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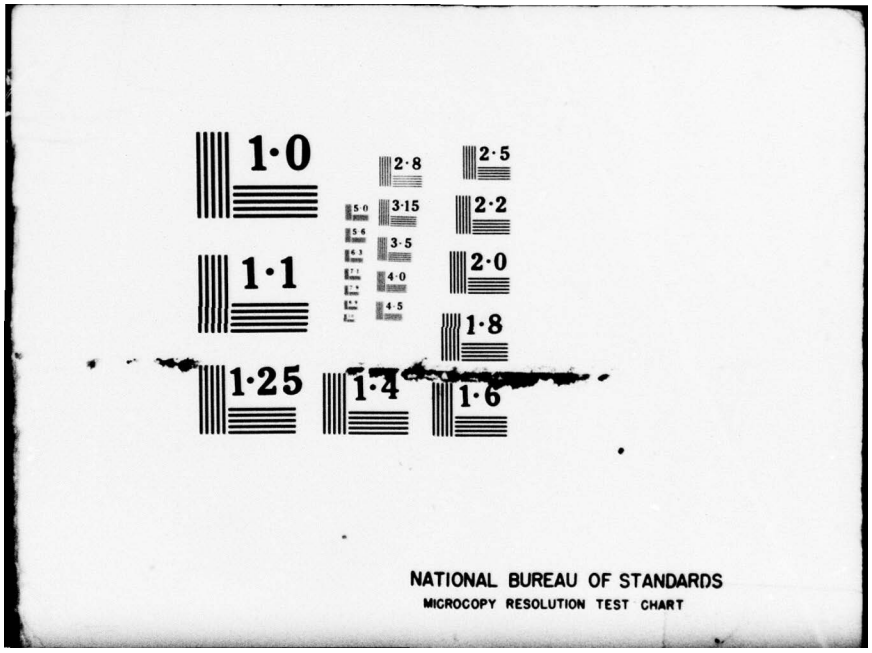
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THE CONGLOMERATE FIRM

edited by

ARNOLDO C. HAX and ZENON S. ZANNETOS

Technical Report No. 5

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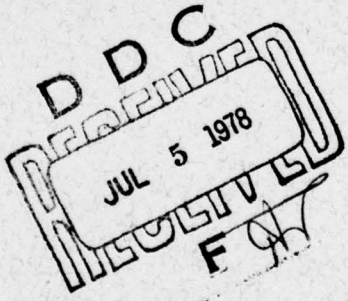

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THE CONGLOMERATE FIRM

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Arnoldo C. Hax and Zenon S. Zannetos

Technical Report No. 5

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NR 347-038 M.I.T. OSP 84297

Alfred P. Sloan School of Management
Massachusetts Institute of Technology
Cambridge, Massachusetts 02139

June 1978

FOREWORD

The Alfred P. Sloan School of Management at the Massachusetts Institute of Technology uniquely combines management programs for undergraduate, graduate, and executive development education and research. The work of the School is supported, in part, by government contracts and industrial grants-in-aid. The work reported herein was supported (in part) by the Office of Naval Research under Contract N00014-76-C-1033.

William F. Pounds
Dean

ABSTRACT

This final report contains nine papers originally presented at a two-day Workshop on the Conglomerate Firm, held at the Sloan School of Management of the Massachusetts Institute of Technology in October 1977. The primary purpose of the workshop was to provide a forum where experienced managers of conglomerate firms and academicians doing research in this field could exchange ideas in a constructive way to expand our state of knowledge on issues related to conglomeration, mergers, and diversification.

THE CONGLOMERATE FIRM

Edited by

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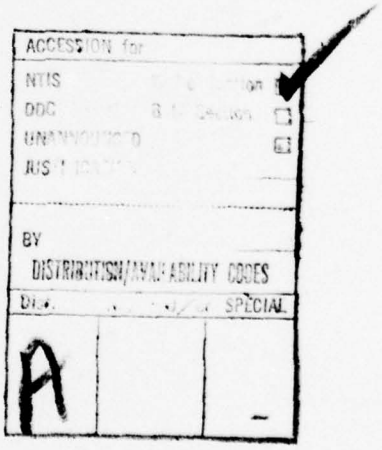
Massachusetts Institute of Technology



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I. Introduction

In October 1977, the Sloan School of Management of the Massachusetts Institute of Technology conducted a two-day Workshop on the Conglomerate Firm, under the sponsorship of the Office of Naval Research. The primary purpose of the workshop was to provide a forum where experienced managers of conglomerate firms and academicians doing research in this field could exchange ideas in a constructive way to expand our state of knowledge on issues related to conglomeration, mergers, and diversification.

Conglomeration is a complex phenomenon that has captured considerable attention in academic and business journals, as well as in the general press. A large number of reasons have been given to explain the formation of conglomerates, the intensification of merger activity, and corporate growth via diversification. The arguments have been centered on legal, economic, political, and social considerations. Nevertheless, we are still far from having solved the key questions surrounding the issue of conglomeration, or from being able to provide a comprehensive framework that encompasses all the different problems encountered in this area. The pragmatic responses supplied by business managers do not seem to derive from satisfactory theoretical justifications. On the other hand, academic research has led to controversial, contradictory, and disarticulated partial analyses mainly through narrow lines of inquiry.

Recent empirical evidence is providing us with new insights, casting doubts on the soundness of government policies that severely constraint the merger and conglomeration activity. The legal basis of present antimerger activities of the U.S. Department of Justice and the Federal Trade Commission

derive from Section 7 of the Clayton Act of 1914 and from the Celler Antimerger Act of 1950 which is an extension to Section 7. Briefly these Acts forbid stockholdings which "substantially lessen competition or tend to create a monopoly", and attempot to stop mergers and acquisitions, vertical, horizontal, and conglomerate, which create incipient monopoly. As regards the administration of these Acts, we have seen a gradual shift from market conduct to market structure as the main criterion for challenging mergers and acquisitions.

The emergence of spectacular take-overs during 1977, and the challenge of foreign competition in the American domestic market have created a resurgence of research interest in the topics of conglomeration and merger.

This led the Office of Naval Research to sponsor a two-day conference at M.I.T., where about fifty participants from government, business, and universities gathered to exchange their points of view on the question of conglomeration and its implications. The following speakers were responsible for presenting the papers that have been collected in this publication:

Robert S. Ames, Senior Vice-President - Operations,
Textron, Inc.

Edward M. Graham, Assistant Professor, Sloan School
of Management, M.I.T.

Arnoldo C. Hax, Professor, Sloan School of Management,
M.I.T.

Nathaniel S. Howe, President, New Britain Machine
Division, Litton Industrial Products, Inc.

Nicolas S. Majluf, Research Assistant, Sloan School
of Management, M.I.T.

Henry S. Marcus, Associate Professor, Ocean Engineering
Department, M.I.T.

Stewart C. Myers, Professor, Sloan School of Management, M.I.T.

Michael E. Porter, Associate Professor, Graduate School of Business, Harvard University

Phillip H. Smith, Chairman and President, Copperweld Corporation

P. Takis Veliotis, President and General Manager, Quincy Shipbuilding Division, General Dynamics Corporation

Zenon S. Zannetos, Professor, Sloan School of Management, M.I.T.

Phillip Smith and Robert Ames discussed conglomeration and diversification from the vantage point of senior executives in conglomerate firms. Nathaniel Howe and Takis Veliotis, analyzed similar issues from the viewpoint of divisional managers representing companies recently acquired by conglomerate firms. These four speakers brought into bear the managerial dimensions of the conglomerate problem. They added a great degree of realism to the conference, by describing actual policies and practices followed by their respective corporations.

The papers by Stewart Myers and Edward Graham served the purpose of defining the conglomerate problem in precise terms, and gave an historical description of the evolution of mergers and conglomeration in the U.S. industry. Henry Marcus presented a similar background for conglomeration in the shipbuilding industry.

Arnoldo Hax and Nicolas Majluf proposed a methodology to assess diversification strategies in private corporations. Michael Porter and Zenon Zannetos examined some of the fundamental changes affecting the regulation of an individual business unit, when it ceases to be an independent unit responding to market forces, and becomes part of the administrative struc-

ture of a conglomerate firm.

We would like to extend our deepest appreciation to Marvin Denicoff of the Office of Naval Research for stimulating our interest in research on conglomeration, and for providing the financial support that made this workshop possible. Special thanks are due to all the workshop participants for a most stimulating discussion on this difficult subject. Finally, our sincere appreciation to our secretaries, Deborah Cohen and Jean Duddy, for an excellent administrative and clerical support.

Arnoldo C. Hax
Zenon S. Zannetos

Cambridge, Massachusetts

II. What We Know and Don't Know About Mergers and Diversification[*]

Stewart C. Myers
Professor of Finance
Massachusetts Institute of Technology

[*] Work on this paper was partially supported by the Office of Naval Research. I wish to acknowledge the contribution of discussions with E. M. Graham.

1. *Introduction*

This paper was prepared as an introduction to a conference on conglomerate firms. The paper says next to nothing about conglomerates as distinct from merely diversified firms. But the decision to become a conglomerate is a decision to diversify, and the decision to diversify is generally a decision to merge. In fact the bulk of large postwar mergers have been diversifying ones, not mergers directed towards further horizontal or vertical integration. So it seemed appropriate to begin the conference with a review of what we know and don't know about mergers and diversification.

I will take the investor's point of view. The financial economist's stock in trade is knowing how capital markets work. His concern is for the efficient allocation of capital. Therefore he starts by asking how capital markets react to mergers and whether investors on average gain or lose as a result of mergers. The ultimate goal, of course, is to understand <u>why</u> mergers occur.

What I can say about the economic motives for mergers is not constructive. Several popularly-cited explanations are clearly spurious or illogical if one is concerned with efficient allocation of capital. On the other hand the list of plausible motives is too long. I will not attempt to reproduce or discuss the full list here, but I would bet such a list would supply a rationale for merging <u>any</u> firm with <u>any</u> other firm. As Segall [14, p. 19] has noted,

> It may be that there are as many causes of mergers as there are mergers. If so, it is correct to say that

> nothing is known about mergers; there are no useful generalizations.

One possible response to Segall is to admit that the list of possible motives is endless, but to concentrate on a subset of particularly strong and pervasive ones. Unfortunately, there is no combination of plausible motives which can explain the dramatic cyclical fluctuations in merger activity.

One could always explain mergers by appealing to non-economic motives -- empire-building, for example. But such theories have little content unless it can be shown that the non-economic goals are pursued at the expense of economic ones. That does not appear to be the case. I cling to the hope that there are economic motives for diversifying mergers, but that the motives are more apparent to specialists in organizational theory and corporate strategy than to financial economists.

In the next section I summarize the facts about merger activity and the reaction of capital markets to mergers. Then I attempt -- and fail -- to explain the cyclical behavior of mergers. A discussion of merger motives precedes a brief conclusion.

Naturally, I am uncomfortable writing a paper professing ignorance, so I have tried to make it as concise as possible.[1]

2. *Merger Activity and Capital Markets*

The vast literature on mergers must contain hundreds of thousands of facts, but it contains only a few useful generalizations. The following three are the most important ones.

1. Mergers come in waves, with peak merger activity associated with buoyant stock prices.

2. Selling companies gain by mergers.

3. There is little evidence that mergers generate, on average, significant net benefits.

Any theory of mergers should explain, or at least accommodate, these three empirical observations. A brief discussion of each is therefore helpful as a prelude to considering merger motives.

2.1 *Mergers come in waves*

The first episode of intense merger activity occurred at the turn of the century, the second in the 1920's, and the third in the post-war period, but most dramatically from 1967 to 1969. Each episode coincided with a period of buoyant stock prices.[2] However, the last one was distinguished by a high proportion of diversifying mergers and by the emergence of dozens of pure conglomerate firms.[3]

Merger activity is extremely volatile, particularly for large publicly held firms. The dollar value of assets acquired in mergers involving mining and manufacturing firms was between $2 and $3 billion per year in the early 1960's and again in the early 1970's. But this series peaked at $12 billion in 1968 -- nearly six times the level of the early 1960's and 1970's.[4]

2.2 *Selling companies gain*

In most mergers there is a clear "buyer" -- usually the larger firm -- and a clear "seller". The selling stockholders almost always receive a premium over the pre-merger value of their shares. For example, Shad [15] examined a sample of large mergers under negotiation in early 1969 and found that selling stockholders gained in terms of market value in every one of the 65 cases examined. The median premium was about 20

percent.

Sometimes premiums are much higher. The J. Ray McDermott Co., which battled United Technologies for control of Babcock and Wilcox, ended up paying $65 per share for Babcock and Wilcox shares that were selling in the mid-30's before United's original tender offer.[5]

Both Shad's study and this more recent example are based on simple before and after comparisons. To obtain the true premium we should compare the value received by the selling stockholders with what their shares would have been worth if merger was excluded. Take the Babcock and Wilcox takeover as an example. The stock market declined between March and August 1977 when the tender contest was taking place. Presumably Babcock and Wilcox stock would have dropped as well. Also, the market may have anticipated the merger before United's opening offer. If so, the March price had already risen to reflect the possibility of a merger premium.

Mandelker [6] and Halpern [2] have studied the stock price behavior of a large number of selling firms. They begin observations well before the merger date and adjust for movements in the stock market. Mandelker found that the stock market anticipates mergers up to seven months before the merger date and that selling stockholders receive, on average, a 13 percent abnormal return during this period after adjustment for market movements.[6] Halpern's work, which is based on a different sample and which uses slightly different procedures, identifies an eight month anticipation period and a 22 percent market-adjusted abnormal return.[7]

2.3 *Mergers and profitability*

The benefit of a merger may be defined as the difference between the total present value of the merged firms and the sum of their values

if they do not merge.[8] If we want to determine whether a proposed merger makes economic sense, we ask "What aspects of the merger make the two firms worth more together than apart?".

The only practical way we have of measuring value is via the stock market. We know that acquired firms' stockholders gain in mergers. If acquiring firms' stockholders also gain, on average, then we have evidence that mergers make economic sense. If acquiring firms' stockholders lose, on average, then mergers must be a game played by management at the expense of their stockholders.

Unfortunately, there is no conclusive evidence for either point of view. Mandelker and Halpern's tests suggest a small positive gain for acquiring stockholders, but the statistical significance of these results is weak at best.[9] It is hard to reject the hypothesis that acquiring stockholders just break even on average.

But if sellers gain, and buyers break even, must there not be a gain overall? That is, should we not be able to find a positive market-adjusted rate of return on an appropriately weighted <u>portfolio</u> of the shares of the buying and selling firms? Unfortunately not: in most mergers the buyer is much larger than the seller, so that the seller's premium counts for a relatively small part of the overall portfolio return. The problem may be illustrated by an extreme example. Suppose IBM buys Fledgling Electronics for $5 million, which price includes a premium of $1 million. The merger's benefit is $2 million. We could not hope to observe the $1 million benefit to IBM stockholders by tracking the rate of return on IBM shares (as this is written the market value of IBM equity is $38.5 billion). Nor could we observe the $2 million overall benefit in the rate of return of a portfolio of Fledgling and IBM shares (the portfolio would be .005 percent invested in IBM).

I have three further reasons for doubting whether mergers generate positive average benefits. The first is perhaps unfair, since it depends on hindsight: I know that several of the most actively merging firms of the 1960's fell on hard times once the merger boom was over. However, Mandelker's sample of mergers ended in 1967 and Halpern's in mid-1965. Second, their results do not reflect the cost of looking and of unsuccessful negotiations or tender offers. Third, both studies may be subject to a sampling bias, since each is based only on consummated mergers. We know that mergers are more frequent in periods of rising stock prices. As Halpern notes (p. 554n) that does not mean that the management of merging firms can predict the market, but only that merger activity is shut off by falling stock prices. This creates an ex post relationship between stock prices and merger activity.

Both Halpern and Mandelker adjust for overall stock price movements. But their samples do not include mergers that were called off because of unfavorable news specific to the merging firms but unrelated to the market or to the merger itself. It does include situations where there was good news during negotiations but before the merger was consummated. We should expect average market-adjusted returns associated with completed mergers to be positive for this reason alone. Of course, I have no way of knowing how severe this bias is.

Thus, Mandelker and Halpern's work does not show that mergers make economic sense. However, their work offsets several previous studies, dating back to Dewing [1], which seem to show that mergers have been at best a normally profitable corporate activity.[10] For example, Hogarty [3, p. 322] concluded that "The investment performance of heavily merging firms is significantly worse than the average performance of firms in their respective industries." However, his sample was smaller than

Halpern and Mandelker's and, unlike them, he did not adjust for risk and market movements, nor did he investigate how stock prices respond to specific mergers.

3. *Why Should High Stock Prices Encourage Mergers?*

We believe many economic propositions that are extremely difficult to test and prove directly. But belief requires a theory that makes sense and does not conflict with whatever indirect evidence is available.

It is the indirect evidence that undermines the natural economic explanations for mergers. The problem is explaining why mergers come in waves. If there are economic motives for mergers, at least one of them must be "here today, gone tomorrow", and it must be somehow associated with high stock prices.

Some say or imply that high stock prices in themselves make mergers profitable. Or a more cautious argument is made, i.e., that there are always good economic reasons for mergers, but that mergers are difficult to consummate if stock prices are low; thus favorable conditions in capital markets unlock a pent-up demand for mergers. Still another argument posits a "chain-letter" or "bootstrapping" effect in which firms with high price-earnings ratios can generate rapid short-run growth in earnings per share by acquiring companies with low price-earnings ratios.

There are other variations on this theme. None of them makes economic sense. The reasons why follow.

Let us take the viewpoint of the buyer or protagonist in a proposed merger. Such a firm may go ahead with a merger that generates no overall benefits if (1) the acquisition can be financed by issuing overvalued

shares or (2) if the acquisition is a "bargain". But because the seller almost always receives a premium, a bargain can exist only if the seller's shares are substantially undervalued.

"Overvalued" or "undervalued" mean that the buyer has inside information about the true value of one or both of the merging companies. By definition the inside information is not available to the seller or to the market generally. Therefore, if high stock prices explain mergers, we must assume that sellers consistently make mistakes in valuing their own or the buyer's shares, and that they make these mistakes only when stock prices are high.

What do we mean by "high"? One of two things: either stock prices are substantially higher than they used to be or stocks are selling at high price-earnings ratios. But neither definition of "high" has any necessary connection with overvaluation. Stocks can be undervalued at high price-earnings ratios or overvalued at low ones. A stock that climbs in value may not climb far enough; one that falls may not fall far enough. It is only with hindsight that we know that stocks were overvalued in the 1960's.

But let us assume for the sake of argument that actively mergering firms knew in the 1960's that stocks were generally overvalued. What good does that do the buyer if the seller's shares are overvalued too? If stocks are generally overvalued, Treasury Bills are a better investment than any acquisition. Even if management is determined to merge, they have to find another firm whose shares are <u>less</u> overvalued. But we can turn that argument around to predict merger activity in bear as well as bull markets. It doesn't matter if your firm's shares are undervalued if you can identify another firm whose shares are more undervalued than yours are. There were some wonderful bargains available in 1974, for example.

Finally, we should consider whether high stock prices allow actively merging firms to play a bootstrapping or chain letter game, generating the temporary growth in earnings per share and fooling investors into believing the growth was permanent. This is one way management can pump up the price of their own firm's shares. In some cases it worked. But it works as a general explanation only if actively merging firms have, on average, high price-earnings ratios. Weston and Mansinghka [19] found that they did not. Anyway, bootstrapping does not require that price-earnings ratios be high, on average, but only a difference between the buyer's and seller's ratios. Why don't we see bootstrapping in bear markets?

In short, any statement that high stock prices make merging attractive or easy must assume that the stock market's mistakes of valuation are concentrated in bull markets and nearly disappear otherwise. It must also assume that buying firms see through the mistakes better than sellers do and that buyers end up getting something for nothing despite the premiums they pay to sellers.

I might be persuaded that "a sucker is born every minute", but I refuse to believe that they can only be harvested in bull markets. I believe there is no satisfactory explanation of the risk of mergers in the middle and late 1960's. There is some hidden mechanism linking stock prices to merger activity, some unidentified factor that is merely associated with stock prices, or perhaps contagious irrationality. Of course, any mysterious behavior can be explained away as irrational.

4. *Motives for Diversifying Mergers*

I now turn to merger motives that do not depend on stock prices, accepting that such motives are not likely to be "here today, gone tomorrow", and, therefore, will not explain merger waves. Nevertheless, we can attempt to identify the chief economic motives for the large number of diversifying motives consummated in the postwar period.

Diversifying mergers are not likely to generate operating economies reflecting economies of scale or of vertical integration. Nor does acquisition of market power supply a strong motive for mergers which cross industry lines. There are allegations that diversifying mergers thwart competition, for example, by combining two potential competitors or by creating opportunities for cross-subsidization. But I accept Markham's conclusion [7, p. 177] that "highly diversified firms (or, if one prefers, conglomerates) present no special anti-trust problems... in the marketplace they appear to behave no differently from other firms".

4.1 *Risk and Diversification*

What about diversification as an end in itself? It is obvious that diversification reduces risk. The trouble with this argument is that diversification is easier and cheaper for the stockholder than for the corporation.[11] The market pays no premium for diversified firms -- discounts are more common.[12] Kaiser Industries was dissolved as a holding company in 1977 because its shares had consistently sold for less than the value per share of the stock of Kaiser Steel, Kaiser Cement, Kaiser Aluminum and certain other assets. Kaiser Industries' stockholders were better off without their conglomerate.

4.2 *Mergers and the invisible hand*

Diversifying mergers may be one manifestation of the invisible hand that insures efficiency in a competitive economy. We can group several plausible motives under this heading.

Mergers can provide a way of rejuvenating firms operating below their potential. Incompetent managers are now likely to fire themselves. for example, and stockholders have little influence if shares are widely held. A merger, by concentrating ownership, makes the painful deed possible.

This view is supported by Mandelker, who found that the stock of acquired firms yielded abnormally low returns up to six months before the merger date.[13]

Firms in stagnant industries should, in principle, return excess capital to shareholders as cash dividends. But this entails not only a loss of face on the part of management, but also exposes corporate earnings to taxation as personal income. We should not be surprised to find firms in slowly growing industries redeploying capital through diversifying mergers. (If they do not do so, someone else may take them over and redeploy the capital for them: firms with excess cash or unused borrowing power are widely regarded as natural targets for takeover or acquisition.) Weston and Mansingkha [19] found evidence supporting this story.

Similarly, a conglomerate can, in effect, set up its own mini-capital markets, and use it to shift funds from unpromising to promising areas. We usually think of that as the job of capital markets. There are both benefits and costs of having conglomerates' management do it instead. The benefits are reduced transaction costs in financing, avoidance of personal taxes on dividends, and <u>possibly</u> superior information possessed by conglomerate management. The costs are not easily dismissed, however. First, is conglomerate management really smarter than the stock market?

I can't help be suspicious of management's desire to make investment decisions without having to turn to capital markets for financing. It is nice to be the invisible hand, but not so nice to be subject to it. Second, even the most diversified conglomerate contains a limited menu of investment choices compared to those available to any individual investor. Third, conglomeration reduces the information available to investors on the performance of individual lines of business and makes it hard for prospective bond- or stockholders to know what they are buying.

4.3 *Other motives*

I will not discuss other plausible merger motives, because the rest of the list contains none that might supply a general explanation for diversifying mergers. No doubt many other motives are important in particular cases.

5. *Conclusion*

We can sum up in terms of the three empirical generalizations cited earlier in the paper.

1. I find no rational explanation for timing of the three merger waves observed since the late 1800's.
2. I have not attempted to explain merger premiums. It seems common sense to say that some premium is necessary to win over selling management and stockholders. I do not know why that premium averages 13 percent or more rather than some lower number.
3. Buyer's willingness to pay such premiums suggests that

there are, on average, positive net benefits to mergers. That suggestion is difficult to verify empirically, but there are a few plausible merger motives that seem to support it. For example, mergers, or the threat of them, are one way to force firms to live up to their economic potential and to force transfer of capital from stagnant industries to profitable ones.

But the search for a general, strong and sensible merger motive has so far been only partly successful. It is totally unsuccessful if the motive is required to explain merger waves as well.

Footnotes

[1] Consequently, I have not attempted to review the literature on mergers piece by piece. The works I have cited contain extensive lists of references. See Mandelker [6] and Markham [7], for example. Also, see Segall [14] for an excellent discussion of theory and methodology.

[2] This statement is obviously true for the 1960's. See Nelson's discussion of the earlier waves [11].

[3] In the 1965-1974 period, the proportions of conglomerate mergers to the total of large acquisitions in manufacturing and mining were 79.4 percent by number and 79.5 percent by assets. U.S. Federal Trade Commission, Office of Economics [18], p. 99. These figures are based on a very wide definition of conglomerate. Markham [7, Chapter 5] argues that the FTC figures significantly overstate the proportion of true conglomerate mergers. But there has been an increasing incidence of diversifying mergers. There is no doubt about that.

[4] U.S. Federal Trade Commission, Office of Economics [18, p. 95].

[5] Metz [8]. The $65 price includes a $2.50 special dividend passed on by McDermott to Babcock and Wilcox shareholders.

[6] Halpern [2]. See esp. Table 2, p. 567.

[7] Mandelker [6]. See esp. Table 2, p. 315.

[8] Myers [9].

[9] Halpern does not distinguish between buyer and seller but only between the larger and smaller of the merging firms. I think it is safe for present purposes to associate "larger" and "buyer". Halpern claims to find statistically significant positive abnormal returns on the larger firms' shares. This conclusion is based on the number of positive returns. It does not prove that the buyer's average return is positive.

Mandelker properly examines the buyer's average return, which is positive, but weakly significant.

[10] Reid [13] argues that mergers have been detrimental to acquiring firm's stockholders. But see Weston and Mansinghka [19] and Reid [12].

[11] See Myers [10] or Levy and Sarnat [4] for formal proofs that mergers solely for diversification do not pay.

[12] Note that closed-end mutual funds have sold at discounts for many years. There is an interesting point here, however. Closed-end funds sold at premiums at the same time that the postwar merger boom was peaking. Can we interpret the conglomerate movement as a rational response to a corresponding overvaluation of conglomerates? It is hard to say. But even if we accept this hypothesis it does not take us very far. No one understands why closed-end funds sell for significant discounts or premiums.

[13] Mandelker [6], Table 2, p. 315.

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III. Reflective Thoughts on Conglomerate Structure

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1. *General*

Perhaps the first and one of the most interesting exercises to be carried out in this field of study is to first sort out the conglomerates that have been apparently successful over a sufficiently long period of time to confirm that they <u>are</u> indeed successful, and, in the same search process, catch in the "net" the conglomerates who have not been successful by some reasonable business judgment criteria.

Some companies found from the search could be:

Succeeding	Faltering
G.M.	Whittaker
Textron	Litton
G & W	Athlone
Teledyne	Bank Holding Companies
Colt Industries	Penn-Dixie
Ogden Corporation	LTV
	Lykes-Youngstown

Conglomeration must first have some logic to it. In other words, there must have been some real reason for, and expectation of, synergism. By this, synergism is meant in its true sense, not in a stock market parlance sense. There should be a market combination logic, a raw materials or energy logic; in other words, the combination of the two parts should, and demonstrably have, done better as a whole than as the two parts.

The criteria of success is not stock market price of P/E ratio; the criteria should properly be a return on investment over a fair period of time, at least enough time to span several economic cycles. It would appear, too, that one of the main emerging reasons for a successful conglomerate is that there has been, and is, a continuing logic to the conglomeration. Often this occurs in the form of vertical integration

where a built-in supplier/customer relationship exists. One could make a fair case that General Motors is a conglomerate -- automobiles, aircraft engines, electronics, kitchen appliances, diesel locomotives, earthmoving equipment, plus a finance company. And each one is quite successful. This would appear to be the case in G.M. where the various companies were bought to more completely integrate the manufacture of automobiles. A number of divisions, though, do not seem to fit this pattern, e.g., Electro-Motive Division, Allison, and Terex. Similarly, Ford is in autos, tractors, steel, aircraft electronics, and finance. Ford at one time was in glass, fabrics, etc., yet spun them off. It would appear that G.M. has been more successful than Ford, and a lot of debate could hinge around the reason why.

Textron, as a conglomerate, does not seem to fit this disparate mold; perhaps here there has been the preservation of the entrepreneur relationship in each acquired enterprise. At first examination, there does not appear to be at Textron any of the vertical integration benefits seen in G.M., yet Textron has remained a profitable and well managed enterprise. Textron recently spun off an insurance subsidiary, presumably because it did not fit the growth plan for the future. Gulf and Western also seems to be of the Textron type conglomerate. The synergism between the parent and the acquired parts seems minor. Perhaps in the case of G&W, the effectiveness of financial controls has been a major contributor to its success.

It is perhaps, when one is examining the failures in the conglomerate field, that identifiable problems emerge. The primary problem seems to be the absence of both a sound financial control system and management information system. Some of the faltering conglomerates seems to be adversely affected by high interest costs, usually as a result of a high

purchase price paid for an illogical grouping of companies. LTV is an example of this problem.

Whittaker is an example of things that can go wrong with a conglomerate. Early in its acquisition career, Whittaker could seemingly do no wrong. The visionary president, Dr. Duke, went on to one acquisition after another. Aided by glowing market analysts reports, the P/E ratio of Whittaker's stock was such that no company could resist it, even if it wanted to. Mostly, there was a strong willingness of owners to sell, for the Whittaker stock, climbing steadily on the NYSE, was a valuable commodity. Steel service centers, helicopter blade manufacturers, stainless tubing plants, and so on, were added to the corporate fold. Then, the stumble occurred -- performance did not live up to expectations, and the market turned thumbs down on the company. Over-extended, a new management group had to undertake the task of dismemberment and retrenchment, a story repeated from earlier conglomerate examples.

It has to be recognized when studying and evaluating the conglomerate phenomenon, that stock market dynamics can create a conglomerate that ordinary business common sense would not create. And it can be also said that very often when the stock market "logic" stumbles, then real economic common sense comes into play and a return to fundamentals begins. This may mean that some associations are partially or completely unwound, or it can mean that a solid company begins to get built from the ground up.

Perhaps the areas this writer knows best are those related to steel and allied areas. We have had several which are worth reviewing, including Copperweld. Let us first consider a success story, viz., Inland Steel.

Inland, just celebrating its 75th birthday, is one of the best managed steel companies in the U.S., and for that matter, in the world today.

Hardworking, hard-driving, dedicated, knowledgeable, shrewd, would be typical adjectives describing its management. Inland grew internally, and by acquisition, the acquisition being that of Joseph T. Ryerson & Sons, a steel warehouse chain, in the 1930's. This was a successful acquisition. Later, Inland diversified into other areas, mainly steel fabricating, an area understood by the top executive management. In the early 1970's, Inland diversified into a totally new area, housing, through the acquisition of Scholz Homes. This acquisition may now be turning out to be worthwhile, with the current surge in housing, but for years it was a severe drain on the company, both on earnings and management time. The reasons for the Scholz problems are probably complex and numerous, and would vary somewhat depending upon to whom one talked. However, it does appear on the surface that one essential difference between the housing diversification, and those made earlier in the metal fabrication and steel warehousing, is that the key management group knew and understood the one area, and did not the other. (The same observation could be made on recent acquisitions and spin-offs by Westinghouse in the fields of records and book publishing.) Thus, one big element of conglomerate diversification seems to be, "does management <u>understand</u> the area into which they are diversifying?"

Penn-Dixie is another example of conglomeration that has stumbled. Aided by a favorable P/E, Penn-Dixie acquired Continental Steel, a steady but perhaps unspectacular steel company headquartered in Kokomo, Indiana. Over the years, Continental had carved out a particular niche and did well at it. However, the P/E for steel was not adequate to hold up against a more glamorous P/E existing for Penn-Dixie. Penn-Dixie has now run into problems, and the conglomerate seems adrift in the water. Part of the problem seems to be that the key management did not understand the

steel business, and part seemed to be that the key management at headquarters developed other problems which took their eye off the ball. Athlone Industries, a clothing manufacturer that acquired Jessop Steel, seems to fall into the same mold -- the Athlone management does not understand the stainless steel business, and as a result, the combined resources do not seem to be applied effectively, and it now has earnings problems.

The record of certain industries which diversified into steel has been a sorry one. LTV and Lykes have a poor record, and it speaks for itself. It will be interesting to see how these two companies put together a survival pattern for the future.

LTV is a study in itself. Its acquisition of Jones & Laughlin Steel at $80 a share plus, when the market was $48 per share, left it with a crippling debt load, which even today is still adversely affecting the corporation. It may be also said that the LTV management did not understand the steel business, and J&L has not been the strong competition under LTV that it was when independent; it has, if anything, atrophied under LTV.

A similar case study occurs at Lykes-Youngstown. A shipping company, based in New Orleans, used to dealing with a regulated and government subsidized industry, acquired a flat-rolled steel and tubing producer. YS&T had once tried merger with Bethlehem, but the Justice Department blocked that, and both companies went their own way. It does not appear that Lykes ever completely understood YS&T and its business, although it placed a senior Lykes executive in the Youngstown chairmanship (recently given early retirement). The situation now is that the economic health of the affiliate is perilling the health of the parent and the survival pattern is far from clear, even with the recent moves to consolidate

operations into the Chicago districts.

In the LTV/J&L and Lykes/YS&T cases, the affiliates lost their dynamics after acquisition. Key management was recruited away, often to competitors and a slow deterioration set in. Perhaps one of the criteria to be examined is whether the parent takes a holding company or portfolio management approach to the affiliate, or whether a stronger, centralized, hands-on approach was used. If the acquisition had been made in reverse, it would border on the ridiculous to assume that J&L's management would have known much about electronics or defense aircraft manufacture, and would have presumably left that to the key managements in those respective fields. However, the reverse was not true, resulting in the exit of two J&L presidents in fairly quick succession; one to early retirement, and one to a competitor. The early retiree went into consulting, his clients being mainly in the steel industry. Similarly, the YS&T situation went the same way -- a chairman and C.E.O. from the shipping industry, running the steel company with an iron hand, and two presidents leaving, until a pliant officer, carrying out the chairman's directives, succeeds in office. In the meantime, the steel company has faltered and appears to be stalling out.

Thus, it appears key to the conglomerate pattern to understand the business of the acquired, and if not, learn it. And, while learning it, let the incumbent management keep running it the way they were. Presuming that the new affiliate was bought because it was attractive and successful, every possible effort should be expended to reinforce the effort which made it successful.

To explore some of the pros and cons of conglomerate structure in greater detail, some questions posed by Professor Zannetos will be answered from this writer's point of view.

2. *Why is the phenomenon of conglomeration more prevalent in certain industries than in others? Is it? What are the examples?*

As discussed earlier, one has to carefully weigh whether conglomeration has been a success or a failure. Some of the "conglomerates" which were the darlings of the stock market in early times, are now the bums. A lot of them went through an acquisition phase, and then about a decade or so later, went into a spin-off phase, e.g., AMF and Brunswick.

An interesting way to observe the investor rating of conglomerate success or failure is when we can still obtain an open market value of the acquired part, i.e., it was not a complete acquisition. It has been quite common to observe that the conglomerate holding company's capitalization is less than the sum of the parts. This was recently observed in the Kaiser Industries case, where a spin-off to the shareholders was the advantageous action. This was as a result of the market capitalization of Kaiser Industries being substantially less than the market capitalization of the fractionally held subsidiaries, steel, aluminum, cement, etc. Kaiser Engineers was sold, then the stock distributed, with an appreciable gain for the holders of KI stock.

A similar example is also observable. ASARCO, a U.S. based mining and minerals company, owns 40% of MIM, formerly Mount Isa Mines, a Queensland based leading lead/zinc producer in Australia. ASARCO appeared particularly vulnerable to a tender offer through the phenomenon of the market capitalization value of its 49 percent holding of MIM, approximately equalling the NYSE market capitalization of ASARCO's outstanding stock! In effect, buying ASARCO at market would have given the tenderer the ASARCO assets at no cost. This precarious position led to MIM taking a 10 percent holding in ASARCO and its chairman joining the ASARCO board

as partial defensive measures.

However, to return to the basic question, it is not clear that conglomerate activity is more prevalent in some industries than others. For years banking was just that, banking. Then the bank holding act passed and banks branched out into REITS, mortgage companies, etc. The record speaks for itself, the results have been close to disastrous for some sectors of the banking industry.

Partial Review of Conglomerate Activity by Industry

Industries	Comments
Steel	- Inland - real estate, not successful; LTV, YS&T, discussed earlier.
Autos	- Partial conglomeration - discussed earlier
Glass	- No major conglomerate activity
Aluminum	- Alcoa - real estate, poor investment; balance, little conglomerate activity
Copper	- Very little; Kennecott in coal-FTC forced divestiture
Oil	- MARCOR, coal, uranium
Coal	- Very little
Non-Ferrous	- Very little
Textiles	- Very little
Tobacco	- Quite successful
Banking	- Not successful
Chemicals	- Partial
Foods	- Beatrice Foods; some others also successful
Machinery	- Colt Industries an exception

3. *What are the major changes that occur in the acquired firm after it loses its independence?*

Perhaps the main change is the lack of the "independence" spirit. Loss of management talent is one of the key losses that often occurs,

either intentially or unintentially. The acquirer may "clean house" and put in his own people, or may wish to hold on to the key staff, yet eventually loses them for many reasons. U.S. Industries, for example, has been able to hold on to its people, mainly because the entrepreneur held U.S.I. stock. G.M. was the same, e.g., Sloan, Mott, McLaughlin, etc.

Possible Pluses	Possible Minuses
(a) Financial resources	(a) Policy controls
(b) Staff support resources (R&D, marketing, planning, etc.)	(b) Financial controls
(c) Added clout in the market and in the industry as a whole	(c) Reporting requirements
	(d) Parent meddling
	(e) Loss of entrepreneur spirit
	(f) Loss of people; some managers prefer a small to a large company

4. *How does the imposition of administration control of the conglomerate affect strategic choices of the acquired firm?*

I shall address strategic choices such as: (a) Market/product choices, (b) Price/bidding, (c) R&D activities, (d) Investment decisions, (e) Organization structure, and (f) Management Systems. The key question is: Does the acquirer have superior skills in these areas:

Concerning (a) Market/Product choices, this is a difficult question to answer; it depends on how forcefully the parent enforces its will on the subsidiary. Under ideal circumstances, the administrative control should improve the choices, if the parent has the necessary skills.

With regard to (b) - (f), the key assumption here is whether the new parents' skills are superior to the subsidiaries' skills. If they

are not, the administrative control will be negative. There are also situations where the skills are superior, but lack of knowledge of the acquired's markets are not reinforcing; e.g., the MARCOR acquisition. Mobil is strong on R&D, marketing, investment, etc., but could not bring a lot of department store merchandising skills to the MARCOR party.

5. *Does the conglomerate shield its affiliate from all, or some of, the market forces which were governing its behavior before it lost its independence?*

There is considerable merit to this point that the conglomerate may shield the affiliates. The size of the conglomerate carries a certain clout, perhaps, in the marketplace in both selling and procurement, which could bolster the affiliate with the result that the affiliate management may not have to be as sharp as if they were independent.

This, though, is a two-edged sword, and on net balance, it could probably be concluded that the affiliate management would not be as sharp and tough as if they were independent. When independent, the mistakes hit and hit hard, and one learns from them, and quickly, or one does not survive. However, with a parent to back one up, mistakes and missed opportunities can be smoothed over without a great loss in momentum.

6. *How does the individual firm view various dimensions of risk, growth, and managerial development before and after acquisition?*

The factors to be discussed here are: risk, growth, and managerial

development.

6.1 *Risk*

A considerable amount would depend here on the motive of the parent for the acquisition in the first place. If the parent bought for ongoing market entry, rather than "green grass" entry, the risk threshold factor would be considerably lower. Before acquisition, it would be assumed that the affiliate would move slower with a given risk threshold, and later, would be willing to assume higher risk thresholds with the parent's managerial and physical resources behind it.

6.2 *Growth*

Much the same logic and approach would apply to growth. The affiliate would push growth plans more aggressively with the managerial and physical resources of the parent behind it. Often, a small growth company ends up taking in a big brother partner because the rate of growth has outstripped the resources of the company; these the new parent can supply.

6.3 *Managerial development*

This point has to be examined and weighted carefully, because large corporations attract and hold different types of management poeple. All too often, when an acquisition is made, the parent management style is forcibly imposed on the acquired company, and in time, the acquired management group moves on, often to a competitor. Head-hunter firms recognize this point very well and will work the recruiting turf over thoroughly after an acquisition.

The key to success lies in letting the acquired company maintain its own style and successful management techniques while conforming to policy parameters requested by the parent. The parent has to recognize that conformance to policy is enough, the mechanics are up to the individuals.

The actual management development can be better in the acquired situation, as broader managerial exposure is available and can be used. Some of the individualistic growth traits may be impacted, but other development doors in multi-disciplinary growth may open as a result.

7. *What happens to the strategic planning process and what is the nature and role of financial controls before and after?*

It would perhaps be questionable if the strategic planning process were as sharp in a smaller acquired affiliate as in the larger acquiring parent; however, it could well be so. The potential clearly exists to have a real synergistic benefit -- a case where 2 plus 2 would equal 5. Certainly, the potential for better strategic planning would exist, resulting from the combination of different points of view coming together. It is entirely possible that the process might become more formal and ritualistic after the acquisition, and possibly not as much results and growth oriented. A lot would depend on the attitude of the two planning groups. If competitive, disastrous results would flow. If complimentary, good results would flow.

It would be usually assumed that the parent would bring in the requirement that more formal and precise financial controls be put into place. Given the continuation of "independence" for the affiliate, financial controls would be a must.

One of the best examples of this type of evolving situation is the career pattern of Alfred P. Sloan and G.M.'s growth. The decentralization of responsibility and authority was preserved as G.M. grew through acquisition, but Mr. Sloan, supported by Albert Bradley, instituted financial controls that are a success story and a model for industry.

In contrast, many of the conglomerate disasters have resulted from inadequate financial controls. In such cases, the problem is only recognized when it is close to crisis proportions. It cannot be stressed too much that financial controls and management information systems are the key areas to make a conglomerate work.

*IV. The Conglomerate Phenomenon: An Overview**

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1. *Introduction*

This paper represents a survey of the rise (and possible fall) of the type of business organization known as a "conglomerate." Such a survey runs into immediate difficulties, because the term "conglomerate" (as applied to business organizations) is of recent coinage and is not precisely defined. In fact, as recently as the editions of the middle 1960s, Webster's dictionary does not define "conglomerate" in a manner applicable to business organizations. Later editions define a conglomerate as simply "a widely diversified corporation."

The Webster's definition of "conglomerate" is certainly consistent with the manner in which the term is used by the financial press. All organizations which are referred to as "conglomerates" in this press are, in fact, highly diversified. It is not so clear, however, that all highly diversified firms are considered to be "conglomerates." Forbes magazine each year, for example, publishes its "Annual Report on American Industry," wherein summary financial and operating data are presented for the largest U.S. corporations. (There were 929 of these in Forbes' 1976 "Annual Report.") These corporations are categorized by industry, there being a total of 17 major industrial categories and 83 subcategories listed in 1976. One of the major categories listed is "multicompanies," those companies which are too diversified to fit neatly into a single industry grouping. In 1976, Forbes listed 69 corporations as "multicompanies," but only 49 of these as "conglomerates."[1]. The prime difference between a "multi-industry company" and a "conglomerate," in Forbes' eye, seems to be the extent to which a firm utilizes leverage (long term debt). The median debt/equity ratio for Forbes' "multi-industry companies" in 1976

was 0.4 and for Forbes' conglomerates, 0.7. The median debt/equity ratio for all industries was 0.4.

