum & Chemical Corporation and Reynolds Metals Company, the total demand for aluminum today would be vastly less than it is.

Error of Analysis

Some may argue that it is foolish to set the railroads off against aluminum or the movies off against glass. Are not aluminum and glass naturally so versatile that the industries are bound to have more growth opportunities than the railroads and movies? This view commits precisely the error I have been talking about. It defines an industry, or a product, or a cluster of know-how so narrowly as to guarantee its premature senescence. When we mention "railroads," we should make sure we mean "transportation." As transporters, the railroads still have a good chance for very considerable growth. They are not limited to the railroad business as such (though in my opinion rail transportation is potentially a much stronger transportation medium than is generally believed).

What the railroads lack is not opportunity, but some of the same managerial imaginativeness and audacity that made them great. Even an amateur like Jacques Barzun can see what is lacking when he says:

"I grieve to see the most advanced physical and social organization of the last century go down in shabby disgrace for lack of the same comprehensive imagination that built it up. [What is lacking is] the will of the companies to survive and to satisfy the public by inventiveness and skill." [1]

Shadow of Obsolescence

It is impossible to mention a single major industry that did not at one time qualify for the magic appellation of "growth industry." In each case its assumed strength lay in the apparently unchallenged superiority of its product. There appeared to be no effective substitute for it. It was itself a runaway substitute for the product it so triumphantly replaced. Yet one after another of these celebrated industries has come under a shadow. Let us look briefly at a few more of them, this time taking examples that have so far received a little less attention:

◐ *Dry cleaning* — This was once a growth industry with lavish prospects. In an age of wool garments, imagine being finally able to get them safely and easily clean. The boom was on.

Yet here we are 30 years after the boom started and the industry is in trouble. Where has the competition come from? From a better way of cleaning? No. It has come from synthetic fibers and chemical additives that have cut the need for dry cleaning. But this is only the beginning. Lurking in the wings and ready to make chemical dry cleaning totally obsolescent is that powerful magician, ultrasonics.

◐ *Electric utilities* — This is another one of those supposedly "no-substitute" products that has been enthroned on a pedestal of invincible growth. When the incandescent lamp came along, kerosene lights were finished. Later the water wheel and the steam engine were cut to ribbons by the flexibility, reliability, simplicity, and just plain easy availability of electric motors. The prosperity of electric utilities continues to wax extravagant as the home is converted into a museum of electric gadgetry.

[1] Jacques Barzun, "Trains and the Mind of Man," *Holiday*, February 1960, p. 21.

How can anybody miss by investing in utilities, with no competition, nothing but growth ahead?

But a second look is not quite so comforting. A score of nonutility companies are well advanced toward developing a powerful chemical fuel cell which could sit in some hidden closet of every home silently ticking off electric power. The electric lines that vulgarize so many neighborhoods will be eliminated. So will the endless demolition of streets and service interruptions during storms. Also on the horizon is solar energy, again pioneered by nonutility companies.

Who says that the utilities have no competition? They may be natural monopolies now, but tomorrow they may be natural deaths. To avoid this prospect, they too will have to develop fuel cells, solar energy, and other power sources. To survive, they themselves will have to plot the obsolescence of what now produces their livelihood.

¶ *Grocery stores* — Many people find it hard to realize that there ever was a thriving establishment known as the "corner grocery store." The supermarket has taken over with a powerful effectiveness. Yet the big food chains of the 1930's narrowly escaped being completely wiped out by the aggressive expansion of independent supermarkets. The first genuine supermarket was opened in 1930, in Jamaica, Long Island. By 1933 supermarkets were thriving in California, Ohio, Pennsylvania, and elsewhere. Yet the established chains pompously ignored them. When they chose to notice them, it was with such derisive descriptions as "cheapy," "horse-and-buggy," "cracker-barrel storekeeping," and "unethical opportunists."

The executive of one big chain announced at the time that he found it "hard to believe that people will drive for miles to shop for foods and sacrifice the personal service chains have perfected and to which Mrs. Consumer is accustomed." [2] As late as 1936, the National Wholesale Grocers convention and the New Jersey Retail Grocers Association said there was nothing to fear. They said that the supers' narrow appeal to the price buyer limited the size of their market. They had to draw from miles around. When imitators came, there would be wholesale liquidations as volume fell. The current high sales of the supers was said to be partly due to their novelty. Basically people wanted convenient neighborhood grocers. If the neighborhood stores "cooperate with their suppliers, pay attention to their costs, and improve their service," they would be able to weather the competition until it blew over.[3]

It never blew over. The chains discovered that survival required going into the supermarket business. This meant the wholesale destruction of their huge investments in corner store sites and in established distribution and merchandising methods. The companies with "the courage of their convictions" resolutely stuck to the corner store philosophy. They kept their pride but lost their shirts.

