Impact of strategic planning on profit performance

Study of 57 corporations, with 620 diverse businesses, establishes relationship between strategic planning and profit performance

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One of the most significant research projects undertaken by the Marketing Science Institute is the ongoing profit impact of market strategies (PIMS) study. The basic idea behind PIMS is to provide corporate top management, divisional management, marketing executives, and corporate planners with insights and information on expected profit performance of different kinds of businesses under different competitive conditions. Among the 37 factors investigated and analyzed are market share, total marketing expenditures, product quality, R&D expenditures, investment intensity, and so on. These factors account for more than 80% of the variation in profit in the more than 600 business units analyzed. In this article, the authors describe the highlights of their research findings.

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What rate of return on investment (ROI) is "normal" in a given type of business, under given market and industry conditions? What factors explain differences in typical levels of ROI among various kinds of businesses?

How will ROI in a specific business be affected by a change in the strategy employed? By a change in competitive activity?

Many corporate presidents and planning directors wish they had more reliable answers to these kinds of questions, for they are at the heart of strategic planning in the modern corporation. Consider some of the ways in which these questions arise:

Forecasting profits: In a diversified company, the usual practice is for business plans to be prepared by each product division or other operating unit. These plans are then reviewed by corporate executives, often with the assistance of corporate staff specialists. Among the key elements of each unit's plan are, of course, estimates of investment requirements and profits for future periods.

Often these forecasts are simply projections of local experience. But when market conditions are expected to change, or when a change in strategy is

Authors' note: We wish to acknowledge the contributions to this article of our associates on the PIMS Project Team. Ralph Sultan, who is now chief economist, Royal Bank of Canada, served as project director of Phase I of PIMS during 1972 and was responsible for much of the basic design of the study. Bradley Gale, Thomas Wilson, Bernard Catry, James Conlin, and Robert McDowell also participated in various stages of the research and offered valuable suggestions on this presentation of the latest results.

contemplated, how reliable is the past as a guide to the future?

Allocating resources: A major purpose of reviewing divisional plans at the corporate level is to make effective allocations of capital, manpower, and other scarce resources among divisions. Often the capital appropriation requests of the divisions add up to more than headquarters can provide.

The problem, then, is one of emphasis: Which products and markets promise the greatest returns? Here, especially, the profit estimates supplied by divisional managers are likely to be of doubtful reliability, since each division is in the position of pleading its own case.

Measuring management performance: Closely related to the problem of forecasting profits is the need to evaluate actual profit results. Suppose Division A earns 30% on its investment (pretax), while Division B achieves an ROI of only 15%. Is A's management twice as effective as B's, and should it be rewarded accordingly?

Executives of Division B would no doubt object to this. They would attribute differences in ROI to differences in conditions such as market growth rate and strength of competition. Perhaps they are right. What corporate management would like, in this situation, is some way of determining what level of ROI is reasonable or "normal" for different operating units under given circumstances.

Appraising new business proposals: Still another common problem in strategic planning is that of estimating ROI in a prospective new business which is being considered for either internal development or acquisition. When the business is new to the company, actual experience, by definition, cannot be consulted. Even when entry is proposed via acquisition, the current performance of the existing business may be of doubtful reliability as a guide to its future.

The common thread running through the four types of strategic planning situations just described is the need for some means of estimating return on investment in a given business, under given industry and market conditions, following a given strategy. Every experienced business executive and corporate planner knows that ROI varies enormously from one business to another and from year to year in an individual division or product line. How can these variations be explained and predicted?

Some answers to these questions are beginning to emerge from a unique research project called PIMS —a study of actual experiences of hundreds of businesses which is aimed at measuring the profit impact of market strategies. Building on work that has been under way at the General Electric Company for more than 10 years (see accompanying ruled insert), the PIMS project is a sharing of experience among 57 major North American corporations.

PIMS was organized in early 1972 as a project of the Marketing Science Institute, a nonprofit research organization associated with the Harvard Business School. The project was established as a cooperative venture, with HBS faculty members and research assistants working alongside planning specialists from industry. (Industry personnel did not, of course, have access to any of the data supplied by other companies.) The project is now organizing its third yearlong phase.

