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STRATEGIES FOR NEW PRODUCT DEVELOPMENT

Guidelines for a critical company problem

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In spite of much evidence of its success, many managers hesitate to establish a policy for new product development. Their indecision often arises from two reasons: they fear that a defined strategy may discourage innovation and they are uncertain how to formulate a new product strategy. The author of this article discredits the former notion and, in reply to the latter, proposes the guidelines for developing such a statement. As new products are essential to the continued success of most firms, the strategy must exist and must be operant if the firm is to avoid wasted time, effort, and money as well as employee confusion and discouragement.

For longer than most of us care to remember, Dan Gerber has been proclaiming that babies are his business, his only business. With some nostalgic regret I read recently that he has altered his strategy: he now permits limited diversification beyond products for babies.

A leading toiletries manufacturer has an equally tenacious, though unpublicized, commitment to only those new, nonfood, packaged goods that do not compete item-to-item with Procter and Gamble.

Richard Rifenburgh, president of Mohawk Data Sciences, manufacturers of peripheral computer equipment, was cited recently in Fortune as a man who, at the present time, would rather be an agile follower than a creative leader. On the assumption that it would be too expensive to develop frontiers, Rifenburgh prefers to wait to see on which newly opened trails the volume of activity will fall.

All of these companies have a powerful managerial tool—what I call a New Product Development Strategy Statement. They have formed convictions concerning new products that seem most appropriate for their respective firms. Under vigorous leadership, their policies are being implemented.

Contrast the clarity of these approaches with the following charge given to a product development group:

...to take the lead in meeting the needs of the company's customers for improved and new products, to develop new uses for existing products, and to develop high-profit products for introduction to existing and potential customers.

Research directors who labor under guidance like this are the ones who lament the lack of vision of marketing and top management personnel: the top brass can't recognize a good product idea when it is shown to them. Research operations which "benefit" from the most liberal guidelines also endure

the most idea rejection, development difficulties, and product failure.

Specifically, does the statement of that company limit the search to improving or extending the present product line? What degree of relationship to the present scope of activity is necessary for the idea to be acceptable? May the search proceed into unrelated areas? Is search limited to the firm's present technological capabilities, distribution system, raw materials, and plant and human resources? Is the door to acquisition open or closed? Will functional capability be added to match each new idea, or should the ideas match present functional capabilities?

The idea of putting definitive restrictions on the new product activity is not novel, but use of it, especially sophisticated use, is still not widespread. Most large firms have something they call new product strategy but it is more for directors and stockholders than for serious internal direction; other firms have sketches of such strategy but they are rarely available for personnel down the line from the president's office. As the president of a medium-sized firm recently said to me, not entirely in jest: "Sure, we have a new product strategy; just ask me!"

Early in this century General Motors committed itself to a full line of automobiles, a strategy that proved superior to Ford's. Only recently did Coca-Cola abandon its strategy of no line additions. General Electric's approach, a broad attack upon markets susceptible to electrical technology, is decades old.

Indeed, new product strategies are so old, and in so many cases credited with such successful outcomes, that one is prompted to ask why all firms don't have them. There are essentially two reasons:

1. Management is not certain what such statements should cover.
2. Management fears that limitations may discourage some useful or successful innovation.

These are the points to which we will now turn our attention.

WHAT SHOULD THE STATEMENT INCLUDE?

The basic purpose of new product strategy is to provide unifying direction. It specifically notes any tempting development areas that are off limits; it clearly specifies those areas where effort is to proceed; and it adds any other direction appropriate and relevant to the firm, as in the Mohawk strategy.

A review of representative strategy statements reveals how the following dimensions are in actual use.

Technology/Market Mix

As long ago as 1957, the Harvard Business Review ran an article by Samuel C. Johnson of S. C. Johnson & Son, Inc. and Conrad Jones of Booz, Allen & Hamilton which became a classic because it spelled out what was rapidly gaining fame as the BA/H method of organizing the new product function. The article contained a table which should be on page one of every firm's planning document. It diagramed the alternatives available for new product activity as a 3x3 matrix (see accompanying table).

This table structurally depicts the possible nine combinations of market and technology. Some, all, or none of these may be encouraged, as the applicability of each of the options will vary from firm to firm. Unless it values new and improved products for their own sake, any management will want to study thoroughly the various cost/return relationships and stipulate those which it wants to stress and those it wishes to avoid.

Market Width

The bottom row of the matrix, New Market, provides the third dimension into the consid-

Options in the Market-Technology Mix

<table>
<thead>
<tr>
<th>No Market Change</th>
<th>Improved Technology</th>
<th>New Technology</th>
</tr>
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<tbody>
<tr>
<td>No Activity</td>
<td>Reformulation</td>
<td>Replacement</td>
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<tr>
<td>Remerchandising</td>
<td>Improved Product</td>
<td>Line Extension</td>
</tr>
<tr>
<td>New Use</td>
<td>Market Extension</td>
<td>Diversification</td>
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</table>


That a team was developed for each sphere emphasizes the positiveness as well as the restrictiveness of the strategy.

**Degree of Innovation/Imitation**

This is the third and last dimension on which most managements have made commitments, not because strategic direction is consciously desired so much as because innovative research requires different scientific staffs. Thus the product development staff at Mohawk Data Sciences is clearly directed to taking someone else's new technology and improving, or at least individualizing, it in some way. In contrast, the Cabot Corporation is thoroughly committed to innovation and takes in fifty times as much money from licensing processes as it pays out. 4

Examples of both approaches can be found in Theodore Levitt's "Innovative Imitation," an article in which the world's leading opponent of myopic marketing vigorously pleads for the option of imitation, though it too requires thoughtful development as well as faithful executions. 5

If a management wants to assume the high-risk/pay-off character of innovative

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development, all persons in positions to influence company activities should know it. This applies to imitation as well, or to any blend of the two.