A few facts from Forbes' "Annual Reports" are of some interest. In 1966 the survey included a total of 356 firms, of which only nine firms were classified as diversified, or 2.5% of the total. (In 1966 no distinction was made by Forbes between "conglomerates" and other diversified firms.) In 1971 the survey included 659 firms, and, of these, 59, or 9.0%, were classified as diversified, and, of these, 43, or 6.5%, were classified as conglomerates. (See Exhibit 1.)

Although part of the apparent growth in the number of diversified firms between 1966 and 1971 can doubtlessly be accounted for by Forbes' introduction of more liberalized criteria for classification of such (this in particular seemed to have happened in the 1969 and 1971 surveys), most of the growth is real. During the late 1960s and early 1970s there was a wave of merger and acquisition activity that was virtually without parallel in American economic history, and during this period of time numerous firms diversified rapidly. During the middle 1970s, however, the rate of merger and acquisition activity subsided substantially. In fact, some firms which had diversified extensively during the 1960s actively sought to divest themselves of their recent acquisitions during the 1970s. Following the peak year of 1970, the percentage of firms which were classified by Forbes magazine to be conglomerates fell steadily, from 8.1% in 1970 to 5.3% in 1976.

That the rate of conglomerate diversification swelled during the 1960s, crested sometime around 1970, and subsided thereafter is indicated by data collected by the Federal Trade Commission. (See Exhibits 2 and 3). The data show that while assets acquired by means of merger and acquisition averaged 11.6% of gross business investment during the years 1948-1966, this figure climbed to 31.7% for the years 1967-1970. Following 1970 this

Exhibit 1: Multi-industry and Conglomerate Firms as a Percentage of all Firms Categorized by *Forbes* Magazine in its Annual Report on American Industry

Year of "Annual Report"	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
Total Firms Surveyed	356	408	414	500	578	659	729	780	851	859	929
Total "Diversified" or "Multicompanies"	9	19	20	48	57	59	62	64	67	65	69
Total "Conglomerates"	--	--	15	38	47	43	46	46	48	44	49
Total "Multi-industry"	--	--	5	10	10	16	16	18	19	21	20
Diversified Companies/ Total Companies	.025	.046	.048	.096	.099	.090	.085	.082	.079	.075	.074
Conglomerates/Total Companies	--	--	.036	.076	.081	.065	.063	.059	.056	.051	.053

Exhibit 2

Acquired Assets and New Investment, Gross, in the U.S. Economy, 1948-1975

Year	New Investment[1]	Acquired Assets[2]	Acquired Assets as a Percentage of New Investment
	(# billions)		
1948	9.94	.11	1.1
1950	8.23	.19	2.3
1952	12.66	.39	3.0
1954	12.52	1.48	11.8
1956	17.04	2.11	12.4
1958	13.81	1.17	8.5
1960	16.39	1.73	10.6
1961	15.62	2.21	14.2
1962	16.46	2.64	16.0
1963	17.49	3.11	17.8
1964	20.68	2.54	12.3
1965	24.90	3.62	14.5
1966	29.82	3.83	12.9
1967	30.16	8.89	29.5
1968	30.00	13.48	44.9
1969	33.54	11.61	34.1
1970	33.84	6.48	19.1
1971	32.15	2.85	8.9
1972	33.61	2.07	6.2
1973	40.75	3.56	8.7
1974	49.19	5.13	10.4
1975 p	52.13	5.41	10.4

Source: F.T.C., Statistical Report on Mergers and Acquisitions, November, 1976, Table 23.

1) Gross, by business firms
2) of acquired firms with total assets of $10,000,000 or more

Exhibit 3

Number of Large Acquisitions in U.S. Mining and Manufacturing Industry, 1948-1975[1)]

Year	Total Number of Acquisitions	Conglomerate Acquisitions	Conglomerate/Total
1948	4	2	0.50
1949	6	4	0.67
1950	5	1	0.20
1951	9	4	0.44
1952	16	8	0.50
1953	23	11	0.48
1954	37	21	0.57
1955	67	37	0.55
1956	53	29	0.55
1957	47	29	0.62
1958	42	26	0.62
1959	49	33	0.67
1960	51	37	0.73
1961	46	29	0.63
1962	65	43	0.66
1963	54	40	0.74
1964	73	50	0.68
1965	62	46	0.74
1966	75	59	0.79
1967	138	118	0.86
1968	173	150	0.87
1969	136	112	0.82
1970	90	81	0.90
1971	58	48	0.82
1972	56	34	0.61
1973	64	39	0.61
1974	62	38	0.61
1975p	57	50	0.87

Source: F.T.C., Statistical Report on Mergers and Acquisitions, November, 1976, Tables 17 and 24.

1) includes only acquired firms having total assets of $10 million or more

figure declined from 19.1% in 1970 to 10.4% in 1975. The FTC data show that conglomerate acquisitions averaged about 25 per year during 1948-1966, but averaged 115 per year during 1967-1970. Again, the number of conglomerate acquisitions declined after 1970, from a total of 81 reported in 1970 to 50 in 1975. Conglomerate acquisitions as a percentage of all acquisitions averaged 65% from 1948 to 1966 but averaged 86% from 1967-1970. This percentage declined steadily from a peak of 90% in 1970 to 61% in 1974, but then rose to 87% in 1975.

What appears to have happened, then, was that there was something of a "boom" in conglomerate formation and acquisition activity during the late 1960s, a "boom" which subsided during the 1970s. It is of historic interest to note that the late 1960s is but one of three periods of "boom" in acquisition activity in U.S. economic history. The first such "boom" took place during the time spanning roughly the years 1897 to 1903, the second during the years 1924-1932, and the third during the years 1965 to 1971. The first such "boom" was characterized largely by consolidation within single major industrial categories, consolidation epitomized by the formation of the industrial trusts of the likes of John D. Rockefeller, Andrew Carnegie, and J. Pierpont Morgan.[2] The second "boom," while largely devoid of personalities of the order of Rockefeller and Carnegie, likewise was largely characterized by consolidation within industries.[3] Only during the third "boom" has the phenomenon of "conglomeratization," the acquiring by large corporations of other corporations functioning in widely unrelated activities, been prevalent.

The motivation for merger and acquisition activity is relatively clear for the first two "booms" of such activity: monopolization (or at least domination) of an entire industrial sector by one or a few firms. The extent of this motivation is illustrated by the tactics of the American Tobacco

Company during the early 1900s. American Tobacco regularly would acquire its competitors and then proceed rapidly to scrap their capital assets and lay off their employees. Obviously, elimination of rivals was American Tobacco's major concern in making acquisitions! Although such overt tactics, if pursued later in this century, would have surely met with prosecution under the Sherman or Clayton Antitrust Acts, it would appear that most merger and acquisition activity up until the most recent decades was directed towards the objective of strengthening the position of major firms within a single industrial category.

In some cases, this objective led to a limited diversification of a firm's activities. For example, General Electric, itself created by the merger of two rival firms holding competing patents for the generation and distribution of electricity, sought to dominate all sectors of the electrical industry (other than those from which it was prohibited from entering by law) during the 1920s. As a result, G.E., originally a manufacturer of electrical generators, electrical power transmitting and distributing equipment, and electric illumination products, acquired firms manufacturing electric motors, light and heavy appliances, electrical instrumentation equipment, electrical insulating materials, and radio equipment. G.E. thus emerged from the 1920s as a rather diversified corporation. Despite this, however, most of G.E.'s portfolio of products, however diverse these might have been from a marketing or production point of view, involved in one way or another the use of electricity.

The motivation for the "conglomerate" types of mergers and acquisitions of the 1967-1970 "boom" is not as clear as it was for the earlier two "booms." As has already been suggested, most of the acquisition activity during this latter period consisted of the combining of firms whose businesses were in wholly unrelated fields of endeavor. (That this is so is further reinforced

by FTC data which shows that the value of the assets of firms acquired through conglomerate acquisitions averaged over 78% of the assets of firms acquired in all acquisitions during the years 1961-1970.) It could be, of course, that the objective of "conglomerate" types of acquisitions during this third "boom" was consolidation within or domination of multiple industrial sectors by a single firm or a small number of firms, i.e., that the essential motivation for acquisition during the third "boom" was qualitatively similar to motivation during the earlier booms but was more expansive. Several studies, however, cast aspersion on this hypothesis. The most celebrated such study was one conducted by the FTC.[4] This study showed that for a sample of nine very large conglomerate firms, there was very little tendency for these firms to dominate the markets which they had entered via acquisition. In fact, in the acquired product classes, the conglomerates held a market share of less than one percent for 53.6% of the product classes and a market share of less than five percent for an additional 28.4% of product classes. Thus, the conglomerates held a market share of greater than 5% for only 18% of all product classes in which the conglomerates had acquired a market position.[5]

This would suggest that the motivation for the making of acquisitions during the 1960s might have been quite different than that during the 1890s or 1920s. What this modern motivation might be is a slightly perplexing, controversial, and, in the final analysis, unresolved issue. Various aspects of this issue are touched upon in the next section of this paper.

Despite the dissimilarities between the third "boom" of acquisitions and the earlier two, it is of interest to note that there are a number of similarities. All three "booms," for example, took place during periods of rapid expansion of the economy. This empirical fact tends to run against one hypothesis that has been advanced as an explanation of why mergers take place, notably that mergers are consummated as solutions to the intense competition

that prevails during business slumps. All three "booms" also took place during a period of rapid rises in stock market prices, and in all three cases a decline in merger activity was preceded by a downturn in stock market activity.[6] Exactly why this should occur is a question to which there is no widely accepted answer.

2. *Why Did the Conglomerates Come into Existence?*

In a paper presented before this same symposium, Professor Stewart Myers argues that if a number of assumptions are met, it is difficult to determine why a corporation should engage in acquiring firms operating in diverse activities. The assumptions are as follows: 1) that the individual firm act in a manner that is consistent with the long-run maximization of the wealth of its shareholders; 2) that the capital markets are efficient; and 3) that there is no scale advantage possessed by the combined firm that is not also possessed by each of the firms before the acquisition.[7] This last assumption, among other things, states that there is no so-called "synergy" resulting from the merger.

It is probably not unreasonable to deduce that the very existence of conglomerate firms is evidence that at least one of these three assumptions is not met in the real world. Thus, it is of some interest to examine what might be the reasons for conglomerate acquisition activity if one of the above assumptions does not hold. It is also of interest to assess whether or not it is probable that these reasons actually did account, in whole or in part, for the emergence of conglomerate firms during the 1960s. Relaxation of each assumption will be considered in turn.

2.1 *Did conglomeratization result from efforts to achieve scale economies or "synergies"?*

In this section, only real scale economies (or real "synergies") will be considered. Pecuniary economies of scale, those resulting from financial considerations, will be considered in the next section. "Real" economies of scale result from merger of two firms only if the two firms combined can operate more efficiently than can either firm operating alone. This can be only if the combined firm can produce a given level of output with less total inputs than can the uncombined firms, or if the combined firm can achieve the development of new marketable products which neither of the uncombined firms could develop on their own. Real economies of scale can be achieved within a firm at the level of the individual plant, at the level of distribution of products, or at the level of overall firm administration. Each of these will be considered in turn.

Most consideration by economists of scale economies has been focussed on the level of the individual plant.[8] While it is generally agreed that significant economies of scale are achievable at the plant level, it is not at all evident that these can be achieved from conglomerate acquisitions. Conglomerate acquisitions involve the merging of assets of firms of differing activities, and it is unlikely that, in most cases, such assets can be rationalized to achieve scale economies at the plant level. This possibility is not totally precluded, it is important to note. For example, if a manufacturer of machine tools were to be merged with a manufacturer of helicopters, it might be possible for the combined firm to erect one plant to produce forgings which could supply both manufacturing operations more efficiently than might be the case were each manufacturer to erect its own forgings plant. Such possibilities, however, are likely to be limited. It is hard to conceive of scale

economies at the plant level resulting, say, from a merger of a bakery with a logging concern.

One argument that has been advanced in favor of the possibility that mergers and acquisitions result in scale economies at the plant level is that the combined firm is able to close inefficient marginal plants and to replace them with larger, more productive facilities. This argument, which has been made primarily by European analysts, applies more directly to horizontal mergers (mergers of firms producing closely competing products) than it does to conglomerate mergers.[9] The problem with this line of reasoning is that inefficient plant capacity is most likely to exist in industries characterized by a high degree of monopolization. Otherwise, the forces of competition would force the closure of rationalization of the inefficient plant. Merger in such an industry might indeed enhance overall efficiency, but, even better, so would a healthy dose of competition.

Economies of scale at the level of distribution might be enhanced by means of conglomerate acquisition if the products of the combined firms could be distributed through the same distributive network and if neither of the antecedent firms had achieved full economies of scale prior to the acquisition. In the case of the conglomerate firm, both of these "if"s are likely to be quite important. Fire sprinklers, rent-a-cars, electronic instrumentation, and life insurance are not typically sold or distributed through the same (or even similar) channels (and certainly not natural gas and naval warships!). Sporting goods and pleasure boats might, to some extent, be distributed through similar channels, but it is not clear that joint distribution of these necessarily would be more economical than separate distribution.

Organizational economies of scale are perhaps the richest ground for the possibility of the realization of economies of scale by the conglomerate firm. A conglomerate firm, for example, might be able to operate with one

financial staff, one accounting and control staff, and one research and development staff, while each of the conglomerate's constituent activities would have to create their own separate staffs were they to be operated as independent firms. Offsetting this somewhat, the staffs of the conglomerate would be larger and more complex than those of the constituent firms. Whether or not such economies of scale at the organizational level are actually achieved is open to question. The FTC, studying the organizations of the nine largest U.S. conglomerates, concluded that within these firms there was little discernible evidence to support the existence of such scale economies.[10] Rather, it was found that these firms operated with highly decentralized organizational structures, with very few activities conducted at the corporate level other than efforts to locate new acquisition targets.

On the balance, then, it would seem that the possibilities for a firm to achieve real economies of scale by means of conglomerate acquisition are relatively limited. It might be noted here that several investigators have attempted to measure empirically whether or not scale economies or "synergies" resulted from mergers during the 1960s. No one investigator claims to have measured all possible consequences of the realization of scale economies, and the methodologies of the investigators are varied. The conclusions drawn from the various investigations are in some instances conflicting, but, overall, most investigations have found little, if any, evidence indicating that significant scale economies or synergies result from mergers.[11]

2.2 *Can imperfections in financial markets explain conglomerate acquisitions?*

An efficient financial market is one in which there is a very large number of buyers and sellers of financial securities, each buyer and each seller possessing identical and complete information, each buyer and each seller

striving to maximize his or her accumulation of wealth, all buyers and all sellers having homogenous expectations about the outcome of uncertain future events, and no buyer or seller being large enough to affect significantly the price at which any security is sold. If a financial market is efficient, all wealth-creating institutions whose securities are bought and sold in the market will be valued by the market "correctly," in the sense that the market value of the institution will be equal to its long run discounted real economic worth. Because of this, in an ideal efficient financial market, no small firm which possesses an idea whose "time has come" and which possesses the entrepreneurial capability to transform the idea into economic wealth will suffer for want of financial capital to develop the idea; the market will recognize the significance of the intangible assets of the firm and value them accordingly, allowing the firm to raise the needed capital. Likewise, no efficient market would allow a corporation whose size is gigantic but whose business activities are antediluvian to invest in outmoded or unnecessary productive capacity.

It is clear to an economic idiot that U.S. financial markets are not perfectly efficient. Exactly how efficient they are is a matter of not inconsiderable controversy. Generally, the very existence of the controversy is evidence that U.S. financial markets behave in manners that can simultaneously be consistent and inconsistent with the notion of efficiency. It is probably true, for example, that most innovations of economic merit do get recognized by the market, albeit not always as rapidly as one might hope for. The market has, alas, on more than one occasion recognized an "innovation" that, with hindsight, proved to be less than economically meritorious. The market likewise does act to reduce the value of large firms whose economic futures are dim -- the steel industry might be a current case in point -- but the market also from time to time has been known to advance vast amounts

of funds to a large corporation for undertakings of dubious economic value, apparently acting largely on the basis of the established reputation of the corporation (or perhaps personal relationships between the management of the corporation and financial lending officers) rather than a sound evaluation of the undertaking.[12]

It might be noted that, to an extent, the very existence of conglomerate firms creates within U.S. financial markets inconsistencies with the basic premises underlying the notion of an efficient financial market. Conglomerate firms, for example, have rather consistently engaged in the practice of withholding from their shareholders specific information regarding the performance of their individual acquisitions.[13] Such withholding of information is inconsistent with the notion of all buyers and sellers having complete and identical information. Conglomerate firms, particularly when seeking to acquire corporations whose management did not particularly want to be taken over, have engaged in the practice of "tendering" for the shares of the acquisition candidate. ("Tendering" involves offering the shareholders of the company to be acquired a share price that is, or at least appears to be, greater than the market value of the shares). Such a practice is inconsistent with the notion that no one buyer or seller can act so as to affect prices significantly. In more than one important case of tendering, the tender offer was backed by loans of considerable size obtained through friendly backing channels.[14]

The major issue to be addressed here is whether or not inefficiencies in the financial markets have significantly contributed to the rise of the conglomerate corporation. Alternatively put, would conglomerate corporations have been able to come into being during the 1960s had the securities and lending markets of the U.S. been more efficient?

The issue is at best a difficult one to tackle. The available evidence is scanty and largely anecdotal. The case for financial market inefficiencies

contributing to the rise of the conglomerate is effectively summarized by F.M. Scherer, formerly chief economist of the FTC:[14a]

> "But in essence, the new breed of merger promoters profit by convincing investors they have invented a kind of perpetual growth machine. To illustrate, consider the hypothetical ZAM Corporation with current annual profits of $10 million, 1 million shares of common stock outstanding, earnings per share of $10, and (because investors are enthusiastic about its growth potential) the relatively high stock price/earnings ratio of 30. A share of ZAM common sells then at 30 × $10 = $300. ZAM then sets out to acquire the XYZ Corporation, with profits of $2 million, 200,000 shares of stock outstanding, earnings per share of $10, and a more conventional price/earnings ratio of 12, yielding a price per share of $120. To effect a take-over, ZAM offers XYZ stockholders six ZAM shares for each ten XYZ shares. If XYZ stockholders expect the ZAM stock price to hold firm, this is an irresistible offer, since they receive six shares valued at a total of $1,800 in exchange for ten shares valued at $1,200. To finance the deal, ZAM issues 120,000 new shares, conveying them to XYZ shareholders. Consolidated profits of the newly expanded ZAM Corporation are $12 million. With 1,120,000 shares outstanding, earnings per share are $10.71. If the market continues to evaluate ZAM stock at a price/earnings multiple of 30, the price per share rises to $321.30. Everyone is better off than before, even though total combined earnings have not increased at all!"

In other words, the conglomerate grows by convincing the shareholders that it is generating extraordinary wealth when in fact it is not. The conglomerate effectively "fools" the financial market into overvaluing its own stock.

That at least some conglomerates actively sought to engage in such foolery is borne out by a number of observations of actual conduct of certain firms.[15] Efforts to mislead shareholders, according to the public record, were carried on by certain conglomerates by means of manipulation of the accounting system.[16] Documentation exists to show that accounting manipulation has enabled some conglomerate firms to report earnings increases of subsidiaries following acquisition when in fact the actual earnings consistently reported had declined.

Scherer continues:

> "This seeming Midas touch will turn to lead if the ZAM price/earnings ratio falls because ZAM becomes a different organization after the merger, having assimilated the less glamorous XYZ operation. But that need not happen if investors can be kept in the proper frame of mind. As long as ZAM can continue to make such deals, acquiring other firms with lower price/earnings ratios, and (more importantly) as long as investors believe it will continue to do so, earnings per share will rise. With rising earnings per share, investors' growth expectations are validated, and the price/earnings ratio remains high. Should those expectations for any reason be contradicted, however, the ZAM stock price will fall relative to earnings; ZAM will find it much more difficult to acquire other firms with lower price/earnings multiples; and the growth on which its high stock price depended must slow. The whole process, then, is fueled by self-reinforcing but inherently fragile speculative expectations. When they falter, the bubble bursts."

Scherer's observation that "fragile speculative expectations" can lead to the market placing a high price/earnings ratio on a conglomerate's common stock seems to be borne out by observation of actual such ratios during the years 1965-1969 or so. (See Exhibit 4). The ratios are not observed to be high for all conglomerates, however. For certain conglomerates, most notably Textron, the ratios are close to all-industry averages for industrial firms which ranged from roughly 12 to 18 through the period. Other conglomerates, most notably Litton and Teledyne, enjoyed quite high ratios. The data also tend to support Scherer's contention that "when (the speculative expectations) falter, the bubble bursts." If one were to attempt to date the bursting of the bubble, it would appear to have happened late in 1972 or so.

It is doubtlessly of some comfort to those who believe that U.S. capital markets are efficient to note that if capital market inefficiency historically did contribute to the rise of the conglomerate firm, it is latter day capital market efficiency that could cause their demise. As Exhibit 4 suggests, the ability of conglomerates to make acquisitions on the basis of inflated market value of the conglomerates' common shares seems to have faded. If the conglomerates were able to "fool" the market, this ability apparently

Exhibit 4

Price/Earnings Ratios of Selected
Conglomerate Firms, 1965-1975*

Firm	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
Gulf and Western	25.3	12.5	13.3	18.3	10.7	7.5	9.5	11.8	6.2	3.1	4.5
IT&T	16.6	16.9	21.6	20.8	18.4	14.3	16.4	14.8	10.2	5.7	6.2
Tenneco	13.7	11.6	14.0	13.2	11.7	11.3	11.3	10.5	8.8	5.1	5.7
Teledyne	28.6	25.6	41.6	33.6	20.7	13.3	14.7	13.2	9.3	8.5	2.9
GT&E	22.5	19.1	22.5	19.7	15.7	13.5	13.4	11.2	9.5	10.0	7.5
Litton	33.1	32.0	38.9	45.5	22.7	14.1	20.5	**	9.7	**	7.2
Textron	14.0	13.1	19.5	21.7	14.8	10.5	13.7	14.4	9.6	6.1	7.5

*Based on unweighted yearly average prices of common stock and fully diluted earnings

**Deficit reported this year

Source: Moody's Handbook of Common Stocks, various issues

exists no longer.

The extent to which "fooling the stock market" played a role in the rise of the conglomerate, it must be noted in closing this portion of the discussion, is still a matter of some controversy. As will be raised in the following subsection of this report, there are analysts who believe (still) that the behavior of the financial markets in valuing conglomerate performance was wholly rational. On the balance, however, the hypothesis that inefficiency in the capital markets contributed mightily to the formation of conglomerates is a powerful one, albeit a controversial one.

Before this discussion is laid to rest, one additional point must be raised. During the height of the conglomerate "boom," many advocates of conglomerate behavior advanced the notion that the conglomerate was doing its shareholders a major favor by diversifying its activities and thus stabilizing its earnings flows. This notion is largely rejected by financial economists. While the benefits of diversification in terms of reducing the risk associated with a given level of earnings are demonstrably great, it is generally believed that these benefits are best achieved by the individual shareholder diversifying his or her portfolio of securities of independent firms.[17] If the total assets of the individual investor are too small to allow that person to diversify his or her personal portfolio, the diversification function can be performed by an unloaded mutual fund in which the investor holds shares. The services of a conglomerate firm are simply not needed to achieve diversification.

There is one possible exception. If an individual business firm faces a significant risk of bankruptcy due to cyclic variations in its earnings stream, if there is a tangible cost associated with bankruptcy, and if the business firm is viable economically providing that cyclically induced bankruptcy does not occur, it might be economically advantageous for that firm to

merge itself with other firms in order to reduce the bankruptcy risk.[18] While this argument is a theoretically valid justification for conglomeratization, the argument does not have much utility with regard to the explanation of actual conglomerate acquisition activity. This is because, as will be shown in the next section of this paper, during the conglomerate "boom," conglomerates typically sought as candidates for acquisition those firms which were well established, well managed, and had accumulated sizeable liquid assets. For such firms, the risks of bankruptcy were markedly low.

2.3 *Can managerial inefficiency at the level of the firm explain the existence of the conglomerate firm?*

Most financial theory operates under the assumption that the behavior of the management of a firm is consistent with the long run maximization of the wealth of the firm's shareholders. Should this assumption fail to hold, behavior of firms might take on dimensions that would not be predictable within the framework of financial theory. This section explores whether or not the "boom" in conglomerate acquisition can be accounted for to any significant degree by behavior by firm management that is inconsistent with the notion of long run wealth maximization of shareholders.

Two possibilities exist: first, that the management of the acquiring firms (i.e., the conglomerates) do not act to maximize the wealth of their original shareholders, and second, that the management of the acquired firms did not act to maximize shareholder wealth prior to the acquisition. Each of these two possibilities holds a different set of ramifications in terms of whether or not, from an economic point of view, the existence of the conglomerate firm is a desirable thing.

It has been noted in the financial press that the chief executive officers of some of the so-called "go-go" conglomerates of the 1960s were quite concerned

with growth for its own sake. It has been argued that if growth possibilities through internal expansion tend to be lackluster, the executive might turn to acquisition as an alternative source of growth.[19] Such an alternative is not necessarily inconsistent with maximization of shareholder wealth because growth through acquisition might be the best means by which to maximize the present value of long run profits. However, it is also possible that growth might be an autonomous goal of a management more interested in building an internal empire than in looking out for shareholders' interests.

Divergence of opinion among economists exists on the issue of whether or not the management of conglomerate firms have acted in their own shareholders' best interests. Professor John F. Winslow, an economist whose writings strongly suggest that he is not wildly enthusiastic about the growth of conglomerate firms, argues the negative case. He points out that at least five conglomerate firms (Gulf and Western, LTV, IT&T, National General and Litton Industries) during the 1960s deliberately sought as acquisition candidates firms which were already well managed and financially sound.[20] In acquiring such companies, these conglomerates would often pay the acquired firms' shareholders a premium per common share over and above the market value of the share. If the market valuation of both the acquiring and acquired firms is economically sound, it would not be in the interests of the shareholders of the acquiring firm to be willing to pay such a premium unless there existed the possibility of the realization of scale economies by the combined firm. It has already been argued that such a realization is unlikely. Also supporting the negative case is Samuel R. Reid, who has compiled data to show that firms which have grown largely by means of acquisition have done relatively better in terms of sales growth but relatively poorer in terms of increasing the wealth of their original shareholders than did firms which have achieved their growth largely through internal expansion.[21] Reid's data, however, are not immune to criticism.[22]

In defense of the conglomerates, several points might be raised. The first is one which is most often raised by conglomerate managers themselves: that if the conglomerate acquires a firm which is financially sound and well managed, the motivation is usually that the acquired firm possesses an asset, tangible or intangible, which is of utility within the conglomerate organization and which cannot be acquired easily by means other than acquisition.[23] Such an acquisition, it is argued, is completely in the interests of the acquiring firm's shareholders. Ultimately, however, whether or not this so depends upon whether the asset can be more usefully employed within the conglomerate than outside of it. The question again boils down to whether the acquisition leads to some sort of previously unrealized scale economy or not. A second point is that if the acquired firm is undermanaged, and the acquiring firm has the capability of correcting this deficiency, the acquisition might make sense for the shareholders of both firms.

This opens up the second possibility raised at the beginning of this section: that the management of the acquired firm does not, prior to the acquisition, behave in a manner consistent with maximization of the wealth of its shareholders. If this is the case, and if the acquiring firm is motivated by the desire to upgrade this management, the acquisition would be a desirable thing from both a private and a social point of view.

Whether or not this generally is the case, however, is quite debatable. In one study, James C. Ellert observes that the share prices of firms about to be acquired by conglomerates tend to rise significantly when news of the imminent merger reaches the stock market.[24] This is taken as evidence that the market anticipates that the firm to be acquired will be better managed (and hence more valuable economically) after the acquisition than before. The rise in share price, however, could also reflect the possibility that the market expects the conglomerate to overpay the shareholders of the acquired

company for the privilege of completing the transaction, a possibility not entertained by Ellert.

Data presented before the U.S. Congress concerning the economic performance of firms before and after acquisition by a conglomerate indicate a mixed but overall negative report card for the ability of a sample of conglomerates to improve the management of their acquisitions.[25] Generally, the data show that for 28 companies acquired by four conglomerates (IT&T, Litton, LTV, and Gulf and Western), sales typically rose but income as a percent of sales and income as a percent of assets typically declined after the acquisition was incorporated into the conglomerate's organization. Twenty-one of the 28 firms experienced an absolute decline in income before taxes. It would be unfair to conclude from this data that the conglomerates actually caused a decline in the economic performance of the acquired firms. To do so, it would be necessary to compare actual performance of the acquired firms after acquisition to what their performance would have been had no acquisition taken place. Data documenting the latter, of course, is impossible to generate. However, the Congressional data do not support the contention that firms acquired by conglomerates are better managed by the conglomerates than by their original management.

Professor Winslow, relying largely on the data presented before the Congress, and upon his own observation that conglomerates often seek specifically to acquire firms which were already well managed, concludes that conglomerates generally have done very little to improve the management of their acquisitions.[26] In making his case, however, he presents information that could be used to support the opposite point of view. For example, he cites the several cases of conglomerate acquisition of insurance companies during the 1960s and 1970s, indicating that the major reason why the acquisitions were sought was the desire of the conglomerate to tap the large liquid re-

serves amassed by the insurance companies. He argues that the liquidity of insurance companies resulted from sound management practice, enabling the companies to build large liquid reserves far in excess of those required by law. One can ask, however, if the amassing of large amounts of liquid assets by insurance company executives, reserves far in excess of company needs, constitutes sound management practice. Perhaps, one might speculate, those liquid funds could be put to more creative and useful ends by the conglomerate firm management than by the overly conservative insurance company managers.

Thus, whether or not conglomerates do improve the management of acquired companies, to this author's mind, is an important question to which there is not yet a satisfactory answer.[27] It is doubtlessly true that in some individual cases, a conglomerate does improve the management of its acquisition while in other cases it does not. The imperative question is whether, on the balance, the positive cases outweigh the negative ones or vice versa. Whether the phenomenon of the conglomerate firm merits society's praise or deserves society's damnation is an issue which to a large extent rests on this question.

Footnotes

[1] The Forbes list is supplied as an appendix to this paper.

[2] The extent of consolidation is evidenced by the observation of Prof. Jesse Markham that approximately 71 industries which were competitive prior to 1890 were transformed into monopolies or near monopolies during this period. Many of the giant firms of U.S. industry were formed at this time, including Standard Oil, U.S. Steel, General Electric, American Can, American Tobacco, DuPont, National Lead, U.S.Rubber, United Shoe Machinery, Pittsburgh Plate Glass, International Harvester, International Paper, to name but a few.

It is also felt by many analysts that financial capital market imperfections played a major role in creating this first "boom" of acquisitions. During the late 19th century, it is claimed, the New York capital market system operated almost as a club, wherein bankers would lend primarily to persons known to the bankers personally. Thus, potential users of capital who

did not have personal connections in the banking establishment would find themselves unable to secure needed financial capital.

For various accounts of this period, see George Stigler, "Monopoly and Oligopoly by Merger", American Economic Review, May 1950; Jesse W. Markham, "Survey of the Evidence and Findings on Mergers", in National Bureau of Economic Research, Business Concentration and Price Policy (Princeton University Press, 1955); Ralph L. Nelson, Merger Movements in American History, 1895-1956 (Princeton University Press, 1960); and F. Michael Scherer, Industrial Market Structure and Economic Performance (Rand McNally, 1970), Chapter 4. See also John Moody, The Truth About Trusts (New York, 1904).

[3] A major difference between the first "boom" and the second was that the industries most affected during the first "boom" were mostly in the manufacturing sector while those affected during the second "boom" were mostly (but not entirely) in the public utilities sector. Most of the large combinations of firms created during the first "boom" are still in existence today, although some of these were broken apart by antitrust proceedings. By contrast, most of the utilities trusts created during the second "boom" disintegrated during the Depression of the 1930's. See Markham, "Survey of the Evidence and Findings on Mergers", op. cit.

[4] FTC, Conglomerate Merger Performance, Report Number PB-213-556, November, 1972. Similar studies were conducted by at least nine government agencies.

[5] There might, however, be some room for argument with these conclusions. The FTC study defined product class at the SIC 5 digit level, a very finely disaggregated level of product classification. The analysis does not indicate whether or not at a coarser level of aggregation the same lack of market domination would necessarily be evident. See Conglomerate Merger Performance, pp. 107-127.

[6] Ralph Nelson found in fact that there is a strong positive correlation between the rate of merger activity over time and the first derivative of measures of levels of stock market prices, the correlation coefficient being 0.47. See Nelson, Merger Movements in American History. See also C. J. Maule, "A Note on Mergers and the Business Cycle", Journal of Industrial Economics, April 1968, and Nelson, "Business Cycle Factors in the Choice Between Internal and External Growth", in Alberts and Segall, editors, The Corporate Merger (University of Chicago Press, 1966).

[7] Differential tax treatment of capital gains versus earned income could result in an incentive for owners of firms to sell out to other firms even if these three assumptions are met. While such an incentive doubtlessly explains, from the seller's point of view at least, why a certain percentage of acquisitions are made, it is doubtful that this percentage was large during the conglomerate acquisition "boom". See J. K. Butters, J. M. Lintner, and W. L. Cary, Effects of Taxation on Corporate Mergers (Harvard University Press, 1951).

[8] See, for example, F. T. Moore, "Economies of Scale: Some Statistical Evidence", Quarterly Journal of Economics, May 1959; comment by S. C. Schuman and S. B. Alpert, Quarterly Journal of Economics, August 1960; J. Haldi and D. Whitcomb, "Economies of Scale in Industrial Plants", Journal of Political Economy, August 1967; C. F. Pratten, Economies of Scale in Manufacturing Industry (Cambridge University Press, 1971).

[9] See, for example, P. Leslie Cook, Effects of Mergers (George Allen and Unwin, 1958).

[10] FTC, Conglomerate Merger Performance, op. cit. The nine firms were IT&T, LTV, Litton, Rapid-American, Gulf and Western, FMC, North Simon, and White Consolidated. The findings of the FTC are consistent with those of other studies, including M. M. Nangia, Organization of Conglomerates (N.Y.U. Ph.D. Thesis, 1974), and U.S. Congress Staff Report, Investigation of Conglomerate Corporations, 1970.

[11] See, for example, K. V. Smith and J. C. Schreiner, "A Portfolio Analysis of Conglomerate Diversification", The Journal of Finance, June 1969; J. F. Weston and S. K. Mansinghka, "Tests of the Efficiency Performance of Conglomerate Firms", The Journal of Finance, September 1971; S. R. Reid, "A Reply to the Weston/Mansinghka Criticisms Dealing with Conglomerate Mergers", The Journal of Finance, September 1971; R. A. Haugen and J. Udell, "Rates of Return to Stockholders of Acquired Companies", The Journal of Financial and Quantitative Analysis, January 1972; R. W. Melicher and D. R. Rush, "The Performance of Conglomerate Firms: Recent Risk and Return Experience", The Journal of Finance, March 1974; R. A. Haugen and T. C. Langetieg, "An Empirical Test for Synergism in Merger", The Journal of Finance, September 1975.

Most of the above studies attempt to evaluate the actual economic performance of a combined firm against what would have been the performances had the antecedent firms not merged. In most cases, the findings are that the performances of the merged and unmerged firms do not differ significantly. In another study, however, Lev and Mandelker, investigating mostly mergers not involving conglomerate firms, found significant differences in performance, albeit differences not necessarily unambiguously favoring the combined firm. See B. Lev and G. Mandelker, "The Micro-Economic Consequences of Corporate Mergers", The Journal of Business, January 1972.

[12] For an example in the extreme, see J. F. Winslow, Conglomerates Unlimited (University of Indiana Press, 1973), Chapter 3.

[13] For evidence, see FTC, Conglomerate Merger Performance, op. cit., and U.S. Congress Staff Report, Investigation of Conglomerate Corporations, op. cit.

It is of interest to note the following statement by E. V. Klein, president of National General Corporation, cited in U.S. Congressional hearings on conglomerate corporations: "I believe that the shareholders are not in a position to understand the information because it is so highly legal and technical. Financial information is so complex that I believe it is beyond the capacity of a small shareholder to understand it. ... I believe that a better way should be found of informing shareholders of exactly what is going on."

[14] See Winslow, Conglomerates Unlimited, op. cit., Chs. 3 and 4, and U.S. Congress Staff Report, Investigation of Conglomerate Corporations, op. cit.

[14a] F. M. Scherer, Industrial Market Structure and Economic Performance, op. cit., p. 114.

[15] See especially U.S. Congress Staff Report, Investigation of Conglomerate Corporations, op. cit., and Winslow, Conglomerates Unlimited, op. cit. See also the Editors of Fortune, The Conglomerate Commotion (Viking Press, 1970) and S. C. Vance, Managers in the Conglomerate Era (Wiley-Interscience, 1971).

[16] See U.S. Congress Staff Report, Investigation of Conglomerate Corporations, op. cit. As an example, the report reprints a note from the vice president to the chairman of the board of Gulf and Western dated June 6, 1964: "The consolidated statement of earnings for the nine months ended April 30 shows that the automotive parts subsidiaries have made $1,123,000 before taxes. Of this amount more than a million dollars represents 'special items'... thus the true earnings of the parts companies are virtually nil and I am extremely fearful of any detailed disclosures we might have to make in a registration statement."

[17] The "classic" works on this subject are Harry Markowitz, Portfolio Selection: Efficient Diversification of Investments (John Wiley and Sons, 1959); W. F. Sharpe, "Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk", Journal of Finance, September 1964; John Lintner, "Security Prices, Risk, and Maximal Gains from Diversification", Journal of Finance, December 1965.

[18] See R. C. Higgins and L. D. Schall, "Corporate Bankruptcy and Conglomerate Merger", Journal of Finance, March 1975.

[19] See Edith Penrose, The Theory of the Growth of the Firm (John Wiley and Sons, 1959) and C. J. Sutton, "Management Behaviour and a Theory of Diversification", Scottish Journal of Political Economy, Volume XX, No. 1.

[20] Winslow, Conglomerates Unlimited, op. cit. Winslow's evidence is presented mostly on a case by case basis. As one example, he notes that in attempting to persuade the board of directors of LTV to acquire the firm Wilson and Co., LTV's management emphasized the good quality of Wilson's management and the soundness of Wilson's financial position as reasons why LTV should be willing to tender for Wilson at a rate above market value.

[21] Samuel R. Reid, Mergers, Managers, and the Economy (McGraw Hill, 1968).

[22] See Scherer, Industrial Market Structure and Economic Performance, op. cit., p. 121.

[23] See the Editors of Fortune, The Conglomerate Commotion, op. cit.

[24] James C. Ellert, "Mergers, Antitrust Law Enforcement, and Stockholder Returns", The Journal of Finance, May 1976. Ellert's findings are consistent with those of Halpern and Mandelker. See Paul J. Halpern, "Empirical Estimates of the Amount and Distribution of Gains to Companies in Mergers", The Journal of Business, Volume 46, No. 4, 1973, and Gershon Mandelker, "Risk and Return: The Case of Merging Firms", Journal of Financial Economics, Volume 1, No. 4, 1974.

[25] Economic Concentration, Hearings Before the Subcommittee on Anti-trust and Monopoly of the Committee on the Judiciary, United States Senate, 91st Congress, 1969 and 1970.

[26] Winslow, Conglomerates Unlimited, op. cit.

[27] The general practice of conglomerates of withholding from their shareholders detailed accounts of the economic performance of their subsidiaries exasperates the question. It has already been suggested that this practice may have led to (or at least contributed to) possible overvaluation by the financial markets of the common shares of conglomerate firms during the 1960's. It is in the clear public interest that highly diversified, publicly held firms be required by law to disclose detailed operating data of subsidiaries to their shareholders.

Appendix

Forbes Magazine
1976 Annual Report on American Industry
Firms Classified as "Multicompanies"

1. Firms Classified as "Conglomerates"

Northwest Industries (1969)
Scott and Fetzer (1974)
White Consolidated Industries (1969)
AMF (*)
National Service Industries (1970)
Ogden Corporation (1969)
Tenneco (1968)
Gulf and Western Industries (1967)
LTV (1968)
Textron (*)
I.U. International (1971)
Raytheon (1976)
Chromalloy American (1971)
TRW (1967)
Zapata (1976)
Amfac (1971)
Alco Standard (1971)
Dayco (1971)
Brunswick (1967)
Walter Kidde (1969)
Rockwell International (1975)
Sybron (1973)
W.R. Grace (1969)
Dart Industries (1970)
International Telephone and Telegraph (1967)
Signal Companies (1968)
Studebaker-Worthington (1969)

National Industries (1970)
Teledyne (1968)
A-T-O (1970)
Amtel (1976)
U.S. Industries (1969)
United Technologies (1976)
Lear Siegler (1972)
Allied Products (1971)
Fuqua Industries (1970)
Transamerica (1971)
City Investing (1969)
UOP (1972)
I.C. Industries (1971)
SCM (1969)
Singer (1969)
Whittaker (1969)
American Standard (1972)
Litton Industries (1967)
AVCO (1967)
Bangor Punta (1971)
National Kinney (1970)
Southdown (1976)

2. Firms Classified as "Multi-industry Companies"

Minnesota Mining and Manufacturing (1969)
General Electric (1969)
Union Carbide (1969)
Koppers (1969)
Eltra (1969)
General Tire and Rubber (*)
Sperry and Hutchinson
Martin Marietta (*)
Sperry Rand (1969)
National Distillers (*)
Bendix (1967)
PPG Industries (1969)
NL Industries (1969)
FMC (*)
GAF (1969)
Borg-Warner (*)
Westinghouse Electric (1969)
Kaiser Industries (*)
Allis-Chalmers (1969)
Olin Corporation (*)

Note: Parentheses indicate year in which company first appeared on list as a "conglomerate" or "multi-industry" company or in a predecessor category; an asterisk means that the company appeared in such a category prior to 1966.

V. Return on Investment and Internal Growth: Basic Objectives of a Multimarket Company

Robert S. Ames
Senior Vice President - Operations
Textron, Inc.

1. *Introduction*

In 1954, Royal Little recognized that his long career, in many aspects of the textile industry, had never witnessed a satisfactory return on assets for the shareholder. Little came to the conclusion that the shareholder was entitled to a competitive return, and in building the new Textron, his goal was to redeploy the assets into higher yielding businesses. This concept led Textron from a textile business to the modern conglomerate or multimarket form of non-related diversification. Today Textron has no textile activities but has become a major builder of many different businesses.

2. *Diversification and Conglomeration*

Multimarket companies share three basic characteristics: a degree of autonomy of their units, a philosophy of unrelated diversification, and an objective of return on investment for their investors. Multimarket companies take many forms; i.e., G.M., Goodyear, G.E., Rockwell International, TRW, Textron, Litton, Gulf & Western, etc. It is apparent from this list that the term "multimarket" company covers a wide spectrum of firms with very different characteristics. The origin of their differences stems from the relative size of their units and the different types of acquisitions. In addition, the image projected by the dominant divisions may tend to overshadow the public perceptions of other units.