This article is a progress report on Phases I and II of the PIMS project. In it, we shall describe how the study has been carried out and summarize some of the major findings of the first two years' work.

PIMS profit models

In Phase I of PIMS, 36 corporations supplied information on some 350 businesses. The information included descriptions of industry and market characteristics, as well as selected operating results and balance sheet figures for the years 1970 and 1971.

(All financial data were submitted to PIMS in "scaled" form—that is, actual dollar amounts were multiplied by a scaling factor, such as .5. This procedure served to ensure both the confidentiality of the original data and the relationships among the figures.)

GE's search for answers

The current effort to find better ways to explain and predict operating performance began back in 1960, as an internal project at the General Electric Company.

Fred J. Borch, then GE's vice president-marketing services, called in Jack McKitterick, his director of market research, and pointed out what today is generally accepted as an axiom: as the market share of a business goes up, so do operating economies. Borch asked McKitterick to survey any relevant published research and the experience of other businessmen with respect to this relationship. If the relationship were valid, executives might have an important clue as to how to improve operating results.

Equally important, Borch wanted to find a handle for GE's growing "manageability" problem. Sales were already at the $4 billion level. By 1970, they were likely to be $8 billion to $9 billion. How could corporate officers like himself stay in touch with so many diverse businesses, ranging all the way from turbine generators to toasters?

After months of exploration, McKitterick became convinced that the best way to address the question was to do some basic pioneering work on the apparent causes of GE's own successes and failures. Borch agreed and authorized a major research project to probe for "laws of the market place." Project PROM (profitability optimization model) was organized under the direction of coauthor Sidney Schoeffler.

After five years of intensive research and testing, Project PROM produced a computer-based model that captured the major factors which explain a great deal of the variability in return on investment. Since this model reflects data from diverse markets and industries, it is often referred to as a "cross-sectional" model—as contrasted to a time-series model based on data over a series of years for a single business.

With the help of this model, GE could estimate the "average" level of profit or investment or cash flow that went with various combinations of the success determinants. The model did not and could not predict the "precise" ROI of any one of GE's businesses in a given year.

When Borch became GE's chief executive officer in 1964, he found the PROM model to be (a) a tool for detecting high-risk strategic moves, (b) a rich source of questions for the review of strategies proposed by divisional managers, and (c) a means of computing the differential between the entire company's financial goals and the expected aggregate earnings of its components. (If the model predicted a shortfall, it could then be used to display the future implications of "belt tightening," component by component.)

In addition to making extensive use of the model himself, Borch also encouraged his group executives and division managers to use it. He supported follow-on research to improve the coverage and predictive powers of the early models.

Today, cross-sectional models are standard elements of GE's corporate planning system.

The primary purpose of Phase I was to establish the feasibility of obtaining reasonably comparable data from a large number of diverse companies. Although differences in accounting systems and terminology did pose problems, the project was successful: profit results were explained and predicted with considerable accuracy. Moreover, the principal results of GE's earlier work were confirmed. By and large, the same factors that influenced ROI in GE businesses also showed up in the analysis of profitability among the 36 diverse corporations.

Thus, in late 1972, MSI agreed to sponsor a second, enlarged phase of the PIMS project. This time, 57 companies enlisted in the study and supplied more extensive information, covering the years 1970-1972, for 620 businesses. Analysis of this data base over the past several months has led to the current set of PIMS profit models. For the composition of our sample of businesses, see *Exhibit I.*

Explaining ROI

The models we and our associates have developed are designed to answer two basic questions: What factors influence profitability in a business—and how much? How does ROI change in response to changes in strategy and in market conditions?