Self-Deceiving Cycle

But memories are short. For example, it is hard for people who today confidently hail the twin messiahs of electronics and chemicals to see how things could possibly go wrong with these galloping industries. They probably also cannot see how a reasonably sensible businessman could have been as myopic as the famous Boston millionaire who 50 years ago unintentionally sentenced his heirs to poverty by stipulating that his entire estate be forever invested exclusively in electric streetcar securities. His posthumous declaration, "There will always be a big demand for efficient urban transportation," is no consolation to his heirs who sustain life by pumping gasoline at automobile filling stations.

Yet, in a casual survey I recently took among a group of intelligent business executives, nearly half agreed that it would be hard to hurt their heirs by tying their estates forever to the electronics industry. When I then confronted them with the Boston streetcar example, they chorused unanimously, "That's different!" But is it? Is not the basic situation identical?

In truth, *there is no such thing* as a growth industry, I believe. There are only companies organized and operated to create and capitalize on growth opportunities. Industries that assume themselves to be riding some automatic growth escalator invariably descend into stagnation. The history of every dead and dying "growth" industry shows a self-deceiving cycle of bountiful expansion and undetected decay. There are four conditions which usually guarantee this cycle:

1. The belief that growth is assured by an expanding and more affluent population.
2. The belief that there is no competitive substitute for the industry's major product.
3. Too much faith in mass production and in the advantages of rapidly declining unit costs as output rises.
4. Preoccupation with a product that lends itself to carefully controlled scientific experi-

[2] For more details see M. M. Zimmerman, *The Super Market: A Revolution in Distribution* (New York, McGraw-Hill Book Company, Inc., 1955), p. 48.

[3] Ibid., pp. 45–47.

mentation, improvement, and manufacturing cost reduction.

I should like now to begin examining each of these conditions in some detail. To build my case as boldly as possible, I shall illustrate the points with reference to three industries — petroleum, automobiles, and electronics — particularly petroleum, because it spans more years and more vicissitudes. Not only do these three have excellent reputations with the general public and also enjoy the confidence of sophisticated investors, but their managements have become known for progressive thinking in areas like financial control, product research, and management training. If obsolescence can cripple even these industries, it can happen anywhere.

Population Myth

The belief that profits are assured by an expanding and more affluent population is dear to the heart of every industry. It takes the edge off the apprehensions everybody understandably feels about the future. If consumers are multiplying and also buying more of your product or service, you can face the future with considerably more comfort than if the market is shrinking. An expanding market keeps the manufacturer from having to think very hard or imaginatively. If thinking is an intellectual response to a problem, then the absence of a problem leads to the absence of thinking. If your product has an automatically expanding market, then you will not give much thought to how to expand it.

One of the most interesting examples of this is provided by the petroleum industry. Probably our oldest growth industry, it has an enviable record. While there are some current apprehensions about its growth rate, the industry itself tends to be optimistic. But I believe it can be demonstrated that it is undergoing a fundamental yet typical change. It is not only ceasing to be a growth industry, but may actually be a declining one, relative to other business. Although there is widespread unawareness of it, I believe that within 25 years the oil industry may find itself in much the same position of retrospective glory that the railroads are now in. Despite its pioneering work in developing and applying the present-value method of investment evaluation, in employee relations, and in working with backward countries, the petroleum business is a distressing example of how complacency and wrongheadedness can stubbornly convert opportunity into near disaster.

One of the characteristics of this and other industries that have believed very strongly in the beneficial consequences of an expanding population, while at the same time being industries with a generic product for which there has appeared to be no competitive substitute, is that the individual companies have sought to outdo their competitors by improving on what they are already doing. This makes sense, of course, if one assumes that sales are tied to the country's population strings, because the customer can compare products only on a feature-by-feature basis. I believe it is significant, for example, that not since John D. Rockefeller sent free kerosene lamps to China has the oil industry done anything really outstanding to create a demand for its product. Not even in product improvement has it showered itself with eminence. The greatest single improvement, namely, the development of tetraethyl lead, came from outside the industry, specifically from General Motors and DuPont. The big contributions made by the industry itself are confined to the technology of oil exploration, production, and refining.

Asking for Trouble

In other words, the industry's efforts have focused on improving the *efficiency* of getting and making its product, not really on improving the generic product or its marketing. Moreover, its chief product has continuously been defined in the narrowest possible terms, namely, gasoline, not energy, fuel, or transportation. This attitude has helped assure that:

- Major improvements in gasoline quality tend not to originate in the oil industry. Also, the development of superior alternative fuels comes from outside the oil industry, as will be shown later.

- Major innovations in automobile fuel marketing are originated by small new oil companies that are not primarily preoccupied with production or refining. These are the companies that have been responsible for the rapidly expanding multipump gasoline stations, with their successful emphasis on large and clean layouts, rapid and efficient driveway service, and quality gasoline at low prices.