Conglomerates or multimarket companies diversify in minor and major ways. A minor diversification is the extension of a product line within

a division and, while this might involve a significant investment, it still represents a minor departure from the existing business lines. A major diversification is the addition of a completely new and unrelated division.

The multiplicity of divisions provides the firm with protection against a particular industry economic cycle. The basic concept in a conglomerate is, in the long run, to direct the assets toward more profitable alternatives, and to gradually transfer resources from less profitable to more profitable areas of activities.

3. *Textron's Traditional Acquisition Policy (An Example of a Specific Strategy)*

Textron's policy factors acquisitions with 100% ownership. The following characterisitcs are sought in a company to be acquired:

a. The prospective company should be of significant size and profitable, but not necessarily an industry leader. This will allow for infusion of capital and management to stimulate growth opportunities.
b. Management should be in place. The basic managerial talent must exist in the firm being acquired, since Textron's small headquarters does not have a reservoir of assignable talent. This policy also preserves entrepreneurial spirit in the company being acquired.
c. Ease of entry should be somewhat limited. The business should be characterized as rewarding investment and technology.
d. Manufacturing companies of reasonable size are preferred as acquisitions. Capital intensive firms in major industries (like steel, autos, etc.) are to be avoided.

In the recent history of Textron's acquisitions, there have been

two exceptions to this policy: ARD and Allied Chemical. ARD is wholly owned but it invests in venture capital situations for possible long-range capital gains, insights into new technologies, and stimulus to present Textron companies. ARD contributes both capital and management assistance -- an active association is sought, not just an investment relationship. The Allied Chemical investment represents a participation in energy resource development.

4. *Major Operating Policies*

Some major policy areas related to the operation of the acquired firm are:

a. The basic measure of divisional and corporate performance is return on net worth; it is essential for long-range growth. An acquired firm with an image of industry leadership has no merit in itself if it is not accompanies by a satisfactory return on investment. Whenever appropriate, emphasis should be given to individual product line profitability within a division.

b. Meaningful decentralization is the essence of Textron's operational approach, represented by a small headquarters and with fill operating responsibilities to the divisions. Competent managers are selected and given a high degree of freedom, but, at the same time, uniform accounting systems and corporate controls are used throughout the divisions.

c. Headquarters performs traditional functions that are usually centralized, like financial management and corporate relations. The divisions are in the business of making and selling products, and their managers

can concentrate on business strategy and not be distracted by raising money. Thus, operating managers do what they can do best.

d. Regarding the planning process, the major responsibility of the divisions is to know the businesses they are engaged in, and to lay out their corresponding business strategies. Corporate headquarters provides full support with all the required capital investment to implement satisfactory plans aimed at long-range, superior return on investment.

e. Mutual obligations between corporate headquarters and divisions call for early disclosure of problems, avoidance of surprises, and maintenance of open communication channels.

5. *Acquisitional Availability*

A common form of acquisition in the late 1960's was based on the coexistence of a wide variety of price/earnings ratios. The high P/E firm acquired firms with low P/E ratios and earnings per share increased magically. This is no longer the case since no one has a high P/E anymore, -- the numbers game is over.

Special situations still can exist with firms, private held, or closely held often under family ownership. Companies like Gorham, Talon, and Fafnir approached Textron in search of a "good home", seeking protection against raids.

Another reason usually given for merging is the acquisition of undervalued companies (real or imagined). Acquirers can take form of:

a. Asset stripper. His strategy is based on acquiring a firm, selling off fringes and yet retaining the profitable core: this is the speculator's dream. A true asset stripper cannot run a company, and does

not know the true value of the acquisition or its parts. Occasionally this can be done, more often there is little left to operate.

b. Asset bargain seeker. Companies whose asset values are greater than their stock value are the targets for asset bargain seekers. Although the condition of the company might appear to be good at a first glance, care should be exercised in assessing the true economic value of its assets, since they may be concentrated on obsolete facilities, or they may serve dying markets.

c. Investor willing to build a business. There are many businesses that can be rebuilt by making additional investments and changing the business strategy. Thus Textron acquired Pittron, a foundry that sold large castings by the pound. A change to high quality castings and significant amounts of machining resulted in a profitable company but only after significant investment. At CWC, high investments in environmental protection facilities were needed, but many competing companies failed to recognize these needs. Casting line modernization become the key to another profitable business.

In the case of Bell Aircraft and Textron, the personnel were in place but investment was required to obtain contracts and to reassert technical leadership.

6. *Industries with Low Stock Prices Relative to Assets*

Some possible characteristics of apparently undervalued stocks should be examined. There are some generalized characteristics that tend to be coupled with firms not held in high repute in the market place -- i.e. the low P/E syndrome. The company may be well established and honored in

reputation but its desirability as an acquisition already may be impaired, and seriously, by such factors as:

- High labor content
- Excessive foreign competition
- Cyclicality
- Excessive risk on contracts/projects
- Government customer and governmental regulation problems
- Poor public image (i.e. subject to political arena forces)
- Discouragement of investment
- Low profitability.

Certain industries have more than their share of such companies -- some specific recurring examples include: Foundries, shipyards, government contractors that lack high technological or specialized competencies.

7. *The Possible Special Contribution of a Multimarket Company*

A multimarket corporation can revitalize an acquired company by applying its special strengths. Textron (and any other responsible multimarket company) makes significant contributions in a number of ways.

a. Ability to invest, particularly in critical, core technologies is all important to buidling or revitalizing a company. Investment is essential to growth in a modern society.
b. Responsible bidder to the Government. The single company is exposed to higher vulnerability due to the urgency of winning a bid and its lack of protection against economic cycles.
c. Staying power. Business risk stemming from different sources (regulation, environmental requirements, etc.) may not be manageable to

the smaller firm. A conglomerate provides the base to absorb short-term risks, to meet governmental regulations, and to live with a single contract or product loss situation.

d. Financial stability. Freedom from the economic cycle is attained. Textron has countercyclicality (for example, in the last recession defense and machine tool exports improved). The cyclicality effect does not force cutting R&D expenditures, an essential requisite for a high technology operation. Cas crises can be avoided.

These contributions do not require the existence of synergies or economies of scale, and are independent of them. But they are very real contributions to the acquired firm and have been demonstrated by Textron in diverse industries. Textron has demonstrated its ability to strengthen and build companies.

8. *Textron's Acquisition Policy Today*

Top priorities remain:

a. People development

b. Internal profit growth/refinement of operations

c. Third priority - new initiatives (different objectives at different times) still includes selected acquisitions

Requirements of an acquisition are:

a. Product line for a Division; (fit with an existing business); traditional reasons to sell still apply (family situations, financial limits of growth, diversifying an investment into a listed stock); product-line acquisition remains a continuing interest; opportunities are often identified by Divisions.

b. Stand alone investment; limits of control require bigger building blocks. Requirements of a positive (or at least not significantly negative) influence on earnings per share is a limitation. Textron, an undervalued stock is unwilling to accept significant dilution. Management fit required; tender offers and other techniques of "take-overs" have not been used.

c. Selectivity: Textron is highly selective re: acquisitions. At $2.6B plus sales, $121M profits in 1976; acquisitions must provide potential for improved earnings per share.

VI. *Conglomerates in the Shipbuilding Industry: Impact on Corporate Strategy*

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1. *Introduction*

The objective of this paper is to attempt to determine the impact of conglomerates in the U.S. shipbuilding industry on the corporate strategies of those firms. The corporate strategy of a shipyard will be reflected in the type and size of capital investments it has made in the yard, the number and skills of employees, and the types of vessel for which it has pursued contracts. The assumption made here is that physical investment, workforce, and contracts are part of a conscious, well-conceived decision-making process which -- for the purposes of this paper -- can be considered to be the heart of the implementation of a corporate strategy.

There are two main ways of analyzing the decision making process which produces a corporate strategy. On the one hand, corporate executives could be interviewed and internal company reports and memoranda could be analyzed to determine the type and sequence of events taking place within a firm. Unfortunately, time and research did not permit such a methodology. Instead, a compilation of existing data on the U.S. shipbuilding industry and each of the major yards was analyzed;[1] a corporate strategy was then inferred from the data. Some degree of subjective analysis is used in this methodology and there are various pitfalls with it. The data may be misinterpreted. A short-term dislocation from a long-term strategy may be confused with the long-term strategy itself. For example, a company which has decided to focus on production runs of ULCC's (ultra-large crude carriers) might temporarily perform overhaul work on naval vessels to keep its workforce occupied until the desired tanker contract is secured. Consequently, there is the need to differen-

tiate the long-term strategy from "tactics" which may be used temporarily and may differ from the long-run objectives. The author has communicated with persons in the industry enough to hopefully avoid major errors in using this methodology. It could also be argued that a more accurate view of corporate strategy and implementation might be obtained in some cases by analyzing what actions a company actually took rather than listening to executives state what actions the company planned to take.

2. *The Corporate Decision Making Process*

We assume that we can infer from the actions a shipyard has taken, a corporate strategy that is consistent with those events. Therefore, it is helpful to briefly review the types of steps which must be taken to develop a corporate strategy. Many reports have been written describing the strategic decision making process. In this paper we will refer to the framework described by Uterhoeven, Ackerman, and Rosenblum in Strategy and Organization which is depicted diagrammatically in Exhibit 1.[2]

To complete the seven-step process a shipyard must consider the following factors.

2.1 *Step 1 -- Strategic profile*

The strategic profile for the shipyard consists of three major elements:

- How the shipyard defines its business
- How the shipyard defines its competitive posture
- How the shipyard defines its concept of itself.

Skills / Elements	Identification	Prediction	Evaluation	Innovation	Decision
Strategic profile	Step 1				
Environmental dimensions	Step 2				
Strategic forecast		Step 3			
Company resources	Step 4		Step 4		
Strategic alternatives				Step 5	
Test of consistency			Step 6		
Strategic choice					Step 7

EXHIBIT 1. MATRIX OF DECISION MAKING PROCESS IN DEVELOPING A CORPORATE STRATEGY

Source: Hugo, E. R. Uterhoeven, Robert W. Ackerman, and John W. Rosenblum, Strategy and Organization (Homewood, Ill., Richard D. Irwin, 1973).

Within this step a shipyard must consider the wide range of activities it can perform:

- New construction
- Conversions
- Repair
- Ownership and operation of vessels
- Design and research consulting services
- Manufacture of vessel equipment
- Machining services for outside industries.

The choice of activities influences the type of physical facilities as well as management and workforce which will be needed. Even within a particular activity heading, a large variation is possible. For example,

in the area of new construction, a shipyard must choose between naval and commercial vessels, nuclear or fossil-fueled ships, surface or subsurface (submarine) vessels, and long standardized produced runs or custom-tailored "job-shop" production. Standardized production runs imply an assembly line with steel panel lines and huge cranges, sometimes called Goliath cranes, for large subassemblies. For job-shop production of a very small number of vessels of the same design, such a massive investment in physical facilities is not necessary.

A comparison between naval and commercial vessels shows the naval vesel contains considerably more equipment and personnel to perform many functions in addition to providing transportation. Consequently, a much larger shipyard engineering staff is needed for the more intricate ship designs and the sophisticated weapon systems. The Department of Defense procurement procedures also might require the shipyard to maintain a larger accounting (as well as legal) staff. The choice to provide nuclear propulsion plants requires additional personnel skills and security procedures. The shipyard must also determine the number and location of sites.

The choice of product lines of a shipyard will be influenced by how the shipyard views its competitive posture within the industry. The shipyard must consider its choice of competitive weapons relative to the industry:

- Technological expertise
- Unique physical facilities
- Degree of flexibility
- Degree of specialization
- Skills and efficiency of workforce
- Reputation and relationship of yard with shipowners

- Reputation and relationship of yard with Maritime Administration
- Reputation and relationship of yard with Department of Defense
- Ability to obtain government training grants
- Ability to acquire government surplus property
- Ability to obtain state or local financial aid for yard expansion.

By analyzing its possible activities and competitive posture, a shipyard will arrive at some basic performance goals such as obtaining a certain small percentage of a major segment of the new construction market or obtaining a large percentage of a carefully-defined market niche.

2.2 *Step 2 -- Environmental dimensions*

A shipyard's strategy will necessarily be influenced by how it views its external environment. In identifying the conditions prevailing in the external environment, four major dimensions typically must be considered:

- Political, social, and economic dimension
- Market dimension
- Product and technological dimension
- Competitive dimension

In analyzing these dimensions, a shipyard must consider the following types of factors:

Political, social, and economic dimensions

- Congressional appropriations for Navy shipbuilding
- Congressional appropriations for merchant marine subsidies
- Federal subsidies to train unemployed
- Federal disposal of former government shipyards
- Domestic subsidies to shipbuilders and shipowners

- Foreign subsidies to shipbuilders and shipowners
- Domestic tax regulations for shipbuilders and shipowners
- Foreign tax regulations for shipbuilders and shipowners
- Navy fleet policy
- Federal maritime policy (including cargo preference)
- Arab oil embargo
- Worldwide trade and economic conditions.

Market dimensions

- Naval construction -- types and sizes
- Subsidized commercial construction -- types and sizes
- Unsubsidized commercial construction -- types and sizes.

Product and technological dimensions

- Supersized commercial vessels (tankers and dry bulk carriers)
- Cryogenic vessels (LNG, LPG, etc.)
- Unitized cargo vessels (containerships, barge carriers, etc.)
- Sophisticated naval weaponry (missiles, etc.)
- Mass production shipbuilding techniques (panel lines, Goliath cranges, etc.).

Competitive dimensions

- Ability to compete against factors outside the industry
- Ability to compete within the industry.

It should be noted that due to its high cost structure, the U.S. shipbuilding industry does not generally compete directly with foreign shipyards in the world market. With few exceptions, a vessel constructed in a U.S. yard for international commercial trade requires subsidy payments from the U.S. government to equalize the costs of construction and possibly operation relative to foreign competitors.

A vessel operating in the U.S. domestic trades, such as coastal,

intercoastal, and non-contiguous trades (i.e. Puerto Rico, Alaska, Hawaii, etc.) does not require such subsidies since foreign-built or foreign-operated vessels are excluded by law from these trades.

2.3 *Step 3 -- Strategic forecast*

A ship must consider not only the existing environmental dimensions but also must make the necessary strategic judgments to forecast the environmental trends. Consequently, such an exercise must consider the following aspects.

- Future vessel types:
  - High-speed vessels (hydrofoil, hovercraft, etc.)
  - Nuclear-powered commercial vessels
  - Commercial submarine tankers
  - Larger sizes of existing vessel types
  - Oceangoing integrated tug-barge combinations
- Future naval shipbuilding programs
- Future federal maritime programs
- Future maritime policies of foreign governments
- Future worldwide economic conditions.

2.4 *Step 4 -- Company resources*

The strategy of a shipyard may be constrained by its resources. Key considerations here are:

- Physical facilities (including geographic locations)
- Technological expertise
- Management expertise
- Labor resources

- Financial resources

2.5 *Step 5 -- Strategic alternatives*

Assuming a shipyard has decided to stay in business (and ignoring the possibility of diversifying into non-related industries), the types of strategic alternative the shipyard faces are shown below.

- Maintain the status quo (i.e., change nothing)
- Invest in new equipment (i.e., such as penl lines, Goliath cranes, etc.)
- Expand (or reduce) shipyard locations
- Change the degree of market specialization
- Change the degree of vertical integration (i.e., own and/or operate vessels).

2.6 *Step 6 -- Test of consistency*

In simple terms, the shipyard must now relate what the firm is able to do with respect to its resources to what is possible in its external environment. Consequently, this step relates the corporate strengths and weaknesses to the environmental opportunities and threats. The test of consistency analysis will result in the final step of the process, the determination of the strategic choices.

2.7 *Step 7 -- Strategic choice*

This step involves a number of key choices which periodically confront the shipyard:

- A tradeoff between maximizing opportunities and minimizing risk

- The timing of strategic moves based on anticipated changes
- An assessment of the potential competitive confrontation which may result from strategic action.

The strategic choices a shipyard makes may have economic consequences for years to come. A decision to concentrate solely on one particular market segment of vessel type might maximize potential profit but also maximize risks of such events as changes in federal maritime policy, reductions in naval construction appropriations or a worldwide economic downturn. The timing of such factors as new investments or development of new vessel designs by the shipyard will also be critical decisions. The shipyard must also consider the reaction of its competition to its strategic choices. If the development of a new ship design is immediately followed by similar actions on the part of other shipyards, any competitive advantage will be short-lives. If a major investment in new facilities triggers similar events by competitors, then an anticipated competitive advantage might instead result in an exacerbation in industry overcapacity.

3. *The Role of the Conglomerates*

This research effort is complicated by the fact that we wish not only to hypothesize the corporate strategies of major private shipyards but also hypothesize the role of the conglomerate in this decision making process. For the purposes of this discussion, we will adopt a definition of the term "conglomerate". We will use the definition of J. Dean in his paper "Causes and Consequences of Growth by Conglomerate Merger: An Introduction", Conglomerate Mergers and Acquisitions: Opinion and

Analysis (St. John's University Law Review, Vol. 44, 1970). Dean classifies all forms of acquisitions as either horizontal, vertical, or conglomerate. Broadly defined, horizontal acquisitions involve companies that are direct competitors; typically a horizontal acquisition rounds out a company's product line by increasing the line of goods sold to its customers. Vertical consolidations involve companies with a buyer-seller relationship; a vertical acquisition builds the company's capabilities either "forward" towards its markets or "backwards" toward the source of supply. Conglomerate acquisitions as mergers are those that involve neither horizontal nor vertical acquisitions; the conglomerate category describes all other consolidations and can be thought of as unrelated acquistions.

If we apply this definition to the major private shipyards as shown in Exhibit 2, we see that we have many different classifications. While six of the thirteen yards are described as conglomerates, note that divisions of these companies are related to the shipyard activities. For example, at Tenneco, LNG ships are under contract at Newport News to transport gas for Tenneco pipeline operations. At Ogden, LNG ships are under contract at Avondale to be operated by the shipping arm of Ogden. Note that all shipyards attempt, in varying degrees, to aid the financing of ships to be built in their yards. Exhibits 3 and 4 show divisional profiles of the parent corporations of the shipyards. Todd is the only yard without major activities not directly related to shipbuilding. We wish to determine not only the impact of the conglomerate structure on corporate strategy but also the impact of the other corporate structures described by non-shipbuilding classifications.

There are, of course, many factors other than corporate organization structure which affect corporate strategy. In addition to different perceptions of future merchant and naval construction market, each firm

Shipyard	Parent Corporation	Classification*
Avondale Shipyards	Ogden Corporation	Conglomerate
Bath Iron Works	Congoleum Corp.	Conglomerate
Electric Boat Div.	General Dynamics	Aerospace and Defense Corp.
FMC Shipbuilding	FMC Corporation	Conglomerate
Ingalls/Litton Shipyards	Litton Industries	Conglomerate
Lockheed Shipbuilding and Construction	Lockheed Aircraft	Aerospace and Defense Corp.
National Steel and Shipbuilding Co. (NASSCO)	Kaiser Industries**	Conglomerate
Newport News Shipbuilding and Drydock Co.	Tenneco Inc.	Conglomerate
Quincy Shipbuilding Division	General Dynamics	Aerospace and Defense Corp.
Seatrain Shipyard	Seatrain Lines	Shipping Corp.
Sparrows Point Shipyard	Bethlehem Steel Corp.	Steep Corp.
Sun Shipbuilding	Sun Oil Co.	Oil Corporation
Todd Shipbuilding	Todd Shipyards Inc.	Shipbuilding Corporation

EXHIBIT 2. MAJOR U.S. SHIPBUILDER CORPORATE CLASSIFICATIONS

* Classifications in accordance with the definition of conglomerate discussed and adopted previously

** NASSCO is in dual ownership of Kaiser Industries (50%) and Morrison-Knudson, Inc. (50%) but management and operational control lies with Kaiser Industries.

Source: Kavanagh, G. L., "The United States Shipbuilding Industry and Influences of Conglomerates", Technical Report No. 1, Sloan School of Management, M.I.T., June 1977.

	% 1975 Revenues
Tenneco Inc. (Newport News Shipbuilding & Drydock Co.)	
Manufacturing	
Construction and Farm Equipment	22
Auto Components	5
Shipbuilding	11
Oil Operations	26
Pipeline Systems	21
Chemicals	6
Packaging	7
Land Use	3
Litton Industries (Ingalls/Litton Shipbuilding)	
Business Systems and Equipment	30
Defense, Commerical and Marine Systems	
Navigational & Control Systems	7
Commercial & Data Systems	7
Marine Engineering & Production	22
Industrial Systems & Equipment	19
Professional Services and Equipment	15
Ogden Corp. (Avondale Shipyards)	
Metals (Recycling, scrap, smelting, refining)	40
Marine Construction	25
Shipping	6
Marine Terminals	6
Food Products	10
Food Service	10
Leisure Service	3
FMC Corporation (FMC Shipyard)	
Machinery (Petroleum & Fluid Control, Materials handling, construction & mining, food & agriculture mach., environmental, power transmission, rail & marine equip., defense equip.)	59
Chemicals	41
Congoleum Corp. (Bath Iron Works)	
Home Furnishings	70
Shipbuilding	25
Industrial Products	5

	% 1975 Earnings
Kaiser Industries (NASSCO)	
Kaiser Steel	32
Kaiser Engineering	5
Aerospace & Electronics, Kaiser Broadcasting, Sand & Gravel, Shipping, Other	1
Equity in Earnings from unconsolidated holdings:	
Aluminum	34
Kaiser Resources	19
Hamersely Holdings	7
Kaiser Cement & Gypsum	1
NASSCO	1

Data source: Corporate Annual Reports

EXHIBIT 3. BRIEF SHIPBUILDING CONGLOMERATE DIVISIONAL PROFILES

Source: Kavanagh, G.L., "The United States Shipbuilding Industry and Influences of Conglomerates", Technical Report No. 1, Sloan School of Management, M.I.T., June 1977.

	% 1975 Revenues
Lockheed Aircraft (Lockheed Shipbuilding and Construction Co.)	
Aircraft	64
Missile, Space Propulsion and Electronics	34
Shipbuilding and Construction	2
Seatrain Lines (Seatrain Shipyard)	
Freight and Charter	56
Shipbuilding	44
Sun Oil Co. (Sun Shipbuilding)	
Refined Products	76
Crude, Condensate & Synthetic Crude	11
Natural Gas	6
Related Products and Services	5
Shipbuilding and Repair	2
Todd Shipyards Inc. (Todd Shipyards)	
Marine Construction	94
Machinery Manufacture	6
General Dynamics Inc. (Quincy & Electric Boat Divisions)	
Military Aircraft	12
Commercial Aircraft	4
Tactical Missiles	9
Space Systems	6
Marine Construction and Repair	35
Material Service and Resources	16
Telecommunications	10
Data Products	2
Other	6
Bethlehem Steel Corp. (Sparrows Point Shipyard)	
Divisions not listed - Shipbuilding approximately 1%	

EXHIBIT 4. BRIEF SHIPBUILDING CORPORATE DIVISIONAL PROFILES

Source: Kavanagh, G. L., "The United States Shipbuilding Industry and Influences of Conglomerates", Technical Report No. 1, Sloan School of Management, M.I.T., June 1977.

has individual traits such as size, number of yards, equipment and production layout, personality of general manager of yard (as well as of corporate parent executives), and experience and skills of shipyard management and workforce.

4. *Role of Individual Yards*

Exhibit 5 gives a brief description of each yard with its employment level. Note that three of the yards have employment levels over 23,000 (the Litton East and West Bank yards are counted as one), while all the rest employ less than one-third this number. At the low end of the spectrum, five yards employ between 1,100 and 2,400. Six yards employ between 3,300 and 6,800. Exhibit 6 shows whether each yard is currently involved in merchant and/or naval vessel construction. Exhibit 7 describes facilities improvement programs contemplated and their present states.

It is helpful at this point to make a few basic assumptions concerning corporate strategy. One can assume that any yard with a labor force of more than 1,000 people will try to focus on new construction rather than on repair or conversion. Typically, a yard would prefer to continually build ships of the same type in order to maintain and train its labor force and benefit from "learning curve" experience; this assumption is limited by the ability of the yard -- in terms of equipment and layout -- to perform a standardized production program. A yard would prefer the design of the standard ship it constructs to maximize the use of the yard. Generally, this means that the ship design should conform to the maximum physical constraints of the building way or graving dock. (In cases with

EXHIBIT 5. CONSTRUCTION CAPABILITIES, FACILITIES AND CURRENT EMPLOYMENT OF THE MAJOR U.S. SHIPYARDS

Avondale Shipyards, Inc.

Construction Capability: Ships up to 1,200 feet in length. Has built merchant vessels of all types, Navy destroyers, Coast Guard cutters, and large drill rigs.

Facilities: In one building way, two vessels up to 960 feet by 176 feet can be constructed simultaneously. In the other shipway, three vessels can be in different stages of construction simultaneously (or up to six vessels if total lengths of each pair do not exceed 1200 feet). The largest of Avondale's two floating drydocks can accomodate a ship 960 feet by 210 feet.

Current Employment: 6,700.

Bath Iron Works Corp.

Construction Capabilities: Ships up to 700 feet in length. Experienced in construction of RO/ROs, containerships, tankers, Navy destroyers, guided missile frigates and patrol frigates.

Facilities: Three large building ways, one large floating drydock, and a steel floating partial drydock for bow sonar dome installation. In 1974, completed a $14 million plant modernization program.

Current Employment: 3,350.

Bethlehem Steep Corp. -- Sparrows Point Yard

Construction Capabilities: Ships up to 1200 feet by 192 feet. During the past two decades, specialized in series construction of standard dizes of tankers, and also freighters and containerships. Since recent facilities expansion program, has also delivered two of a series of five 265,000 DWT VLCC's.

Facilities: A large building basin (maximum ship size 1200 feet by 192 feet) and four conventional inclined shipways.

Current Employment: 4,090.

FMC Corp. -- Marine and Rail Equipment Division

Construction Capability: Ships up to 700 feet by 100 feet. In 1972, the yard entered the market for large seagoing ships by signing a contract for construction of six 35,000 DWT tankers.

Facilities: One side-launching shipway (maximum ship size 700 feet by 100 feet). Drydocking and most outfitting is done in the nearby Port of Portland facility.

Current Employment: 1,930.

General Dynamics Corp. -- Electric Boat Division

Construction Capability: Ship up to 690 feet in length. E.B. specializes in the construction and overhaul of nuclear-powered submarines for the Navy. Current construction involvement is in the SSN-688 Los Angeles and Trident class submarines.

Facilities: Four covered submarine building ways, two dry docks and a floating drydock are used for SSN construction. A new Land Level Construction Facility consisting of an inshore erection area, an outboard

EXHIBIT 5. Continued.

erection area, and a graving dock and pontoon facility is near completion for use in construction of the new SSN and Trident submarines. A separate steel processing facility located at Quonset Point supports the construction effort.

Current Employment: 21,600 (Groton), 4,990 (Quonset Point).

General Dynamics Corp. -- Quincy Shipbuilding Division

Construction Capability: Ships up to 1,000 feet by 144 feet. From 1964 to 1973, delivered 18 ships to the Navy including two ammunition ships, four nuclear powered submarines, six replenishment oilers, two submarine tenders and four LST's. Prior to that time Quincy had built the first nuclear powered surface ship. In 1973 ceased building Navy ships. Currently engaged in construction of barge-carrying ships and 125,000 cubic meter LNG tankers.

Facilities: Five large graving docks and all necessary supporting facilities. In 1975, the Quincy yard completed a $40 million improvement and modernization program for construction of the LNG tankers.

Current Employment: 4,370.

Litton Systems, Inc. -- Ingalls Shipbuilding Division

Construction Capability: Ships up to 830 feet by 170 feet. Experienced builder of cargoliners, containerships and tankers, as well as Navy combatants and auxiliaries. Nuclear submarines have also been constructed in the past.

Facilities: The East Bank yard has six conventional inclined building ways and a small graving dock. The West Bank yard is equipped for series production using modular construction methods. The launch pontoon (floating drydock) is capable of taking a ship 830 feet by 170 feet.

Current Employment: 23,490.

Lockheed Shipbuilding and Construction Co.

Construction Capability: Ships up to 700 feet by 100 feet. In the past has specialized mainly in Naval vessels; however, recent construction includes RO/RO and bulk carriers in addition to Coast Guard icebreaker and submarine tenders.

Facilities: Three inclined building ways suitable for construction of large ships and three large floating drydocks.

Current Employment: 2,000.

National Steel and Shipbuilding Co.

Construction Capability: Ships up to 1,000 feet by 170 feet. Experienced in building both Naval and commercial vessels, having in the 1970's completed 17 Navy LST's, five large cargoliners, two OBO's, four 38,300 DWT tankers, and five 89,700 DWT tankers.

Facilities: One large building basin, three large inclined shipways, a small floating drydock and a large graving dock. In 1975, NASSCO completed a $20 million expansion and modernization program.

Current Employment: 6,120.

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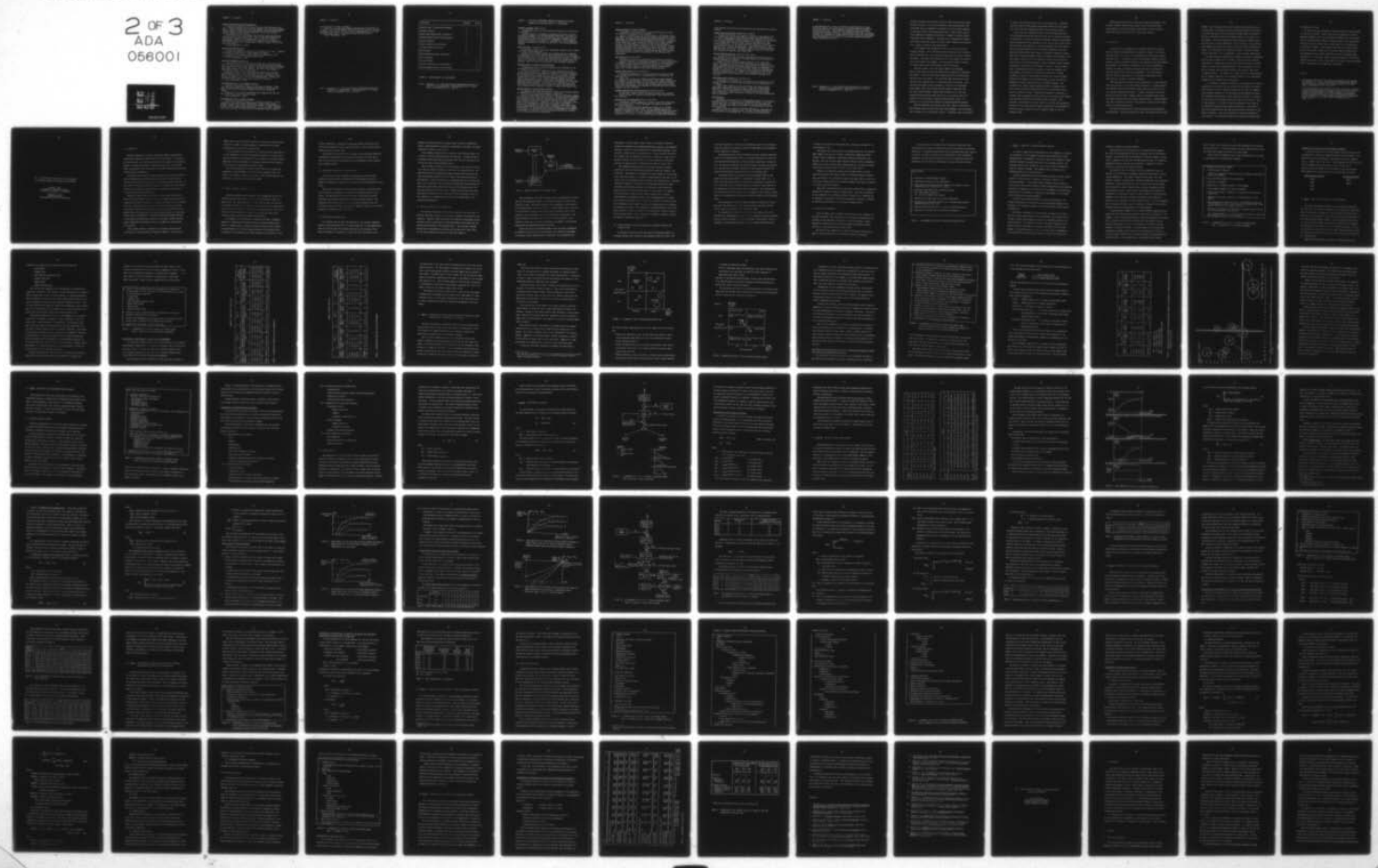

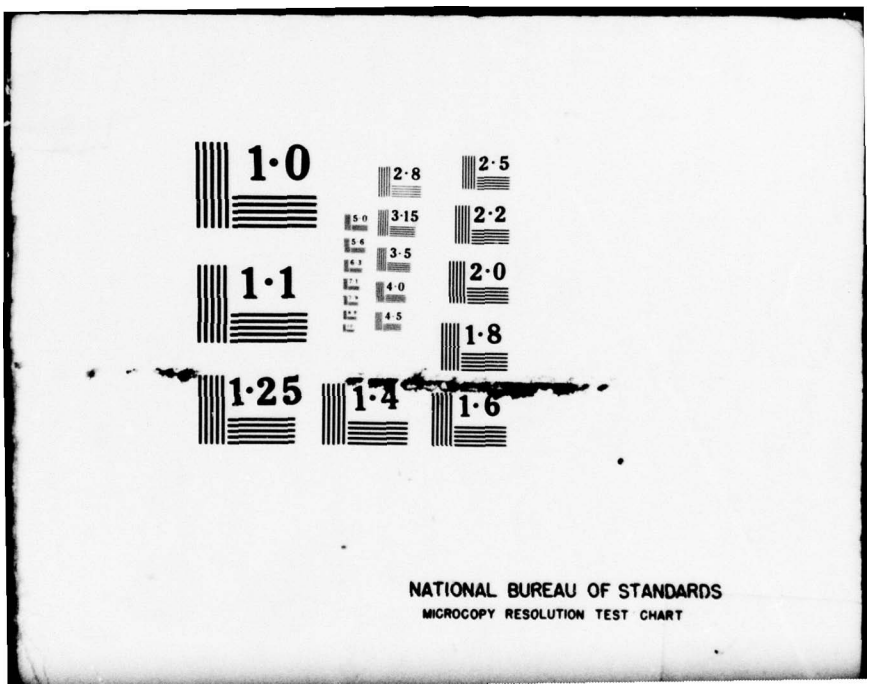
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NATIONAL BUREAU OF STANDARDS
MICROCOPY RESOLUTION TEST CHART

EXHIBIT 5. Continued.

Newport News Shipbuilding and Drydock Co.

Construction Capability: All types of ships up to 1600 feet by 240 feet. A major producer of both Navy and merchant ships including passenger liners, tankers, 125,000 cubic meter LNG tankers, nuclear powered guided missile cruisers, nuclear powered submarines, and all of the Navy's nuclear powered aircraft carriers.

Facilities: Four large building ways and three large graving docks presently used for ship construction. Also, three small graving docks for overhaul, conversion, and repair work. In 1976, at a cost of approximately $180 million, Newport News completed its new commercial yard centered around a new building basin 1,600 feet long, 250 feet wide, and 44 feet deep.

Current Employment: 23,888.

Seatrain Shipbuilding Corp.

Construction Capability: Ships up to 1,094 feet by 143 feet. Seatrain specializes in construction of large tankers and barges.

Facilities: Two building basins capable of accomodating a ship 1,094 feet by 143 feet and a smaller graving dock.

Current Employment: 1,480.

Sun Shipbuilding and Drydock Co.

Construction Capability: All types of ships up to 1400 feet by 195 feet. In recent years, has specialized in RO/RO trailer ships and medium size tankers of its own design. Recently has begun construction of 130,000 cubic meter LNG and 118,300 DWT tankers. Sun has not been engaged in construction of Naval ships in many years.

Facilities: Three large inclined building ways plus a new level shipbuilding platform on which two halves of a ship as large as 1400 feet by 195 feet can be constructed simultaneously or two smaller ships, 700 feet in length or less, can be built simultaneously. Sun has one floating drydock suitable for a ship 1,100 feet by 195 feet.

Current Employment: 4,060.

Todd Shipyards Corp. -- Los Angeles Division

Construction Capability: Ships up to 800 feet by 84 feet. Since 1960, has built guided missile frigates and destroyer escorts for the Navy, as well as three break bulk cargo ships and four 25,000 DWT tankers.

Facilities: Two inclined shipbuilding ways (maximum ship size 800 feet by 84 feet) and two floating drydocks.

Current Employment: 2,350.

Todd Shipyards Corp. -- Seattle Division

Construction Capability: Ships up to 550 feet by 96 feet. In 1952, embarked on a new construction program which included tugs, barges, ferries, dredges, pile drivers, and floating cranes. In 1964, completed a series of four guided missile destroyers. In the late 1960's and early 1970's was lead yard for construction of 26 destroyer escorts, seven of

EXHIBIT 5. Continued

which were built in Todd -- Seattle.

Facilities: One end-launch shipway (maximum ship size 550 feet by 96 feet). Also a double shipway 450 feet by 131 feet on which two ships with beams of 50 feet or less can be built simultaneously, or one ship of 60-foot beam or more. The yard has three floating drydocks.

Current Employment: 1,130.

Source: Kavanagh, G. L., "The United States Shipbuilding Industry and Influences of Conglomerates", Technical Report No. 1, Sloan School of Management, M.I.T., June 1977.

Shipbuilder	Merchant	Naval
National Steel & Shipbuilding (NASSCO)	x	x
Avondale Shipyard	x	
Newport News Shipbuilding & Drydock Co.	x	x
Bethlehem Steel-Sparrows Point Shipyard	x	
Seatrain Shipyard	x	
General Dynamics-Quincy Shipyard	x	
Sun Shipbuilding & Drydock Co.	x	
FMC Shipyards	x	
Todd-Shipyards-San Pedro and Seattle	x	
Litton Shipyards		x
Bath Iron Worlds	x	x
Lockheed Shipbuilding & Construction Co.		x
General Dynamics-Electric Boat Division		x

EXHIBIT 6. MAJOR PRIVATE U.S. SHIPBUILDERS

Source: Kavanagh, G. L., "The United States Shipbuilding Industry and Influences of Conglomerates", Technical Report No. 1, Sloan School of Management, M.I.T., June 1977.

EXHIBIT 7. FACILITIES IMPROVEMENT PROGRAMS CONTEMPLATED AND THEIR PRESENT STATUS FOR EACH MAJOR U.S. SHIPBUILDER

Avondale Shipyards (Ogden Corp.)

Contemplated: Plans for large drydock and methods for construction of LNG ships.

Status: Avondale is spending an estimated $42 million in capital improvements primarily for LNG construction facilities. The three- to five-position shipway, used for the destroyer escort program, has been reconstructed to two large positions to accommodate the LNG program. Additional buildings and equipment to supplement the yard's mechanized handling and fabrication systems are also part of the current expansion program.

Bath Iron Works (Congoleum Inc.)

Contemplated: General facilities improvement program, steel storage, crane ways, and building ways.

Status: The $14 million modernization program has been completed. The upgrading of facilities included the reconstruction of two shipways to accommodate ships of 700 feet in length and 130 foot beam, the installation of a 200-ton level luffing crane with sufficient outreach to erect units on all shipways, and new steel fabrication and assembly shope and equipment that will duoble the shipyard's steel throughput capacity.

Bethlehem Steel Co. Sparrows Point Shipyard

Contemplated: General facilities expansion and upgrading for the construction of VLCC ships.

Status: To provide the capability for the construction of VLCC vessels, Sparrows Point has completed a significant facilities improvement program totalling approximately $30 million. The major components of this modernization program are a new large building basin for the construction of vessels up to 300,000 deadweight tons and a new panel shop for fabrication of steel. Other recent improvements include a numerically-controlled gas-cutting machine and automated plate and shape blasting/painting equipment. Since the basin is expected to be used solely for new construction, the yard does not have a drydocking facility; therefore repair capacity is limited to topside and inboard work.

General Dynamics -- Electric Boat Division

Contemplated: New level land erection facility and launching complex for SSN 688 and Trident nuclear submarine construction.

Status: An approximately $150 million facilities improvement program is in process at the Electric Boat Division. The Groton site improvements are principally inthe Land Level Construction Facility (LLCF) consisting of an inshore erection area; an outboard erection site; and a graving dock and pontoon facility. Completion of the LLCF is scheduled for late 1976. Other improvements at Groton are the nuclear trade support building, the graving dock trade support building, and the major components assembly building, of which most are scheduled for full occupancy in early 1976. At the Quonset Point facility, improvements are underway in buildings to be used for steel processing and fabrication, housing various shops and material storage areas.

EXHIBIT 7. Continued.

General Dynamics -- Quincy Shipyard

Contemplated: Construction of two new building basins and other facilities for construction of LNG vessels.

Status: To provide the tools and facilities to efficiently build LNG tankers in series production, General Dynamics has completed a major improvement and modernization program totalling $40 million, of which approximately $23 million has been expended since mid-1974. In addition to the conversion of two conventional sliding ways to large building basins, other improvements at Quincy include: a steel fabrication facility, materials handling equipment, a 250-ton transporter, a plate cleaning and blasting facility, automated steel flame planer, stripper and cutter equipment and a 1200-ton Goliath crane, the largest in the western hemisphere, installed for transferring the spherical LNG tanks from barges on which they will be delivered to the LNG ships under construction.

FMC Shipyard (FMC Corporation)

Contemplated: Facilities modernization for modular construction.

Status: To expand its shipbuilding capability to include construction of oceangoing ships, FMC has expended $5.7 million for the acquisition of 23 acres of land adjacent to its existing facility, the purchase of a 200-ton whirley crane, new welding equipment, a thousand-ton press, and a computer-operated steel plate cutting machine.

Ingalls Shipbuilding (Litton Industries)

Contemplated: Completion of the new automated west bank yard and a new nuclear overhaul facility and modernization of the piers at the east bank yard.

Status: The new 611 acre advanced automated west bank shipyard was completed for approximately $130 million. This complex includes the first combat systems land-based test and integration facility provided by a private shipbuilder. The east bank nuclear support and pier facilities have been modernized and expanded and improved materials handling equipment has been installed.

Lockheed Shipbuilding and Construction (Lockheed Aircraft)

Contemplated: Planned shipway upgrading and added crane capacity.

Status: Shipway #21 expansion and additional crane facilities have been completed.

National Steel & Shipbuilding (Kaiser Industries)

Contemplated: General expansion of present shipbuilding facilities for the construction of 150,000 deadweight ton tankers and 123,000 cubic meter LNG ships.

Status: During 1975 NASSCO expended $13 million on its current expansion and modernization program. Capital expenditures of $8.6 million are planned for 1976. In the new graving dock, NASSCO can produce ships up to 1000 feet by 170 feet, compared to a previous maximum size of 900 feet by 106 feet. A new outfitting pier and additional mechanized

EXHIBIT 7. Continued.

steel handling and fabricating facilities are also included in the current program.

Newport News Shipbuilding & Drydock Co. (Tenneco)

Contemplated: Planned new commercial shipyard of approximately 150 acres with new graving dock and accessory platen and crane facilities.

Status: Approximately $180 million has been committed for the development of a new commercial shipyard scheduled for completion in 1976. A new building basin 1600 feet long, 250 feet wide and 44 feet deep is near completion. In this basin one ULCC or large LNG carrier and part of a second can be built simultaneously. Supporting platens, a steel assembly shop, a 900-ton Goliath gantry crane, and two outfitting berths have also been constructed. Additional support facilities for this new yard include more computers and storage areas.