In building quantitative models to explain ROI and changes in ROI, we have drawn on economic theory and on the opinions and beliefs of experienced executives. Economic theory suggests, for example, that different "market structures"—i.e., the number and relative size of competitors—will lead to different

Exhibit I
PIMS sample of individual businesses

Number of companies	57
Number of businesses	620*
Type of company:	Percent of total:
Consumer product manufacturers	19.8%
Capital equipment manufacturers	15.6
Raw materials producers	11.9
Components manufacturers	24.1
Supplies manufacturers	16.5
Service and distribution	12.1
Total	100.0%

*The data presented in *Exhibits III-X* are based on analyses of 521 businesses. Since the time these analyses were made, information has been received on an additional 99 businesses.

Exhibit II
ROI and key profit influences

Return on investment (ROI):
The ratio of net, pretax operating income to average investment. Operating income is what is available after deduction of allocated corporate overhead expenses but before deduction of any financial charges on assets employed. "Investment" equals equity plus long-term debt, or, equivalently, total assets employed minus current liabilities attributed to the business.

Market share:
The ratio of dollar sales by a business, in a given time period, to total sales by all competitors in the same market. The "market" includes all of the products or services, customer types, and geographic areas that are directly related to the activities of the business. For example, it includes all products and services that are competitive with those sold by the business.

Product (service) quality:
The quality of each participating company's offerings, appraised in the following terms: What was the percentage of sales of products or services from each business in each year which were superior to those of competitors? What was the percentage of equivalent products? Inferior products? The measure used in *Exhibit IV* and *Exhibit V* is the percentage "superior" minus the percentage "inferior."

Marketing expenditures:
Total costs for sales force, advertising, sales promotion, marketing research, and marketing administration. The figures do not include costs of physical distribution.

R&D expenditures:
Total costs of product development and process improvement, including those costs incurred by corporate-level units which can be directly attributed to the individual business.

Investment intensity:
Ratio of total investment to sales.

Corporate diversity:
An index which reflects (1) the number of different 4-digit Standard Industrial Classification industries in which a corporation operates, (2) the percentage of total corporate employment in each industry, and (3) the degree of similarity or difference among the industries in which it participates.

profit levels. Business experience indicates that product quality—a factor that has received little attention from economists—is also related to ROI.

Whatever economic theory or businessmen's opinions may suggest, however, the ultimate test of whether and how a given factor is related to profitability is an empirical one. To make such a test, we have constructed an equation that explains more than 80% of the variation in profitability among the 620 businesses in the PIMS data base.

This profit level equation includes more than 60 terms composed of various combinations of 37 basic factors. As might be expected, profitability is related to many different factors. Some of the most important ones are listed and defined in *Exhibit II*.

The PIMS profit level equation and a separate equation which predicts changes in ROI have been used to construct separate reports for each business in the data pool. These reports "diagnose" the factors influencing ROI in a business, given all of its specific characteristics such as its market, competitive position, capital intensity, and so on.

Because every business is, in some respects, unique, these diagnostic reports vary enormously. But by comparing businesses that are similar in terms of one or more basic profit-influencing factors with businesses that have different characteristics, we can identify some general patterns or relationships.

For example, we can determine an average relationship between market share and profitability by comparing average levels of ROI for groups of businesses with different market shares. This is the approach we have used in subsequent sections of this article.

Profit determinants

As we mentioned a moment ago, our profit model includes 37 distinct factors which, in various combinations, are significantly related to profitability.

However, we shall limit our discussion to just 3 major determinants of return on investment revealed by our analysis of the PIMS data base—namely, market share, investment intensity, and company factors.

Market share

Our analyses give strong support to the proposition that market share is indeed a major influence on profitability. As shown in *Exhibit III*, ROI goes up steadily as market share increases. On the average, businesses with market shares above 36% earned more than three times as much, relative to investment, as businesses with less than 7% share of their respective markets. (Each of the five market share categories shown in this exhibit represents approximately one fifth of the sample.)

The relationship between market share and profitability has been widely discussed since the inception of Project PROM at General Electric, when the idea was relatively novel. But how and why market share affects profitability is not fully understood as yet.