Thus, the oil industry is asking for trouble from outsiders. Sooner or later, in this land of hungry inventors and entrepreneurs, a threat is sure to come. The possibilities of this will become more apparent when we turn to the next dangerous belief of many managements. For the

sake of continuity, because this second belief is tied closely to the first, I shall continue with the same example.

Idea of Indispensability

The petroleum industry is pretty much persuaded that there is no competitive substitute for its major product, gasoline — or if there is, that it will continue to be a derivative of crude oil, such as diesel fuel or kerosene jet fuel.

There is a lot of automatic wishful thinking in this assumption. The trouble is that most refining companies own huge amounts of crude oil reserves. These have value only if there is a market for products into which oil can be converted — hence the tenacious belief in the continuing competitive superiority of automobile fuels made from crude oil.

This idea persists despite all historic evidence against it. The evidence not only shows that oil has never been a superior product for any purpose for very long, but it also shows that the oil industry has never really been a growth industry. It has been a succession of different businesses that have gone through the usual historic cycles of growth, maturity, and decay. Its over-all survival is owed to a series of miraculous escapes from total obsolescence, of last-minute and unexpected reprieves from total disaster reminiscent of the Perils of Pauline.

Perils of Petroleum

I shall sketch in only the main episodes:

¶ First, crude oil was largely a patent medicine. But even before that fad ran out, demand was greatly expanded by the use of oil in kerosene lamps. The prospect of lighting the world's lamps gave rise to an extravagant promise of growth. The prospects were similar to those the industry now holds for gasoline in other parts of the world. It can hardly wait for the underdeveloped nations to get a car in every garage.

In the days of the kerosene lamp, the oil companies competed with each other and against gaslight by trying to improve the illuminating characteristics of kerosene. Then suddenly the impossible happened. Edison invented a light which was totally nondependent on crude oil. Had it not been for the growing use of kerosene in space heaters, the incandescent lamp would have completely finished oil as a growth industry at that time. Oil would have been good for little else than axle grease.

¶ Then disaster and reprieve struck again. Two great innovations occurred, neither originating in the oil industry. The successful development of coal-burning domestic central-heating systems made the space heater obsolescent. While the industry reeled, along came its most magnificent boost yet — the internal combustion engine, also invented by outsiders. Then when the prodigious expansion for gasoline finally began to level off in the 1920's, along came the miraculous escape of a central oil heater. Once again, the escape was provided by an outsider's invention and development. And when that market weakened, wartime demand for aviation fuel came to the rescue. After the war the expansion of civilian aviation, the dieselization of railroads, and the explosive demand for cars and trucks kept the industry's growth in high gear.

¶ Meanwhile centralized oil heating — whose boom potential had only recently been proclaimed — ran into severe competition from natural gas. While the oil companies themselves owned the gas that now competed with their oil, the industry did not originate the natural gas revolution, nor has it to this day greatly profited from its gas ownership. The gas revolution was made by newly formed transmission companies that marketed the product with an aggressive ardor. They started a magnificent new industry, first against the advice and then against the resistance of the oil companies.

By all the logic of the situation, the oil companies themselves should have made the gas revolution. They not only owned the gas; they also were the only people experienced in handling, scrubbing, and using it, the only people experienced in pipeline technology and transmission, and they understood heating problems. But, partly because they knew that natural gas would compete with their own sale of heating oil, the oil companies poohpoohed the potentials of gas.

The revolution was finally started by oil pipeline executives who, unable to persuade their own companies to go into gas, quit and organized the spectacularly successful gas transmission companies. Even after their success became painfully evident to the oil companies, the latter did not go into gas transmission. The multibillion dollar business which should have been theirs went to others. As in the past, the industry was blinded by its narrow preoccupation with a specific product and the value of its reserves. It paid little or no attention to its customers' basic needs and preferences.

¶ The postwar years have not witnessed any change. Immediately after World War II the oil industry was greatly encouraged about its future by the rapid expansion of demand for its traditional line of products. In 1950 most companies projected annual rates of domestic expansion of around 6% through at least 1975. Though the ratio of crude oil reserves to demand in the Free World was about 20 to 1, with 10 to 1 being usually considered a reasonable working ratio in the

United States, booming demand sent oil men searching for more without sufficient regard to what the future really promised. In 1952 they "hit" in the Middle East; the ratio skyrocketed to 42 to 1. If gross additions to reserves continue at the average rate of the past five years (37 billion barrels annually), then by 1970 the reserve ratio will be up to 45 to 1. This abundance of oil has weakened crude and product prices all over the world.

Uncertain Future

Management cannot find much consolation today in the rapidly expanding petrochemical industry, another oil-using idea that did not originate in the leading firms. The total United States production of petrochemicals is equivalent to about 2% (by volume) of the demand for all petroleum products. Although the petrochemical industry is now expected to grow by about 10% per year, this will not offset other drains on the growth of crude oil consumption. Furthermore, while petrochemical products are many and growing, it is well to remember that there are nonpetroleum sources of the basic raw material, such as coal. Besides, a lot of plastics can be produced with relatively little oil. A 50,000-barrel-per-day oil refinery is now considered the absolute minimum size for efficiency. But a 5,000-barrel-per-day chemical plant is a giant operation.