Seatrain Shipbuilding Corp. (Seatrain Lines, Inc.)

Contemplated: General facilities improvement and modernization of large portions of the former New York Naval Shipyard for construction of 225,000 deadweight ton tankers.

Status: In 1969, Seatrain leased facilities of the former New York Naval Shipyard for build 225,000 DWT tankers on an assembly-line basis. Although the facilities that existed in 1969 included three large fabricating buildings and two massive graving docks to accommodate a maximum ship size of 1094 feet by 143.5 feet, Seatrain has expended $40 million on reactivation. The emphasis in this program has been mechanization and automation which is widely used throughout the yard in its steel processing, module operations, and a prototype adjustable work platform.

Sun Shipbuilding & Drydock Co. (Sun Oil Co.)

Contemplated: Construction of a new facility for construction of LNG tankers or ships up to 400,000 DWT and general facility improvements in its support.

Status: When completed in 1976, the current $42 million capital improvement program will provide Sun with a new level "shipbuilding Platform", a two-section floating drydock capable of lifting 70,000 tons, a 1100 foot outfitting pier, a new plate burning facility and other shipbuilding support facilities. Portions of the new building basin have been delayed.

Todd Shipyards

Contemplated: Construction of a new shipyard adjacent to the existing Galveston facility for construction of 380,000 dwt vessels, land level construction site, and large floating drydock with new launching facilities. Expansion of shipways, new cranes, and modernization of the San Pedro facilities.

Status: Todd, as a result of financial difficulties, has halted all expansion plans at the Galveston site. All that has been completed is the purchase of the adjoining land. No construction facilities exist

EXHIBIT 7. Continued.

at the Galveston site. Also, as a result of cancellations for eight 89,700 dwt tankers, has scaled down its facilities expansion program at their San Pedro yard. The rebuilding and enlarging of its two shipbuilding ways has been halted; but the company is completing the other aspects of the program, including a semi-automated panel line, improvement of heavy lift capabilities, outfitting and related production improvements. These improvements will be needed for the recently awarded Navy patrol frigate shipbuilding contract.

Source: Kavanagh, G. L., "The United States Shipbuilding Industry and Influences of Conglomerates", Technical Report No. 1, Sloan School of Management, M.I.T., June 1977.

extremely limited yard facilities, vessels of half this constraint might be more practical.) We can also assume that yards employing more than 23,000 must have the capability to dominate one or more market segments or otherwise control a particular market niche. Yards without a particular competitive strength will be forced to compete in several markets to maintain their flexibility. Similarly, we can assume that a company with several yards must compete in several market segments and activities (i.e., repair, conversion, new construction).

If we compare these assumptions to the "real world" we find the following results. All of the major yards are involved in new construction and typically try to get follow-on construction for ships of identical design. The larger yards generally do not even compete for construction of the smaller ship designs. Such work might preclude a contract for larger vessels better utilizing the yard's facilities.

The three largest yards have unique competitive advantages. Electric Boat builds only nuclear-powered naval submarines and dominates this market. (Only two other yards, Newport News and Litton East Bank, have even built such ships.) The Litton West Bank yard was built from scratch as an automated yard for standardized ship construction. With the naval procurement policies changing to long runs of standardized ship designs, Litton has successfully made several competitive bids for naval vessel packages. Newport News currently is the only yard producing nuclear-powered naval vessels and is the only yard with the capability of constructing a nuclear-powered aircraft carrier. In addition, it is the only yard capable of building 390,000 DWT tankers.

Todd and Bethlehem, with several yards each, compete in markets for many different types of vessel (and also other equipment, such as drilling rigs or barges) over a wide range of sizes. In addition, they are involved

in repair and conversion work as well as new construction. Bethlehem has built several 265 DWT tankers (only Newport News can build larger ones) while Todd has attempted production runs of smaller tankers.

Other yards have attempted to carve out various marketing niches. Sun Shipbuilding orders long lead-time items, such as turbines and gears, on speculation. In cases, the yard has even built vessels on speculation. These procedures have the advantage that the yard can often offer earlier delivery dates than competitors. This strategy works best when government contracting procedures are not involved; consequently, the yard generally builds neither naval vessels or subsidized commercial vessels. While these conclusions greatly restrict the market left available to the yard (mainly vessels for the U.S. domestic trades), Sun has done very well within this well-defined market. General Dynamics, Quincy Division pioneered the construction of LNG vessels in the U.S. With an investment in engineering R&D and an investment in some new equipment, the yard managed to specialize in LNG carrier construction. Seatrain attempted to pioneer in large tanker construction by using the former Brooklyn Naval Shipyard, and government grants to train the hard-core unemployed to build a production run of 225,000 DWT tankers. The collapse of the tanker market following the OPEC oil embargo and oil price increase had severe detrimental effects on the Seatrain yard as well as on other U.S. yards. Avondale has attempted to capitalize on favorable labor agreements and lower labor costs to perform several multi-ship construction contracts of different types of vessels. FMC, physically constrained in the size of ship it can build, has attempted to specialize in the construction of smaller tankers that could possibly be be used as product tankers in the U.S. domestic trades or the U.S.-Caribbean trade.

Medium-sized yards without a particular competitive advantage, such as Bath or NASSCO, typically stay active in both naval and merchant vessel markets and have constructed a wide range of vessels (although NASSCO has recently concentrated on a long run of tankers).

5. *Conclusions*

In many cases the conglomerate (or related acquisition) structure aids the shipyard in implementing its corporate strategy. Todd is the only yard which is not a part of a conglomerate or diversified organizational structure. In addition, Todd is the only major shipyard that was unable to achieve substantial progress on its announced facilities improvement program. Even during the downside of the cyclical shipbuilding business the larger, diversified shipyards were able to maintain the cash flow necessary for facilities improvement. These facts imply a definite financial advantage to the diversified organization yards, particularly in the face of economic downturns.

Some yards maintain a buyer or seller relationship in some instances with other divisions of their diversified corporation. An Ogden Corporation subsidiary may own and operate vessels built at Avondale, such as in a currently proposed LNG project. A Tenneco subsidiary will own and operate LNG carriers built at Newport News in a proposed project which will supply Algerian LNG to the Tenneco pipeline system. General Dynamics will hold a 40% equity position in two vessels to be built at the Quincy yard for a proposed LNG project.

The seller relationships the yards have given them an advantage in the marketplace. Bethlehem yards have a buyer relationship with the steel

company. One would assume that benefits would also be gained from such a relationship. The unique strategy of Sun Shipbuilding in the ordering of turbines and gears as well as actually building ships on speculation would not be possible without the financial support of the parent, the Sun Company. The yard's "cash-rich" parent has ended up owning vessels more than once (at least temporarily). In one instance, a new containership company was started with service between the Pacific Northwest and Alaska. Sun Shipbuilding has apparently achieved a relatively extreme seller relationship -- to its advantage -- with its parent organization.

The yards previously classified as aerospace and defense corporations, Electric Boat, Lockheed, and G.D. Quincy, as well as Litton, which was classified as a conglomerate, all get some benefits from other divisions relative to their naval shipbuilding work. This aid probably is in the form of technical and procurement expertise (and possibly legal skill in claims disputes). In addition, G.D. Quincy was able to take advantage of the cryogenic expertise of its aerospace partners in the engineering research for its construction of LNG vessels.

It is difficult to separate the benefit the conglomerate (or related acquisition) structure has for the shipyard with the impact the diversified structure has on the corporate strategy of the yard. For example, while cryogenic engineers at G.D. aerospace divisions helped the Quincy yard implement their LNG plans, these divisions had little or no impact on the actual decision making process resulting in the decision to start the LNG program. In the case of facilities expansion, there seems to be significant impacts from the parent corporations. The decision to build the automated Litton West Bank yard was heavily influenced by the parent corporation. Also, in the instance of facilities expansion at other yards, it is questionable whether all would have proceeded, given

the experience of Todd.

Sun may be the only yard where the ongoing corporate strategy depends on the aid of the parent. Other yards, with the exception of facility expansion programs, seem to have corporate strategies which are typically aided by the diversified corporate structure; however, this organization structure cannot be proven to have a great impact on the determination of corporate strategy. It also appears that there are no major differences in this respect between these diversified forms classified above as conglomerates versus others classified as various non-shipbuilding corporations. In conclusion, while the potential exists for diversified corporate structures to have a major impact on shipyard corporate strategy, there is limited proof to document such occurrences.

Footnotes

1 All numerical data used in this paper was compiled by Gary Kavanagh and included in his report "The United States Shipbuilding Industry and Influences of Conglomerates", Technical Report No. 1, Sloan School of Management, M.I.T., June 1977.

2 For recent writings in this general topic area, the reader is referred to the following two papers by Arnoldo C. Hax and Nicolas S. Majluf: "Towards the Formalization of Strategic Planning -- A Conceptual Approach" (Technical Report No. 2) and "A Methodological Approach for the Developing of Strategic Planning in Diversified Corporations" (Technical Report No. 3), Sloan School of Management, M.I.T., August 1977.

VII. A Methodological Approach for the Development of Strategic Planning in Diversified Corporations

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1. *Introduction*

Strategic planning is a process essentially aimed at maintaining a viable match between the organization and the environment. In the case of business firms, this process is focused in the selection of a balanced mixture of products and markets. Firms are looking for a comfortable niche that preserves their survivability even when confronted with vigorous actions taken by competitors.

Business firms consider strategic planning as the process of consolidating and improving the firm's competitive position in the market by reallocating resources from less to more profitable business ventures. In the pursuit of this end, firms will change the composition of the current product mix by adding new product-markets, expanding existing ones, or divesting from old ones (Ansoff [3]).

Except for those firms which operate in very stable markets with products having extremely long life cycles, the whole organization has to engage in the process of finding, structuring, and exploiting new ventures. There are strong incentives for business firms to push their existing capabilities towards uncovering potential investment opportunities that enable them to cope with unexpected environmental changes, or surprising actions taken by competitors. Firms that do not give enough attention to maintaining and exploring a portfolio of strategic options, may lag behind competitors and eventually lose the struggle for survivability in the market.

This chapter presents a framework for strategic planning geared to the needs of business firms in competitive markets. Our goal is to

suggest some steps, situational parameters, and decision variables which could prove valuable to people engaged in formalizing the strategic planning process in their own organizations.

It is certainly not our intention to claim the general applicability of this framework to all firms in competitive markets. We rather think that the framework to be presented may be effective in providing concrete guidelines for the development of a strategic planning process adjusted to the particular circumstances faced by a firm.

The following section is devoted to make explicit the underlying assumptions in the framework, and to describe, in general terms, the steps to be followed. Later in the report, a more detailed analysis and application of each one of these steps is done.

2. *General Statement of the Framework*

Strategic planning can be presented as an incremental process that gradually pervades the operation of the entire organization (Hax and Majluf [11]). But, when observed at a given point in time, this process is focused on each one of the specific business units of the organization. Consequently, to characterize the strategic planning process of business firms, we need to define its business units within the organization structure, and the area of activities of those units.

The framework to be presented is intended to provide a systematic approach at analyzing the strategic options of a given business unit. There is a higher level of corporate strategic planning, which requires the consolidation of all the strategic programs of the business units, by looking at the consequences of these programs in the portfolio of the

overall corporation. Although the conceptual approach presented herein could also be applicable at the corporate level, we will not specifically address ourselves to that issue.

The purpose of this section is to present some underlying assumptions regarding the positioning of the business unit within the firm, and to list the steps that we are proposing for the developing of this framework for strategic planning.

2.1 *Hierarchical levels in the business firm*

In a first cut of the strategic planning process, only two hierarchical levels need to be distinguished in the business firm; one is called the corporate or central level, and the other the divisional or local level.

The process of defining specific options is mainly a divisional task, but the process of evaluating and selecting an alternative goes at both levels. The division will be the main source of local data on market, production, purchasing, distribution, and local economic factors. The corporation will add the impact that the proposed activities will have on other divisions, and also will assess the degree of bias due to excessive optimism or pessimism at the local level.

2.2 *The Strategic Business Unit*

At a certain point in time, the attention of the strategic planning process is directed exclusively to a well defined unit of the organization, which is given the name of strategic business unit or strategy center. This is "composed of a product or product lines with identifiable inde-

pendence from other products or product lines in terms of competition, prices, substitutability of products, style-quality, and impact of product withdrawal" (Arthur D. Little [5]).

The strategic business unit is located at the divisional level, but it does not coincide necessarily with the division. A formal division in a firm may contain more than one business unit, only be a fraction of it, or even be a part of many different units.

When focusing the analysis at the divisional level, special care has to be taken to properly include the links with the corporate level. The right perspective for analyzing strategic options should blend both the local and corporate points of view in terms of well defined measures of profitability. Local profitability is determined from the cash flow foreseen at the local level, while corporate profitability should include also those costs and benefits directly accruing at the corporate level, and not being inputed at the local level. Examples are raw materials bought from another subsidiary of the corporation which is getting a profit in the transaction, or administration costs that are being borne by the corporation headquarters.

2.3 *Areas of activity in a business unit*

The strategic business unit is viewed as having three main areas of activity: marketing, logistics (production, purchasing, distribution), and financial. Normally, these activities are conducted by departments within a division, and it constitutes a third hierarchical level within the corporation participating in the planning effort. The strategic planning process has to distinguish the options open in each one of these areas at both the divisional and corporate levels (see Figure 1).

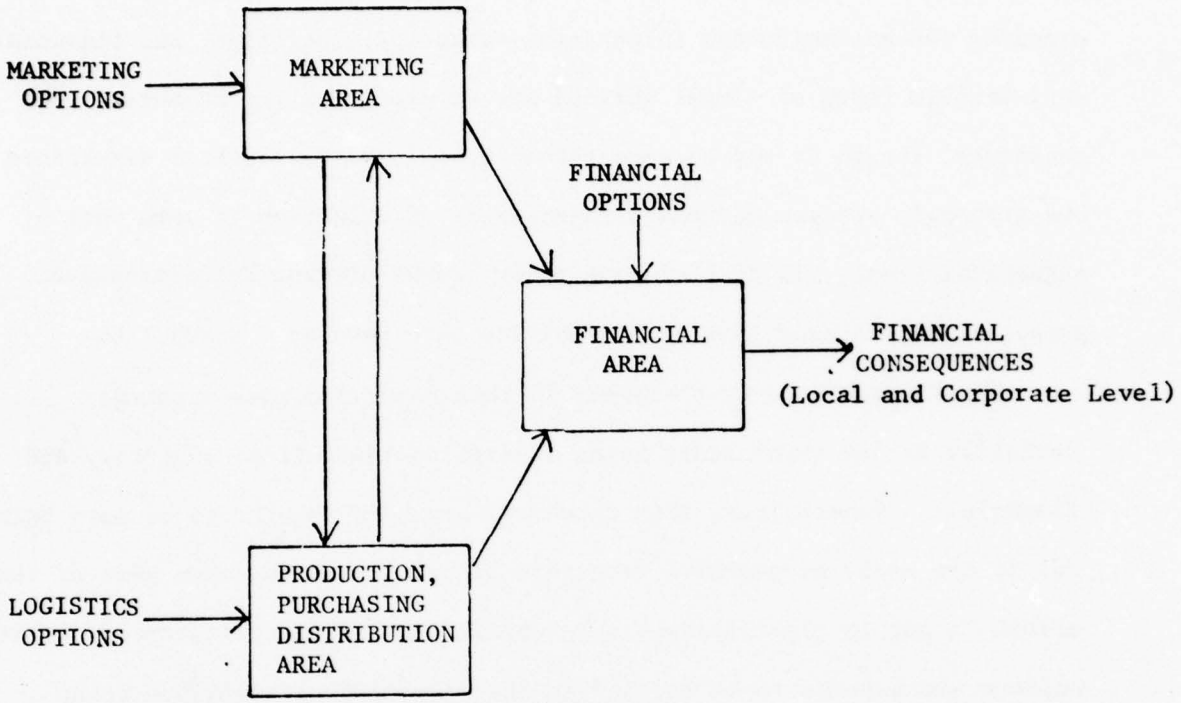

FIGURE 1. AREAS OF ACTIVITY IN A STRATEGIC UNIT

When performing a strategic planning effort, the organization usually goes into the marketing, logistic, and financial areas, in some sort of sequential order. The normal pattern is to put emphasis in the analysis of marketing options in the first place. In this stage, logistics options are considered in terms of rough engineering estimations, just to make possible a first assessment on the attractiveness of the venture. Only when confidence in the marketing projections and the goodness of the venture are built up, the center of attention is changed to the detailed consideration of alternative logistics options

Toward the end of the planning process, once the study of marketing and logistics alternatives is fairly mature, the detailed consideration of financial options captures most of the effort of the planning team.

Nonetheless, at every stage of this process, the financial evaluation provides the mechanism for integrating marketing, logistics, and financial decisions in terms of a well defined set of profitability measures. Consequently, though it may be ascertained that in most practical situations the strategic process addresses these areas of attention in some sort of sequential order, all of them have to be always present for evaluation purposes, at whatever level of definition they have at a given time.

The framework being presented in this paper includes strategic variables in the three areas being identified (marketing, logistic, and financial). Nonetheless, this framework has been thought to be more helpful in the early stages of a strategic planning process, when most of the effort is put in identifying viable options in the marketing area. Logistics options are assumed to be matched to the marketing alternatives being considered, and financial decisions are adjusted to their historical pattern rather than explored their impact in full detail. For example, if the new projects under scrutiny require doing certain technical transformations in production plants, these transformations are assumed to be carried out without a deep study of the available technical options. On the financial side, capital structure and dividend policy, for example, are assumed to be given. This assumption, although appropriate for a divisional analysis, should be relaxed when performing the strategic planning at the corporate level. For a discussion of financial strategic variables, the reader is referred to Zakon [23].

2.4 *Problem definition, general approach to strategic planning, and empirical base*

It should be clear by now that the center of attention chosen is a strategic business unit located at the divisional level of a firm. The

activities identified in this unit are marketing, logistic, and financial ones, but preferential attention is given to marketing in the development of this frameowrk of analysis.

The marketing options being considered are those related to modifications of the existing product mix in a strategic business unit, which can be conducted through expansion, diversification, acquisition, divestment, etc. The ability to identify the correct timing to introduce new products or to withdraw from the market existing ones will greatly determine the growth and profitability characteristics of the strategic path.

The analysis has been developed from the approaches taken by the Boston Consulting Group (BCG) [6] and Arthur D. Little (ADL) [5]. In their view, the product mix may be treated as a portfolio of options and it is the thrust of the strategic analysis to decide on the allocation of cash generated by the most mature lines of products. This consideration is certainly more valid in terms of a cash balance for the overall corporation, but its application can also give valuable insights at the divisional level.

These approaches are built on three fundamental concepts: the learning curve, the product life cycle, and the strong correlation observed between return on investment (ROI) and market share.

The learning curve shows that the cost of performing a given task decreases in a fixed percentage each time the cumulative production doubles. Learning effects, economies of scale, appropriate substitutions, product redesigns, and technological progress serve to explain the realizations

of these costs reductions (Hirschmann [12]), (Abernathy and Wayne [2]), and (Abernathy [1]).

The product life cycle calls for the identification of four development stages in the life of a product: Introduction (Embrionic, Rapid Growth), Growth (Competitive Turbulence), Maturity (Saturation), and Decline. Each one of these stages requires different kinds of managerial skills and actions, and has diverse implications for the resource allocation within the firm (Arthur D. Little [5]), (Wasson [20]).

Finally, the correlation between ROI and market share, has been reported by Project PIMS (Profit Impact of Marketing Strategy) (Buzzell, Gale, and Sultan [7]), (Shoeffler, Buzzell, and Heany [18]), and has led to the use of market share as an effective measure of strategic performance in a highly diversified company.

These three considerations have been used by BCG and ADL to graphically position the product in a matrix categorization. This idea is exploited in the framework to be presented, because it proved to be a powerful way to synthesize a good deal of marketing information, and make it available to different participants in the strategic planning process.

2.5 *Steps in the framework*

A set of simple tools and models form the core of this framework for strategic planning. More sophisticated and flexible representations can certainly be more adequate, but chances to fail in providing a simple language of communication and interaction among the different parties involved are increased with more complex rules.

The steps of the framework for strategic planning are indicated in Figure 2 and are analyzed in the following sections of this paper.

All the steps in the framework will be presented in general terms, and illustrated by using an example taken from a very specific professional experience. All names and data used in this illustration have been completely altered, in order to preserve the confidentiality of the information. Nontheless, the qualitative characteristics of the applications have been maintained, and the salient methodological features have been stressed.

List of Steps:

1. Definition of Product-Market Segments.
2. Quantitative Analysis of Past Performance.
3. Positioning of the Product-Market segments with respect to their Life-Cycle and the Portfolio of the firm
4. Qualitative and Quantitative Marketing Analysis
   - 4a. Total Market Projection
   - 4b. The Set of Market Share Options
5. Definition of a Base Case and its Sales Projections.
6. Determination of Physical Facilities and Investment Requirements Associated with the Base Case.
7. Financial Model Specification. The Set of Financial Options.
8. Evaluation of the Base Case and Sensitivity Analysis.

FIGURE 2. A FRAMEWORK FOR STRATEGIC PLANNING IN BUSINESS FIRMS

3. *Step 1: Definition of Production-Market Segments*

In order to begin with the application of this framework of analysis, the realization of the strategic planning process should have certain minimum degree of advancement. At the very least, the attention of upper executives should be aroused (ignition of the strategic process), the strategic business unit recognized, and its basic options formulated in terms of a general strategy. (For example, place X appears to be a promising market for our product-line Y).

Initial considerations, and the information already available should provide a sufficient base to generate a taxonomy of existing and new product-markets. These product-market segments thus generated are at the core of the process, because strategic alternatives in the marketing side will be formulated as the inclusion of new segments (diversification, acquisition), the exclusion of existing ones (divestment), or the expansion or reduction of existing segments.

The first step in this framework of analysis corresponds to the formal identification of existing and new product-market segments to be included in the strategic planning process for exploring their potential profitability.

Some degree of ambiguity in the definition of markets for products that are partial substitutes will arise inevitably, but an effort has to be made to define these segments as products in mutually exclusive competitive markets. The standard industrial codes may be helpful in the identification of the market (for example, see Rumelt [17]), but some judgment should be exercised to choose the proper level of aggregation in the definition of product-market segments, in order to maintain the

condition of mutually exclusive segments.

Good indications for defining the set of product-market segments may stem from the geographical location of markets, and the distribution network. By using the pair product-market to identify a segment, we have tried to emphasize the fact that the same physical product in a different geographical market, may well be considered as a completely different entity for the purpose of strategic planning.

The potential uses of a product are also an important factor to consider in the definition of segments, because they may help to resolve certain ambiguities. For example, baking soda may serve three very different purposes: cooking powder, toothpaste ingredient, and refrigerator deodorant. On the other hand, the need to contain beer and soft drinks may be satisfied in three different ways: tin cans, disposable bottles, and returnable bottles. These kinds of considerations may suggest the convenience of classifying a specific product under two or more different segments, if the uses that consumers are giving to that product are oriented to the satisfaction of very different needs. It is also suggested that on certain occasions it may be convenient to consider two physically different products as participants in the same segment.

If product-market segments are not properly defined, important information about the product may be disguised from the view of analysts. For example, a firm in the diet-drink market using only saccharine as sweetener for its products, may reach the conclusion that the market is in the maturity stage, while, in fact, it may plunge to 0 if this artificial sweetener is banned by the FDA. In general terms, it can be said that technological changes may precipitate certain products of a firm into the decay stage, though the generic market in which they participate may still be rising. In the example above, the market for diet drinks

may be rising, but the market for diet drinks sweetened with saccharine may be forced to 0. In the watch market, the total market may be rising, but traditional watches are clearly in a decay stage.

Figure 3 gives a summarized view of some considerations to be noted in the definition of product-market segments.

a. Existing Product-Market Segments

- Identification of Segments
- Criteria for aggregation (dependent upon the analysis level and the uses of the product)

b. New Product Market-Segments Being Considered

- Definition of Segments

c. Identification of Competing Market for Each Segment

- Product-Market Segments are mutually exclusive
- There is some degree of ambiguity for products that are partial substitutes
- Industrial codes may be helpful in the identification of the market
- The product-market combination may be the appropriate definition of the competitive market, particularly for a product being distributed in more than one geographic location.
- The uses of the product (satisfaction of consumer's needs) are the clue for the marketing identification
- The competing market for a product may be more restrictive than the generic market in which it is classified.

FIGURE 3. A FRAMEWORK FOR STRATEGIC PLANNING IN BUSINESS FIRMS - STEP 1: DEFINITION OF PRODUCT-MARKET SEGMENTS

Illustration of definition of product-market segments

In the case being used as an illustration, the SIC codes were used as guidelines to define the competitive markets for each product. The definition process went gradually converging to the list of segments that is finally used in the study. In the exposition of this case, only four old segments and two new ones are used, because that is enough to give some insight into the richness of the real situation. These segments are identified with the following short-cut names:

Existing product-markets	New product-markets
Old-A	New-A
Old-B	New-B
Old-C	
Old-D	

4. *Step 2: Quantitative Analysis of Past Performance*

Once the product-market segments have been properly identified, the next step is to start the preparation of a reduced (but significant) piece of quantitative information. This information should provide a small set of key variables for evaluating the historical performance of the existing product-market segments. The idea underlying this effort is to make a direct, simple, and relevant assessment of the strengths and weaknesses of the organization to be shared by everybody. This is an important step toward establishing a common information base to hold the contribution that different people will be doing in the elaboration of a strategic plan.

Important parameters may vary wildly in different cases, but a

minimum set of observations for competitive firms is given by:

- Total Market
- Company Sales
- Most Important Competitor Sales
- Market Growth Rate
- Market Share
- Relative Market Share.

This set has been suggested by the BCG approach for evaluating the competitive strength of a firm holding a diversified portfolio of products, which is later used in Step 3 of this framework. An interesting measure that is included in this set is the relative market share, defined as the ratio of company sales over the most important competitor's sales. This is in line with certain empirical observations showing that relative market share is a better proxy for the solidness of the firm's position in the market than absolute market share (The Conference Board [8]).

Profitability measures of each one of the segments are not included in this set of variables. Certainly, it may be desirable to add here, profit, ROI, or other measures of profitability. The problem is that, most of the time, these are measures hard to get from competitors with the level of detail required to make meaningful comparisons. Since sales are more easily available, they are being used as an imperfect substitute of profitability. It should be emphasized that, despite ignoring the direct consideration of profitability in this preliminary analysis (it is captured indirectly in sales, and in the two measures of market share), profitability is a central criterion in the final decision, because it is the objective of the financial evaluation.

Generally speaking, the second step in this framework is started by selecting the most suitable quantitative parameters to position the

product in its life-cycle and in the firm's portfolio, which in this case has been made with the set of variables suggested by the BCG approach. Then, the corresponding information is collected for an adequate number of years (three to five, for example), and organized in a small number of tables and graphs. Figure 4 gives a summarized view of these steps.

a. Select the most suitable quantitative parameters to assess the product position in its life-cycle and in the portfolio of the firm. In the BCG approach these are:
   - Total Market
   - Company Sales
   - Most Important Competitor Sales
   - Market Growth Rate
   - Market Share
   - Relative Market Share

b. Maintain the set of variables under consideration as reduced as possible (identify the key variables).

c. Collect this information for the past three to five years (or other period which is considered to be adequate and feasible).

d. Organize the information in tables and graphs.

FIGURE 4. A FRAMEWORK FOR STRATEGIC PLANNING IN BUSINESS FIRMS - STEP 2: QUANTITATIVE ANALYSIS OF PAST PERFORMANCE

Illustration of Quantitative Analysis of Past Performance

The information suggested above was in fact collected for the existing product-market segments in the case being illustrated, and it is presented in Tables 1 and 2. An effort was made to get similar information for most important competitors, but no data were available regarding their overall portfolio at the time the study was conducted.

The time spanned by this information is the three years previous to

Summary of Market Data (000's US$)

Year -4		Year -3			Year -2			Year -1			Year -0 (Estimated)	
Product Market Segments	Total Market	Company Sales	Most Imp. Competitor Sales	Total Market	Company Sales	Most Imp. Competitor Sales	Total Market	Company Sales	Most Imp. Competitor Sales	Total Market	Company Sales	Total Market
Old-A	46,140	891	5,091	56,000	1,464	7,000	76,360	2,036	10,818	101,820	2,545	127,280
Old-B	20,640	682	2,364	26,090	945	2,818	33,820	1,064	3,273	40,910	1,182	47,270
Old-C	76,730	1,345	8,364	84,730	1,909	6,909	112,730	1,818	6,364	129,640	2,327	155,090
Old-D	206,050	2,750	4,545	229,320	3,054	5,455	277,730	3,364	6,818	305,770	3,364	336,360
TOTAL	349,560	5,668	20,364	396,140	7,372	22,182	500,640	8,282	27,273	578,140	9,418	666,000

TABLE 1. QUANTITATIVE ANALYSIS OF PAST PERFORMANCE

Summary of Market Data (%)

Product Market Segments	Year -3			Year -2			Year -1			Year -0 (Estimated)	
	Market Growth Rate	Market Share	Relative Market Share	Market Growth Rate	Market Share	Relative Market Share	Market Growth Rate	Market Share	Relative Market Share	Market Growth Rate	Market Share
Old-A	21.4	1.6	18	36.4	1.9	21	33.3	2.0	19	25.0	2.0
Old-B	26.4	2.6	29	29.6	2.8	34	21.0	2.6	32	15.5	2.5
Old-C	10.4	1.6	16	33.0	1.7	28	15.0	1.4	29	19.6	1.5
Old-D	11.3	1.2	61	21.1	1.1	56	10.1	1.1	49	10.0	1.0
AVERAGE (%)	13.3	1.43	28	26.4	1.47	33	15.5	1.43	30	15.2	1.4

TABLE 2. QUANTITATIVE ANALYSIS OF PAST PERFORMANCE

the realization of the study, and the estimated data for that year (designated as year 0). The total market is estimated to be almost $670 million with a 15.2% annual growth, which is certainly higher than the growth of the economy. The market share is only around 1.4%, but the relative market share is around 30%, showing that the leader in the market is not capturing more than 5% of it. A more extreme example of this peculiar circumstance is illustrated by product Old-D, that despite capturing only 1.1% of the market in Year -1, its relative market share is 49%.

This behavior of the data illustrates in a neat way the high degree of dispersion in the market, partly caused by the large number of firms attracted into it. At the time of realization of the study, there were at least 60 firms with a small but significant percentage of the total market.

5. Step 3: *Positioning of Product-Market Segments with Respect to Their Life-Cycle and the Portfolio of the Firm*

The most basic worry of competitive firms is to keep in mind always the characteristics of their product portfolio. The position of a firm in the market will depend drastically on its ability to exploit new opportunities attainable with the available resources.

Step 2 of this framework stood for the collection of basic data needed to summarize the characteristics of the firm in a few tables and graphs. An essential result of that work has to be the assessment of the competitive strength of the firm. In this assessment, market parameters, product characteristics, and firm variables have to be skillfully related, to show the internal and external perspective of the product portfolio in

simple way.

This step will introduce a matrix categorization popularized by BCG, because it has proved to be a valuable instrument to synthesize graphically a lot of market information in a single representation. Afterwards, an effort is made to abstract from the BCG approach what seems to be the conceptual parameters underlying their proposal.*

The kind of graph used by BCG to condense the characteristics of the portfolio of the firm is shown in Figure 5. Each circle corresponds to a different product market segment, and the parameters in the X and Y axis used to fix the center of this circle are relative market share and market growth respectively. The area of the circle is proportional to total sales of the product.

The vertical line in the middle of the graph is drawn to differentiate products in which the firm is leader and products in which it is follower. Because of the relative market share definition, a value greatr than 1 implies that the most important competitor's sales are below the firm's sales for that product. The opposite is true if the relative market share is below 1.

The horizontal line in the middle of the graph relates the dynamic characteristics of a product market segment with an average level of growth. This level is commonly chosen as the GNP-growth or the industry growth. Segments in a low growth market usually correspond to products in the maturity or decay stage of their life-cycle. Segments in a high growth market correspond rather to products in an increasing stage.

In this way, four major categories of products are identified in

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* When referring to the BCG approach, we mean primarily the portfolio analysis via a matrix categorization. We do not intend to represent the BCG's views on strategic planning.

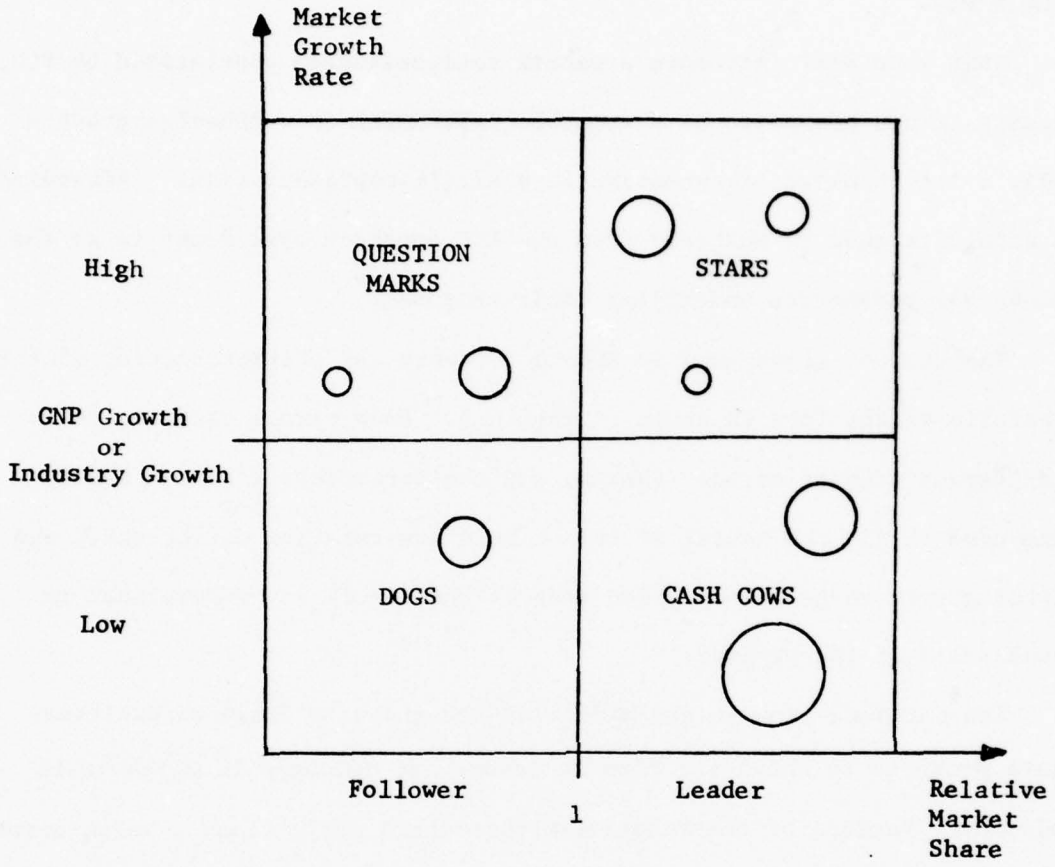


FIGURE 5. AN EXAMPLE OF MATRIX CATEGORIZATION USED BY BCG

the relative market share-growth matrix, whose names have been coined by BCG:

- "Cash Cows": High market share and low growth rate products, which usually generate large amounts of cash to be reinvested in potentially desirable products.
- "Dogs": Low market share and low growth rate products, which constitute typical "cash traps" that neither generate nor require significant amounts of cash.
- "Problem children or question marks": Low market share and high growth rate products, which require large amounts of cash to either maintain

or expand the marketing position.

- "Stars": High market share and high growth rate, which currently may need little or no cash flow, but have the future potential of generating large sums of money.

The heart of the decision making process vis-a-vis this classification, is to identify where to concentrate financial and marketing efforts to enhance the overall company performance.

The BCG group goes further in the interpretation of this matrix, when suggesting that the most likely expectations with regard to the generation and use of cash and those indicated in Figure 6.

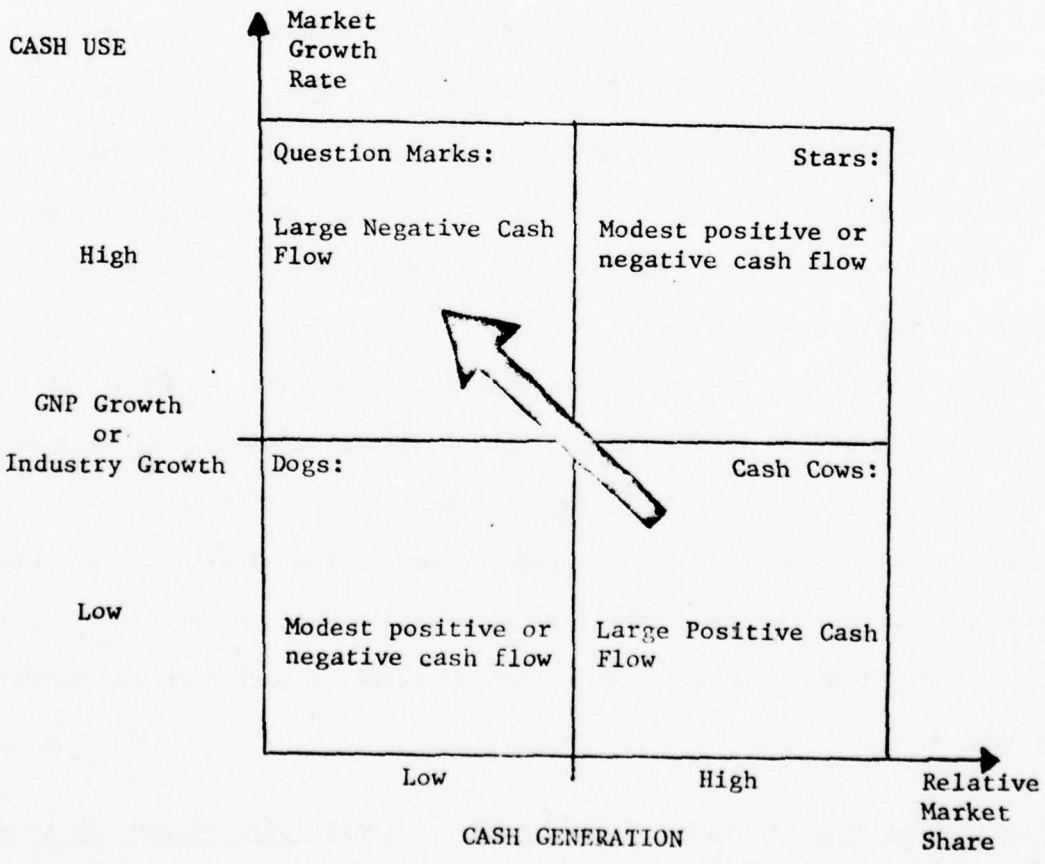


FIGURE 6. GENERATION AND USE OF CASH ACCORDING TO THE BCG GROUP

Consequently, the most important strategic decision in the BCG approach is to determine the way in which the cash generated by cash cows will be used to support and promote some carefully selected question marks. If the firm is successful in its attempt, it will push those question marks into a leadership position in the market (thus becoming star products), and it will have potential cash cows for the future.

Complementary to this fundamental strategic action, BCG indicates that the firm must decide also on which dog products may be profitably divested to have an extra source of cash. Finally, star products are in an expectant position in the market, and the firm should make every effort to maintain that position.

To think that one graph, like the matrix presented, may be enough to summarize all relevant information, and even to suggest the strategic courses of action unambiguously is certainly a simplistic conclusion. The intention behind the discussion of the BCG approach with certain parsimony, is to illustrate through that proposal the richness that may be condensed in a well thought graphical tool.

Step 3 in this framework is an effort to stimulate the intuition of people participating in the formulation of strategic plans. By drawing from approaches similar to BCG, Figure 7 makes a specific proposal for constructing a graph that leaves open the definition of all its parameters. These parameters must be a single or a composite measure capable of condensing the firm position in the market in terms of both firm and market variables.

Illustration of positioning product-market segments with respect to their life-cycle and the portfolio of the firm

The information collected in Tables 1 and 2 constitute the base of data needed for the graphic positioning of products, and it is now used

a. Establish a measure to identify the product-market segment position in its life-cycle (maturity of the market measured by market growth in the BCG approach).
b. Establish a measure to identify the firm's position in the product-market segment (relative market share in the BCG approach).
c. Establish a measure to identify the product-market segment contribution to the firm's results (net revenue is used in the BCG approach; net profit or other profitability index may also be used).
d. Prepare a chart with the three variables above:
   - Product-market segment position in its life-cycle (Y-axis)
   - Firm's position in this product-market segment (X-axis)
   - Product-market segment contribution to the firm's result (circle area).
e. Identify a cut-off rate to classify product-market segments position in its life-cycle (mature, non-mature, or unclear if the indication about the maturity of the product is not conclusive). (GNP growth or industry growth in the BCG appraoch.)
f. Identify a cut-off rate to classify products according to the firm position in each particular product-market segment (good, poor, or unclear if the information is not conclusive enough). (Relative market share of 1 is used in the BCG approach.)
g. If possible, prepare similar charts for most important competitors (competitors for existing and new product lines).

FIGURE 7. A FRAMEWORK FOR STRATEGIC PLANNING IN BUSINESS FIRMS - STEP 3: POSITIONING PRODUCT-MARKET SEGMENTS WITH RESPECT TO THEIR LIFE-CYCLE AND THE PORTFOLIO OF THE FIRM

for constructing a chart spanning the three years previous to the realization of the study. By putting the information of three years in the same chart, not only the positioning of products will be indicated, but also their relative movements in this period.

The kind of chart used in this illustration is very much like BCG's. The basic parameters used are relative market share, market growth, and net sales. The horizontal divisionary line is chosen as the industry growth

rate. The vertical divisionary line is defined in a more unorthodox way as the average relative market share:

$$\text{Average Relative Market Share} = \frac{\text{Sum of Company Sales}}{\text{Sum of Leading Competitors Sales}}$$

This was done because the firm was not the lead in any product-market segment.

However, since average relative market share and industry growth rate change from year to year, the parameters were refined as follows to permit dynamic comparisons:

X-axis: Relative market share - Average relative market share

Y-axis: Market growth rate - Industry growth rate

Circle area: Net sales (in dollars of year 0)

Vertical divisionary line: It is drawn at the level 0 (because with the redefinition of the X-axis, 0 represents the average relative market share)

Horizontal divisionary line: It is drawn at the level 0 (because with the redefinition of the Y-axis, 0 represents the industry growth rate).

Table 3 is constructed from the previous data, as an intermediate step to draw Figure 8, which in this illustration corresponds to the graphic positioning of product-market segments in the market and in the portfolio of the firm.