Our findings suggest that businesses with relatively large market shares tend to have above-average rates of investment turnover, particularly working capital. Also, the ratio of marketing expense to sales is generally lower for high-share businesses than for those with small market shares. These differences are indications of economies of scale that may go along with strong market positions.

However, much remains to be done, both in exploring the connection between market share and ROI and in determining how the relationship varies for different types of businesses or for different market conditions.

Whatever the reasons, the data in *Exhibit III* clearly show that it is very profitable to have a high share of market. Beyond this, the PIMS profit model sheds some light on how market share and other factors work together to influence ROI.

Consider, for example, the impact of both market share and product quality on ROI, as shown in *Exhibit IV*. In this exhibit, and in several others that follow, we have divided the PIMS sample of businesses into three approximately equal groups on the basis of each of two factors. The percentages for each of the nine subgroups shown include between 40 and 70 businesses.

Exhibit III
Relationship of market share to profitability

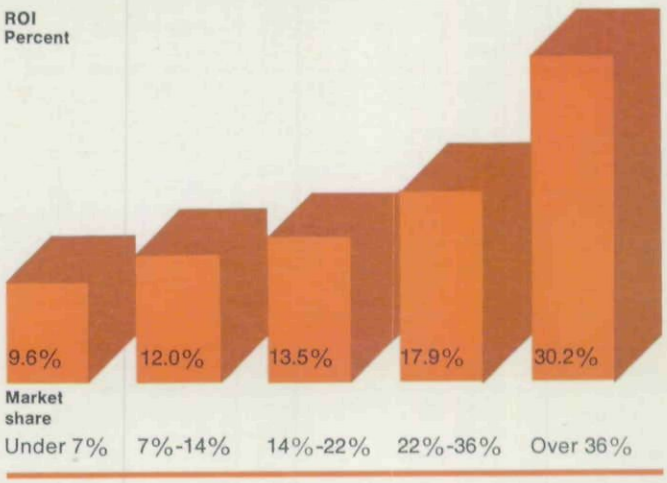

Exhibit IV
Effect of market share and product quality on ROI

Market share	Product quality		
	Inferior	Average	Superior
Under 12%	4.5%	10.4%	17.4%
12%-26%	11.0	18.1	18.1
Over 26%	19.5	21.9	28.3

The best of all possible worlds is to have both high market share and superior quality: businesses in this category averaged 28.3% return on investment. But even when quality was relatively inferior, average ROI for high-share businesses was a respectable 19.5%. On the other hand, superior-quality producers with weak market positions earned an average 17.4% on investment, which suggests that quality can partially offset low share.

It should be noted that product quality and market share usually, but by no means always, go together. The percent distribution of the three market share groups, in terms of quality levels, was as follows:

Percent of businesses with:	Market share		
	Under 12%	12%-26%	Over 26%
Inferior quality	47%	33%	20%
Average quality	30	36	30
Superior quality	23	31	50
Number of businesses	169	176	176

Exhibit V
Impact of expenditures on product quality and market share

A
High marketing expenditures damage profitability when quality is low

	Ratio of marketing expenditures to sales		
Product quality	Low Under 6%	Average 6%-11%	High Over 11%
Inferior	15.4%	14.8%	2.7%
Average	17.8	16.9	14.2
Superior	25.2	25.5	19.8

B
High R&D spending hurts profitability when market position is weak but increases ROI when market share is high

	Ratio of R&D costs to sales		
Market share	Low Under 1.4%	Average 1.4%-3.0%	High Over 3.0%
Under 12%	11.4%	9.8%	4.9%
12%-26%	13.8	16.7	17.0
Over 26%	22.3	23.1	26.3

While it is not surprising that both market share and relative quality influence ROI, in the short term there may be relatively little that management can do to change these factors. Are some strategies more profitable than others, given the basic competitive position of a business? Analysis of the results achieved by the businesses in the PIMS sample suggests that some guidelines can, indeed, be formulated for businesses in different positions.