Oil has never been a continuously strong growth industry. It has grown by fits and starts, always miraculously saved by innovations and developments not of its own making. The reason it has not grown in a smooth progression is that each time it thought it had a superior product safe from the possibility of competitive substitutes, the product turned out to be inferior and notoriously subject to obsolescence. Until now, gasoline (for motor fuel, anyhow) has escaped this fate. But, as we shall see later, it too may be on its last legs.

The point of all this is that there is no guarantee against product obsolescence. If a company's own research does not make it obsolete, another's will. Unless an industry is especially lucky, as oil has been until now, it can easily go down in a sea of red figures — just as the railroads have, as the buggy whip manufacturers have, as the corner grocery chains have, as most of the big movie companies have, and indeed as many other industries have.

The best way for a firm to be lucky is to make its own luck. That requires knowing what makes a business successful. One of the greatest enemies of this knowledge is mass production.

Production Pressures

Mass-production industries are impelled by a great drive to produce all they can. The prospect of steeply declining unit costs as output rises is more than most companies can usually resist. The profit possibilities look spectacular. All effort focuses on production. The result is that marketing gets neglected.

John Kenneth Galbraith contends that just the opposite occurs.[1] Output is so prodigious that all effort concentrates on trying to get rid of it. He says this accounts for singing commercials, desecration of the countryside with advertising signs, and other wasteful and vulgar practices. Galbraith has a finger on something real, but he misses the strategic point. Mass production does indeed generate great pressure to "move" the product. But what usually gets emphasized is selling, not marketing. Marketing, being a more sophisticated and complex process, gets ignored.

The difference between marketing and selling is more than semantic. Selling focuses on the needs of the seller, marketing on the needs of the buyer. Selling is preoccupied with the seller's need to convert his product into cash; marketing with the idea of satisfying the needs of the customer by means of the product and the whole cluster of things associated with creating, delivering, and finally consuming it.

In some industries the enticements of full mass production have been so powerful that for many years top management in effect has told the sales departments, "You get rid of it; we'll worry about profits." By contrast, a truly marketing-minded firm tries to create value-satisfying goods and services that consumers will want to buy. What it offers for sale includes not only the generic product or service, but also how it is made available to the customer, in what form, when, under what conditions, and at what terms of trade. Most important, what it offers for sale is determined not by the seller but by the buyer. The seller takes his cues from the buyer in such a way that the product becomes a consequence of the marketing effort, not vice versa.

Lag in Detroit

This may sound like an elementary rule of business, but that does not keep it from being

[1] *The Affluent Society* (Boston, Houghton Mifflin Company, 1958), pp. 152–160.

violated wholesale. It is certainly more violated than honored. Take the automobile industry:

Here mass production is most famous, most honored, and has the greatest impact on the entire society. The industry has hitched its fortune to the relentless requirements of the annual model change, a policy that makes customer orientation an especially urgent necessity. Consequently the auto companies annually spend millions of dollars on consumer research. But the fact that the new compact cars are selling so well in their first year indicates that Detroit's vast researches have for a long time failed to reveal what the customer really wanted. Detroit was not persuaded that he wanted anything different from what he had been getting until it lost millions of customers to other small car manufacturers.

How could this unbelievable lag behind consumer wants have been perpetuated so long? Why did not research reveal consumer preferences before consumers' buying decisions themselves revealed the facts? Is that not what consumer research is for — to find out before the fact what is going to happen? The answer is that Detroit never really researched the customer's wants. It only researched his preferences between the kinds of things which it had already decided to offer him. For Detroit is mainly product-oriented, not customer-oriented. To the extent that the customer is recognized as having needs that the manufacturer should try to satisfy, Detroit usually acts as if the job can be done entirely by product changes. Occasionally attention gets paid to financing, too, but that is done more in order to sell than to enable the customer to buy.

As for taking care of other customer needs, there is not enough being done to write about. The areas of the greatest unsatisfied needs are ignored, or at best get stepchild attention. These are at the point of sale and on the matter of automotive repair and maintenance. Detroit views these problem areas as being of secondary importance. That is underscored by the fact that the retailing and servicing ends of this industry are neither owned and operated nor controlled by the manufacturers. Once the car is produced, things are pretty much in the dealer's inadequate hands. Illustrative of Detroit's arm's-length attitude is the fact that, while servicing holds enormous sales-stimulating, profit-building opportunities, only 57 of Chevrolet's 7,000 dealers provide night maintenance service.