From the graphic categorization of products it may be appreciated that Product A is the one with the highest rate of growth, but this is precisely the segment in which the firm's position is the weakest, and it has stayed this way during the three year period. Note that though

Product Line	Year -3			Year -2			Year -1		
	MG-IG (%)	RMS -ARMS (%)	Sales (000 US$)	MG-IG (%)	RMS -ARMS (%)	Sales (000 US$)	MG-IG (%)	RMS -ARMS (%)	Sales (000 US$)
Old-A	8.1	-10	891	10.0	-12	1,464	17.8	-11	2,036
Old-B	13.1	1	682	3.2	1	945	5.5	2	1,064
Old-C	-2.9	-12	1345	6.6	-5	1,909	-0.5	-1	1,818
Old-D	-2.0	33	2750	-5.3	23	3,054	-5.4	19	3,364
CUT-OFF	13.3	28	-	26.4	33	-	15.5	30	-

MG = Market Growth (%)

IG = Industry Growth (%)

RMS = Relative Market Share

ARMS = Average Relative Market Share

TABLE 3. DATA NEEDED TO POSITION THE PRODUCT-MARKET SEGMENTS WITH RESPECT TO THEIR LIFE-CYCLE AND THE PORTFOLIO OF THE FIRM

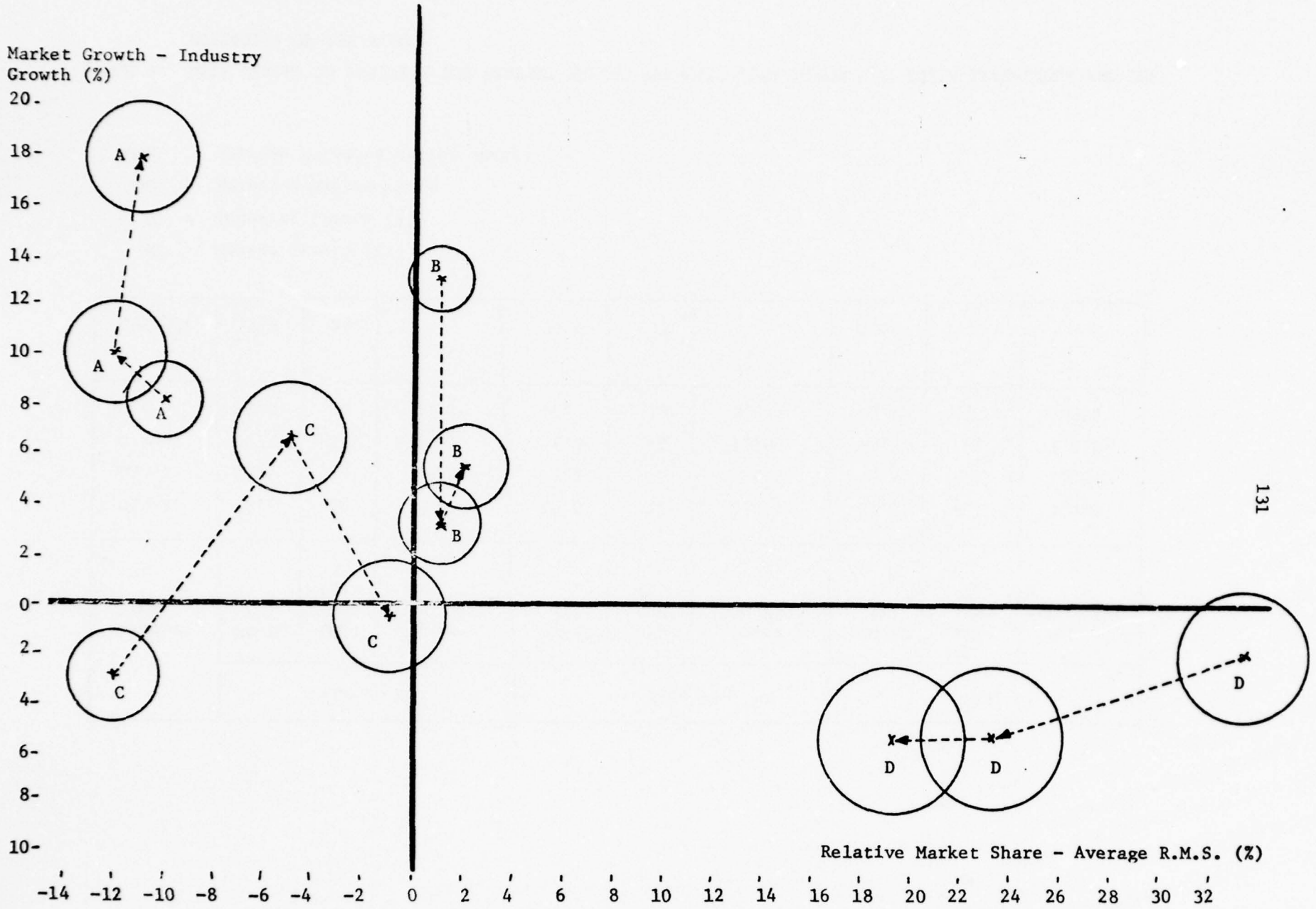


FIGURE 8. GRAPHIC ASSESSMENT OF THE PRODUCT-MARKET SEGMENTS WITH RESPECT TO THEIR LIFE-CYCLE AND THE PORTFOLIO OF THE FIRM

the circle size has been growing, the position of the segment in the market has remained unchanged. This indicates that the sales growth has been enough to match the leader growth in the market, but not to improve the relative position of the firm in it.

Product C is the only one in which the firm seems to be improving its relative position, but this is a dog in the BCG nomenclature. The growth of this product is below the growth of the industry, and it is a less attractive alternative for other firms in this market. The gain in the relative position of Product C may well be due to a possible retraction of other firms from this market. If this were the case, the firm should be prepared to leave that market at some time in the future, because this segment would be in a decay stage in the life-cycle.

Product B shows a more erratic growth and a stagnant position in the market. Finally, Product D, that is the only cash cow, is quicly losing its position in the market, despite the growth in sales shown by the larger area of circles. This should be a source of deep concern for the firm, and the causes behind this pattern, as well as the strategic alternatives that these causes may suggest, should be investigated thoroughly.

From this simple illustration, it may be seen that this categorization suggests a good number of interesting topics of concern for concentrating the effort of the strategic planning team. Balance sheets and operating statements are not enough to measure the strategic value of the different product market segments. This type of chart is a useful vehicle to conduct information in a simple pictorial way to people that need not be fully aware of the marketing options of the firm. This chart has given not only the product positioning, but also the trends observed in the last three years of the study.

6. *Step 4: Qualitative and Quantitative Market Analysis*

The realization of this step should bring in all qualitative and quantitative pieces of information that different groups can make available to finally generate a sales forecast. For expository purposes, Step 4 will be broken down into sections, qualitative market analysis and sales forecast. In turn, sales forecast is split into total market forecasts and definition of market share options.

6.1 *Qualitative Market Analysis*

The matrix categorization of the firm's product portfolio is intended to provide preliminary insights into the strategic process which may be sustained or dismissed when new data are brought into the analysis.

By using historical information and present expectations a forecast for the future should be provided. The kind of issues that should be focused upon are indicated in Figure 9. Three general areas are specifically addressed. The first one is the definition of plausible scenarios. For that to be done, trends should be analyzed and expectations formulated on the outlook for the economy, the industry, the specific markets, competitors' actions and the firm's situation. The information is summarized in terms of different scenarios for each one of which a sales forecast should be later on provided.

The second area to be addressed is an estimation of the competitive characteristics of the products in many different dimensions. The generation of the products' profile will disclose strengths and weaknesses of old and new products. For example, vulnerability to new technologies,

Some issues that should be focused:

a. Scenarios definition.
Determine trends and expectations on:

- The general economic environment
- The industry
- The product markets
- Competitor actions
- The firm's situation.

b. Generation of product's profiles.
Strengths and weaknesses of old and new products, like vulnerability to:

- New technologies
- Inflation
- Raw material supply
- Competitor actions
- Consumer preferences
- Cyclical fluctuations
- Strikes, workers' union actions
- Government and other regulatory bodies
- Environmental impact
- Community reaction.

c. Dynamic analysis under different scenarios of:

- The total market for each product. Life-cycle considerations.
- The firm's absolute and relative market share. Considerations on the firm's position in the market as the result of:
  - Environmental scenario
  - Competitors actions
  - Marketing strategy
  - Marketing effort
  - Market structure
  - Product's strengths and weaknesses (the product's profile).

d. Identification and analysis of the impact that other internal and external factors may have on the product's performance.

FIGURE 9. A FRAMEWORK FOR STRATEGIC PLANNING IN BUSINESS FIRMS - STEP 4: QUALITATIVE AND QUANTITATIVE MARKET ANALYSIS

inflation, raw material supply, competitors' actions, consumers' preferences, cyclical fluctuations, strikes, workers' union actions, government and other regulatory bodies, environmental impact, community reaction, etc., should be assessed.

Finally, a detailed analysis of the evolution to be expected in the total market for the product and in the firm's market share under different scenarios, will provide the fundamental information needed to produce a sales forecast.

A good discussion on relevant issues to consider at this stage of the strategic process is given by Steiner and Miner [19], Chapter 8.

Illustration of qualitative market analysis

To illustrate the extension and richness of the interaction generated by the qualitative market analysis, it would be necessary to provide too many details of the product's, firm's, market's, and material characteristics, which are peculiar to this specific example.

The following sample of the kind of information that was explored in drawing the product's profile provides a flavor for the qualitative analysis conducted.

(i) Characteristics of the product

- Size
- Weight
- Obsolescence
- Transportation
- The firm's production technology
- Uses given by the consumer
- Scientific principles behind the action of the product (in more sophisticated industries).

(ii) Characteristics of the market

- Size ($, units)
- Competitor's roles
- Analysis of most important competitors
- Characteristics of products recently launched to the market
- New production technologies being used by competitors.

(iii) Life-cycle position and market share

- Launching date
- Sales patterns (long-run trends, cyclical fluctuations)
- Market share patterns
- Relative market share patterns.

(iv) Responsiveness to marketing strategies

- Promotional effort
  - Media advertising
  - Samples
  - Salesmen's activities, etc.
- Price strategies
  - Demand elasticity
  - Competitor reactions
- Changes in advertising approach.

(v) Future competitive environment

- New competitors
- Expected activities of competitors
- Patent protection.

6.2 *Sales forecast*

The generation of a sales forecast is done in terms of some kind of explicit or subjective "marketing model", which incorporates the impact on sales of the general environmental situation, competitors' actions, marketing strategy, marketing effort, market structure, and the product's strengths and weaknesses. The approach to build a model like this varies greatly for each specific case, depending on the firm's practices and the degree of predictability that the external variables may present. Personal

preferences of the group in charge of a task like this, coupled with the particular characteristics of the firm's environment, determine if a highly sophisticated correlation model, and educated guess, or a more intermediate methodology is the most appropriate approach to produce a sales projection. An early marketing model with strategic planning implications was proposed by Weinberg [21]. The Brand Aid marketing models provide a valuable tool to identify key strategic variables and represent their dynamic interrelation (Little [13] and [14]).

We propose now a specific model of the market situation, abstracted from the particular experience underlying this study. The model intends to estimate total sales for a product by a two step procedure: first the total market projection, and second, the firm's decision on share of that market to be sought after. The total market is defined to be independent of the firm's actions and the desired market share to be a basic strategic decision of the firm. The relation to get sales is simply:

$$S_t = MS_t \times M_t \qquad (1)$$

where:

S_t = Sales in period t

MS_t = Market share in period t

M_t = Total market in period t.

Total market should be understood as total potential market, which is an environmental variable that can not be manipulated by the firm. Market share is the fraction of this potential market that the firm is considering capturing. This is the basic strategic result, because it is affected by all kinds of promotional and marketing decisions undertaken by the firm.

Steps 4a and 4b of the framework for strategic analysis correspond to the determination of these two factors concurring in the sales forecast. They are in turn analyzed in further detail.

7. *Step 4a: Total Market Projection*

The total market is projected by specifying its current value and the market growth factor, according to the following recursive relation:

$$M_t = MGF_t \times M_{t-1}$$

$$M_o = \text{given data} \qquad (2)$$

where:

M_t = Total market in period t

MGF_t = Market growth factor from (t-1) to t.

The market growth factor is expressed in terms of a factor depending on the general environmental situation (the scenario), and a life-cycle factor, as indicated in relation (3):

$$MGF_t = SF_t \times LCF_t \qquad (3)$$

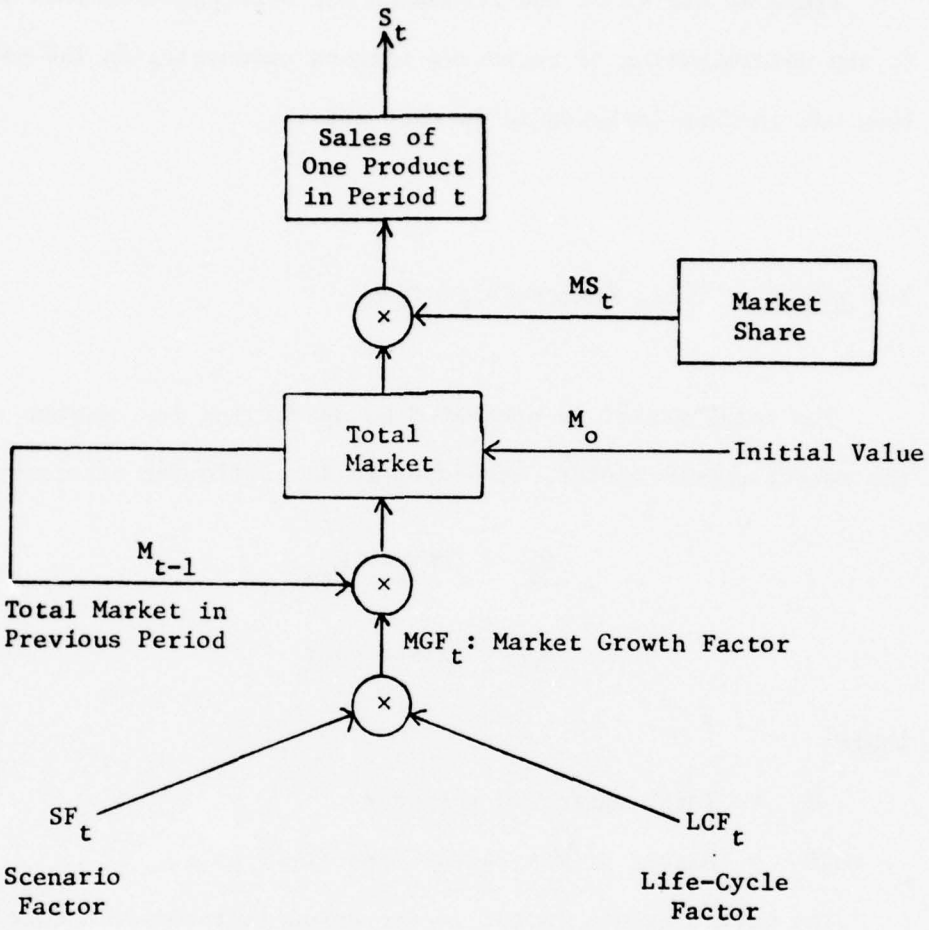
where:

MGF_t = Market growth factor in period t

SF_t = Scenario factor in period t (a factor external to the product that depends on the scenario)

LCF_t = Life-cycle factor in period t (a factor typical to the product).

Figure 10 gives a summarized view of the total market projection, and some specific forms that may be adopted by these factors. Four main objectives are being sought with the formulation of this model: first, maintain

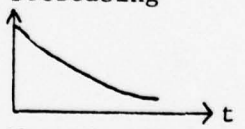


Examples:

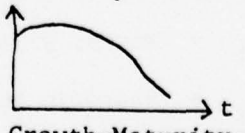
1) Variable growth $(1+G_t)$
2) Constant growth $(1+G)$

Examples:

1) Decreasing



2) Maturity-Decreasing



3) Growth-Maturity-Decreasing

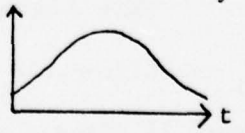


FIGURE 10. A FRAMEWORK FOR STRATEGIC ANALYSIS IN BUSINESS FIRMS - STEP 4a: THE TOTAL MARKET PROJECTION

its structure as simple as possible; second, provide enough flexibility to include subjective information in almost every place; third, leave room for using more advanced techniques in the determination of some of the factors (econometric methods, for example), or getting those factors from more comprehensive models (for example, to get the scenario factor from a macroeconomic model like DRI [10], MPS [16], or Wharton (McCarthy [15]); and fourth, make the model suitable for sensitivity analysis.

Illustration of Total Market Projection

A version of this model was used to produce the market projections in the case being presented. At the beginning, there was not analytic formulation of the market growth factors, but a later analysis disclosed the fairly consistent patterns used by the marketing team, because their numbers could be reproduced within a 1% deviation with the following exponential growth formulas:

$$MGF_t = SF_t \times LCF_t \qquad \text{[same as relation (3)]}$$

$$SF_t = (1+G)$$

where:

G = Market growth rate depending on overall economic conditions (G = .08 for the base case)

$LCF_t = 1.157e^{-0.012t}$ for product Old-A

$LCF_t = 1.07e^{-0.004t}$ for product Old-B

$LCF_t = 1.108e^{-0.0005t(t-4)}$ for product Old-C

$LCF_t = 1.017e^{-0.00075t(t-4)}$ for product Old-D

$LCF_t = 1.065e^{-0.0001t(t+1)(t-9)}$ for product New-A

$LCF_t = 1.08e^{-0.00012t(t+1)(t-9)}$ for product New-B

It is very useful to translate subjective estimates into analytical

expressions like these, because having these expressions greatly facilitates subsequent sensitivity or scenario analyses aimed at modifying life-cycle assumptions.

The market growth factors obtained from the application of these formulae are given in Table 4. It may be noticed that products A and B have a decreasing life-cycle factor, while products C and D have a fairly constant factor in the first years and a decreasing factor thereafter (maturity-decreasing situation). Finally, new products A and B show an increasing pattern at the beginning to continue later on with a maturity and decreasing life-cycle factor.

The total market, obtained by applying the market growth factor to the previous year total, is given in Table 5. The data for year 0 are provided as external data.

8. *Step 4b: The Set of Market Share Options*

Having determined the total market for each segment, now the aim is to produce a mechanism to estimate the impact that some decisions may have on the firm's share in each market under consideration. The main characteristic to be assessed for old and new product-market segments is the sensitivity of the market share to different marketing strategies.

Market share is a composite measure of marketing strategy that can be very much affected by decisions under the control of the firm. It is a global assessment of the degree of efficacy achieved by the marketing strategy adopted by the firm. This is the driving idea behind this step, in which the firm's decisions are being traced forward into their impact on market share.

Product Line	Year									
	1	2	3	4	5	6	7	8	9	10
Old-A	23.5	22.0	20.5	19.1	17.7	16.3	14.9	13.5	12.2	10.8
Old-B	15.1	14.6	14.2	13.7	13.3	12.8	12.4	11.9	11.5	11.0
Old-C	19.8	19.9	19.8	19.7	19.4	18.9	18.4	17.8	17.0	16.1
Old-D	10.1	10.2	10.1	9.8	9.4	8.9	8.1	7.2	6.2	5.0
New-A	15.2	15.5	15.9	16.2	16.4	16.5	16.3	15.9	15.0	13.8
New-B	16.9	17.2	17.7	18.0	18.3	18.4	18.2	17.7	16.6	15.1

TABLE 4. MARKET GROWTH FACTORS (100%)

Product Line	Year									
	1	2	3	4	5	6	7	8	9	10
Old-A	157,138	191,697	231,067	275,200	323,853	376,561	432,626	491,108	550,846	610,481
Old-B	54,410	62,376	71,221	80,997	91,747	103,508	116,311	130,176	145,113	161,117
Old-C	185,867	222,861	267,084	319,604	381,496	453,782	537,342	632,799	740,385	859,790
Old-D	370,281	407,923	449,056	493,225	539,711	587,486	635,187	681,120	723,287	759,473
New-A	146,624	169,356	196,201	227,938	265,340	309,064	359,489	416,472	479,026	544,948
New-B	66,931	78,463	92,314	108,974	128,951	152,700	180,520	212,385	247,726	285,159
TOTAL	981,251	1132,676	1306,943	1505,938	1731,098	1983,101	2261,475	2564,060	2886,383	3220,968

TABLE 5. TOTAL MARKET PROJECTIONS (At price for products in year 0, 000 US$)

The main decision that the firm has to make for each one of the product-market segments, is to determine the market share target, which is the level of market share to be attained by the end of the planning horizon. This target implies an overall marketing strategy that the firm has to follow (marketing effort and pricing policy). At the same time, the dynamic pattern followed by market share from its present level up to the target, called the market share learning factor, is imbedded in the selection of the marketing strategy.

The attainment of the market share target is conditioned to a primary decision, the entry date for new products, and the withdrawal date for old ones. That is to say, the target is attained provided that the product is introduced to the market (if new), or it is not withdrawn (if old).

Consequently, the following parameters are being used to get market share through time:

- the present level of market share (0 for new products);
- the market share target, to be attained by the end of the planning horizon;
- the market share learning factor, which is the dynamic approach from the present level of market share to the target;
- the entry date for new products;
- the withdrawal date for old products.

It is in the determination and specification of these parameters that most of the subjective inputs have to be brought into the analysis, to complement and improve the information content of quantitative data.

Typical behaviors assumed for market share are exemplified in Figure 11.

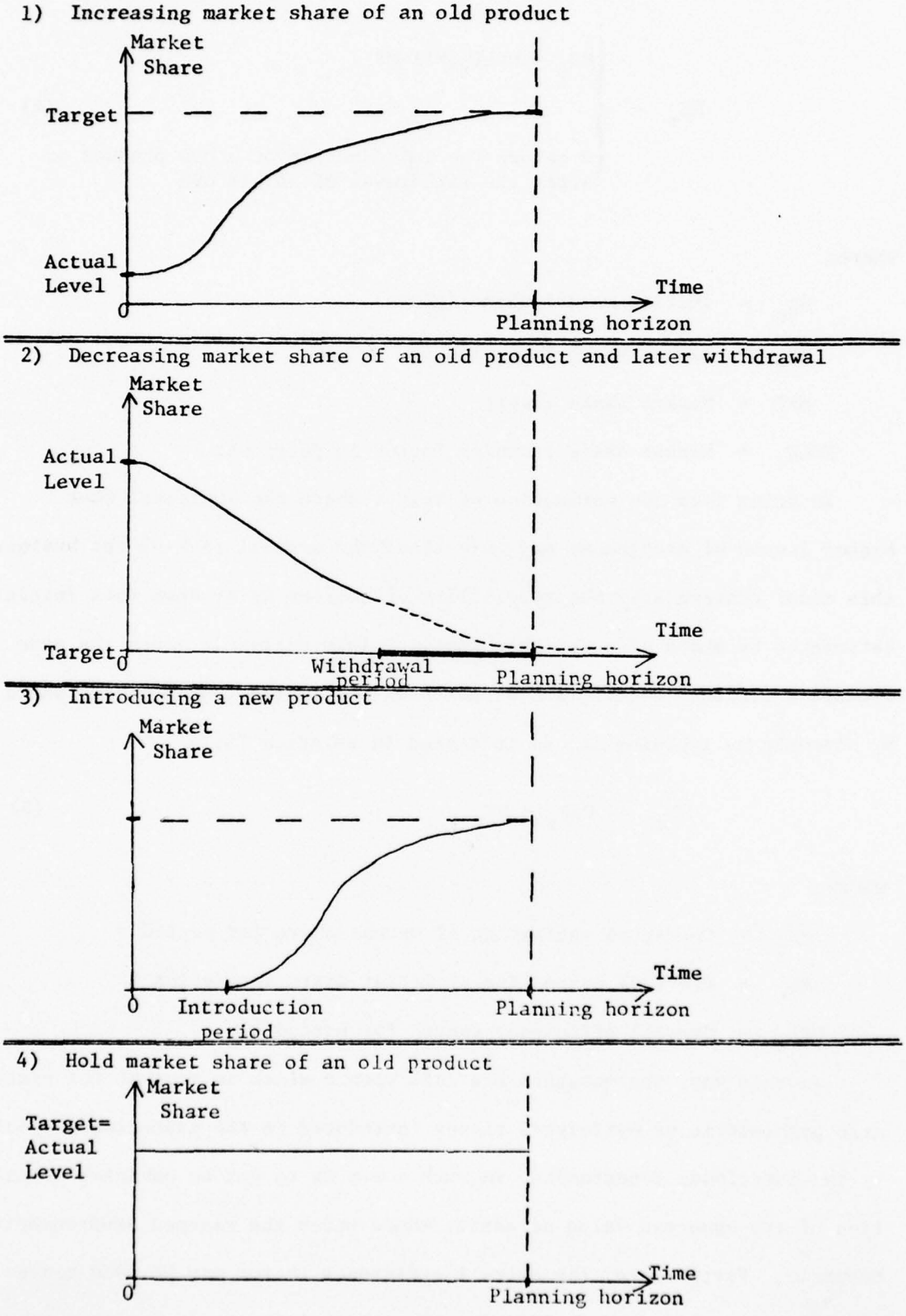


FIGURE 11. SOME EXAMPLES OF MARKET SHARE BEHAVIOR THROUGH TIME

All of them can be easily represented by the following relation:

$$MS_t = \begin{cases} MS_o + MSLF_t(MST-MS_o) \\ \\ 0 \text{ before the introduction of a new product or after the withdrawal of an old one} \end{cases} \quad (4)$$

where:

MS_o = Initial market share (given)

MS_t = Market share in period t

MST = Market share target

$MSLF_t$ = Market share learning factor in period t.

To bring into the estimation of market share the appraisal that higher levels of management may have about the overall risk of the business, this model contemplates the possibility of scaling up or down this initial estimation by means of a suitable factor. This factor is given the name overall efficiency factor, and it performs the correction of market share by directly multiplying it, as indicated in relation (5).

$$\overline{MS}_t = OEF_t \times MS_t \quad (5)$$

where:

$\overline{MS}_t$ = Corrected estimation of market share for period t

MS_t = Previous estimation of market share for period t

OEF_t = Overall efficiency factor for period t.

In this way, top managers are left with a slack to account for systematic pessimistic or optimistic biases introduced in the marketing projection by the functional departments, in such a way as to get an unbiased estimation of the expected value of market share under the assumed environmental scenario. Furthermore, the overall efficiency factor may be used conveniently to simplify the realization of a sensitivity analysis, or a risk

analysis over changes in market expectations held by the study team. For this to be done, it is enough to assign a set of values or a probabilistic distribution to the correction factor.

So far, the skeleton of the procedure for determining market share has been suggested. The main ideas are: first, to decompose market share in terms of the present level, target, learning factor, entry date for new products, withdrawal date for old ones, and the overall efficiency factor; and, second, to recognize the relationships between marketing strategy (marketing effort, and pricing policy), with the target, and the learning factor.

Relations (4) and (5) are formal relations of the way in which market share may be expressed in terms of the more basic components indicated above. Two additional assumptions are suggested to simplify the study of the causal relations between marketing effort, pricing policy, market share target, and market share learning factor.

First, pricing policy. In this model, prices are assumed to be maintained at levels in accordance with the normal practice of the firm, the industry, and the general economic environment. All market shares to be estimated are imbeded in this assumption of normality of the price strategy.

Price variations are then seen as different environmental situations that do not affect in a fundamental way the physical volume of sales. The impact of the price policy over the profitability of the strategic plan is not pursued in this model. If this assumption happens to be too restrictive for a specific case, an effort should be made to determine the elasticity of market share to prices and add a suitable term in the relations to get market share.*

---

* For example, add to the physical volumes of sales the factor $(P/P_o)^{\varepsilon}$, where:
P_o = Base price
P = Any price "close" to P_o
ε = Price elasticity of demand

Second, the market share learning factor. It has been assumed that this factor is given as an external data. This number is characteristic for each product, and it has to be kept in the [0,1] interval. By forcing the external provision of this factor, the model makes available to the study team a door open to represent the most capricious market share patterns that may be thought of by the marketing people. This is, in fact, an important flexibility to have in the model, because the learning factor may be very circumstantial for each product-market segment, and strongly dependent on the strategy resulting in an increase or decrease of market share.

The remaining part of this section is devoted to analyzing the relation between marketing effort and market share target. Two cases are distinguished in the course of this analysis depending on whether a change in market share target is or is not intended in the study period.

If there is no change in the market share target, the marketing effort in a given period is directly given by the follwoing relations:

$$ME_t = MEAF_t \times ME_{t-1} \qquad (6)$$

where:

ME_o = given data (0 for new products)

ME_t = Marketing effort in period t

$MEAF_t$ = Marketing effort adjustment factor from (t-1) to t.

The adjustment factor in relation (6) is obtained by the product of two factors; one is intended to incorporate the market characteristics, and the other the usual practices of the firm in the dosage of promotional effort for their products. Both factors should be given as external data or as a function of known information. Relation (7a) shows the factorization of the adjustment factor.

$$MEAF_t = MAF_t \times FAF_t \qquad (7a)$$

where:

$MEAF_t$ = Marketing effort adjustment factor from (t-1) to t

MAF_t = Market adjustment factor

FAF_t = Firm adjustment factor.

This relation is further simplified in the application in this paper by assuming that the market adjustment factor is the market growth factor, and the firm adjustment factor is a positive constant less than 1:

$$MEAF_t = MGF_t \times c \tag{7b}$$

where:

$MEAF_t$ = Marketing effort adjustment factor from (t-1) to t

MGF_t = Market growth factor

c = Positive constant less than 1.

When the market share target is changed because of the introduction of a new product, or the decision to increase or decrease market share for an old product, the pattern that the marketing effort is having is abruptly disrupted in that period. This is done by adding a pulse to the computation of marketing effort in the period in which the target of the product is changed. Relation (6) is then turned into relation (8), in which it is also made explicit that the marketing effort is 0 before the introduction of a new product or after the withdrawal of an old one.

$$ME_t = \begin{cases} MEAF_t \times ME_{t-1} + \Delta ME_\theta \times \delta(t-\theta) \\ \\ 0 \text{ before the introduction of a new product or} \\ \text{after the withdrawal of an old one} \end{cases} \tag{8}$$

where:

ME_t = Marketing effort in period t

$MEAF_t$ = Marketing effort adjustment factor from (t-1) to t

θ = Period of a change in the market share target (introduction of a new product, or increase or decrease in target of an old product)

ΔME_θ = Change in the marketing effort of period θ needed to eventually reached the new target

$$\delta(t-\theta) = \begin{cases} 1 \text{ if } t = \theta \\ 0 \text{ otherwise} \end{cases}$$

The only piece of information that is missing is the relation to get the change in marketing effort as a function of the intended change in the market share target. This is the link provided in this model between market share target and marketing effort.

This link has to be given as external data to the model, but there are certain qualitative features that may be expected about it. The following examples are worth analyzing:

(i) Figure 12 gives a plausible relation between the market share target and the level of marketing effort that has to be reached in the period of introduction of a new product. Three elements are characterized in in graph:

- An upper limit for the market share target, which probably goes down if the product's introduction is retarded;
- A minimum marketing effort needed before any gain in market share is attained, which probably goes up with a later introduction of the product;
- A diminishing effectiveness of each extra unit of marketing effort added on top of the existing ones.

(ii) Figures 13 and 14 give a similar relation when the strategy of increasing the market share target of an existing product is followed. Note that the variables in the axis are the "changes" with respect to the levels existing at the moment of implementation of the new strategy.

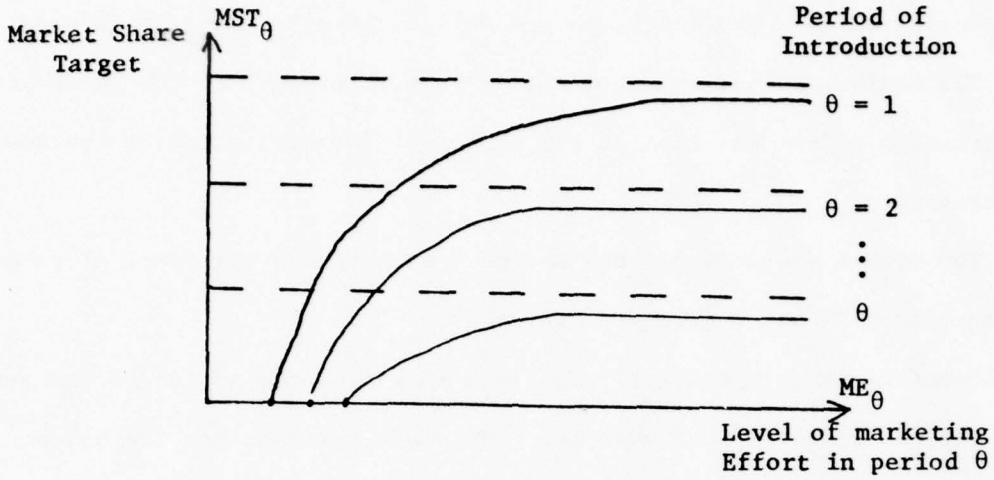


FIGURE 12. SOME EXAMPLES OF THE FUNCTIONAL RELATION BETWEEN THE CHANGE IN MARKET SHARE TARGET AND THE CHANGE IN MARKETING EFFORT - INTRODUCTION OF A NEW PRODUCT

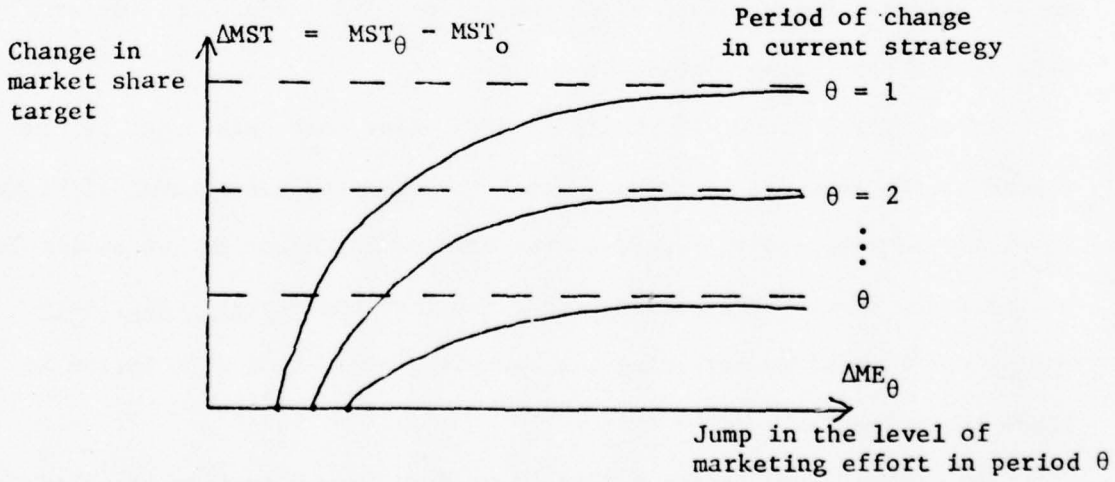


FIGURE 13. SOME EXAMPLE OF THE FUNCTIONAL RELATION BETWEEN THE CHANGE IN MARKET SHARE TARGET AND THE CHANGE IN MARKETING EFFORT - INCREASING MARKET SHARE OF AN EXISTING PRODUCT (VERSION 1)

(iii) Figure 15 completes the picture for a product whose market share is being given up. There are two special characteristics in this case:

- The maximum reduction of marketing effort is equal to the level of marketing effort existing at the moment of implementation of the new strategy;
- The market share target may become 0 even though the level of marketing effort is not 0 (Example, point P).

A summary of the parameters involved in the determination of the market share options is given in Figure 16. Certainly, this is not the unique way to capture the interdependence among marketing factors, but it is a simple way and it serves the purpose of formally bringing into the picture some factors that the marketing people may want to consider in their forecasts.

Illustration of the set of market share options

The objective to be accomplished by the realization of this step, is to get a formal representation for the set of market share options available in the case being used as an example.

In the first place, it should be made clear that this study is conducted at the local or divisional level. Therefore, the opinion of higher level of management with regard to the bias of the study is not available to the study team. This comment indicates that the overall efficiency factor was ignored in marketing the marketing projection (the factor is given the value 1).

The market share learning factors used in the estimation of sales were generated by the marketing group, and are given in Table 6.

	Year of Introduction	+1	+2	+3	+4	+5	≥6
Old-products	40	70	90	100	100	100	100
New-A	10	30	60	85	95	100	100
New-B	30	45	60	75	85	95	100

TABLE 6. MARKET SHARE LEARNING FACTORS FOR OLD AND NEW PRODUCTS (%)

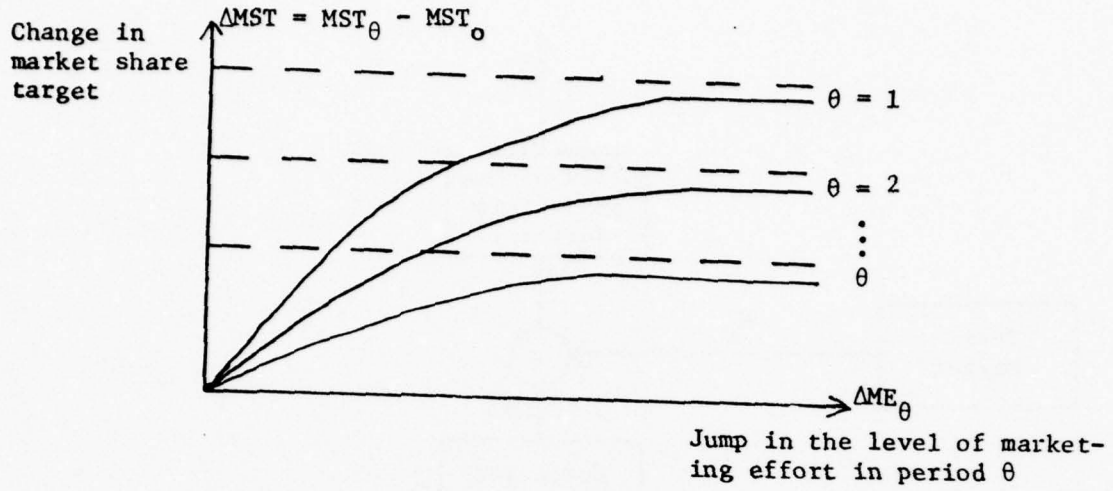


FIGURE 14. SOME EXAMPLES OF THE FUNCTIONAL RELATION BETWEEN THE CHANGE IN MARKET SHARE TARGET AND THE CHANGE IN MARKETING EFFORT - INCREASING MARKET SHARE OF AN EXISTING PRODUCT (VERSION 2)

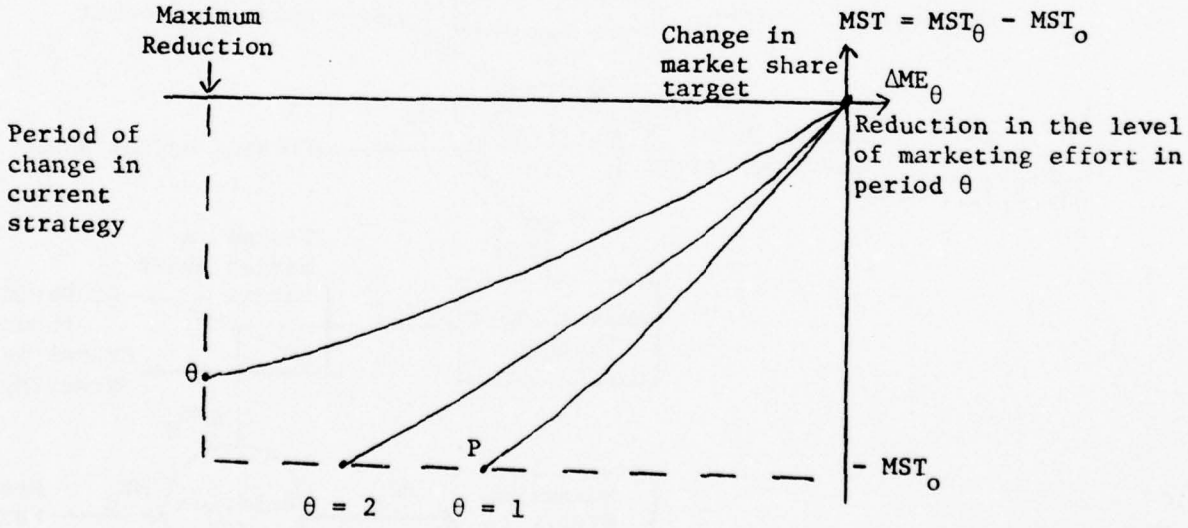


FIGURE 15. SOME EXAMPLES OF THE FUNCTIONAL RELATION BETWEEN THE CHANGE IN MARKET SHARE TARGET AND THE CHANGE IN MARKETING EFFORT - DECREASING MARKET SHARE OF AN EXISTING PRODUCT

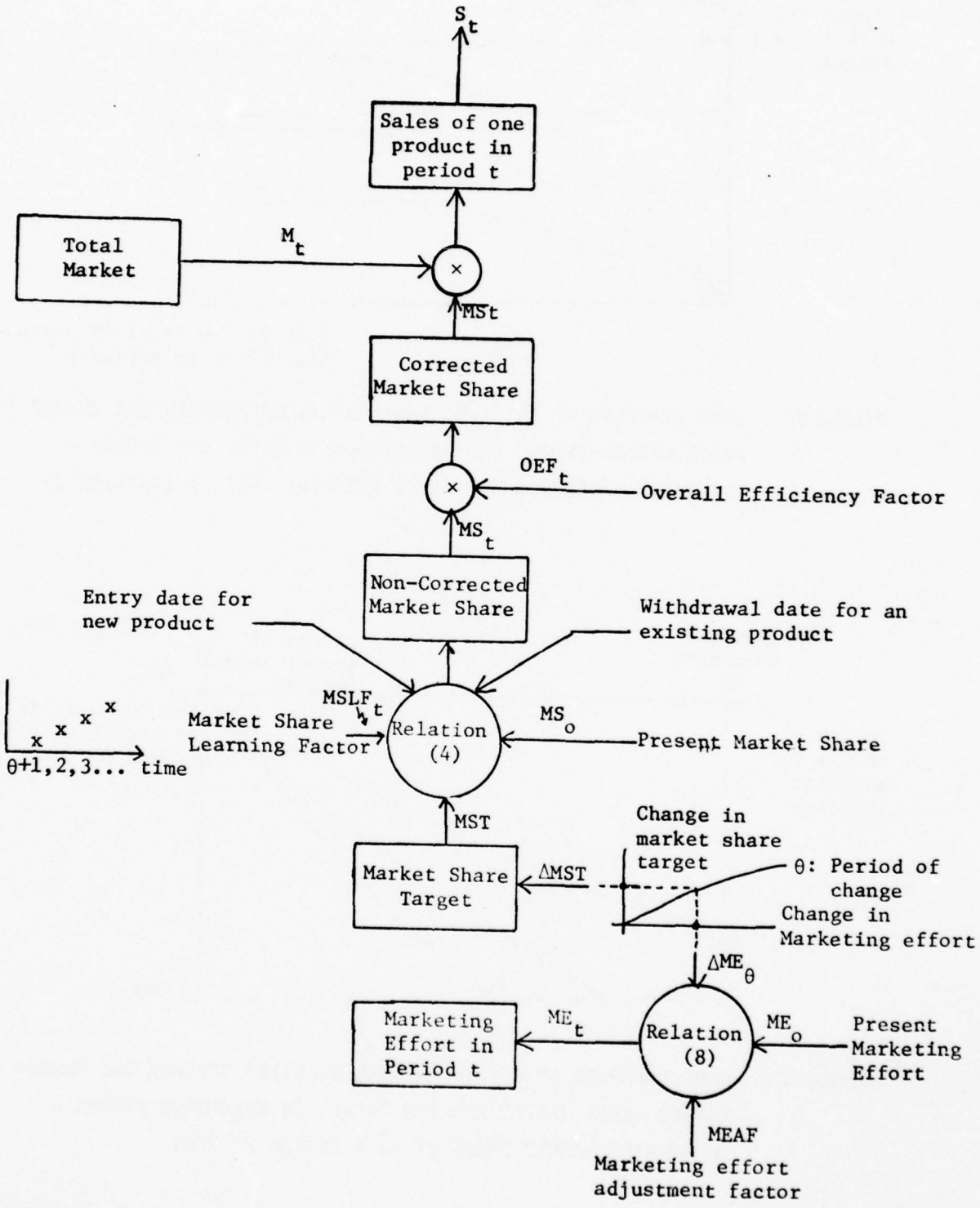


FIGURE 16. A FRAMEWORK FOR STRATEGIC PLANNING IN BUSINESS FIRMS - STEP 4b: THE SET OF MARKET SHARE OPTIONS

The basic strategy formulated for old products is to maintain market share at the current levels, according to what is indicated below.