Consider, for example, the data in Part A of *Exhibit V*. Here, as in *Exhibit IV*, the sample has been divided into three roughly equal groups, this time in terms of (a) relative quality, and (b) the ratio of marketing expenditures to sales.

When quality is relatively low—exactly equivalent to competition or somewhat inferior—there is a strong negative relationship between marketing expenditures and ROI. In effect, these figures confirm the old adage that "it doesn't pay to promote a poor product."

ROI is somewhat diminished by a high level of marketing expenditure for businesses with "average" or "superior" relative product quality—but not nearly to the same extent as for competitors with lower-quality products. This might suggest, further, that sellers of higher-quality products or services could inflict severe short-term penalties on weaker competitors by escalating the level of marketing costs in an industry—and that lower-quality producers should avoid such confrontations like the plague.

Another clue to how profit influences vary, depending on competitive position, is given in Part B of *Exhibit V*. This shows, for businesses in the same market share categories as in *Exhibit IV*, the relationship of ROI to R&D spending levels. When market share is high, average ROI is highest when R&D spending is also high—above 3% of sales.

These figures do not, of course, show which is cause and which is effect; possibly businesses that are highly profitable—for whatever reason—are inclined to invest more of their earnings in research. Most likely, the positive relationship between ROI and R&D spending reflects both this kind of "reverse causation" and a positive impact, in the other direction, of R&D on profits.

When market share is low, the relationship between R&D and profitability is exactly the reverse of that experienced by those with strong positions. The higher the level of R&D spending, the lower profits were, on the average. Here, there appears to be little doubt about cause and effect: low profits would be very unlikely to lead to high R&D spending.

We should emphasize, however, that these data represent short-term effects. Since the PIMS participants supplied information only for a three-year period, it may well be that Part B of *Exhibit V* reflects a "transitional" cost of innovation. Some support can be given for this interpretation: among businesses with low market shares, ROI was higher (11.6%) when new products comprised a relatively high proportion of total sales than when new products represented only a small fraction of sales (average ROI, 5.3%).

Thus, when and if R&D spending is successfully converted into new products, it can pay off. But the most profitable course of all, for businesses with weak market positions, may be to seek new products without investing in research and development —via imitation, for instance.[1]

Investment intensity

Apart from market share and product quality, the most important determinant of return on invest-

1. For further thoughts on this topic, see Theodore Levitt, "Innovative Imitation," HBR September-October 1966, p. 63.

ment that was revealed by our analysis of the PIMS data pool is investment intensity, which is simply the ratio of total investment to sales.

Exhibit VI shows the overall relationship between ROI and investment intensity: the higher the ratio of investment to sales, the lower ROI tends to be. Apparently businesses with high investment intensities are not able to achieve profit margins sufficient to offset the greater amounts of investment they require to sustain a given volume of sales. We suspect that a prime reason for this may be the heavy emphasis placed on achieving high volume, and thus high capacity utilization, in investment-intensive industries.

Since both market share and investment intensity are major determinants of profitability, it is not surprising that the combination of the two factors accounts for a substantial portion of total variation in ROI. As shown in *Exhibit VII*, average ROI for businesses that enjoyed both a high market share and a low degree of investment intensity was 34.6%—more than 17 times the average return earned by the unfortunate businesses with high investment intensity and small market share.

In most cases, the basic level of investment intensity required for a given business is probably not subject to much control by management. The amount of capital required to support a specified amount of sales is determined primarily by the technology of the business and by traditional terms of trade.

However, very often management does have some choices that affect investment intensity—such as the degree of mechanization or computer utilization. Our data indicate that these types of investments should be carefully controlled if market position is weak. Beyond this, what can managers do about investment intensity? Is a business that requires a high investment/sales ratio simply doomed to exist with low rates of return?

Comparison of various groups of businesses within the investment-intensive category shows that some strategies are likely to be more profitable than others. Consider, for example, the data in *Exhibit VIII*. Among businesses in the highest investment/sales group, ROI was strongly—and negatively—related to the level of marketing expenditures. For businesses with low investment intensity, the relationship of ROI to marketing expenditures was quite different: average profitability was actually higher when marketing expenditures were "moderate" in relation to sales than when they were low.