Motorists repeatedly express their dissatisfaction with servicing and their apprehensions about buying cars under the present selling setup. The anxieties and problems they encounter during the auto buying and maintenance processes are probably more intense and widespread today than 30 years ago. Yet the automobile companies do not *seem* to listen to or take their cues from the anguished consumer. If they do listen, it must be through the filter of their own preoccupation with production. The marketing effort is still viewed as a necessary consequence of the product, not vice versa, as it should be. That is the legacy of mass production, with its parochial view that profit resides essentially in low-cost full production.

What Ford Put First

The profit lure of mass production obviously has a place in the plans and strategy of business management, but it must always *follow* hard thinking about the customer. This is one of the most important lessons that we can learn from the contradictory behavior of Henry Ford. In a sense Ford was both the most brilliant and the most senseless marketer in American history. He was senseless because he refused to give the customer anything but a black car. He was brilliant because he fashioned a production system designed to fit market needs. We habitually celebrate him for the wrong reason, his production genius. His real genius was marketing. We think he was able to cut his selling price and therefore sell millions of $500 cars because his invention of the assembly line had reduced the costs. Actually he invented the assembly line because he had concluded that at $500 he could sell millions of cars. Mass production was the *result* not the cause of his low prices.

Ford repeatedly emphasized this point, but a nation of production-oriented business managers refuses to hear the great lesson he taught. Here is his operating philosophy as he expressed it succinctly:

"Our policy is to reduce the price, extend the operations, and improve the article. You will notice that the reduction of price comes first. We have never considered any costs as fixed. Therefore we first reduce the price to the point where we believe more sales will result. Then we go ahead and try to make the prices. We do not bother about the costs. The new price forces the costs down. The more usual way is to take the costs and then determine the price, and although that method may be scientific in the narrow sense; it is not scientific in the broad sense, because what earthly use is it to know the cost if it tells you that you cannot manufacture at a price at which the article can be sold? But more to the point is the fact that, although one may calculate what a cost is, and of course all of our costs are carefully calculated, no one knows what a cost ought to be. One of the ways of discovering . . . is to name a price so low as to force everybody in the place to the highest point of efficiency. The low price makes everybody dig

for profits. We make more discoveries concerning manufacturing and selling under this forced method than by any method of leisurely investigation." [5]

Product Provincialism

The tantalizing profit possibilities of low unit production costs may be the most seriously self-deceiving attitude that can afflict a company, particularly a "growth" company where an apparently assured expansion of demand already tends to undermine a proper concern for the importance of marketing and the customer.

The usual result of this narrow preoccupation with so-called concrete matters is that instead of growing, the industry declines. It usually means that the product fails to adapt to the constantly changing patterns of consumer needs and tastes, to new and modified marketing institutions and practices, or to product developments in competing or complementary industries. The industry has its eyes so firmly on its own specific product that it does not see how it is being made obsolete.

The classical example of this is the buggy whip industry. No amount of product improvement could stave off its death sentence. But had the industry defined itself as being in the transportation business rather than the buggy whip business, it might have survived. It would have done what survival always entails, that is, changing. Even if it had only defined its business as providing a stimulant or catalyst to an energy source, it might have survived by becoming a manufacturer of, say, fanbelts or air cleaners.

What may some day be a still more classical example is, again, the oil industry. Having let others steal marvelous opportunities from it (e.g., natural gas, as already mentioned, missile fuels, and jet engine lubricants), one would expect it to have taken steps never to let that happen again. But this is not the case. We are now getting extraordinary new developments in fuel systems specifically designed to power automobiles. Not only are these developments concentrated in firms outside the petroleum industry, but petroleum is almost systematically ignoring them, securely content in its wedded bliss to oil. It is the story of the kerosene lamp versus the incandescent lamp all over again. Oil is trying to improve hydrocarbon fuels rather than to develop *any* fuels best suited to the needs of their users, whether or not made in different ways and with different raw materials from oil.

Here are some of the things which nonpetroleum companies are working on:

- Over a dozen such firms now have advanced working models of energy systems which, when perfected, will replace the internal combustion engine and eliminate the demand for gasoline. The superior merit of each of these systems is their elimination of frequent, time-consuming, and irritating refueling stops. Most of these systems are fuel cells designed to create electrical energy directly from chemicals without combustion. Most of them use chemicals that are not derived from oil, generally hydrogen and oxygen.

- Several other companies have advanced models of electric storage batteries designed to power automobiles. One of these is an aircraft producer that is working jointly with several electric utility companies. The latter hope to use off-peak generating capacity to supply overnight plug-in battery regeneration. Another company, also using the battery approach, is a medium-size electronics firm with extensive small-battery experience that it developed in connection with its work on hearing aids. It is collaborating with an automobile manufacturer. Recent improvements arising from the need for high-powered miniature power storage plants in rockets have put us within reach of a relatively small battery capable of withstanding great overloads or surges of power. Germanium diode applications and batteries using sintered-plate and nickel-cadmium techniques promise to make a revolution in our energy sources.

- Solar energy conversion systems are also getting increasing attention. One usually cautious Detroit auto executive recently ventured that solar-powered cars might be common by 1980.