Product	Market Share (%)	Marketing Effort (Equivalent # of persons)
Old-A	2	35
Old-B	2.5	25
Old-C	1.5	30
Old-D	1.0	20

Marketing effort is directly determined in this case by relations (6) and (7b). In particular, this last relation was used with a constant c = .9, becoming:

$$MEAF_t = .9 \times MGF_t$$

The choice of c = .9 indicates that for the firm to have the same level of sales in a 0-growth market, only 90% of the marketing effort of previous year needs to be done.

The marketing effort obtained by applying these relations under the conditions of the problem are indicated in Table 7.

Product	Year										
	0	1	2	3	4	5	6	7	8	9	10
Old-A	35	38.9	42.7	46.3	49.7	52.6	55.0	56.9	58.1	58.7	58.5
Old-B	25	25.9	26.7	27.5	28.1	28.7	29.1	29.4	29.6	29.7	29.7
Old-C	30	32.4	34.9	37.7	40.6	43.6	46.6	49.7	52.7	55.5	58.0
Old-D	20	19.8	19.6	19.5	19.2	18.9	18.6	18.1	17.4	16.7	15.7

TABLE 7. THE MARKETING EFFORT NEEDED TO MAINTAIN THE MARKET SHARE OF OLD-PRODUCTS (Equivalent number of persons)

It may be noticed that the marketing effort required to maintain the

actual level of market share stabilizes for Products A and B at the end of the period, is persistently increasing for Product C, and persistently decreasing for Product D.

To get marketing effort for new products, it is essential to specify the relation between market share target and marketing effort in the year of introduction. The qualitative properties of this relation, pictured in Figure 12, are analytically represented by means of the following exponential formula:

$$MST_\theta = \begin{cases} U_\theta[1-e^{-A(ME_\theta - B_\theta)}] & \text{if } ME_\theta \geq B_\theta \\ 0 \text{ otherwise} \end{cases}$$

where:

θ = Year of introduction of the product to the market

MST_θ = Target Market Share in year θ

ME_θ = Marketing effort in year θ (measured as number of people in the sales force)

U_θ = Upper limit for market share (decreasing with time) in year θ

B_θ = Minimum marketing effort needed to introduce the product in the market (increasing with time) in year θ

A = Constant to escalate the marketing effort.

U_θ, A, B_θ are a measure on the competitive characteristics of the environment.

Four questions have to be answered to determine the parameters of this situation:

(i) What is the maximum market share that the firm can capture if the product is introduced in year 1 (other year may be used as anchor if desired)? This is the value of U_1.

(ii) What is the minimum marketing effort that has to be committed in year 1 before any market share can be captured? This is the value of B_1.

(iii) Assess the marketing effort required to get a market share $.5 \times U_1$ (any number between 0 and U_1 may be used). This provides enough information to find the constant A.

(iv) Estimate the way in which this relation can be affected if the product is introduced in a later year instead. The variation of parameters with the year of introduction θ has to stem from this exercise.

In this part of the model, there is a great deal of latitude for the study group to bring in subjective and objective knowledge pertinent to the situation.

The relations obtained for new products are the following:

For product New-A:

$$MST_{\geq\theta} = \begin{cases} 0.041(0.95)^{\theta-1}\left[1-e^{-0.18(ME-\theta-9)}\right] & ME \geq \theta+9 \\ 0 & \text{otherwise} \end{cases}$$

For the base case:

$$ME = 30 \quad \text{(persons in the sales force)}$$

$$\theta = 1 \quad \text{(product introduced in the first year)}$$

$$MST_{\geq 1} = 4\%$$

For product New-B:

$$MST_{\geq\theta} = \begin{cases} 0.035(0.95)^{\theta-1}\left[1-e^{-0.1(ME-\theta-9)}\right] & ME \geq \theta+9 \\ 0 & \text{otherwise} \end{cases}$$

For the base case:

$$ME = 30 \quad \text{(persons in the sales force)}$$

$$\theta = 1 \quad \text{(product introduced in the first year)}$$

$$MST_{\underline{>1}} = 3\%$$

Obviously, these relations are hard to generate. Nonetheless, when successfully going through such an experience, the relations produced are a consensus attained by all participants in the study group with regard to the potential of the product, the effort required, and the competitive characteristics of the market. It should be stressed that there is a powerful capability of synthesizing a host of wide experiences and data buried in these relations when they are carefully obtained. There is a parallel between the evaluation of market share targets presented here, and the techniques employed within the framework of decision theory to assess uncertainties and utility functions.

The basic strategy formulated for new products is to assume they are introduced in the first year of the planning horizon, and the marketing effort done in this year of introduction is 30 (equivalent persons) for each product. The resulting market share target is 4.0% for product New-A and 3.0% for product New-B.

By applying relation (4) to these data, the market shares indicated in Table 8 are obtained.

Product	Year									
	1	2	3	4	5	6	7	8	9	10
New-A	.4	1.2	2.4	3.4	3.8	4.0	4.0	4.0	4.0	4.0
New-B	.9	1.4	1.8	2.3	2.6	2.9	3.0	3.0	3.0	3.0

TABLE 8. MARKET SHARES FOR NEW PRODUCTS UNDER BASIC ASSUMPTIONS (%)

The marketing effort needed to maintain the market share target is derived from relations (8) and (7b) (with c = .9), and is indicated in Table 9.

Product	Year										
	0	1	2	3	4	5	6	7	8	9	10
New-A	0	30.0	31.2	32.5	34.0	35.6	37.3	39.1	40.8	42.2	43.2
New-B	0	30.0	31.7	33.5	35.6	37.9	40.4	43.0	45.5	47.8	49.5

TABLE 9. MARKETING EFFORT NEEDED TO REACH TARGETS OF 4.0% AND 3.0% FOR NEW-PRODUCTS A AND B RESPECTIVELY (Equivalent number of persons)

It may be observed that the marketing effort jumps in the first year (introduction of products in the market), and then increases progressively, pushed by the market growth and the condition of holding market share target.

9. *Step 5: Definition of a Base Case and Its Sales Projections*

The selection of a base case is a corner-stone to the proper evaluation and comparison among strategic alternatives. The base case is used as reference to appraise the attractiveness of different decisions. Though it may be defined arbitrarily, it is convenient to choose as the base case the set of circumstances and decisions that appear as the most valid on an a priori analysis.

If the final strategy is selected by exploring the neighborhood of the base case, as is usually done in many complex decisions, this choice might be greatly influenced by the definition of the base case. Under these circumstances, the base case is not only a point of comparison, but

an important initial step in reaching a final strategic decision. If a global optimization could be done, the careful selection of the base case is much less important, but as Cyert and March suggest [9], firms perform only limited comparisons rather than exhaustive searches for optimality, in order to agree on a final course of action.

All preceeding steps in this framework have provided us with the basic information to forecast sales. This forecast is conditional upon the strategic decisions regarding market share, and the scenario of circumstances. The definition of a base case corresponds to the identification of the basic scenario and basic strategic decisions.

The basic scenario is summarized in this model in terms of the planning horizon and the scenario factor that enters in the estimation of the total market for each product [relation (3)].

The basic strategic decisions are summarized in the entry date for new products, the withdrawal date for old products, and the selection of a market share target (for old and new products). Typical strategic options with regard to the target are: hold, increase, reduce, withdraw, and harvest (first reduce and then withdraw).

With this information it is possible to get total sales and marketing effort for all products along the planning horizon. Figure 17 summarizes the definitions involved in the selection of a base case and the projection of sales.

Illustration of the definition of a base case, and its sales projections

When the total market and market share were projected in the illustration give before, the assumptions behind those projections were the base case assumptions. They are now more carefully stated to avoid any confusion:

a. Definition of the basic scenario
   - Determine the planning horizon
   - Indicate the proper scenario factor [Relation (4)]

b. Identification of basic strategic decisions
   - Entry dates for new products
   - Withdrawal dates for existing products
   - Pick a strategy concerning market share target. Typical options are:
     - Hold
     - Increase
     - Reduce
     - Withdraw
     - Harvest (First reduce and then withdraw)

c. Get Total Market (procedure summarized in Figure 10).

d. Get Market Share and marketing effort (procedure summarized in Figure 16).

e. Get Sales for all years in the planning horizon [Relation (1)].

FIGURE 17. A FRAMEWORK FOR STRATEGIC ANALYSIS IN BUSINESS FIRMS - STEP 5: DEFINITION OF A BASE CASE AND ITS SALES PROJECTIONS

Definition of the basic scenario

Planning horizon = 10 years

Scenario factor = 1+G with G = .08

Identification of basic strategic decisions

Product

Old-A	hold market share to 2% during the 10 years	
Old-B	hold market share to 2.5% during the 10 years	
Old-C	hold market share to 1.5% during the 10 years	
Old-D	hold market share to 1.0% during the 10 years	
New-A	Entry date: 1st year	Market Share Target: 4.0%
New-B	Entry date: 1st year	Market Share Target: 3.0%

These parameters and other basic data indicated along the illustration of this example, were used to get the total markets and market shares given in Tables 5 and 8 for each one of the products being considered. Sales projections are now obtained as the simple product of these quantities, and they are presented in Table 10.

Product-Market Segment	Year									
	1	2	3	4	5	6	7	8	9	10
Old-A	3,150	3,818	4,614	5,505	5,491	7,541	8,655	9,832	11,009	12,218
Old-B	1,364	1,564	1,782	2,027	2,291	2,591	2,909	3,255	3,627	4,027
Old-C	2,782	3,345	4,000	4,800	5,727	6,800	8,055	9,491	11,109	12,891
Old-D	3,705	4,077	4,491	4,932	5,395	5,873	6,350	6,809	7,232	7,595
New-A	582	2,036	4,691	7,709	10,036	12,327	14,327	16,618	19,091	21,745
New-B	614	1,064	1,677	2,468	3,314	4,391	5,468	6,423	7,500	8,632
TOTAL	12,197	15,904	21,255	27,441	33,254	39,523	45,764	52,428	59,568	67,108

TABLE 10. SALES PROJECTIONS FOR THE BASE CASE (at price for products in year 0, 000 US$)

In a similar way, sales in physical units are also projected. The resulting numbers are given in Table 11. It is worth noticing that Old-D is a high volume, but not a high revenue product. For example, in year 10, it corresponds to 52.1% of the total volume of Old-products,

Product	Year									
	1	2	3	4	5	6	7	8	9	10
Old-A	990	1220	1450	1730	2040	2370	2720	3090	3460	3840
Old-B	1500	1720	1960	2230	2520	2850	3200	3580	3990	4430
Old-C	1530	1840	2200	2640	3150	3740	4430	5220	3110	7090
Old-D	8150	8970	9880	10850	10850	12920	13970	14980	15910	16710
New-A	160	560	1290	2120	2760	3390	3940	4570	5250	5980
New-B	450	780	1230	1810	2430	3220	4010	4710	5500	6330

TABLE 11. SALES PROJECTIONS FOR THE BASE CASE (000 units)

and only to 20.7% of their revenue. Considering Old and New Products, D represents 37.7% of the volume and 11.3% of the revenue. This observation suggests a strategy that opposes the primary indication of the BCG-kind of graph, because divesting D (a cow in the graph) has the desirable property of freeing plant capacity for other products of higher return. Therefore, investments in a new plant may be postponed by sacrificing part of the sales revenue.

10. Step 6: *Determination of Physical Facilities and Investment Requirements Associated with the Base Case*

It was already indicated that, in this framework of analysis, the set of logistics options is dependent upon the adopted marketing strategy. As a first step, an assessment should be made on the technical viability of the marketing options being considered. Also, the adequacy of existing facilities, the need for their expansion, or the acquisition of new ones ought to be studied.

This initial analysis should provide the appropriate information that, starting with the sales estimates, could render the fundamental consequences of the logistics options. A model to accomplish this task has not been elaborated upon in this paper, because it has been assumed that the level of knowledge and information on the technical options is rather low in the first stages of exploration of a new venture. But such a model can certainly be made more specific if the available data allows that.

The impact of the logistics choices is condensed in terms of investments and cost functions, both of which are representative of the chosen technology. The total investment and its calendar should be given for the base case, and for other relevant alternatives. The investment should

be classified according to its depreciation pattern: for example, in this study it was given in terms of land, equipment, and buildings.

The cost functions are expressions to get the total production and distribution costs corresponding to the level of sales. They have been directly integrated into the financial model and its detailed specification is done in the next section. Special attention is given here only to the raw materials used per unit of final product, singling out those coming from the parent corporation. This is because an important strategic variable is the transfer prices charged for those raw materials, which can substantially change the outlook for the project.

Figure 18 gives a summary of the aggregated way adopted in this study to transmit into monetary terms the impact of the technical choice. The mathematical forms chosen to express investment and cost functions must be adequate to explore the base case and a neighborhood of it, without engaging into an exhaustive new assessment of basic parameters. This is particularly helpful when conducting a sensitivity analysis.

Specification of a technical model:

a. Assumptions regarding investment
   - Total investment for the base case
   - Functions to adjust this investment to close alternatives
   - Calendar of investment
   - Classification of investment according to its depreciation pattern. Typical option:
     - Land
     - Equipment
     - Construction

b. Assumptions regarding cost functions
   - Production costs (Details in the financial model). Separate raw materials coming from the parent corporation (charged cost depends on transfer prices).
   - Distribution costs (Details in the financial model.

FIGURE 18. A FRAMEWORK FOR STRATEGIC ANALYSIS IN BUSINESS FIRMS - STEP 6: DETERMINATION OF PHYSICAL FACILITIES AND INVESTMENT REQUIREMENTS ASSOCIATED WITH THE BASE CASE

Illustration of determination of physical facilities and investment requirements associated with the base case

It was estimated that the plant expansion for the base case should increase actual capacity up to 70,000 units. For a plant capacity of 70,000 (units), the investments required are the following:

- Land: LC$ 11,000,000 — 3 years before starting
- Equipment: US$ 2,400,000 — 1 year before starting
- Construction: LC$ 65,000,000 — 2 years before starting
  LC$ 21,000,000 — 1 year before starting

(LC$ = Local currency; US$ = U.S. dollars)

(1 US$ = 11 LC$)

If capacity is different to 70,000 units, but close to it, the following relations are used to get the new estimates for the investment.

- For Land and Construction

$$I(C) = I_o(\frac{C}{C_o})^{\alpha}$$

where:

$I(C)$ = Investment at capacity C

I_o = Investment at capacity C_o = 70,000

α = Constant = .5

- For Equipment

$$E(C) = E_o(\frac{C}{C_o})^{\alpha}$$

where:

$E(C)$ = Equipment at capacity C

E_o = Equipment at capacity C_o = 70,000

α = Constant = .2

Expressions such as those provided above are standard engineering practices to obtain crude assessments of investment estimates (Woods [22]).

With regard to cost functions, Table 12 gives the data used in the base case as costs proportional to production.

Product	Raw Materials from Parent Corporation US$/unit*	Other Imported Raw Material US$/unit	Local Raw Materials LC$/unit	Direct Labor LC$/unit
Old-A	0.7	0.3	0.4	0.2
Old-B	0.1	0.0	2.0	0.1
Old-C	0.3	0.0	3.0	0.8
Old-D	0.0	0.1	1.0	0.1
New-A	1.0	0.2	0.5	0.2
New-B	0.2	0.0	2.5	0.5

LC$ = Local currency (1 US$ = 11 LC$)
US$ = U.S. dollars

TABLE 12: COSTS PROPORTIONAL TO PRODUCTION

11. *Step 7: Financial Model Specification. The Set of Financial Options*

The financial model, coupled with the marketing and production models, constitutes the basic mechanism to fully assess the impact of a strategic course of action at the corporative level. Both the financial and production models are pretty much preconditioned by the existing financial policies, and by the marketing strategies chosen. In fact, those two models are not strictly differentiated entities at the level of detail chosen in this paper to make the strategic analysis. They may be thought of as a unique black box that is fed by the marketing projections, and generates cash-flows and

* Transfer prices are assumed to be the current ones (transfer prices index = 1).

profitability measures. These cash-flows encompass all production costs and investment needs, as well as the impact that different financial options may have on it.

The core of the financial model is then an analytic construct allowing the determination of cash streams for the overall planning horizon, under different sales levels, production conditions, and financial options. To make the exposition easier, two sections will be distinguished: model characteristics, and financial options.

11.1 *Model Characteristics*

The general structure adopted for the financial model, that is shown in Figure 19, follows widely accepted conventions (Anthony and Reece [4]). A more detailed version of the same model is given in Figure 20, which gives the itemized specification of the cost of goods sold, that correspond to the representation of the technical model indicated in Step 6.

The analysts should direct their efforts to providing close expressions for each one of the items being included in the model. These expressions are very circumstantial to the firm characteristics and organization style, and, most important, to the institutional setting in which the local subsidiary is operating. This is especially true when dealing with a subsidiary of a U.S. corporation located in a foreign country. In this case, taxes, financing by the parent corporation, profit remittance, capital remittance, raw materials imported, etc., are issues that may be regulated in extremely different ways by the different countries. These institutional peculiarities should be captured by the financial model.

One of the most immediate impacts of having the corporation headquarters and the subsidiary located in different countries, is that these two organizations will be operating in a different currency. In this

a) INCOME STATEMENT

Sales
- Allowances (bad debts, returns, discounts)

Net Sales
- Cost of Goods Sold

Gross Margin
- Marketing Expenses
- Administrative Expenses

Incoming from Operation
- Interest Expenses

Net Income Before Taxes
- Taxes

Net Income After Taxes

b) LOCAL NET CASH FLOW

Net Income After Taxes
+ Depreciation
- Increase in Working Capital
- Investments
+ Borrowings
- Principal Payments
+ Salvage Value of Investments*
+ Working Capital Recovery*

Local Net Cash Flow

c) CORPORATE CASH FLOW

Local Net Cash Flow
± Transactions between Parent Corporation and Division

Net Contribution to Corporate Cash Flow

FIGURE 19: A FRAMEWORK FOR STRATEGIC PLANNING IN BUSINESS FIRMS - STEP 7: FINANCIAL MODEL SPECIFICATION (GENERAL STRUCTURE)

* Items are only applicable to compute cash-flow at the end of the planning horizon.

FIGURE 20: FINANCIAL MODEL SPECIFICATION (DETAILED STRUCTURE)

a. INCOME STATEMENT:

Sales

- Allowances (Bad Debts, Returns, Discounts)

Net Sales

- Cost of Goods Sold
  - * Production Costs
    - * Proportional to Sales
      - * Imported Raw Materials
        - * Parent Corporation
        - * Others
      - * Local Raw Materials
      - * Direct Labor
    - * Other Production Costs (Overhead)
      - * Indirect Labor
      - * Depreciation of Industrial Buildings & Equipment
      - * Other
  - * Distribution Costs
    - * Salaries
    - * Freight
    - * Other

Gross Margin

- Marketing Expenses
  - * Promotional Effort
    - * Salaries
    - * Advertising
    - * Samples (Production and Distribution Costs)
      - * Raw Material from Parent Corporation
      - * Other Costs
    - * Other Marketing Expenses
  - * Depreciation of Marketing Buildings and Equipment
- Administrative Expenses (and other General Expenses)
  - * Salaries
  - * Other Administrative Expenses
  - * Depreciation of Administrative Buildings and Equipment

Income from Operation

FIGURE 20 (Cont'd.)

Income from Operation

- Interest Expenses
  - * Paid to the Parent Corporation
  - * Paid to Other Parties
    - * Local
    - * Others

Net Income Before Taxes

- Taxes

Net Income After Taxes

b. LOCAL NET CASH FLOW:

Net Income After Taxes

+ Depreciation of Buildings and Equipment
  - * Industrial
  - * Marketing
  - * Administrative

- Increase in Working Capital Coming From:
  - * Increase in Current Assets
    - * Accounts Receivables
    - * Inventories
    - * Cash and Prepaid Expenses
  - * Decrease in Current Liabilities
    - * Account Payable and Accrued Liabilities

- Investments
  - * Land
  - * Equipment
    - * Industrial
    - * Marketing
    - * Administrative
  - * Buildings
    - * Industrial
    - * Marketing
    - * Administrative

+ Borrowing
    * Parent Corporation
    * Other Parties
        * Local
        * Other
- Principal Payment
    * Parent Corporation
    * Other Parties
        * Local
        * Other

Local Net Cash Flow
+ Working Capital Recovery
+ Salvage Value of Investments
+ Others

Local Net Cash Flow Plus Residual Value

c. CORPORATE CASH FLOW:

Local Profit Remittance
+ Profit Contribution of Raw Materials from Parent Corporation
- Equity Financing
+ Capital Remittance
- Borrowing from Parent Corporation
+ Principal Paid to Parent Corporation
+ Interest Paid to Parent Corporation
± Adjustments for Deviations from Corporative D/E
± Adjustments for inflation and changes in conversion rate

Net Contribution to Corporate Cash Flow

FIGURE 20: A FRAMEWORK FOR STRATEGIC PLANNING IN BUSINESS FIRMS - STEP 7: FINANCIAL MODEL SPECIFICATION (DETAILED STRUCTURE)

model it is assumed that the corporation operates in dollars (US$), and the subsidiary in local currency (LC$). All institutional rules are represented more easily when allowing this distinction; but what is more valuable, from an analytic point of view, is that these two currencies follow very different inflationary patterns, and the corporation may suffer a loss or get a net gain, by pure changes in the conversion rates between the beginning and the end of an exercise. Therefore, the recognition of two different currencies in the model allows for a more systematic exploration of the risk factors involved in the venture.

The impact of inflation is another important feature to be included in the financial model, because it tends to distort the relative growth of the different cash-flows. To model inflationary trends, it is not convenient to try guessing the absolute changes in prices, but only the relative ones, because absolute changes do not add important information to the cash-flow (it is only a change in scale). The validity of this assertion is conditioned to the existence of institutional rules whose objective is precisely the correction of purely inflationary impacts on the profitability of a business. For example, some countries with heavy inflation permit the revaluation of assets and depreciation allowances. The absence of these kinds of rules would require a more involved analytic treatment of inflation. (Notice one more the impact of the institutional setting in the specification of the model.)

The cash flow is determined at the local and at the corporate level. This last cash flow should include all those effects over the entire corporation that are not perceived at the level of the subsidiary engaged in the analysis. The institutional rules are certainly a major factor in this part of the model. Also, the attractiveness of the project is fundamentally affected by the corporate definition of a financial strategy.

When the size of the venture is rather small compared with the overall corporation, the assumption done in this paper of constant financial strategy is a good one. But if the venture represents a substantial commitment of resources, the corporation may be willing to make an overall assessment of its current financial strategy, and change parameters like the capital structure, and the dividend policy. This type of study would require a very different perspective of analysis, which has not been included in this paper. The interested reader is referred to Zakon [23].

Illustration of Model Characteristics

Given the very particular nature of the evaluation model, there is no point in making a full specification of it in this paper. Only certain related equations and properties will be given here as illustration.

a) "What if" kind of model.

The model is a mathematical structure that allows the determination of cash-flow and rentability indeces under different combinations of externally given values for parameters. To facilitate the exploration of the venture, the model has been implemented in computers using APL, which is a powerful conversational language.

b) Two types of currencies are being used.

The model contemplates the possibility of differentiating between local currency (LC$) and dollars (US$). This capability makes possible the distinction of three kinds of transaction in the determination of the cash-flow:

- Transactions between the subsidiary and the local environment (in LC$);
- Transactions between the subsidiary and other business firms outside the country of the venture (in US$, with no control on prices);

- Transactions between the subsidiary and the corporation (in US$, with corporate control on terms of the transaction).

c) Modeling inflation.

The model works with a constant monetary base in US$ and LC$. The impact of inflation is represented by relative changes in the prices of labor, products, construction costs, and conversion rate.

No attempt is made to estimate the absolute level of inflation, because existing regulations allow the revaluation of assets and depreciation rate.

The specification of changes in relative prices by means of properly defined price indeces, is the way in which the study team condenses its expectations about evolutionary changes in the environment. The degree of comprehensiveness chosen for the description of the environment is the consequence of the available information, and of the essential dimensions of the environment as perceived by the study team.

d) Net Sales.

Net sales is obtained from the sales volumes expressed in physical units (generated by the marketing model), and their corresponding prices, as indicated in relation (9).

$$NETS(T) = PPIND(T) \times \left[\sum_{P=1}^{PP} VSAL(P,T) \times PRICE(P) \right] \qquad (9)$$

$$\text{for } T=0,1,2,\ldots,TT$$

where:

NETS(T) = Net Sales in year T

PPIND(T) = Products price index in year T

VSAL(P,T) = Volume of sales for product P in year T

PRICE(P) = Price of Product P in year 0

PP = Total number of products (old and new)

TT = Last year in the planning horizon.

Prices holding in year 0 (the year of realization of the study) are given net of bad debts and any applicable discount. To account for the relative change of product prices with regard to the monetary base, the price index PPIND(T) is introduced.

e) Production costs proposal to sales.

This cost source is estimated as the total constribution coming from four cost components (see Table 12):

First, raw materials imported from the parent corporation, which are given in (US$/unit): To get the total contribution of this component, both the conversion rate, and the transfer price indeces should be taken into consideration.

Second, raw materials imported from other firms out of the country in which the subsidiary is residing (US$/unit): Only the correction due to relative changes in the conversion rate should be used in this case to get the total cost for this concept.

Third, local raw materials, which are given in (LC$/unit): This price is supposed to vary at the same pace as inflation in the country; therefore, no correction index is needed, because there is no relative change between the price for these local raw materials and the general price index.

Fourth, direct labor, which is given in (LC$/unit): A salary index is used in this case to correct for the relative change in the price of labor.

Based on these considerations, the following expression gives the cost of production proportional to sales:

$$PCPS(T) = [TPIND(T) \times CRO \times CRIND(T) \sum_{P=1}^{PP} UC(P,1) \times VSAL(P,T)] +$$

$$+ [CRO \times CRIND(T) \times \sum_{P=1}^{PP} UC(P,2) \times VSAL(P,T)] +$$

$$+ \left[\sum_{P=1}^{PP} UC(P,3) \times VSAL(P,T) \right] +$$

$$+ \left[SLIND(T) \times \sum_{P=1}^{PP} UC(P,4) \times VSAL(P,T) \right] \qquad (10)$$

$$\text{for } T=1,2,\ldots,TT$$

where:

PCPS(T) = Production costs proportional to sales in year T

TPIND(T) = Transfer price index in year T

CRO = Conversion rate in year 0

CRIND(T) = Conversion rate index in year T

UC(P,C) = Unit cost of production proportional to sales for product P and cost component C.

VSAL(P,T) = Volume of sales for product P in year T

SLIND(T) = Salary price index in year T

PP = Total number of products (old and new)

TT = Last year in the planning horizon.

f) Distribution costs.

These costs are obtained by adding the contribution of salaries (and all items that change with the salary index), freight, and other expenses. Freight is estimated as a fraction of net sales, while salaries and other expenses are constants that are adjusted by the salary index, and by the increase in the level of business activity respectively.

$$DCOST(T) = [C_1 \times SLIND(T)] + [C_2 \times NETS(T)] + [C_3 \times BAIND(T)]$$

$$\text{for } T=1,\ldots,TT \qquad (11)$$

where:

DCOST(T) = Distribution costs in year T

SLIND(T) = Salary index in year T

NETS(T) = Net sales in year T

BAIND(T) = Business activity index in year T

TT = Last year in the planning horizon.

C_1, C_2, and C_3 are constants determined empirically. Notice in this example the way in which inflation changes the relative importance of the three sources of distribution costs.

g) Marketing effort.

The important point to remember with regard to marketing effort is that this item is rooted in the marketing model, where marketing effort is determined as a function of the strategies chosen for each one of the products. The financial model has to make use of that information for getting the total cost for this concept.

h) Taxes.

The payment of taxes is directly linked to the tax law in the country. A point to be considered is the existence of carry backward, and carry forward provisions for tax payment. For example, is a tax credit granted for losses in a given exercise? If so, for how many years?

i) Working Capital.

Important policy variables, that are usually controllable at the local level, are the credit terms given by the firm to its buyers. Working capital may reach substantial levels depending on the credit terms. In this example, working capital and new investments are of the same order of magnitude.

j) Depreciation Allowances.

Total depreciation is obtained by considering depreciation allowances for buildings and equipment used in the production, marketing, and administrating activities. These values are directly dependent on institutional regulations like the type of depreciation allowed (linear, acce-

lerated, etc.), the period of depreciation, and the treatment of local inflation (revluation rules).

k) Financing and interest expenses.

This is another important policy variable and it is presented and discussed now as part of the financial options.

11.2 *Financial Options*

The long exposition and illustration of the model structure is not particularly helpful in providing with clarity the set of financial options open to the firm. This second part in Step 7 of the framework is pursuing precisely that end.

The financial options that have been represented in this evaluation model are primarily four: transfer prices of raw materials, terms of the project's financing, capital structure at the corporate level, and credit terms for sales at the local level.

Transfer prices of raw materials is an important decision variable that affects the attractiveness of the business by changing the profitability of the subsidiary as well as the rest of the corporation. The project's financing can change the characteristics and composition of cash-flow at the local and corporate level. Even more important, it can deviate from the capital structure fixed for the corporation, imposing an extra burden, or generating an extra slack in the capability to engage in long term debts. This is a factor that should be introduced in the evaluation at the corporate level.

Finally, the credit terms for sales may be used as a financial option, but it should be recalled that they cannot be treated independently of prices being given to products. Figure 21 summarizes a set of financial

options that may be considered in the strategic analysis of a project.

Four variables are considered in this modelling:

a. Transfer prices
   - A transfer price index is defined and it is given the value 1 in the base case.

b. Financing.
   Three components are distinguished:
   - Uses
     - Land
     - Equipment
     - Construction
     - Working Capital
   - Source for each use
     - Local
     - Parent Corporation
     - Other
   - Credit terms for each source
     - Interest
     - Term of Loan
     - Grace Period
     - Earmarking and Inspection Fee
     - Principal Payment Schedule

c. Capital Structure
   - The debt-equity ratio must be used to correct cash-flow at the corporate level. (There is no option on the capital structure. It is given by the corporation.)

d. Credit terms on sales
   - This option can not be considered in the absence of the price chosen for products.

FIGURE 21: A FRAMEWORK FOR STRATEGIC PLANNING IN BUSINESS FIRMS - STEP 7: FINANCIAL OPTIONS

Illustration of financial options

In the example case, transfer prices are represented in terms of a transfer price index, which is given the value 1 for the conditions assumed in the base case. The project's financing is assumed to be all equity in

the base case, though alternative financing is explored in the sensitivity study. Correction for deviations of this project from the corporate capital structure are provided in the evaluation at the corporate level.

Credit terms for sales financing are not considered as a financial option in this case, but are assumed to be largely the imposition of sales conditions prevailing in the industry. This assumption is justifiable because all demand projections are done assuming a certain historical pattern of price behavior for the industry and the firm, which is very much associated with a tradition in credit terms that can hardly be changed unilaterally by the firm.

12. *Step 8: Evaluation of the Base Case and Sensitivity Analysis*

Up to this point, all steps in the framework have been preparing the ground for a final evaluation of the strategic alternatives, by orderly and formally defining these alternatives in terms of the environmental parameters and the available strategic options. This first analysis of the problem is concluded by the evaluation of the base case, that at this point is a very mechanical task suitable to be implemented in a computer.

But the potentiality of a formal procedure like the one presented in this paper would be badly misused if no analysis is made on the sensitivity of the profitability indices to different scenarios, and to different strategic options. The whole conception of the system has been thought of as to provide enough flexibility in these final steps of the analysis. People should raise doubts about certain assumptions, study the impact on profitability of different decisions, or simply feel curiousity for the impact of a change in the definition of the base case parameters. In

a nutshell, people should grow confident with the use of the model, and develop a quantitative understanding for the effect that different circumstances and decisions may have over the profitability of the venture.

In this way, all participants in the decision will be able to reach an agreement, in a more formal way, regarding the attractiveness and riskiness of the venture.

Illustration of Evaluation of the Base Case and Sensitivity Analysis

The complete evaluation of the base case is presented in Table 13. It may be observed that all profitability indices show an attractive venture.

In Table 14 are included many interesting examples of the sensitivity of the net present value indicator to different changes in the assumptions. The assumptions changed are the following:

Scenarios -

- Pessimistic : Scenario factor = G = 0.03
- Optimisitic : Scenario factor = G = 0.10

Strategic options -

- Delay new products one year (introduction in year 2)
- Supress new products (they are not introduced)
- Withdraw product D in year 7
- Assume 100% financing of fixed assets

It may be observed that supressing or delaying the introduction of new products has undesirable effects on the profitability of the venture; therefore, all efforts should be concentrated in the introduction of these new products. The other interesting aspect shown in this sensitivity analysis is that withdrawing product D in period 7 does not require any new investment, thus improving the cash position at the beginning of the study period, and deteriorating it toward the end. This is clearly an

Year	1	2	3	4	5	6	7	8	9	10
INCOME STATEMENT (000 US$):										
Net Sales	11830	14965	19398	24293	28557	32921	36976	41090	45286	49488
Cost Goods Sold	5740	7357	9654	12320	14871	17652	20953	23946	27174	30597
Gross Margin	6090	7608	9744	11973	13686	15269	16023	17144	18112	18891
Marketing Expns	5004	5398	5833	6289	6739	7191	7899	8311	8684	8997
Administr Expns	1175	1309	1484	1675	1849	2031	2532	2719	2916	3121
Income Operatn	-89	901	2427	4009	5098	6047	5592	6114	6512	6773
Interest Expns	0	0	0	0	0	0	0	0	0	0
Net Inc. Bef. Tax	-89	901	2427	4009	5098	6047	5592	6114	6512	6773
Taxes	0	325	971	1604	2039	2419	2237	2445	2604	2709
Net Inc. Aft. Tax	-89	576	1456	2405	3059	3628	3355	3669	3908	4064
LOCAL NET CASH FLOW (000 US$):*										
Net Inc. Aft. Tax	-89	576	1456	2405	3059	3628	3355	3669	2908	4064
Depreciation	73	73	73	73	73	73	1165	1165	1165	1165
Change w. Cap	723	940	1330	1468	1279	1309	1216	1234	1259	1261
Investments	0	0	0	1146	6976	4739	0	0	0	0
Borrwoings	0	0	0	0	0	0	0	0	0	0
Princp. Payment	0	0	0	0	0	0	0	0	0	0
Net Cash Flow	-739	-291	199	-136	-5123	-2347	3304	3600	3814	3968
Assets End Per.	0	0	0	0	0	0	0	0	0	25156
CORPORATE CASH FLOW (000 US$):**										
Local Cash Flow	-739	-291	199	-136	-5123	-2347	3304	3600	3814	3968
Raw M. Transfer	1047	1507	2210	3013	3726	4477	5204	5997	6849	7755
D/E Adjustments	12	27	51	101	263	381	380	380	381	381
Corp. Cash Flow	320	1243	2460	2978	-1134	2511	8888	9977	11044	12104

*At the Local Level: Net present value at 10% = 10859
Net present value at 15% = 6331
Net present value at 20% = 3589

**At the Corporate Level: Net present value at 10% = 34178
Net present value at 15% = 24012
Net present value at 20% = 17334

TABLE 13. EVALUATION OF THE BASE CASE

	Change in NPV with regard to the base case (000 US$)					
	AT THE LOCAL LEVEL			AT THE CORPORATE LEVEL		
	10%	15%	20%	10%	15%	20%
	[10859] *	[6331]	[3589]	[34178] *	[24012]	[17334]
Base Case	0	0	0	0	0	0
Scenarios						
- Optimistic	1100	273	-219	4128	2474	1419
- Pessimistic	-1130	327	1041	-7602	-4372	-2449
Strategic Options						
- Delay new products	-1459	-1020	-705	-3355	-2583	-2018
- Supress new products	-5125	-2464	-865	-17481	-11696	-7924
- Withdraw product D	2333	2664	2645	1691	2195	2296
- Financing	1044	1601	1779	-181	703	1109

* These are the absolute values of NPV in the base case

TABLE 14. SENSITIVITY OF NET PRESENT VALUE TO A CHANGE IN ONLY ONE ASSUMPTION OF THE BASE CASE

interesting possibility that should be given proper consideration, because it looks as a favorable option. (It should be recalled that product Old-D is the only cash cow under the BCG approach, therefore the strategy of withdrawing it is contradicting the option of milking the product before discarding it.)

By making considerations like the ones exemplified in this illustration, it is possible to go over those aspects of the decision whose exploration appears as a rewarding effort. The systematic analysis of the problem will generate the needed confidence and understanding of the characteristics and riskiness of the project.

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VIII. The Shipbuilding Company in a Multi-Divisional Corporate Environment

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1. *Introduction*

Only twenty years ago, the majority of shipbuilding firms in the United States were independent operating entities; today, eleven of the twelve major shipbuilding firms are subdivisions of large multi-division corporations. This paper presents, in general terms, some of the basic economic conditions which led to corporate acquisition of independent shipbuilding companies, and the visible impact of acquisition on these formerly independent companies. The paper then proceeds to illustrate a less visible effect of corporate acquisition: the operational inter-relationships that have been worked out between the shipbuilding sub-division and its parent corporation. For this purpose we discuss the working relationships that have been developed between the Quincy Shipbuilding Division and General Dynamics, which we assume are representative of similar relationships worked out between other corporations and their shipbuilding divisions.

For the purpose of this paper, we use the term multi-division corporation as synonymous with conglomerate, since whether or not the parent corporation is considered a conglomerate is not relevant to this discussion.

2. *Overview*

2.1 *Historical Background*

The first questions we address are the historical trends that have shaped the character of the U.S. shipbuilding industry and the economic

conditions that have made independent shipbuilding firms susceptible to acquisition by large corporations.

During the first one hundred years of the republic, shipbuilding developed as a major U.S. industry which flourished and successfully competed in a free market economy. However, as the country became industrialized and the domestic economy expanded in the years following the Civil War, U.S. shipping and shipbuilding declined. Progressively, the industry lost its ability to compete effectively in world markets, until, near the turn of the century, American shipbuilding had become a relatively minor industry that received little national attention except during wartime.

During both World Wars I and II, the shipbuilding industry experienced tremendous booms, followed by equally dramatic postwar declines. After World War I, a budding naval shipbuilding program was curtailed by the Washington Naval Limitation Treaty of 1922. As a result of World War II, the United States became the world's leading seapower. Following the war, however, the U.S. was not able to maintain its position in the post-war world commercial shipbuilding market, and naval procurement dropped to a low level.

The U.S. Congress has attempted, by legislative incentives and subsidies, to counteract this decline and to maintain U.S. commercial shipbuilding as a viable national industrial resource. As a means of protecting the U.S. shipping and shipbuilding business a series of cabotage laws was enacted between 1793 and 1893 which imposed increasingly severe restrictions on foreign shipping between U.S. coastal ports. In 1920, the Jones Act stipulated that coastwise trade between U.S. ports must be carried exclusively in U.S. built ships.

The Merchant Marine Act of 1936 and subsequent amendments through

1970 have provided subsidies to equalize costs of shipping operations and shipbuilding between U.S. and foreign competitors, but the amount of subsidies available in any given period has fluctuated with political decisions. Although subsidies have been a catalyst to enable U.S. commercial shipbuilding to meet foreign competition on equal terms, sufficient trade and appropriate governmental tax incentives are required to generate shipbuilding and shipping business.

Commercial shipbuilding business has fluctuated widely since World War II. Currently, a resurgence has been underway in Liquefied Natural Gas (LNG) ships; however, market projections for other types of commercial vessels indicate softness in the 1980's.

The naval shipbuilding program has historically provided a second pillar of support for the U.S. shipbuilding industry. Since World War II, naval shipbuilding has come to dominate the market, but an erratic pattern of naval ship procurement has developed based on changing perceptions of defense needs.

Although the U.S. Government has attempted to sustain the shipbuilding industry as an available national industrial resource, no coordinated Navy/commercial shipbuilding policy has been developed to stabilize the shipbuilding market in the U.S. This lack of coordination has resulted in a cyclic business pattern, particularly evident in the years since World War II (see Figure 1).

The shipbuilding industry today is characterized by (1) complete dependence on political decisions which are related to perceived national security and economic needs entirely unrelated to the needs of the shipbuilding industry, and (2) an erratic business pattern since World War II which has virtually eliminated any degree of long-term market predictability.