Exhibit VI
Relationship of investment intensity to profitability

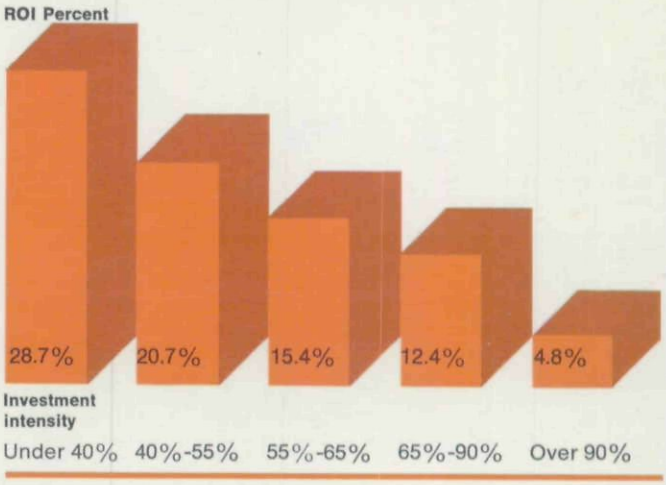

Exhibit VII
Low market share plus high investment intensity equals disaster

Investment intensity	Market share		
	Under 12%	12%-26%	Over 26%
Under 45%	21.2%	26.9%	34.6%
45%-71%	8.6	13.1	26.2
Over 71%	2.0	6.7	15.7

Exhibit VIII
High marketing expenditures damage ROI in investment-intensive businesses

Investment intensity	Ratio of marketing expenditures to sales		
	Under 6%	6%-11%	Over 11%
Under 45%	29.3%	31.7%	22.0%
45%-71%	17.6	13.2	18.3
Over 71%	10.9	10.1	3.9

Similar comparisons of subgroups within the PIMS sample show that when investment intensity is high (a) high levels of R&D spending depress earnings sharply, at least in the short run, and (b) high labor productivity is vital to profitability. (The average return for businesses with high investment intensity and low productivity—measured by sales per employee—was a negative 1% of investment.)

Company factors

A third category of profit determinants revealed by the PIMS project consists of characteristics of the

Exhibit IX
ROI varies with size and diversity of parent company

	Total company sales (in millions)		
	Low Under $750	Average $750-$1,500	High Over $1,500
Average ROI	15.8%	12.5%	21.7%
	Degree of diversity		
	Low	**Average**	**High**
Average ROI	16.1%	12.9%	22.1%

Exhibit X
Large companies benefit most from strong market positions

Company sales (in millions)	Market share		
	Under 12%	12%-26%	Over 26%
Under $750	14.5%	13.7%	19.6%
$750-$1,500	6.8	15.0	25.0
Over $1,500	12.0	17.8	29.4

company that owns a business. Even when all of the characteristics of two businesses are identical, our analysis suggests that their profit results may vary if they belong to corporations that differ in terms of size, diversity, and other factors.

Exhibit IX shows average ROI levels for businesses belonging to companies that are in "low," "average," and "high" sales categories, and that have different degrees of corporate diversity. The range of corporate size represented in the PIMS sample is, of course, limited: "small" companies are those with annual sales volume under $750 million. Within this range, ROI at the business level was highest for the largest companies and lowest for those in the "average" group.

The explanation for this, we believe, is that the large corporations benefit from economies of scale, while the smaller companies gain some advantages from greater flexibility. Those in the middle are neither fish nor fowl, and consequently they earn the lowest rates of return.

The relationship between business-level ROI and corporate diversity is similar to that based on company size. On the average, ROI was practically identical for businesses belonging to highly diversified corporations and for those operated by nondiversified companies. Presumably, the diversified corporations achieve good results through effectivenessness as "generalists."

At the other extreme, profitability reflects the advantages of corporate specialization. The lowest levels of ROI are for the middle group, which benefits from neither. (These and other observed relationships between ROI and company characteristics are tentative findings, of course, because of the limited number of companies included in our sample.)