As for the oil companies, they are more or less "watching developments," as one research director put it to me. A few are doing a bit of research on fuel cells, but almost always confined to developing cells powered by hydrocarbon chemicals. None of them are enthusiastically researching fuel cells, batteries, or solar power plants. None of them are spending a fraction as much on research in these profoundly important areas as they are on the usual run-of-the-mill things like reducing combustion chamber deposit in gasoline engines. One major integrated petroleum company recently took a tentative look at the fuel cell and concluded that although "the companies actively working on it indicate a belief in ultimate success . . . the timing and magnitude of its impact are too remote to warrant recognition in our forecasts."

One might, of course, ask: Why should the

[5] Henry Ford, *My Life and Work* (New York, Doubleday, Page & Company, 1923), pp. 146–147.

oil companies do anything different? Would not chemical fuel cells, batteries, or solar energy kill the present product lines? The answer is that they would indeed, and that is precisely the reason for the oil firms having to develop these power units before their competitors, so they will not be companies without an industry.

Management might be more likely to do what is needed for its own preservation if it thought of itself as being in the energy business. But even that would not be enough if it persists in imprisoning itself in the narrow grip of its tight product orientation. It has to think of itself as taking care of customer needs, not finding, refining, or even selling oil. Once it genuinely thinks of its business as taking care of people's transportation needs, nothing can stop it from creating its own extravagantly profitable growth.

"Creative Destruction"

Since words are cheap and deeds are dear, it may be appropriate to indicate what this kind of thinking involves and leads to. Let us start at the beginning — the customer. It can be shown that motorists strongly dislike the bother, delay, and experience of buying gasoline. People actually do not buy gasoline. They cannot see it, taste it, feel it, appreciate it, or really test it. What they buy is the right to continue driving their cars. The gas station is like a tax collector to whom people are compelled to pay a periodic toll as the price of using their cars. This makes the gas station a basically unpopular institution. It can never be made popular or pleasant, only less unpopular, less unpleasant.

To reduce its unpopularity completely means eliminating it. Nobody likes a tax collector, not even a pleasantly cheerful one. Nobody likes to interrupt a trip to buy a phantom product, not even from a handsome Adonis or a seductive Venus. Hence, companies that are working on exotic fuel substitutes which will eliminate the need for frequent refueling are heading directly into the outstretched arms of the irritated motorist. They are riding a wave of inevitability, not because they are creating something which is technologically superior or more sophisticated, but because they are satisfying a powerful customer need. They are also eliminating noxious odors and air pollution.

Once the petroleum companies recognize the customer-satisfying logic of what another power system can do, they will see that they have no more choice about working on an efficient, long-lasting fuel (or some way of delivering present fuels without bothering the motorist) than the big food chains had a choice about going into the supermarket business, or the vacuum tube companies had a choice about making semiconductors. For their own good the oil firms will have to destroy their own highly profitable assets. No amount of wishful thinking can save them from the necessity of engaging in this form of "creative destruction."

I phrase the need as strongly as this because I think management must make quite an effort to break itself loose from conventional ways. It is all too easy in this day and age for a company or industry to let its sense of purpose become dominated by the economies of full production and to develop a dangerously lopsided product orientation. In short, if management lets itself drift, it invariably drifts in the direction of thinking of itself as producing goods and services, not customer satisfactions. While it probably will not descend to the depths of telling its salesmen, "You get rid of it; we'll worry about profits," it can, without knowing it, be practicing precisely that formula for withering decay. The historic fate of one growth industry after another has been its suicidal product provincialism.

Dangers of R & D

Another big danger to a firm's continued growth arises when top management is wholly transfixed by the profit possibilities of technical research and development. To illustrate I shall turn first to a new industry — electronics — and then return once more to the oil companies. By comparing a fresh example with a familiar one, I hope to emphasize the prevalence and insidiousness of a hazardous way of thinking.

Marketing Shortchanged

In the case of electronics, the greatest danger which faces the glamorous new companies in this field is not that they do not pay enough attention to research and development, but that they pay *too much* attention to it. And the fact that the fastest growing electronics firms owe their eminence to their heavy emphasis on technical research is completely beside the point. They have vaulted to affluence on a sudden crest of unusually strong general receptiveness to new technical ideas. Also, their success has been shaped in the virtually guaranteed market of military subsidies and by military orders that in

many cases actually preceded the existence of facilities to make the products. Their expansion has, in other words, been almost totally devoid of marketing effort.

Thus, they are growing up under conditions that come dangerously close to creating the illusion that a superior product will sell itself. Having created a successful company by making a superior product, it is not surprising that management continues to be oriented toward the product rather than the people who consume it. It develops the philosophy that continued growth is a matter of continued product innovation and improvement.