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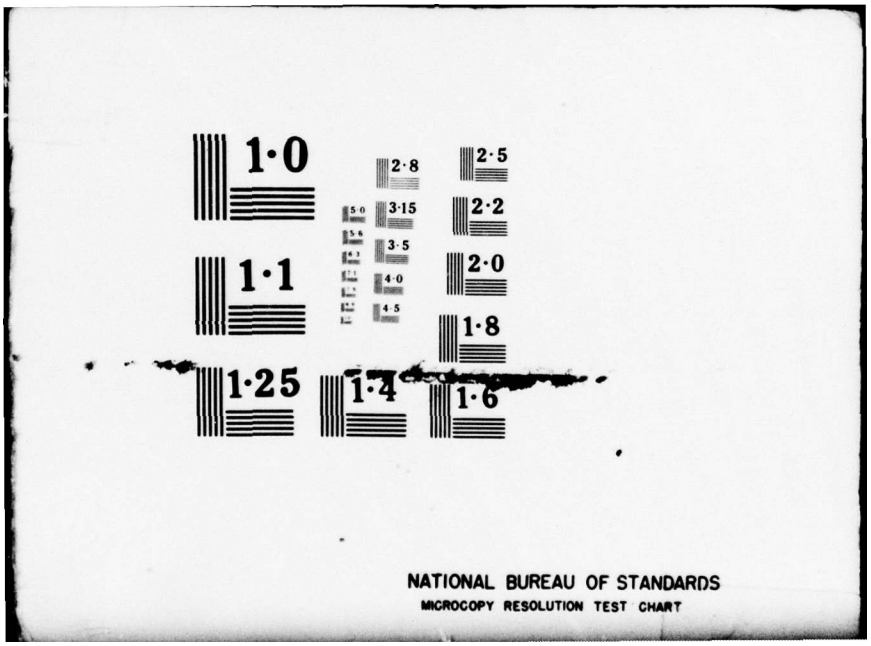
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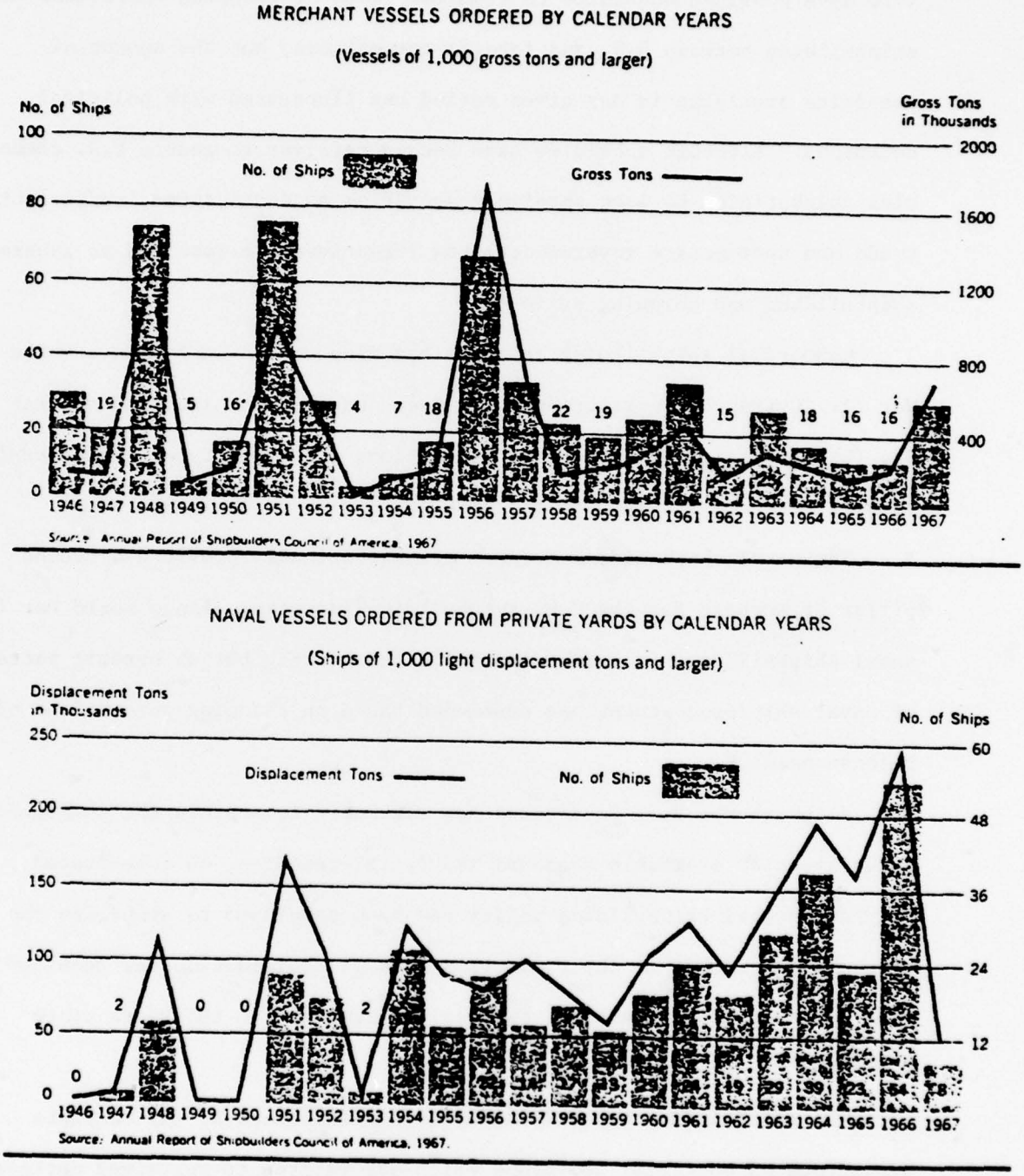

FIGURE 1. SHIPBUILDING BUSINESS PATTERNS, 1946-1967 (Volume of orders placed in private shipyards).

2.2 *Effect of market pattern on independent shipbuilding firms*

Following World War II, independent shipbuilders faced an unpredictable and unstable market. Well into the 1950's, the peaks and valleys of naval and commercial shipbuilding activity occurred simultaneously, as shown in Figures 1 and 2. Ship orders were restricted to limited quantities of specialized vessels spread among various shipyards. Without consistent business and without opportunities to construct multiple ships of standard design, independent shipbuilding firms had neither the incentive nor the ability to obtain the financial resources required to modernize their aging World War II facilities or to make the technological advances necessary to improve productivity. As a result, independent shipbuilders were faced with steadily deteriorating, outdated facilities coupled with low labor productivity. By 1969, the number of major seaboard private shipbuilding firms had shrunk from 57 to 12.

By the 1960's, the manufacturing facilities of the surviving independent shipyards were in urgent need of complete overhaul and modernization, in order to compete for new business opportunities. In short, they were ripe for acquisition or extinction.

2.3 *Corporate acquisitions*

The conditions favoring corporate acquisition of independent shipbuilding firms can be briefly summarized: (1) new market opportunities, primarily multiple procurements of new generation naval ships, opened up in the late 1950's and early 1960's; (2) independent shipbuilding firms needed financial and technological support to enter these new markets; and (3) large corporations saw profit potential in capturing multiship procurements and were willing and able to take the associated financial

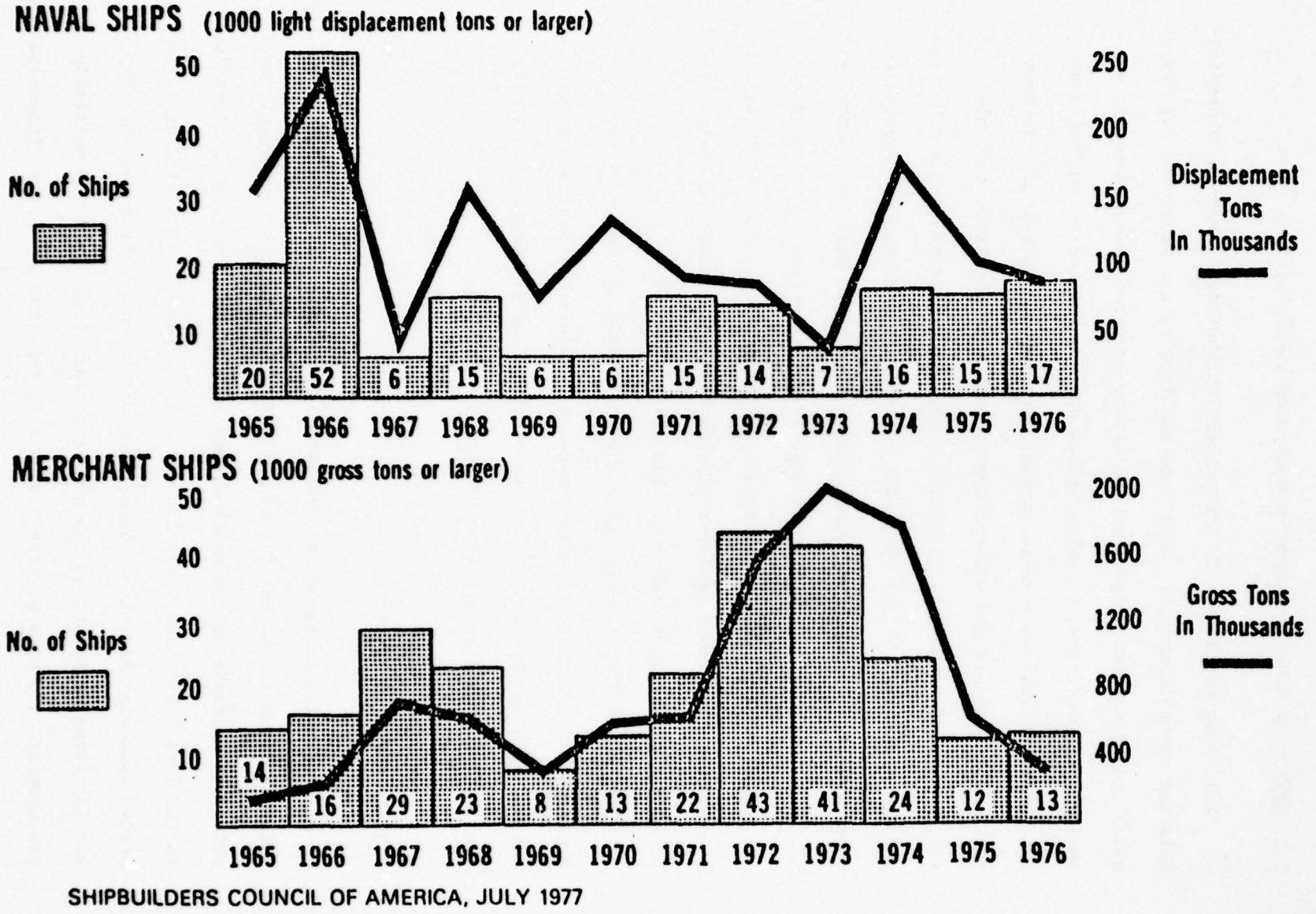

FIGURE 2. SHIPBUILDING BUSINESS PATTERNS, 1965-1976 (Volume of orders placed in private shipyards)

risks.

This situation led to a spate of corporate takeovers of independent shipbuilding firms in a 10-year period between 1959 and 1968. Table 1 shows these recent acquisitions and summarizes the status of the twelve major U.S. shipbuilding firms today. As a result of the most recent acquisitions, eleven of the twelve major U.S. shipbuilding firms are subdivisions of parent multi-division corporations, conducting their business as determined by their relationship to their parent corporation.

2.4 *Visible impact of corporate acquisition*

Multi-division corporations have brought the following benefits to their acquired shipbuilding subdivisions:

(1) The financial resources to revitalize and modernize their manufacturing facilities.

(2) The financial strength to take on major contracts where the financial risks of cost overruns and unreimbursed inventories would have prevented independent shipbuilding companies from participating in such programs.

(3) The human and technological resources necessary to compete successfully for and undertake complex shipbuilding programs.

The application of these resources to acquired shipbuilding firms has resulted in visible, dramatic improvements over the past ten years. Some examples are:

(1) Quincy Shipbuilding Division of General Dynamics has completely modernized its 180-acre facility, which now has an automated panel line and 1200-ton capacity Goliath crane. Quincy has also constructed an entirely new automated LNG sphere manufacturing facility in

RECENT ACQUISITIONS OF INDEPENDENTS BY MULTI-DIVISION CORPORATIONS, 1959 - 1968

Shipbuilding Company		Acquiring Corporation	Date of Acquisition
1.	Avondale Shipyards	Ogden Corporation	1959
2.	National Steel & Shipbuilding Company	Kaiser Industries & Morrison Knudsen	1959
3.	Lockheed Shipbuilding & Construction Company (formerly Puget Sound Bridge & Drydock)	Lockheed	1959
4.	Ingalls Shipbuilding	Litton Industires	1961
5.	Bath Iron Works	Congoleum	1967
6.	Newport News Shipbuilding & Drydock Company	Tenneco	1968

FORMER ACQUISITIONS

7.	Electric Boat Company (Electric Boat was originally the parent company of General Dynamics when the corporation was founded in 1952.	General Dynamics	1952
8.	Quincy Shipbuilding	General Dynamics	1964 (from Bethlehem Steel)

FIRMS ORIGINALLY ESTABLISHED BY PARENT CORPORATIONS

Shipbuilding Company		Parent Corporation	Date Established
9.	Sun Shipbuilding & Drydock Company	Sun Co., Inc. (formerly Sun Oil)	1916
10.	Sparrows Point	Bethlehem Steel	1916
11.	Seatrain Shipbuilding Corporation	Seatrain Lines, Inc	1969

INDEPENDENTS

12. Todd Shipbuilding Corp.

TABLE 1. STATUS OF MAJOR U.S. SHIPBUILDING FIRMS

Charleston, South Carolina in support of its LNG shipbuilding program. These facilities have enabled Quincy to take a commanding role in the LNG shipbuilding market.

(2) Avondale Shipyard has added a new 900-foot long floating drydock, which improves its capability to handle large LNG ships and large oil tankers, and has updated its fabrication area to include numerically controlled burning machines, a panel line, and an enlarged module assembly area.

(3) Bath Iron Works has modernized and enlarged its building ways to accommodate larger ships and has installed a new 220-ton traveling crane to serve these ways.

(4) Bethlehem Steel has installed a new large building basin and a panel line at its Sparrows Point yard.

(5) Electric Boat Division of General Dynamics has recently built a new multi-million dollar land level submarine construction facility to enable simultaneous construction of new SSN688 Class Attack Submarines and Trident Ballistic Missile Submarines, both significantly larger and more complex than previous designs; and has developed a new steel fabrication facility at Quonset Point, Rhode Island.

(6) Litton Industries has promoted the construction of an entirely new shipyard at Pascagoola, Mississippi. The yard was financed by the State of Mississippi and has been leased to the Corporation on a long-term basis.

(7) National Steel has installed new wider ways.

(8) Newport News has constructed an entirely new facility for commercial shipbuilding adjacent to the existing yard and has upgraded heavy lift facilities over its building docks.

(9) Seatrain Shipbuilding Corporation has installed a panel line, a girder fabrication facility, large cranes to handle ship sections, and numerically controlled cutting and burning equipment.

These facility modernizations have dramatically improved the ability of U.S. shipbuilding firms to handle large, technologically complex commercial and naval shipbuilding programs.

3. *Operational Interrelationships Between Quincy Shipbuilding Division and General Dynamics Corporation*

Now we turn to a discussion of a less obvious but equally significant impact of corporate acquisition, the working relationship between shipbuilding firm and parent corporation. Here we draw on the specific experience of the Quincy Shipbuilding Division and its parent corporation, General Dynamics. Quincy was not an independent firm when it was acquired by General Dynamics, having been previously owned by Bethlehem Steel since the early 1900's; nevertheless, the operational interrelationship between Quincy and General Dynamics provides a specific case study which parallels similar relationships that have been worked out between the formerly independent shipbuilding firms and their new parent corporations.

Major differences from an independent mode of operation are:

(1) The financial performance of each division is closely monitored by a corporate staff, who have ultimate control of the division's purse strings.

(2) Each division is responsible for initiating its business plans, formulating its market strategy, and proposing facility improvements; in fact, the corporation requires its divisions to assume the lead

role in these areas. However, the corporation reviews the division's proposed objectives in the light of their profit potential and their consistency with overall corporate long-range plans, then decides whether to support division business initiatives. Thus, the ultimate go/no-go decision on proposed new business programs rests with the corporation.

(3) The division conducts negotiations with its customers and formulates its own contracts, subject to the review and approval of the corporation.

(4) Centralized financial and data processing services are provided for each division, eliminating the need for the divisions to maintain their own treasury and data processing facilities.

(5) Each division can draw on the technological, human, and material resources not only of the corporate staff, but also of other divisions in the corporation.

(6) Each division must conduct relations with its employees under the guidelines established by the corporation.

(7) Each division of General Dynamics is able, under corporate sponsorship, to offer far better employee fringe benefit incentives than would be possible under independent management.

The overall result is that the individual division of General Dynamics receives significant benefits and assistance from its relationship to the corporation, but its management is ultimately accountable to the corporation.

3.1 *Management philosophy*

The management philosophy that underlies General Dynamics' corporate relationships with its subdivisions is "hands-on" centralized control.

Mr. David S. Lewis, Chairman, President and Chief Executive Officer, is himself deeply involved not only in decision-making, but also in many operational details. He holds quarterly review meetings, at which all the top divisional executives report the status of their division activities, with particular emphasis on significant problem areas. In addition, a staff of financial specialists visits each division regularly to monitor performance. There is a large corporate staff of over 300 functioning under three executive vice-presidents who head the key areas of finance, aerospace, and commercial operations; the shipbuilding divisions report directly to the Chairman. Key staff personnel have direct responsibilities for supporting the divisions in their respective areas. A specialized staff of cost estimators and contract specialists review the preparation of cost estimating and contract pricing for all major business, and advise the divisions of recommended changes. With these management tools, General Dynamics exercises remarkably effective control of its diverse operations, considering that the corporation has a sales volume of over 2.5 billion dollars.

3.2 *Organization relationship*

The organizational relationship between Quincy Shipbuilding Division and General Dynamics has been set up to implement centralized management control. Key features are:

(1) Financial services for all divisions are centralized in a corporate treasury.

(2) The corporate staff have direct oversight of corresponding division functions in

  (a) Contracts

  (b) Government Relations

(c) Legal Affairs

(d) Industrial Relations

(e) Science and Engineering

(f) International Business

(3) The general manager or president of each operating unit is a vice-president of the corporation.

3.3 *Financial services*

A centralized corporate treasury provides financial services for all divisions and has the responsibility for managing the effective allocation of funds throughout the corporation. The division controller keeps the corporate treasurer continuously informed of daily cash flow requirements and other pertinent information, and periodically submits cash flow requirement forecasts up to four years from the current date. The corporate treasury handles the transfer of funds to local banks from which the divisions draw to meet their payroll and day-to-day operating expenses. Financing arrangements and capital expenditures are managed directly through the corporate financial staff. Thus, the division is relieved of the need to maintain individual treasury functions.

The corporate financial staff periodically conducts audits of each division's performance and reports results to the executive staff for evaluation and corrective action, if planned.

3.4 *Business planning*

Responsibility for business planning is shared between the division and the corporation. Each division formulates its own annual operating plan, the purpose of which is to:

(1) give a profile of all major in-house programs over a five-year planning period;

(2) evaluate the current and projected future use of division resources and manufacturing capacity, as a basis for recommending business decisions that will make the most profitable and effective use of these resources and facilities;

(3) assess the near-term and long-range (up to five years) market prospects and their profit potential;

(4) give a financial profile of current and anticipated business in terms of investments, earnings, return on investments, and cash requirements;

(5) submit recommendations for long-term strategic market plans for up to ten years;

(6) propose capital investments needed to meet current contractual obligations, to improve current performance, and to acquire promising new business.

On the basis of this information, consultations with division management, and data collected independently by the corporate staff, the corporate executive management makes the ultimate decisions relating to market strategy and capital investments.

Quincy Division initiates its own new business market probes and initially decides what business to pursue; for example, whether or not to bid on a request for proposal. The division prepares its own proposals. However, any proposal for significant new business is reviewed and approved by the corporation before it is submitted to a customer. On major proposals, the division is required to present the impact of proposed work on its facilities, to demonstrate its ability to perform according to schedule, to describe any new facility requirements, to submit proposed make or buy

and subcontracting plans, and to assess the competition.

3.5 *Legal and contractual relationships*

The corporate legal and contractual staff is not a policy formulation body, but acts primarily in a supportive and controlling role. In contract estimating and negotiating, the corporate staff works in parallel with the corresponding division departments to review cost estimates and contract language originated by the division. In most cases, the individual divisions negotiate directly with their customers, with the advice and consent of the corporation. However, in negotiations which have a potential significant impact on the corporation as a whole, the corporate staff will take an active role in the negotiations. Expert legal support is available to the division whenever difficult legal disputes or negotiations are conducted with the government, with other firms, or with foreign customers.

3.6 *Technical resources - R&D*

General Dynamics Corporation is in a business where technological resources are of the utmost importance. From sophisticated electronics to nuclear-powered submarines to LNG tankers, the corporation's diversified business demands a high level of technical competence and facilities in order to keep abreast of new technology. The corporation therefore continually assesses how it should invest in research and development programs that have the greatest application potential for current and fugure business. Each division recommends areas for potential allocation of IRAD (independent research and development) funds for review by the corporation. The corporation then decides which IRAD programs to fund,

based on allocation of available financial resources to those programs which have direct potential for payoff in new business, or which most effectively enhance the corporation's technological capabilities in critical areas. In this manner, based on market assessments, potential payoff, and risk evaluation corporate IRAD resources are effectively managed. From the division standpoint, Quincy division must convincingly demonstrate to the corporation that its proposed IRAD programs are effectively directed toward achievable and realistic goals.

3.7 *Inter-division resources*

General Dynamics Corporation not only provides expertise from the corporate staff to its division, but also actively promotes the sharing of inter-divisional resources, both human and material. Through the corporate office, each division is kept abreast of the resources of all the other divisions, so that any division may request specialized talent for short-term projects, or may request services that are unavailable in-house.

The corporation has also recently moved to consolidate regional data processing centers to serve all the divisions in a geographical area. The establishment of these centers has standardized computer operations throughout the corporation and has facilitated sharing of computer tasks between regions where necessary. The individual divisions have been relieved of the responsibility for establishing and maintaining separate data processing facilities.

3.8 *Labor relations*

The corporation's functions in labor relations are: (1) to establish

basic policies, (2) to support the division in labor disputes and negotiations, (3) to approve and finalize wage and benefit packages offered to employees, (4) to provide salary administration guidelines, and (5) to review and approve annual salary proposals submitted by each division. The division is still largely responsible for recruiting and hiring, and for establishing specific labor relations practices within the scope of the corporate guidelines.

3.9 *Employee fringe benefit incentives*

A very positive benefit to General Dynamics' divisions has been the corporation's sponsorship of vastly improved retirement plans and insurance benefits. The corporation has implemented, in all divisions, a stock savings and investment plan to which the corporation contributes up to 75 percent of employee savings. This plan provides a real incentive for employees to make a long-term employment commitment to the division.

4. *The LNG Sphere Manufacturing Facility - A Demonstration of the Division-Corporation Relationship*

Far from being restrictive in nature, the relationship between the Quincy Shipbuilding Division and General Dynamics has been outstandingly beneficial to the division. The ultimate example of how General Dynamics management resources and technological expertise have been effectively applied to a shipbuilding program is, in Quincy's case, the LNG sphere manufacturing crisis it faced in 1974.

Quincy Division was the first U.S. shipyard to undertake construction

of LNG ships, although several had been built in foreign yards. If successful, the program would give the division a leading position in the U.S. market. With initial orders for eight LNG ships, the division developed an innovative construction approach that would reduce ship construction time on the building ways and would thereby greatly increase the production capacity of the Quincy yard. In this approach, the spherical aluminum LNG tanks were to be fabricated by a subcontractor at an off-site facility, then installed on the ships at Quincy, using a 1200-ton Goliath crane. In other shipyards, the LNG spheres had been built into the ship while it was on the ways. Delivery commitments were based on the reduced ship construction time made possible by off-site sphere fabrication.

However, late in 1974, with the shipbuilding program well underway, the sphere subcontractor proved unable to support delivery commitments to the shipyard because of an inability to meet fabrication tolerances and to produce sound weld joints in the aluminum material used for the spheres. The subcontractor's default threatened to jeopardize the entire ship construction program. After evaluating several possible solutions, Quincy Division determined that the most feasible approach was to buy out the subcontractor and take over sphere fabrication at the subcontractor's site in Charleston, South Carolina. The solution would, however, require commitment of significant corporate financial resources above and beyond those already committed to facility improvements at the Quincy shipyard, and would require extraordinary technological expertise and manufacturing know-how to successfully undertake a sphere manufacturing program, with the least delay to the ship construction schedule.

The Quincy plan (see Sphere Manufacturing Plan analysis outline) was endorsed by General Dynamics Corporation, which immediately marshalled a

125,000 M^3 LNG

SPHERE MANUFACTURING PLAN

KEY REQUIREMENTS OF AN LNG SPHERE MANUFACTURING PLAN

- HIGH CONFIDENCE THAT MANUFACTURING PLAN WILL WORK
- FLEXIBILITY IN PRODUCTION PROCESS
- LOWEST FACILITIES COST
- FASTEST TIME FOR CONSTRUCTION OF FACILITIES
- EARLIEST AND MOST RAPID RATE OF SPHERE DELIVERIES
- BEST FINANCIAL SOLUTION FOR GENERAL DYNAMICS
- ACCEPTABLE RISK

125,000 M^3 LNG
SPHERE MANUFACTURING PLAN
SUMMARY COMPARISON OF PLANS (12 SHIPS)

ELEMENT	OSD	CONVAIR	SUBCONTRACTOR
CONFIDENCE IN PLAN	HIGH-PROVEN PROCESS	HIGH - BUT PROCESS UNPROVEN	UNCERTAIN - PROCESS UNKNOWN
PRODUCTION PROCESS	FLEXIBLE - 6 INDEPENDENT ASSEMBLY STATIONS	CAN BOTTLENECK – 12 POSITION PRODUCTION LINE	UNKNOWN
FACILITIES COST	56 MILLION	110 MILLION	11 MILLION
TIME TO COMPLETE FACILITIES	12 MONTHS	24 MONTHS	24 MONTHS
TOTAL SPHERE COST	201 MILLION	320 MILLION	LOW 331 MILLION HIGH 359 MILLION
SPHERE DELIVERIES			ONLY BEST EFFORT CONTRACT
NO. 1	17 MONTHS – MAY '76	30 MONTHS – JUNE '77	TARGET 21 MONTHS – SEPTEMBER '76
NO. 5	21 MONTHS SEPT '76	34 MONTHS – OCT '77	TARGET 25 MONTHS – JANUARY '77
FINANCIAL IMPACT	119 MILLION	(69 MILLION)	LOW 71 MILLION HIGH 53 MILLION
RISK	ACCEPTABLE – • CONTROL RE-ESTABLISHED • PROPOSAL FOR JIGS AND ASSEMBLY HALL IN HAND	ACCEPTABLE – • CONTROL RE-ESTABLISHED BUT; • ESTIMATED BASIS ONLY • DESIGN NOT COMPLETED • NO RESPONSIBILITY FOR PERFORMANCE OF DESIGNED FIXTURES	QUESTIONABLE – MAYBE NO BETTER THAN ORIGINAL SUBCONTRACTOR

125,000 M^3 LNG
SPHERE MANUFACTURING PLAN
ELEMENTAL MANUFACTURING PLAN COMPARISON

ELEMENT	QSD	CONVAIR	SUBCONTRACTOR
MANUFACTURING SITE	BUSHEY PARK, S.C.	BUSHEY PARK, S.C.	BUSHEY PARK, S.C. OR OTHER S.C. SITE
MANUFACTURING PLAN			
ASSEMBLY SEQUENCE	2 PLATE SAS SPHERE	3 & 4 PLATE SAS 4 RINGS 2 HEMISPHERES SPHERE	SUBASSEMBLIES 4 RINGS SPHERE
STARTING POINT OF ASSEMBLY	EQUATORIAL RING	BOTTOM & TOP HEMISPHERES	EQUATORIAL RING
METHOD OF CONSTRUCTION	PROVEN	PROVEN - BUT UNTRIED ON 120 FOOT DIAMETER SPHERES	UNKNOWN - DETAILS OF PLAN NOT AVAILABLE
ABILITY TO MEET TOLERANCES & DIMENSIONAL CONTROL	GOOD	OUTSTANDING - BUT OVERDESIGNED	UNKNOWN
ASSEMBLY PROCESS	6 STATIONS	12 POSITION PRODUCTION LINE	? STATIONS
ASSEMBLY JIGS	HARD FIXTURES 5,400 TONS	HARD FIXTURES – 5,600 TONS	NOT DESIGNED
KNOWLEDGE OF TECHNICAL REQUIREMENTS	GOOD	GOOD	UNKNOWN
KNOWLEDGE OF PRODUCTION REQUIREMENTS	GOOD	ACCEPTABLE	UNKNOWN

team of experts in metallurgy, welding processes, facility construction, and manufacturing process development to actively assist the Quincy Division. The team included experts from Convair Division in aluminum manufacturing technology and fabrication process. Other management resources were called into play to resolve the contractual and legal problems involved in buying out the subcontractor without losing his sources of material supply, to establish labor policies at Charleston, to negotiate contracts with construction firms that could assure performance to schedule goals, and to train local employees in advanced welding techniques. A foreign firm was engaged to develop highly specialized tooling and automatic welding equipment.

In order to enclose the spheres during manufacture, a special facility was built, complete with adequate materials handling and heavy lift equipment. A unique barge was designed and built at Quincy to ensure all-season water transportation of the spheres to Quincy. All in all, the General Dynamics Corporation committed 80 million dolars to the development of the sphere manufacturing facility.

The gamble paid off handsomely. The Quincy Division installed the first sphere on board an LNG ship only two years after General Dynamics had undertaken the sphere manufacturing program, and sphere production capability has been rapidly catching up with the ship construction program. This remarkable achievement is described in the General Dynamics pamphlet, "Charleston LNG Sphere Manufacturing Facility".

The success of the sphere manufacturing program has enabled Quincy Division to successfully meet the challenge of the LNG shipbuilding program. As a result of its commitment to Quincy, General Dynamics has been able to build up as large a backlog of series production commercial shipbuilding business as any shipyard in the country and is in a strong posi-

tion to profitably exploit further business.

5. *Concluding Remarks*

The Quincy experience indicates that the large multi-division corporation has become a third essential pillar of support to the shipbuilding industry, together with the merchant marine subsidy/investment incentive program and the naval shipbuilding program. Following are some of the key contributions of the multi-division corporation toward maintaining U.S. shipbuilding as a vital national industrial source.

(1) Relationship with a larger, more diversified corporation has enabled shipbuilding firms to endure the periodic fluctuations in the U.S. shipbuilding market, which are likely to continue into the foreseeable future. The fate of independent shipbuilding concerns following World War II demonstrates that most shipbuilding companies are not able to survive in the current market environment without corporate affiliation.

(2) Corporate parent corporations like General Dynamics have shown a willingness to accept large financial risks to modernize and expand the facilities of their shipbuilding subdivisions, in order to undertake series production of large, complex ships.

(3) Shipbuilding firms like Quincy have been able to draw upon the technological, financial, and management resources of their parent corporations to achieve the level of manufacturing technology necessary to remain competitive in shipbuilding markets.

(4) Relationship with a multi-division corporation has enabled shipbuilding firms like Quincy to take business initiatives that would

have been unthinkable if they had been limited to their own resources.

For most shipbuilding concerns, and for Quincy Division in particular, the advantages of their corporate relationship far outweigh the loss of complete operational autonomy. Even under centralized corporate control like that currently exercised by General Dynamics, the shipbuilding firm still initiates new business and manages its own manufacturing operations with minimal corporate invervention.

IX. Administrative Regulation Versus Market Regulation in the Conglomerate Company

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1. *Introduction*

The phenomenon of corporate diversification in the 1960's and 1970's has raised a debate about the effects of diversification on the performance of the firm. On one end of the spectrum, there is the view that the diversified company, while adding little or no value to its individual business units, creates the potential for a wide variety of anticompetitive practices such as reciprocity and predatory cross subsidization, and increases the aggregate concentration of economic power.[1] The opposite view holds that diversification has some decided advantages, relating in large part to its managerial properties. The diversified firm is said to allow for desirable spreading of risk,[2] to allocate capital internally more efficiently than the external capital markets do, and to bring to bear sophisticated, detached and unbiased management supervision on business entities where managerial slack would allow management inefficiency to survive indefinitely.[3] Evidence of the hypothetical undesirable practices described above, according to those who hold this view, is lacking.[4]

One central consequence of diversification that bears directly on these issues is a fundamental change in the nature of "regulation" of the individual business unit operating in a particular industry. Diversification means that the regulation of such business units either partially or totally passes from "purely" market mechanisms to the corporate office of the diversified corporation, which attempts to regulate business units through a set of administrative procedures. While some of the debate about diversification has dealt implicitly with the consequences of this shift,[5] it is clearly quite central to assessing the proposed managerial advantages of diversification and thus a more complete examination is in order. This shift in the nature of regulation also

carries implications for competition in individual industries which need to be examined.

The purpose of the exploratory paper is to:

- Examine in a tentative way some characteristics and possible consequences of the shift to administrative regulation of the business unit, with special emphasis on how these differ from market regulation of the independent firm.
- Draw some possible implications of administrative regulation for resource allocation and other strategic decisions of the firm, as well as assess the possible impact of such regulation on some other aspects of firm behavior.
- Explore some of the most likely consequences overtime, of administrative regulation for the characteristics of the diversified firm's portfolio of business.
- Examine the dynamics of competition in a mixed industry, or the industry composed of both independent entities regulated by the market and entities regulated through administrative mechanisms.

While we can only raise questions rather than provide answers in view of the myriad of administrative arrangements that are actually observed in place of diversified companies, our analysis will suggest some doubts about the unqualified attainment of the proposed managerial benefits of diversification, and raise some implications for the management of the diversified firm.

For purposes of this paper we examine the case of the diversified firm where no operational synergies exist among business units in the portfolio of businesses held by the corporate parent. That is, while there may be purely financial benefits to the portfolio, the non-capital costs of the individual business units are unaffected by their joint presence in the

portfolio. While this assumption restricts our attention to what is commonly called the pure conglomerate, it allows us to concentrate our attention on the managerial implications of diversification alluded to earlier and is in practice probably a reasonable assumption for many large diversified firms.[6] Relaxing the assumption would complicate the exposition of our argument, but would not change the basic conclusions.

2. *Administrative Regulation Versus Market Regulation*

Let us now examine how administrative regulation of the business unit differs from market regulation. In market regulation, major pricing, promotion, resource allocation and other key business decisions are made by the Chief Executive Officer (CEO) of the independent business unit on the advice and counsel of his senior subordinates.[7] The consequences of those decisions are evaluated through the subtle operation of the product market mechanism, which determines the short and long term financial returns for the independent company. Capital for investment purposes comes from two primary sources. First, it is generated internally in amounts depending on the financial results of the firm. Second, it can be raised on the external debt or equity capital markets, based on their evaluation of the future of the firm, which is usually strongly influenced by the performance of other firms in its industry.

The CEO is at the top of the organization both in decisionmaking and career terms, and by definition can aspire to no higher position within the organization. He and his subordinates are intimately familiar with the business and its characteristics, possessing extensive information and experience about it. Any information, reporting and control sys-

tems are in place to serve the CEO's needs in managing the particular business. While planning and forecasts are part of the management process, they are used as a management tool and the CEO is well aware of the uncertainties involved.

It is hard to generalize about how the CEO's salary is set, but it is undoubtedly influenced by the level of salaries paid by other firms of comparable size and by the general performance of the firm as compared to that of others in its industry. As for the performance itself, it is based on both short-run results and longer term, more intangible factors. Since the CEO usually has played a major role in selecting the Board, it may well be sympathetic to evaluating his performance and in any event is knowledgeable about the business as a result of its association with the firm. In fact the literature on takeovers suggests that there is a great deal of slack before poor results are translated into the wrestling of control from present management.[8]

In administrative regulation, pricing, promotion, resource allocation and other key decisions are made by the head of the business unit, who we call the Division General Manager (DGM), again with advice from his senior subordinates. However, these decisions are reviewed (in most cases formally) by one or more layers of corporate management superimposed over the DGM.[9] For simplicity, we will refer to the entire structure of corporate management as the Corporate Chief Executive Officer (CCEO). Providing review of major divisional decisions is a major element of the job of the CCEO. The CCEO also allocates capital, hires and fires divisional management and sets their compensation. The DGM's hope is to become corporate management if they are successful.

Perhaps the central characteristic of corporate review is that the CCEO does not possess detailed and complete knowledge of the character-

istics and ongoing status of the individual business units under his supervision. This is not a failing of the CCEO, but simply a reflection of the fact that he has multiple business units to review, is not actively managing all these business units on a day to day basis, and has bounded rationality (or is limited in time and cognition). This basic inability to know each business intimately has led to the common adoption of the divisionalized or profit center organizational structure in the diversified firm, where the CCEO delegates much of the day to day decisionmaking authority to division management who possess the relevant information.

Coupled with decentralization, however, is the institution of formal or quasi-formal corporate planning, budgeting, resource allocation, information and control systems. The latter provide the CCEO with selected measures for assessing the performance of divisions, give the divisions a common format for seeking capital and enable the CCEO to review what each division plans to do. These systems, usually standardized across divisions, are designed to give the CCEO that portion of information (from the very wide range of information the DGM possesses) he needs to review divisional decisions, in a consistent form to allow for more effective use and comparability. Since financial data often provide the only comon denominator across divisions, these corporate systems are usually heavily financial in nature. In fact, the more diversified the firm the greater the likelihood for the review and control to be heavily financial in nature, and the more separated by layers of management the CCEO is from DGMs. In addition to review, corporate management sets incentives for DGMs, again often based on a common system applied to all divisions.

The decisions of the DGM, ratified or altered by corporate management, are evaluated by the product market in much the same way as in the case of the independent firm, and short and long-term financial

results are returned. Unlike the independent firm, however, capital resources are allocated to the division based on decisions of corporate management. They may bear no relation (in either direction) to the funds generated internally by the division, nor necessarily to what the external capital markets would have allocated to the division based on its performance were it a free-standing company. Capital allocation by corporate management necessarily involves a comparison among divisions which are in most cases heterogeneous, few of a kind to prevent normalization and in situations where capital resources are limited.

The DGM under administrative regulation, then, operates under a dual set of masters. He owes allegiance to the marketplace, which translates his decisions into financial results in the short and long term. However, he also owes allegiance to the administrative structure within which he operates. This structure has its own set of rules about what and how he is to be measured and compensated, and on the progress of his career. Even putting his own short run career interest aside, this structure will determine how much capital he receives to improve his business, and how much effective authority he has in making decisions. It is a structure which has an incomplete knowledge of his business and of the opportunities and constraints under which he operates. As a result, it is a structure that measures performance and potential with a limited and incomplete number of indicators, and where measures and measurements may be averaged and applied uniformly to the whole portfolio of businesses. As we have already intimated and even if the CCEO wanted to apply standards of global rationality in the processes of review, evaluation and allocation of resources, to the extent that his portfolio includes heterogeneous entities, it is very unlikely that he can approach the rationality the markets impose on the independent firms of the industries represented

in the portfolio. The process of averaging coupled with incomplete information will invariably cause distortions.

It would be surprising if the presence of this other structure did not affect the decisions of the DGM.[10] Bower's (1970) intensive clinical study of capital budgeting decisions in large diversified companies illustrates persuasively, and so does Ackerman's work (1968), that what we have called here an administrative structure does make a difference. Bower and Ackerman both indeed find that the corporate "context," or the array of systems in place in the organization, fundamentally affect the type of capital budgeting proposals initiated and presented to top management. Our task, then, is to examine how the administrative structure will affect the behavior of the division of the diversified company as compared to that of the independent firm.

3. *Administrative Regulation and Decision Making at the Divisional Level*

Conceptually, administrative regulation could affect business unit decisions in two ways. It could alter the opportunity set facing the DGM as compared to the CEO of the independent firm, or it could affect the decisionmaking (or maximization) processes the DGM applies to the opportunity set vis-a-vis that which the CEO applies. While the resources of the diversified firm might indeed change the opportunity set facing the DGM, we will assume here that the opportunity sets or range of strategies facing the DGM and CEO are the same, so that we may examine how the DGM operating under administrative regulation is likely to choose among those strategies as compared to the CEO of the independent firm.

The allocation of internal capital and the rewards and punishments applied to a DGM are determined by the administrative system or "rules of the game" described earlier, while external factors dominate both capital allocation and rewards and punishments for the CEO of the independent firm. As noted earlier, the internal measurement system is based on an inherently limited set of measures while the external evaluation of the independent firm by the product and capital markets is longer term and more subtle and multidimensional. Thus utility maximizing behavior for DGMs will likely diverge from that of CEOs.

Managers operating under administrative regulation will seek to understand the rules of the game set by that regulation and adapt their behavior accordingly. If they are successful, or "have a good track record," corporate management will rarely overturn their decisions. Top management will not get the chance to choose directly, but rather will be faced with very "good" proposals because of prescreening processes based on the DGM's "reading" of the administrative system, or, relatedly, must let proposals reaching them pass by default due to lack of information. A supporting point is that lack of time and information usually prevents top management from seeing alternative proposals for a given business decision, but rather an individual proposal it must either accept, reject or modify. The tradeoffs involved in selecting the "best" alternative are made at lower levels.

The observation that proposals to top management are rarely turned down is supported by Bower's work, which found that very few capital requests that actually reached top management were denied.[11] Similarly, few long-range plans are not accepted, and arguments over annual budgets tend to occur within fairly narrow ranges. Hence in examining the implications of administrative regulation, we must place a major focus on

the decisions of the DGM and not the CCEO. While it is not possible to generalize completely, in view of the differences among diversified companies in the manner in which the administrative structure operates, we can highlight some potential areas of divergence between the division and the independent company which may occur.

3.1 *Strategic Choices*

Both the DGM and the CEO continuously face a range of strategic alternatives that can be arrayed by expected payoff, risk, time pattern of inflows and outflows (including their regularity), etc. They also face a set of alternatives with analogous characteristics when considering reactions to external disturbances or to competitors' strategic moves. The DGM will have more complete information on the opportunity set available than corporate management does, as well as better information about the reasons why opportunities may or may not be realized both ex ante and ex poste. In addition to the problem of limits on the quantity of information there also exists the potential problem of information impactedness that has recently been explored in the literature on organization theory, product choice, and fraud.[12] While the DGM may know the true probabilities of alternative outcomes occurring as a result of strategy choices, or at least have the best estimates of these in the corporation, it is extremely difficult for him to communicate these credibly to his superiors. The latter may see his estimates of the true probabilities of downside events as overly pessimistic to protect his position, and his estimates of the true probability of upside outcomes of proposed strategic choices as overly optimistic to get his plans approved. Thus even though both the DGM and CCEO might benefit from communicating the "truth", this is difficult to

achieve. No such problems or much less of a problem exists for the CEO, who needs no approval for strategic choices.

In view of the informational differences between administrative regulation and market regulation, we might expect them to be reflected in strategic choices by the DGM that are different than those of the CEO in the following respects.

3.1.1 *Strategy choices with shorter time horizon for achieving results:*

In the presence of incomplete measurement by the corporate office, there is a tendency for the time horizon of the DGM to be shorter than that of the CEO.[13] He is less likely to make choices which will take a long period to be reflected in results, or which build goodwill, than the CEO, because corporate management's poorer information and the problem of information impactedness makes it difficult for them to understand and accept his justificiation that the future will show the necessary benefits of present sacrifices.[14] Further, the normal review period for the plans and the results of operation for the CEO is quarterly or possibly annually, while frequently monthly reviews are held by the CCEO for his DGM's. Adopting strategies which require short-run sacrifices invites questions and interference by well-meaning top management, while strategies with lower returns but quicker results may bring praise and autonomy.

The tendency towards strategies with short feedback is reinforced by the DGM's need to compete for capital on a year by year basis with other units in the corporation (unlike the independent firm which can operate on a less regular and constrained schedule). The DGM, needing to win continued capital investments in the annual corporate-wide competition for capital, will often be under pressure to show some promising results from year to year to secure this allocation. There is also the possibility, that has

been noted by many, that the DGM will get promoted elsewhere before the results of long-term actions are registered, and he may adopt strategies with short-run payoffs to facilitate his rapid advancement. Another often noted force working in this direction is for the measurement and incentive system stressing single measures of performance, such as ROI, to place emphasis on short-term performance.[15] While shorter-time horizon strategies may not always be adopted by divisions as compared to the independent firms, the pressures are evidently there.

3.1.2 *Less willingness to adopt risky strategies:*

When one considers the implications of the administrative structure described above, it may well be that the DGM is willing to take less risk in strategic choices than the CEO of the independent firm. The DGM is continuously measured and rewarded on the basis of mainly financial results, and seeks approval and advancement from corporate management. Despite the ability of the diversified corporation as a whole to withstand failures, it is extremely difficult to shield the DGM from the adverse affects of a prudently attempted move which results in failure.