Our final example of a relationship between ROI and a combination of factors serves to illustrate further how company characteristics affect profitability. In *Exhibit X*, we show average levels of ROI for businesses that have different market shares and that belong to different company size groups.

As in earlier exhibits, the positive impact of a high market share is apparent. But, in addition, the data indicate that larger companies derive greater advantages from strong market positions than smaller companies do. This probably reflects the ability of larger companies to provide adequate support for strong positions, in terms of management personnel and funds for marketing or R&D.

On the other hand, smaller companies do slightly better than large ones in businesses with low market shares. This lends support to the belief that the relatively small companies derive some advantages from flexibility.

Applying the findings

The corporate applications of the PIMS findings are many and varied. These include aid in profit forecasting for individual business units, measuring management performance, and appraising new business opportunities.

As part of the PIMS project, reports are prepared for each business, showing how its expected level of ROI is influenced by each of the 37 distinct factors included in the profit model. The result of this kind of analysis is what we call a "PAR" return on investment for a business, given its market and industry environment, its competitive position, its capital structure, and so on.

Some of the participating companies are beginning to put the findings to work by using the PAR reports as a standard of performance for individual divisions. For example, if actual ROI is substantially above the PAR level, this in an indication that divisional management is performing well. The excess of actual over PAR reflects gains made by current tactical superiority, since the factors considered in calculating PAR are largely aspects of the strategic position of the business.

Apart from management performance, special circumstances may cause actual ROI to fall above or below PAR. For instance, the effects of patents and trade secrets are not reflected in the profit model. Subject to this qualification, we believe that PAR or expected profit levels derived from the PIMS model —or from a similar analysis of actual experiences under different conditions—can serve as a meaningful standard for evaluating actual results. Certainly, this kind of standard is preferable to the simple interdivisional comparisons used to judge divisional profits in many large companies today.

Potentially, the most valuable application of the PIMS findings will come from using them to estimate the effects of strategic changes. Each participating corporation has recently received a second set of reports which show how ROI in a given business could be expected to change, both in the short and long term, if modifications were made in its strategic position.

It is too soon to tell how accurate those estimates will be. But it is clear already that many of the managers and planners have obtained valuable insights into the reasons for past performance and the most fruitful directions for change.

Summing up

The PIMS project has demonstrated the feasibility and the benefits to be realized when companies pool their experiences. Information on strategic actions, market and industry situations, and results achieved can be organized into a multipurpose data base, and analysis of this data base has yielded useful general findings. Executives of the participating companies are beginning to utilize these results in the development and appraisal of strategic plans for individual business units.

Beyond the current benefits, we can also speculate on the broader impact that the approach represented by PIMS may have on the functioning of the private enterprise economy.

Competition is at the heart of our economic system. Will the process of competition become more effective or less effective if PIMS-type information becomes increasingly available? Is the answer the same if we judge effectiveness by some index of "social benefit," rather than by the health and profitability of individual businesses?

It seems entirely probable that the answers are: *more effective* and *yes*.

While competition has been one of the mainsprings for the dynamic growth of the U.S. economy, the great wastage of competition is increasingly retarding our national productivity. Can we maintain the benefits while reducing the drag of the wastage?

Research on multicompany data may enable us to accomplish just that, by helping individual competitors to lessen the frequency and scale of their competitive mistakes. The pooled record of business successes and failures, analyzed in PIMS-type fashion, can identify the courses of action that simply have no plausible promise at all, whether for the company or the customer or anyone else. It can also identify the other courses of action that have a good probability of yielding viable results. Competitors can therefore concentrate their energies on the higher-yield actions, and not dissipate their resources on quixotic ventures and forlorn causes.

Business is not a zero-sum game, where one man's gain is inevitably another man's loss. Sometimes most everyone wins, and sometimes most everyone loses. The systematic comparative study of ongoing experience can help maximize the frequency of the first outcome and minimize the second.