A number of other factors tend to strengthen and sustain this belief:

(1) Because electronic products are highly complex and sophisticated, managements become top-heavy with engineers and scientists. This creates a selective bias in favor of research and production at the expense of marketing. The organization tends to view itself as making things rather than satisfying customer needs. Marketing gets treated as a residual activity, "something else" that must be done once the vital job of product creation and production is completed.

(2) To this bias in favor of product research, development, and production is added the bias in favor of dealing with controllable variables. Engineers and scientists are at home in the world of concrete things like machines, test tubes, production lines, and even balance sheets. The abstractions to which they feel kindly are those which are testable or manipulatable in the laboratory, or, if not testable, then functional, such as Euclid's axioms. In short, the managements of the new glamour-growth companies tend to favor those business activities which lend themselves to careful study, experimentation, and control — the hard, practical, realities of the lab, the shop, the books.

What gets shortchanged are the realities of the *market*. Consumers are unpredictable, varied, fickle, stupid, shortsighted, stubborn, and generally bothersome. This is not what the engineer-managers say, but deep down in their consciousness it is what they believe. And this accounts for their concentrating on what they know and what they can control, namely, product research, engineering, and production. The emphasis on production becomes particularly attractive when the product can be made at declining unit costs. There is no more inviting way of making money than by running the plant full blast.

Today the top-heavy science-engineering-production orientation of so many electronics companies works reasonably well because they are pushing into new frontiers in which the armed services have pioneered virtually assured markets. The companies are in the felicitous position of having to fill, not find markets; of not having to discover what the customer needs and wants, but of having the customer voluntarily come forward with specific new product demands. If a team of consultants had been assigned specifically to design a business situation calculated to prevent the emergence and development of a customer-oriented marketing viewpoint, it could not have produced anything better than the conditions just described.

Executives concerned with increasing marketing effectiveness will be interested in three other important aspects of the problem that are discussed in this issue. See John F. Magee, "The Logistics of Distribution," page 89; Victor P. Buell, "Looking Around: Guides to Marketing Planning," page 37; and Alfred R. Oxenfeldt, "Multi-Stage Approach to Pricing," page 125.

Stepchild Treatment

The oil industry is a stunning example of how science, technology, and mass production can divert an entire group of companies from their main task . To the extent the consumer is studied at all (which is not much), the focus is forever on getting information which is designed to help the oil companies improve what they are now doing. They try to discover more convincing advertising themes, more effective sales promotional drives, what the market shares of the various companies are, what people like or dislike about service station dealers and oil companies, and so forth. Nobody seems as interested in probing deeply into the basic human needs that the industry might be trying to satisfy as in probing into the basic properties of the raw material that the companies work with in trying to deliver customer satisfactions.

Basic questions about customers and markets seldom get asked. The latter occupy a stepchild status. They are recognized as existing, as having to be taken care of, but not worth very much

real thought or dedicated attention. Nobody gets as excited about the customers in his own backyard as about the oil in the Sahara Desert. Nothing illustrates better the neglect of marketing than its treatment in the industry press:

The centennial issue of the *American Petroleum Institute Quarterly*, published in 1959 to celebrate the discovery of oil in Titusville, Pennsylvania, contained 21 feature articles proclaiming the industry's greatness. Only one of these talked about its achievements in marketing, and that was only a pictorial record of how service station architecture has changed. The issue also contained a special section on "New Horizons," which was devoted to showing the magnificent role oil would play in America's future. Every reference was ebulliently optimistic, never implying once that oil might have some hard competition. Even the reference to atomic energy was a cheerful catalogue of how oil would help make atomic energy a success. There was not a single apprehension that the oil industry's affluence might be threatened or a suggestion that one "new horizon" might include new and better ways of serving oil's present customers.

But the most revealing example of the stepchild treatment that marketing gets was still another special series of short articles on "The Revolutionary Potential of Electronics." Under that heading this list of articles appeared in the table of contents:

- "In the Search for Oil"
- "In Production Operations"
- "In Refinery Processes"
- "In Pipeline Operations"

Significantly, every one of the industry's major functional areas is listed, *except* marketing. Why? Either it is believed that electronics holds no revolutionary potential for petroleum marketing (which is palpably wrong), or the editors forgot to discuss marketing (which is more likely, and illustrates its stepchild status).

The order in which the four functional areas are listed also betrays the alienation of the oil industry from the consumer. The industry is implicitly defined as beginning with the search for oil and ending with its distribution from the refinery. But the truth is, it seems to me, that the industry begins with the needs of the customer for its products. From that primal position its definition moves steadily backstream to areas of progressively lesser importance, until it finally comes to rest at the "search for oil."

Beginning & End

The view that an industry is a customer-satisfying process, not a goods-producing process, is vital for all businessmen to understand. An industry begins with the customer and his needs, not with a patent, a raw material, or a selling skill. Given the customer's needs, the industry develops backwards, first concerning itself with the physical *delivery* of customer satisfactions. Then it moves back further to *creating* the things by which these satisfactions are in part achieved. How these materials are created is a matter of indifference to the customer, hence the particular form of manufacturing, processing, or what-have-you cannot be considered as a vital aspect of the industry. Finally, the industry moves back still further to *finding* the raw materials necessary for making its products.