The cause is a variant of the informational problems described above. It is hard for the DGM to communicate credibly and on an ex ante basis accurate probabilities of failure of risky strategies. Ex post, his explanation can be read as excuses, and failures interpreted as the lack of trying hard enough to implement effective strategies. In this environment, failure is often very costly to the DGM. Failure reduces the DGM's chances for advancement, and reduces his future credibility in securing internal capital (including that capital which he is generating internally in his own division). Although his direct superiors at the time may understand and accept the failure as the consequence of a prudently taken risky

decision that was implemented as effectively as possible, this information is difficult to communicate to others in the organization and to successive superiors. Even one failure can become a semi-permanent and often intangible blemish on a manager's record, affecting him adversely in his dealings with others in the organization.

Stating these arguments more formally, the DGM will be risk-averse relative to the CEO because the penalty for failure he faces is greater. It can also be argued that the DGM is less likely than the CEO to capture the rents of a "big win", given his difficulty in communicating true probabilities of success ex ante. With full blame for failures and less than full credit for successes, risk aversion may well result. The CCEO cannot force the DGM to take appropriate risks because the CCEO does not know the opportunity set facing the DGM. Thus although the CEO of an independent firm will not likely risk bankruptcy, he may well be more willing to risk small or modest failures than the DGM.

These arguments raise a paradox. We noted earlier that one of the potential benefits of the diversified firm was a greater ability to take risks, and the diversified firm may indeed have the resources available to bear greater prudent business risks. Looking at the consequences of administrative regulation, however, there are some plausible conditions under which the opposite behavior may be expected from the strategic decision maker, the DGM. While this will not necessarily hold in all cases, some forces working in the direction are evidently present that must be overcome if the benefits of the diversification for risk-taking are to be realized.[16]

3.1.3 *Greater propensity to adopt strategies that have predictable outcomes and are readily explainable:*

Corporate management's incomplete information coupled with their frequent review of the DGM suggest that the DGM may be more likely to emphasize strategic choices whose future results are predictable than the CEO. He may also be more likely than the CEO to choose strategies for which the justification for making the choice is explainable in simple, intuitive, logical terms, rather than by arguments resting on faith, on the ability to create or innovate, on intuitions about industry changes or on competitive moves.

The CCEO will have an inevitable tendency to evaluate DGM's on whether there were "no surprises", whether they "delivered" on their promises, and on the degree to which their plans and expectations about future outcomes proved to be accurate. While such criteria have their merits in evaluating managers, because of incomplete information, the CCEO finds it difficult to separate unplanned outcomes which arose because of poor planning from those that occured because of legitimate market uncertainties. If this separation cannot be made, the DGM will be pushed to adopt strategies which have lower expected profit outcomes but which have future consequences that are easy to predict. That is to say, he prefers the lower profit level because of the lower variance. A reinforcing tendency is created by CCEO's role in monitoring divisional performance on an ongoing basis. In this capacity the CCEO can potentially make the DGM uncomfortable with scrutiny, questioning, and potential interference in decision making (reduction in autonomy) if unpredictable and unplanned events occur. Finally, depending on the nature of the corporate incentive system, unplanned adverse outcomes may hurt the DGM's compensation which he cannot recover through unplanned positive outcomes. The DGM who selects a strategy with predict-

able results that actually occur according to plan, raises the confidence of corporate management in him. This credibility may boost his chance in the race for coprorate capital, and allow him to manage his business free from intervention.

In the same vein, as the predictability in outcomes, is the explainlability of strategy choices in simple logical terms. While the CEO does not have to articulate the reasons for his choices to imperfectly informed "outsiders", the DGM does. To fulfill their role as reviewers, corporate management will insist on explanations for critical choices, and will be likely to accept only explanations they can understand. These may well be explanations that rest on specific data and are logically appealing, and which do not rely on highly specialized technical knowledge, on judgments, instincts or "feel", despite the fact that these may be wholly accurate. Furthermore the "chances" the DGM takes will have to be explainable in financial terms while the CEO may have more leeway in adopting strategies that cannot be justified solely in financial terms especially in the short run.

3.1.4 *Less weight on psychic or professional payoffs versus financial payoffs in strategy choices:*

The greater emphasis on strategies that can be explained in financial terms and the separation between corporate management and the business, suggest that less weight may be placed on psychic or professional payoffs by a DGM in his strategic choices than by a CEO. Staying in a particular geographic area of community, maintaining technological leadership (even if it does maximize long run profits) and other factors which offer psychic rewards to managers will inevitably be valued less by a central and "foreign" management not intimately involved in the business. Thus a division will

be less likely to value these sorts of nonprofit-maximizing payoffs in strategic choices which often seems very important to the independent firm, or saying it another way, division management will probably have fewer non-financial arguments in their utility functions.

3.2 *Implications for Innovation*

The aforementioned observations as a group carry some potential implications for innovation by divisions of diversified firms relative to independent companies. We have identified pressures on the division of the diversified company which may make it less willing to engage in risky research and development, less likely to introduce or even later adopt radical innovations, which may increase the variance in the plans, although the expected profits[17] and duration of such may increase, and less likely to make major changes in strategic positioning than the independent firm, other things being equal.[18] These same forces suggest that the division might also be less creative and pioneering in its strategic choices generally than independent firms.

Once again, then, we have a paradox between the potential benefits of diversification and an administrative analysis of the incentives facing the decision maker. Forces are present which operate against innovation in the division, requiring countervailing forces if the diversified firm is to realize its potential in nurturing innovative activity.[19]

4. *Administrative Regulation and the Business Portfolio*

4.1 *Investment*

Administrative regulation replaces market allocation of capital with an internal capital allocation process. While market allocation is based on a subtle and multidimensional set of market outcomes, administrative capital allocation may not be.[20] A consequence of corporate management's incomplete information about each individual business and the absence of many homogeneous entities for comparability, is that it may be unable to fully discern differences in risk among investments in different divisions. Impacted information complicates the assessment of true risk, and we have described above some reasons why risk may be underestimated. These and other characteristics of administrative regulation have implications for how capital is allocated from the corporation to divisions relative to allocations from the market to free-standing companies, and how the portfolio of businesses in the diversified firm may develop over time.

The most basic difference between capital allocation in the division relative to the free-standing firm is that the division will inevitably be judged against other units in its diversified parent, while the free-standing firm has sure access to at least its internally generated funds and its external funds requests are judged against the general population of firms. Take the case of two divisions of similar riskiness and facing similar opportunity sets. The division lodged in a parent company with several "better" performing divisions which are ravenous consumers of capital will likely get less capital than the same division in a parent with other divisions in a capital generating mode. That is, the opportunity cost of capital for the particular diversified firm, and hence its hurdle rate for internal investments in a division, may be greatly different from the oppor-

tunity cost of capital accorded by the external capital markets to the free-standing firm in the same industry as the division even if the division and free-standing firm are equally risky. The capital may be over or under supplied to the division relative to the free-standing firm, and also relative to the socially optimal level. Thus the capital investment choices of a division are much more dependent on its specific ownership situation than those of the free-standing firm.

If corporate management cannot fully discern ex ante differences in risk among the capital investment proposals of its divisions, and each division is not assured of even its internally generated funds but depends on the outcome of the corporate capital allocation procedure, what might some of the consequences be for the behavior of the portfolio of businesses in the diversified company over time? To examine this question, let us make the extreme assumption that because of incomplete and impacted information, corporate management cannot perceive ex ante the risk differences among divisions at all, and assigns a single hurdle rate for investments qualifying for corporate capital. This simplifies understanding of the effects to be described, but formally, any underestimate in the perception of risk differences is sufficient to lead to the conclusions reached. Let us further assume that businesses with higher risk tend to have higher expected rates of return and also have more high return investment projects than lower risk businesses. Finally, we assume that the high risk/high return businesses tend to be earlier in their life cycle, and thus have a greater net appetite for capital than the lower risk businesses.

Under the circumstances we have posited, corporate capital will be allocated to the high risk businesses and not to the lower return, lower risk businesses. The single hurdle rate, set at the opportunity cost of

capital for the firm, will insure this result. Unsupported by capital investment, the performance of lower risk businesses will deteriorate as will their cash generating ability. And even if these units do not initially deteriorate, they will contract relative to the high-risk units, and their relative importance within the firm diminish. Reduced cash generation accentuates their starvation, because even less capital is available to them after allocation to the high risk businsses. Eventually the lower risk businesses become candidates for liquidation. Liquidating them raises the hurdle rate even more, further accelerating the flow of capital to the higher risk divisions.

Over time, then, the diversified firm will be starved of investment funds by weeding out the capital generators in the portfolio, and will increase the overall risk in the business portfolio. In the limit, this will result in bankruptcy of the firm because the subsidized risky divisions will be unable to absorb their long run costs once the less risky businesses have been eliminated. In practice, bankruptcy is unlikely to result but rather a cyclical phenomenon in corporate investment behavior will be observed. Once the dynamic escalation in risk results in capital constraints and sporadic failures, the corporate office is likely to intervene and radically change corporate policies to emphasize internal capital generation and risk reduction. That is, decision rules will shift to reflect the desire to avoid the last disaster. Capital will be denied higher risk divisions, and some may be divested, to restore the parent's financial stability. Once financial stability is regained, however, the same dynamic risk escalation may begin anew, unless management fully appreciates the reasons behind these cyclical patterns of behavior and develops a balanced approach to risk management.[22]

The single hurdle rate will also produce behavior at the division level

which will reinforce this dynamic result. Facing the single overly high average cost of capital, low-risk divisions will set prices higher than otherwise, worsening their position vis-a-vis free-standing firms and shrinking their capital needs. High-risk divisions, conversely, will be misled by the cost of corporate capital and will set prices lower than they would as free-standing entities. This will increase their growth rates and market shares, and increase their desire for capital to expand. It will also send false signals (mounting orders, backlogs, and delivery delays) to corporate management about the underlying soundness of their business strategies.[23]

We have yet another apparent paradox as a result of these arguments. In our dynamic model, the CCEO unknowingly acts like a risk lover in stark contrast to our argument that the DGM may be more risk averse than his counterpart in the independent firm. However, this behavior is not contradictory. The DGM is more risk averse than the CEO because of the greater penalty he pays if failure occurs. The DGM has estimates of the probability of failure of alternative strategies. Under the forces of administrative regulation, he will reduce the risk of failure in his strategy as much as he can, given the nature of the particular business, and still achieve satisfactory financial results. Unless every DGM can eliminate all risk, however, there will still be a portfolio of businesses facing the CCEO with different risk/return combinations.

The CCEO acts like a risk lover because of his poor ex ante information about the risk characteristics of each individual business. If one of the businesses performs poorly, then the CCEO knows it ex post and penalizes the DGM. However, the CCEO does not know the a priori probability that each business will experience a failure and thus is likely to over-penalize the DGM.[24] Thus the different behavior towards risk of the two

levels of management is a reflection primarily of the fact that the DGM knows the true prior probability of failure in his business better than the CCEO does.

4.2 *Disinvestment*

Administrative regulation alters the possibilities for disinvestment by a business unit. For the independent firm, the cost of disinvestment is extremely high. Disinvestment requires either finding a new business area to invest in (diversification), or returning capital to the shareholders either gradually or in a lump sum through liquidation. A variety of factors make these choices difficult for a CEO to make.[25] The market mechanism can refuse new capital to a firm (both by reducing internal generations directly and by limiting access to the capital markets), but the market has difficulty taking capital out of a firm except in extreme cases of outright losses or takeovers.

Administrative regulation, on the other hand, cannot only refuse capital to a division, but can also decide to take capital out, either through liquidation or by means of an explicit strategy of "milking" the division. It has the potential of being less affected by emotional attachments to particular businesses, though in practice this potential is not always realized.[26] Thus administrative regulation may well facilitate economically appropriate disinvestment relative to disinvestment in free-standing firms. It is likely to also facilitate changes in poorly performing management, for similar reasons. Under the assumptions of our dynamic model above, this facilitated disinvestment can accentuate the difficulties in risk balancing of the portfolio. It can also, however, result in social benefits in cases where a division is earning truly subnormal returns.[27]

5. *Competition in the "Mixed" Industry*

After the extensive diversification of the 1960's and 1970's, many industries in the U.S. economy have become "mixed" industries composed of both free-standing firms and divisions of diversified companies. How might our analysis of the consequences of administrative regulation be reflected in the patterns of competition in such industries?

Since administrative regulation may affect strategy choices, the first implication of our analysis is that the competitive strategies of free-standing firms and divisions may well differ systematically within an industry. The free-standing firms may be greater risk takers, operate with longer time horizons, and be more creative strategically, ceteris paribus. Administrative regulation potentially alters the goals of divisions versus free-standing firms, and this is reflected in their competitive behavior.

A second implication of our analysis follows from the discussion regarding the diversified company portfolio. The division's competitive behavior will be affected by the particular financial status of its corporate siblings, while the independent firm is more dependent on capital market evaluation relating to the characteristics of the particular business. In addition, the division may be a more or less dangerous competitor to the free-standing firm depending on the nature of the industry. In the stable, mature industry, the division may be excessively starved for capital for the reasons discussed earlier. However, in the risky industry the subsidized division may make "irrational" pricing and expansion decisions from the point of view of the free-standing firm because of its lower, subsidized cost of capital. Thus such divisions may tend to grow faster and may force the free-standing firm to adopt the relatively risky strat-

egies in the industry that the division will try to avoid. The division will tend to adopt the least risky strategies possible in the risky industry given administrative regulation. In a cross section of industries, we might expect to see divisions attain lower market shares and perhaps higher profits than independents (because they will be harvesting) in stable industries, and higher market shares but lower profits (due to conservative strategies) than independent firms in risky industries, other things being equal.

6. *Summary and Implications*

While it appears to facilitate the shifting of capital out of inefficient units and the replacement of poor management, the properties of administrative regulation raise questions about the achievement of many of the supposed benefits of diversification, and create potential for differences in the behavior of divisions of diversified firms and independent firms. Though there are some arguments for why capital allocation may be facilitated, it can be also misallocated within the portfolio of businesses in the diversified firm. Achievement of the potential benefits of diversification in risk spreading and innovation faces the problem of overcoming forces working in the opposite direction. In fact, as we have argued the opposite forces are likely to be dominant. And while a dispassionate, professional review of division strategies by corporate management may yield better strategic choices in some cases, incentives are created in the process which may lead to suboptional strategy choices from the point of view of the corporation.

The differences between administrative and market regulation carry possible implications for industry competition which have been discussed. The use of a single hurdle rate of return for allocation of capital will most likely encourage over expansion of the risky and contraction of the low-risk divisions, possibly leading to excess capacity and lower prices as compared to free-standing competitors in the case of the former, and the opposite in the case of the latter divisions. The differences observed also carry implications regarding the relations of the firm to its suppliers and customers. Divisions and free-standing firms may well have different propensities in accepting projects or signing contracts with given time horizons and risk profiles. Similarly, when a free-standing firm becomes part of a diversified firm its strategy and its relations with customers and suppliers may change in ways suggested in the discussion above.

These consequences of administrative regulation raise a challenge to the corporate management of the diversified firm. The challenge is to find ways to eliminate the biases we have described. Some of the recommendations flowing from our analysis are as follows. First, it may be important to judge strategies and investment projects as total projects and not on a "day by day" basis. Corporate review should be carried out relative to the business plan and the expected level of predictability that the plan calls for. Incentive and control system that measure only financial performance should be supplemented by measurements which capture long run changes in the total position of the business unit such as market share, customer satisfaction and loyalty, changes in product quality, changes in management and employee turnover.

In planning and capital budgeting systems, one may ask for alternative strategies which are more risky and less risky than the proposed

strategy. This approach will improve choices by exposing the uncertainties involved in the alternatives more fully and posing risk/return tradeoffs to top management. Incentive systems should be designed with enough flexibility so as not to discourage taking prudent risks and also not discourage the sacrifice of short-run profits for longer-run projects with appropriate higher returns. Finally, corporate management must strive to create a climate where those responsible for failures resulting from well planned and well executed decisions under uncertainty, are not penalized and their careers as managers are not ruined. Implementing these suggestions is no easy task, but doing so may offer benefits in the quality of performance for the diversified firm and its component parts.

Footnotes

[1]For a survey see Scherer, F.M., Industrial Market Structure and Economic Performance, Rand McNally, 1970, Chapter 12 and Markham, J.W., Conglomerate Enterprise and Public Policy, Division of Research, Harvard Graduate School of Business Administration, 1973, Chapter 2.

[2]For example, Shumpeter, Joseph, Capitalism, Socialism and Democracy, Harper, 1950, and others have argued that the large diversified firm will be more innovative due to its ability to maintain a portfolio of research projects rather than only a few where its risk of a failure would be prohibitive. Risk spreading is socially beneficial if it is assumed that investors cannot fully diversify their investment portfolios due to indivisibilities or information and transactions costs.

[3]For example, Scott, B.R., "The Industrial State: Old Myths and New Realities," Harvard Business Review, Volume 51, Number 2, March-April 1973, pp. 133-148.

[4]Markham, J.W., Conglomerate Enterprise and Public Policy, Division of Research, Harvard Graduate School of Business Administration, 1973.

[5]See among others, Chandler, A.D., Strategy and Structure, MIT Press, Cambridge, Mass., 1962, and Rumelt, R.P., Strategy Structure and Economic Performance, Harvard University Press, Cambridge, Mass., 1974.

[6]The lessons of the recent merger wave had led many executives to reexamine the feasibility of achieving operational synergies in practice.

[7]In both the independent firm and the diversified firm, top management decisions are formally ratified by the board of directors. In keeping with the prevailing view that in practice the board of directors often acts passively and rarely overturns management's decisions, we will largely ignore the role of the board in this paper. See Mace, Myles, Directors: Myths and Reality, Division of Research, Harvard Graduate School of Businss Administration, 1974.

[8]See Hindley, B., "Separation of Ownership and Control in the Modern Corporation," Journal of Law and Economics, April 1970.

[9]The DGM might report directly to the corporate chief executive officer, or through one or more group executives who supervise a number of divisions. For simplicity we will talk in terms of a single reviewing executive; multiple layers of review would face many of the same pressures as the DGM and pass incomplete information.

[10]One can draw an analogy to the problem of rate of return regulation of public utilities, that have received much attention by economists. There the regulatory agency allows prices to be set to achieve a target rate of return on the rate base, but is unable to measure the efficiency of individual capital investments which add to that rate base. Under these circumstances, the utility is led to overinvest in capital from society's point of view. The general problem is one of imperfect control leading maximizing agents to emphasize the controlled variables over non-controlled variables that may be equally important to society. See Baumol, W.J. and A.K. Klevorick, "Input Choices and Rate of Return Regulation: An Overview of the Discussion," Bell Journal of Economics, Autumn 1970, pp. 162-190.

[11]Bower, J.L., Managing the Resource Allocation Process, Division of Research, Harvard Graduate School of Business Administration, 1970. This weeding process before a formal decision is reached also occurs below the CEO in the independent firm, but the CEO is more likely to be involved directly in the process of project/plan definition and possesses ample information with which to challenge the underlying assumptions of proposals which look good on paper.

[12]Williamson, O.E., "The Vertical Integration of Production: Market Failure Considerations," American Economic Review, May 1971.

[13]The exception is that the CEO may tend to be more swayed by short-term stock market considerations. These arguments, however, should not be confused with the impact of administrative regulation on decisionmaking involving projects of different ex ante risk. We will take up this issue later in Section III.

[14]The same general effect has been extensively discussed in the literature on the evils of using a single measure such as short term ROI as a control device. See for example, Dearden, John, "Limits on Decentralized Profit Responsibility," Harvard Business Review, November/December, 1962, and "Problems

in Decentralized Financial Control," Harvard Business Review, May/June, 1961. While a corporate measurement and control system may contain a variety of measures besides ROI, the central fact remains that corporate management's knowledge will never be as complete as that of the DGM, and thus the bias against accepting longer term qualitative factors as explanations for diminished current results will remain.

[15]One of the key underlying assumptions here is that lower-level management has a more limited scope and its attention must be focused by the information and control system. In the choice and simplicity of the single measures of performance a lot of uncertainty and complexity is absorbed by higher level management and in this way the DGMs are relatively shielded.

[16]One way of overcoming the consequences of the risk aversion manifested in the divisional plans of a firm, is for corporate management to elicit risky proposals and choose some of these for subsidization.

[17]Properly discounted.

[18]If R&D expenditures are made a corporate charge rather than charged to the division, this will create forces working in the opposite direction. However, since the risk of failure and not the cost of R&D is at the heart of the problem, the division may engage in R&D without actually implementing potentially valuable R&D results.

[19]These potential biases raise the question of why the CCEO does not remove himself from the regulatory bias, confining his attention to raising capital, external relations and the like. The answers are numerous. First, measurement, control and review are defined as the role of the CCEO in current management practice. Second, review and intervention by the CCEO does perform a useful function especially in cases of mismanagement and its positive benefits are difficult to disentangle from the possible consequences outlined above. Finally, there may be a variation of the principle that nature abhors a vacuum operating, where the CCEO seeks involvement to show his value to the organization.

[20]In the case of the capital markets in spite of segmentation we often find many, more or less similar, firms competing for funds. So the inputed cost of capital to a specific firm reflects the risk associated with the general activities of the firm.

[21]Corporate management could overestimate risk differences, but the properties of administrative regulation appear to favor underestimation. Furthermore, many processes of cost allocation within firms, for example overhead, tend to reinforce any process "averaging."

[22]Patterns with qualitative characteristics such as these have occurred in recent years at General Electric, Westinghouse, Litton Industries, Pneumo and other diversified firms.

[23]The overhead allocation process will bring about similar results, if it arbitrarily averages over many heterogeneous departments and product lines which have different overhead intensities.

[24]We often find an inconsistency in the "penalties," which favors the risky divisions. Although the a-priori risk may not be used to determine the appropriate cost of capital, corporate management is more likely to dismiss lack of performance in the case of the high-risk divisions with the statement " . . . it is a risky business."

[25]See Porter, M.E., "Please Note Location of Nearest Exit: Exit Barriers and Planning," California Management Review, Winter 1976.

[26]See Porter, M.E., "Please Note Location of Nearest Exit: Exit Barriers and Planning," California Management Review, Winter 1976.

[27]The life of free-standing firms is often uneconomically prolonged even after the market has repeatedly refused additional capital. Vendors, the managers and in some cases family friends provide the sustenance.

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X. *The Experience of a New England Company in the Fold of a Conglomerate*

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As a start, let me give you a bit of the history of the New Britain Machine Company. Founded before the turn of the century, the company had originally built a line of small steam engines, then a variety of woodworking machines, finally settling on an array of high production metal cutting machines. As time went on, the vagaries of the market for machine tools so impressed management that a diversification program was instituted. A division manufacturing hand tools for mechanics was started, a valve company added, and an operation constructing injection molding machines initiated, all of which were to operate counter cyclical to the machine tool industry.

The program was basically successful, for by the late 60's the company grew in sales to approximately $75,000,000 and was generating a reasonable return.

In earlier years, the company had been subjected to an attempted raid when a group from New York surreptitiously bought up shares in the open market. After considerable agony, the management had turned back the attack, but the concern over the possible loss of the company remained deeply etched in the minds of the management. Something had to be done in the long run. Machine tool stocks were never given much of a boost by the investment community, even in good times, with the result that the generally low price of the stock left the company attractive for the hunter.

The President of the company at that time determined that a partner should be found who could provide two things, (1) the financial strength which would be necessary in the development of new machine tools as the sophisticated electronic developments required, and (2) the access to new technologies which could help the company in its future development. Finally, of course, the proper marriage would put to bed once and for all the concern of ending up with an unfriendly partner.

Against this background, many discussions were held with interested companies, and Litton, with its reputation for technology, managerial strength, and growth record was chosen.* At that moment, there could not have been two more diverse companies. The seeds for a turbulent marriage had been planted. New Britain was provincial, and I do not mean this remark unkindly, for it was a small New England company. It had been successful as a result of some strong top management. This management rested pretty much in one family who had developed a strong relationship with the people. In style, it thrived on informality, decisions being made on what, by professional management standards, would hardly have qualified as sound economic analysis.

Litton Industries, on the other hand, had been started by Tex Thornton who, with Roy Ash, through various government and industry activities had earned a substantial reputation. Initially, they had purchased a small electronics outfit on the West Coast. In the market explosion of the 60's,

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*At the time of first contact with Litton, the price of Litton stock was $117 per share. During the period of conversation, the price continued to drop reaching $59 per share at the time of the consummation of the marriage. Ultimately, it was to drop to a low of $3.50 before making a modest recovery. One can well appreciate the feelings of the employees of the New Britain Machine Company who received Litton stock (at the value of $59 per share) for their stock at the time of the merger. As New Britain employees, over the years, under an employee stock purchase plan, they had poured much of their hard earned savings into New Britain Machine stock.

electronics were exciting and Litton, with a stream of acquisitions, soon became known as a glamorous conglomerate. As the price of stock spiralled, the acquisition program accelerated. This explosive growth obviously brought on tremendous absorption problems. To cope, a very sophisticated management information system was developed which was to be widely heralded in business circles as a signficant step forward in managing and controlling diverse operations. This system called for careful and precise divisional planning in exacting detail for the oncoming fiscal year. Once reviewed and approved by a corporate review committee, it was then to be set on file in the computer located at corporate headquarters. From then on, the division inputed its monthly results which were then compared by the computer with the initial plan and variances printed out. The variances were then subject to explanation by the managements in a follow-up report which was, in principle, reviewed by the staff at corporate headquarters. To cope with the inevitable changes, a revised plan was prepared at mid-year which, upon acceptance, once again became the official divisional program.

It was the process of the initial dissection of the various New Britain businesses, in preparation for the entry into this elaborate management information system, that provided the initial sparks, for the New Britain system could only have been characterized as a modest attempt at budgeting with uncertain follow-up. In this process, personnel from Litton corporate headquarters investigated in detail the operational activities of all personnel and analyzed the organizational structure in depth. Operating methods and style were scrutinized, and accounting procedures audited, all leading to recommendations for major changes.

It had been customary at New Britain for the activities of numerous people to extend over several divisions, divisional lines never having been clearly drawn. This, in turn, had led to some arbitrary allocations of

certain personnel and related expenses, which made it difficult for the new owners to see each division of the company on a stand alone basis. Most importantly, the New Britain mode of operations ran head on into a strict Litton corporate policy of separating out each business entity into the bright light to stand or fall on its own merit.

To sort all this out, a top Litton officer was assigned -- to bring New Britain into the fold so to speak. The usual and predictable scenario followed -- meetings on meetings -- as noted above, in depth reviews of the activities of all personnel and all company policies. Nothing escaped scrutiny. This led the New Britain management to feel itself challenged at every turn and, in fact, under an inquisition. What started out seemingly as friendly persuasion changed to thinly veiled criticism. The New Britain management became, understandably, defensive and the total relationship deteriorated to the point that each side dreaded the next encounter.

In his frustration to break the deadlock, the Litton corporate officer proposed a reorganization of the New Britain management with a substantial restructuring of the duties of the top people. No top manager was invited to leave, but definite restrictions were proposed on the activities of the President and Executive Vice President with new duties, more of a staff nature, being proposed for them. This produced the final explosion. After approximately a year and a half of skirmishes, the President and Executive Vice President, refusing to accept their newly proposed assignments, decided to resign. The Litton corporate manager, to his credit, looked within for its new management. I say this, of course, tongue in cheek, because I am still among the employed.

The reason I have dwelt so long on this part of the story is that it is, I think, too typical. You have all heard it before -- many times. I

am afraid it has been repeated time and again in the history of mergers. What conceptually is brilliant, deteriorates into a struggle of misunderstanding -- with too often a loss of significant talent.

In the case described here the two parties had different philosophies, so a clash was inevitable. It was not a question of either party being right or wrong. The real lesson portrayed, it seems to me, was that even where a marriage is intended to be friendly -- and believe me, this one was intended to be just that -- a much deeper analysis of the philosophies of the key people on both sides needs to be made in advance. To avoid hurting the people involved, more appreciation is needed for what is known in MIT circles as the human side of enterprise, the individual. For as other speakers here have suggested, reasonable people reasoning together can cope with any business situation. In retrospect, I am convinced that had there been a full and open discussion beforehand, with a thorough examination of corporate policies and philosophies as they would have related to the New Britain situation, the differences which were later to show up could have been resolved. In summary, the experience that I have described was an unfortunate lesson in the mismanagement of the human resources, which could have been avoided.

To go on with the story, the departure of the two top men in the company brought on unbelievable internal problems. From that point on, the Litton corporate group were cast as the bad guys, not to be trusted in any way. The situation festered and rumors sprung up that the corporation planned to move some of the divisions off the New Britain location, that there would be massive layoffs, and new managers were to be brought in. Some even went as far as to say that the remaining managers had, in effect, sworn to become puppets of the mother company.

As we reviewed it at that time, it was certain that major steps would have to be taken to resurrect the situation. Our case had to be carried to the people. The prevailing attitude would not be changed until the new management could prove by performance that the mother corporation and the division were working together toward the preservation and growth of the business and the interests of the people involved.

During this critical period, unfortunately, typical of the machine tool industry, business fell off sharply. The New Britain managers pleaded with the Litton corporate group for the privilege of keeping their organizations together. While the corporation was sympathetic, it was in no position to accept significantly reduced financial performance. The result was a combination of layoffs and salary cuts. This, coming on top of the departure of the top two men, was too much for the employees. The Union President went on a tirade demanding all kinds of new security for the members of the bargaining unit. Certain members of the office force secretly banded together and made application for an office union. What followed was one of the most agonizing periods in the company's history, as many people concerned themselves only with the protection of their future security.

In the meantime, the management per force had been restructured. As the heir to this turbulent scene, I immediately dropped all normal business activities and spent day after day on the podium addressing small groups, pleading for a chance to prove that the company could be a good place to work as it had been in the past, that they were secure in their jobs, that the interests of the Litton corporation were only in making things better and strengthening New Britain's position in the market place. Indeed, we had our job to do, but as owners, the Litton management only asked that we perform.

In the meantime, the application of the office people for a union election was blocked by the N.L.R.B. on the basis that member list for the unit as

proposed did not include all persons within the company who by rights would have what is known as a "community of interest." This had the effect of ending the unionizing activity, and with the end of this disruptive preoccupation the company personnel finally began to work once again in a productive way.

In the meantime, the Litton corporate group was coming to the realization that they had overpowered the situation and supported fully the efforts at rebuilding the morale. With business somewhat improved, salaries were restored and an honest salary administration program, the lack of which we found to be a source of real bitterness, became a fact. A major effort at communication with employees was instituted and finally there was peace in the valley and we went forward.

Many years have passed since this dark period. While inevitably some skepticism remains, the facts which no fair-minded person can now deny, are that the Litton corporate management has, by its behavior, earned the respect of the division. While demanding performance, as they should be, they have not hesitated to express their appreciation at the results produced and the company has come of age in their eyes.

So much for the turbulent conception and birth. Turning to the present, predictably, the structure of the original New Britain Machine Company has changed. It is now split into five separate operating divisions run by managers who have complete P & L responsibility. Shared personnel are at a minimum and continue only in such areas as labor relations for a common site and in computer services. This group reports to me as Group Executive and Corporate Vice President, and we, in turn, are part of what is known as the Machine Tool Systems Group, a total of 17 operating entities, headed by a Litton Senior Vice President.

THE PRESENT

As the passing of the years has worn down the rough spots, the attitude of top corporate management is now reflected in statements such as: "You are the manager, you know the business, so you make the decisions." Our President stresses that he doesn't know our businesses, and therefore, it's up to us to run them. In addition to the usual financial criteria of performance, he looks for two things in his managers, (1) a high energy content and (2) an ability to communicate. As Bob Ames expressed when discussing his company, our President wants no surprises. If you're in the soup, declare it loud and clear!

Planning sessions have become constructive discussions rather than nerve racking poker games dominated by fear. This is not to say that the seat does not get hot when the manager attempts to explain shortcomings in performance or his failures, but an element of trust seems to exist in most cases and fairness prevails. Of course, some games are played -- some managers develop what are known as "soft" plans -- but over a period of time, their approach to the planning function and their consequent performance become known. Once a reputation is acquired, the playing of games becomes a non-productive exercise. As we say, we "in the provinces" are always searching for ways to cope, but most managers long since concluded that direct factual representation is the best approach.

So we have come to realize that an unhappy honeymoon need not lead to an unhappy marriage. It has taken years, but all parties have finally learned to communicate, and now we have reached the stage where five-year plans are becoming exciting exercises for the managers. No one really believes the numbers, but the narrative makes for interesting reading and catches top corporate attention. The manager has a real opportunity to develop his plan as to how he's going to build the future of his division -- and to present it to an enthusiastic attentive corporate audience.

In response to some of Zenon's questions, I want to turn now to explore the relationship of corporate to division in the various phases of the operation. As noted above, the division's plan, which is prepared at the beginning of each fiscal year, delineates all facets of the business for the coming year. As one would expect, the narrative is cryptic while the development of the financials are elaborate. Comparisons are made with the previous, just completed year, and all projected variances are explained. To support his projected financial results, the divisional manager also provides a separate marketing plan which can be as limited or extensive as he desires. The financial plan is first reviewed in detail at the group level with the Senior Vice President in charge of the group, and then by a top corporate group usually including the President.

A typical review starts with the assumptions underlying the plan such as projected changes in pricing of the product, changes in costs of material, labor cost increases, overhead, etc. -- the projected income statement and balance sheet both quarterly, and then supporting supplementary schedules which explore, for example, sources and applications of funds, profitability by product line, composition of and changes in inventory levels. Special ratios relating to the management of the assets invested in the business, such as number of months of sales in accounts receivable and inventory turnover, receive particular attention -- cash flow, manpower levels, are scrutinized carefully to determine whether appropriate improvements are planned -- and finally, the progress is examined in the key criterion of all, return on capital utilized. All of the above, where appropriate, are related to previous year's performance.

Assuming acceptance of the plan, it then becomes the Bible against which all results are compared as the year unfolds.

Rarely are other reports required unless a significant corporate problem like an unexpected cash drain arises which then calls for more stringent controls and perhaps even revised plans. On the other hand, the Group Vice President may decide that a certain element in the business is not receiving the proper attention and may himself institute a specific control system with appropriate reports.

Assuming all goes well, a monthly letter written by the manager, explains the variances that have developed. This usually suffices unless a significant unfavorable trend develops in some sector which then may be called for special review by the Group Vice President.

Beyond this, the manager is required to submit, for wide publication, a very brief highlights report on a monthly basis which speaks of other significant happenings in the month past, which might otherwise go unnoticed at the corporate level. Example of this might be in noting special opportunities in the market place -- or a special organizational change.

I have provided this information in a brief fashion as background for a deeper analysis of the tougher questions of the relationships of divisions to parent. I am sure that the Litton approach up to this point is in many ways similar to that of other large corporations.

From here on, perhaps differences arise. As explained, once a division's plan for the coming year has been accepted, the manager runs the business, basically free from corporate administrative control. For example, he can and is expected to:

Modify his organizational structure in any way which better fits his business needs, -- but be prepared to explain and support his moves.

When it comes to hiring an outside person for a key job, the manager

is free to make his own selection using outside recruiting services if he so desires.

Occasionally, a person from another division is proposed by corporate, but it is expected only that the manager will make a fair review of the man's capabilities and fit for the job -- but under no condition is he forced to take him. I might add that this has not always been corporate policy. When it comes to promotions within -- or management development programs, these are the manager's problems. He is expected, as a matter of course, to be developing the successor management team.

In the market place, the manager may modify his pricing structure up or down based on his analysis of market place requirements. The development of quotations, bidding for contracts, is all within his charter. It is his responsibility to seek whatever legal aid which may be necessary in the area of terms and conditions -- agency contracts, etc.

A limitation in his scope, however, is placed in the area of bidding for Eastern Country contracts. Beyond a certain dollar figure, corporate level participation is required.

The manager is expected to revise his marketing program to match new opportunities. Should a projected program be significant or have a degree of risk with which he may not be wholly comfortable, he may review the project with his superior, the Group Executive -- but the initiative has to be his.

In the area of product development, he may revamp his program provided the newly contemplated project or projects do not vary significantly from what had been foreseen in the plan. Should a research

or development project arise which would require an investment significantly beyond plan, he is encouraged and, in fact, expected to make a presentation immediately for approval and for authorization of the required funds, the project being analyzed on the basis of its projected returns. Waiting for the next regular divisional review is not an acceptable policy. I might add here that corporate faith in the management often is the factor in gaining approval. Written justifications are often pie in the sky. Our experience in this respect parallels that of Textron.

In the area of capital investments, within the capital budget as approved, each request over a certain dollar figure has to be approved on the basis of a cash-flow rate-of-return analysis. It is interesting to note that there are no hard criteria in the form of minimum returns. On the other hand, where the figures do not measure up, the manager can be expected to provide a strong written justification for his request and can expect some in depth questioning. This less clearly defined policy often seems to have a sobering effect in terms of developing requests for new purchases. Too often, the less firm guidelines seem to make it harder to get the operating people to develop specific justification.

Since additions to the capital base have an immediate effect on the calculated returns on capital utilized, which is in fact the measure of a manager's performance, we are developing a serious concern as to whether our managers are keeping up their plant and equipment as they should. The same concern is being expressed in the area of product development where a conservative manager may be tempted to postpone development so as not to hurt his figures in the immediate future as

well as to avoid uncomfortable risk. I suspect many corporations share similar concerns in this area.

On the often forgotten but extremely important topic of the interface with the community, understandably the issues do not loom as urgent in the eyes of the corporate management. Each manager must create and sell his own program as part of his plan -- there are no corporate directions as such. Charitable donations are within the purview of the manager provided he does not exceed a previously agreed upon figure. As for charitable giving, the corporation strongly favors giving in some way proportional to the divisional performance of the time. To overcome this potential problem and in an effort to support the community on a more even basis, New Britain formed a charitable trust to which contributions are made in proportion to the division's performance for the year -- outlays thus being levelled off to a large degree.

What I have described then are the general conditions for the manager who has established himself. He has room in which to operate.

In certain other areas, he does have certain limitations.

Legal services would be a case in point. Each group has its own legal council to cope with commercial legal problems, patents and license agreements and leases. The legal group has dotted line responsibility to the legal department of the parent and accordingly is guided by policies established by the corporate legal department.

Financial reporting can be a delicate area. Here the key is for the manager to have a financial chief who stands back to back with him to fend off the wolves. However, the financial man has dotted line responsibility to the top financial man in the Group who reports directly to the Senior

Vice President in charge of the Machine Tool Systems Group. Thus he abides by certain rules and policies established by Corporate Finance. Obviously, at times, he can be put in the uncomfortable position of having to choose between the divisional manager's wishes and his charter as passed down from above. When in doubt, it is clearly established that he has the right and duty to appeal a request to higher authority. This, of course, can strain his relationship with the divisional manager and hence it is a fixed policy that the manager find and hire a controller with whom he knows he can work.

In the area of labor relations, contract negotiations and major arbitrations are conducted with a corporate specialist on hand. This adds the expertise as required at the moment. Last year, New Britain suffered a seventeen week strike during which corporate advisors were on hand to help in any way possible. This was a godsend as the experts were always at hand to cope with those problems which the average manager has very little confidence that he can handle effectively. The responsibility for decision rests, however, finally with the manager. Most significantly, this corporate presence helps to insure that new ground will not be broken in any particular negotiation, opening up some union gains in a new area which might later have a ripple effect through the whole corporation.

Another area impacted by administrative overlay is that of salary administration for key people and performance bonus payments. These require approval up the line. No manager can arbitrarily change a compensation program for key employees without corporate approval. An existing plan can continue ad infinitum, but to launch a new plan calls for an extensive analysis and presentation. It is interesting to note, however, that the manager may decide the program of salary adjustments for non-bargaining unit personnel, but he is well advised to discuss same with his Group Executive.

Finally, I want to describe the relationship of the manager to the parent corporation as he faces the political community, his congressmen, the political scene. This is a sensitive area. Corporate policy calls for pronouncements by him to be cleared by the Corporate Public Relations Department even including what seems to be innocuous releases to the local paper. This policy has come about as a result of certain statements made in the past by divisional managers which were later to prove embarrassing to the corporate management. The policy is one which is hard to enforce and hard to follow. A manager has a natural inclination to sound off in the local community on activities affecting his operation. Furthermore, he is encouraged to make his presence felt in the State Capitol and Washington, all in the promotion of his business interests. Coordination with the Corporate Public Relations Department becomes quite a trick. As I was preparing this paper, I was amused by the following comment taken out of a local paper by one of the managers who report to me: "Mr. ---- described his philosophy for maintaining control of his company -- even after it had been absorbed by giant Litton. 'I operate on the theory that the best way to keep a big company like Litton on the defensive is to always be on the offense yourself'." You can see how well I handled my part of the policy.

As a summary statement, it seems fair to say that the corporate administrative overlay is light and appears only in specific areas. What is also clear is that a well established manager may push his boundaries considerably.

This leaves somewhat unanswered the question as to where the manager goes when he wants help. Typically, he will consult the Group Executive above him who, in turn, may involve the Senior Vice President in charge of the seventeen companies. There are no hard and fast rules here. I have

found that in well run divisions, the managers converse most frequently with their Group Executive as to opportunities in the market place and in the area of new product development. In a complementary fashion, the Group Executive is most happy not to be dragged into mundane operating problems.

In a related question, with the varied industrial products, some rather sophisticated, the manager frequently has the requirement for technological inputs not found in his own shop. He can often get them from other Litton divisions, but he soon finds to his horror that little help comes free. The famous synergism may work, but when each division is a profit center, managers don't sell their talents cheap. By this, I do not mean to imply that synergism is dead, for many examples could be cited of productive sessions between divisional personnel. Typical would be quickly scheduled meetings among marketing managers in which efforts are made to analyze the status of the various markets served. In the final analysis, synergism takes place when two managers of separate divisions want it to take place -- it cannot be inflicted from the top -- only suggested.

Before leaving this topic, I might just comment on the related topic of inter divisional transfers. Understandably, the divisions are encouraged to buy one another's products and this, of course, frequently takes place. Experience shows that these transactions become the most difficult of all. Either the buyer, feeling pressure to purchase his cousin's products, expects more -- or the seller senses unreasonable demands on the part of the buyer for something special or extra -- because of his privileged position as a special customer, as free ongoing service. More than one transaction has ended up in some kind of an internal arbitration.

This then, is the story of the New Britain Machine entry into the conglomerate fold and the evolution of the management system under which it operates.

One then needs to reflect upon this experience and ask the obvious question. Has it been good for the company, the people, the community? Is the conglomerate a useful instrument as it relates to a small company like New Britain Machine?

My conclusion is that in spite of the hurts and turmoil experienced, the New Britain Machine Company, in all its divisons, is a much stronger and smarter company and has the operational skills and confidence to remain competitive and face the challenge of the market place -- thanks to the lessons in operating techniques learned from the parent.

I would quickly add that not all my managers share my view -- but they lose sight of certain elements in the business which are no longer my concern such as (1) trips to the banks, and (2) the cyclical nature of the machine tool industry. I concur with what Bob Ames said, "It's delightful to leave these worries to others."

From here on, we must address the question -- will future progress together be better than what could be accomplished independently. While I buy the attributes of the conglomerate as mentioned by previous speakers, my answer is simple. It becomes strictly a question of people and of their relationships. An atmosphere of trust and mutual respect, the absence of fear and defensiveness can be a vehicle of major accomplishment for there are clever, enthusiastic people all around at the corporate level and in the divisional managements who are just waiting for a chance to blossom and build the future. When the corporate management openly says -- "no one can do it better than the divisional manager" and cheers him on, anything is possible and life can be exciting.