The irony of some industries oriented toward technical research and development is that the scientists who occupy the high executive positions are totally unscientific when it comes to defining their companies' over-all needs and purposes. They violate the first two rules of the scientific method — being aware of and defining their companies' problems, and then developing testable hypotheses about solving them. They are scientific only about the convenient things, such as laboratory and product experiments. The reason that the customer (and the satisfaction of his deepest needs) is not considered as being "the problem" is not because there is any certain belief that no such problem exists, but because an organizational lifetime has conditioned management to look in the opposite direction. Marketing is a stepchild.

I do not mean that selling is ignored. Far from it. But selling, again, is not marketing. As already pointed out, selling concerns itself with the tricks and techniques of getting people to exchange their cash for your product. It is not concerned with the values that the exchange is all about. And it does not, as marketing invariably does, view the entire business process as consisting of a tightly integrated effort to discover, create, arouse, and satisfy customer needs. The customer is somebody "out there" who, with proper cunning, can be separated from his loose change.

Actually, not even selling gets much attention in some technologically minded firms. Because there is a virtually guaranteed market for the abundant flow of their new products, they do not actually know what a real market is. It is as if they lived in a planned economy, moving their products routinely from factory to retail outlet. Their successful concentration on prod-

ucts tends to convince them of the soundness of what they have been doing, and they fail to see the gathering clouds over the market.

Conclusion

Less than 75 years ago American railroads enjoyed a fierce loyalty among astute Wall Streeters. European monarchs invested in them heavily. Eternal wealth was thought to be the benediction for anybody who could scrape a few thousand dollars together to put into rail stocks. No other form of transportation could compete with the railroads in speed, flexibility, durability, economy, and growth potentials. As Jacques Barzun put it, "By the turn of the century it was an institution, an image of man, a tradition, a code of honor, a source of poetry, a nursery of boyhood desires, a sublimest of toys, and the most solemn machine — next to the funeral hearse — that marks the epochs in man's life." [6]

Even after the advent of automobiles, trucks, and airplanes, the railroad tycoons remained imperturbably self-confident. If you had told them 60 years ago that in 30 years they would be flat on their backs, broke, and pleading for government subsidies, they would have thought you totally demented. Such a future was simply not considered possible. It was not even a discussable subject, or an askable question, or a matter which any sane person would consider worth speculating about. The very thought was insane. Yet a lot of insane notions now have matter-of-fact acceptance — for example, the idea of 100-ton tubes of metal moving smoothly through the air 20,000 feet above the earth, loaded with 100 sane and solid citizens casually drinking martinis — and they have dealt cruel blows to the railroads.

What specifically must other companies do to avoid this fate? What does customer orientation involve? These questions have in part been answered by the preceding examples and analysis. It would take another article to show in detail what is required for specific industries. In any case, it should be obvious that building an effective customer-oriented company involves far more than good intentions or promotional tricks; it involves profound matters of human organization and leadership. For the present, let me merely suggest what appear to be some general requirements.

[6] Op. cit., p. 20.

Visceral Feel of Greatness

Obviously the company has to do what survival demands. It has to adapt to the requirements of the market, and it has to do it sooner rather than later. But mere survival is a so-so aspiration. Anybody can survive in some way or other, even the skid-row bum. The trick is to survive gallantly, to feel the surging impulse of commercial mastery; not just to experience the sweet smell of success, but to have the visceral feel of entrepreneurial greatness.

No organization can achieve greatness without a vigorous leader who is driven onward by his own pulsating *will to succeed.* He has to have a vision of grandeur, a vision that can produce eager followers in vast numbers. In business, the followers are the customers. To produce these customers, the entire corporation must be viewed as a customer-creating and customer-satisfying organism. Management must think of itself not as producing products but as providing customer-creating value satisfactions. It must push this idea (and everything it means and requires) into every nook and cranny of the organization. It has to do this continuously and with the kind of flair that excites and stimulates the people in it. Otherwise, the company will be merely a series of pigeonholed parts, with no consolidating sense of purpose or direction.

In short, the organization must learn to think of itself not as producing goods or services but as *buying customers,* as doing the things that will make people *want* to do business with it. And the chief executive himself has the inescapable responsibility for creating this environment, this viewpoint, this attitude, this aspiration. He himself must set the company's style, its direction, and its goals. This means he has to know precisely where he himself wants to go, and to make sure the whole organization is enthusiastically aware of where that is. This is a first requisite of leadership, for *unless he knows where he is going, any road will take him there.*

If any road is okay, the chief executive might as well pack his attaché case and go fishing. If an organization does not know or care where it is going, it does not need to advertise that fact with a ceremonial figurehead. Everybody will notice it soon enough.