Actually it may be more complicated than a simple innovation/imitation choice. Igor Ansoff and John Steward recently spelled out a four-point scale of orientation:

1. First to market . . . based on strong R & D, technical leadership, and risk taking.
2. Follow the leader . . . based on strong development resources and the ability to act quickly as the market starts its growth phase.
3. Applications engineering . . . based on product modification to fit the needs of particular customers in mature markets.
4. Me-Too . . . based on superior manufacturing efficiency and cost control. 6

Price/Quality Ranges

From this point forward in the considerations, the various dimensions are optional in the sense that any one firm may or may not find them desirable. Position on the list (whether here or near the end) carries no implications.

The Campbell Soup Company has an outstanding reputation, and cares not to lose it. No surprise then that Campbell's product development people are told: "Prepare and market products that represent superior values to consumers and constantly improve those values. Our products are sound values because they are made from superior quality ingredients . . ." Value can come from either quality or price but Campbell people know which route they are to take. 7

In contrast, many firms take the opposite tack. Small appliances purchased in the chain drugstores, for instance, seem to come from manufacturers whose position is far to the right on the quality/price spectrum.

The strategy statement of a large pharmaceutical firm contains the expression: "New products must enhance the company's stature." It goes on to clarify this by pointing out, among other things, the need to restrict the number of products that are modified copies of ones already on the market for which low price would be a primary or tempting strategy.

Particular Promotional Requirements

The range of options here is limited only by the diversity of marketing tools, but it is customary for marketing people to orient to those new products which match current promotional strategy or marketing resource structure. Just as commonly, R & D people do not—unless they are told.

Several years ago, researchers in Wallace Laboratories were seeking new drug products which could be sold by advertising, since, in contrast to every other firm of significance in the industry, Wallace had no sales force. Procter & Gamble wants products where brand manager skills—advertising, packaging, promotions—can be the deciding factor.

Until Metrecal forced a change, Mead Johnson sought only products which could be promoted ethically through the professional health team rather than as proprietaries on television.

A certain mini-conglomerate which holds a major interest in radio stations wants only those products which can be effectively advertised on radio. Still other firms want products which (1) can be sold through mass merchandisers where the company is strong, (2) can be sold by mail, (3) can be carried by route salesmen in small trucks, or (4) need be (or need not be) sold through state-owned retail outlets.

The list is literally endless, yet within any one firm the necessary or desirable promotional restrictions are apparent to one who observes the marketing operation. One manufacturer of small electrical appliances decided

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to redefine his business as any product with an electric cord at the end of it. But the resulting flow of product ideas and prototypes revealed the folly of not stipulating the promotional requirements, including trade channels, that any new electric product would have to meet.

**Inside vs. Outside Facilities**

Preparing a strategy statement provides the opportunity to decide whether the firm will limit R & D facilities and personnel. Few operating functions are better than research in creeping expenses. Each new piece of equipment requires operators and materials, and new operators inevitably require additional equipment. Active in-house research and development programs legitimately require all of these things, and it is temptingly easy to be penny-wise and pound-foolish.

Management is obligated to define the extent of the continuing activity; if the need for major R & D output is to be sustained, the expansion of in-house facilities is not only justified but mandated. If R & D expansion is not possible or desirable, the strategy must allow for this condition.

**Competitive Situations To Be Sought or Avoided**

One classification of caveats that is inevitably present in a new product situation, yet just as often goes unstated, consists of competitive circumstances in markets being evaluated. Unless clarified they can be tragically disappointing.

One company dealing in several toiletries lines rejected numerous reasonably good ideas over a two year period before someone realized what the ideas had in common: all would have pushed the firm into direct confrontation with P & G's important areas. This undisclosed criterion was so basic as to be of strategic meaningfulness, yet it was not included in the policy. The omission was promptly corrected; although some firm members probably winced, the statement was necessary in order to save a great deal of time in fruitless work. Most frequently, this type of provision is directed against any market which has one dominant leader. In contrast, at least one company deliberately seeks out such situations, figuring to catch a fat, complacent competitor getting careless.

Some markets are said to have deteriorated and, therefore, are to be avoided. Perhaps technology is simple and entry is easy—cut-throat pricing is likely to have ruined the market. Or perhaps competitive enthusiasm got out of hand and tactics exceed the bounds of propriety.

In contrast to these and other exclusion guides, competitive conditions can also be used to define outstanding areas of opportunity. One drug company made a tally of innovations in each of the industry's product categories, seeking as deliberate strategy any in which there had been no significant new product activity for five years. A relatively modest innovation in one such market was highly profitable.

For any company there are good competitive situations and there are bad ones. Depending upon their strategic value, situations should be so designated.

**Production Requirements**

In those rare cases when production requirements are omitted from strategy, they soon get incorporated. The company, for example, which expands to new facilities commonly builds beyond its present needs and then promptly undertakes a search for new products to manufacture. Or equipment may be unique in some way—such as continuous liquid processing, or package filling, or delicate hand assemblies—giving greater value to new items which capitalize on them. One firm simply states that it wants products that
can be mass produced. But, however stated, applicable restrictions should be known.

**Patent Requirements**

The small New England firm which developed and marketed Lestoil would no doubt have welcomed patent protection for it, but the absence of a patent didn’t stop them. As desirable as a patent is, small firms can take the nonpatent gamble; their investments are small, and they hope they have a product so good that the big boys muscle in.

Large firms feel quite differently; some go so far as to deny development funds for any idea which has poor patent probability. Others look beyond patents and stipulate whatever level of protection is desirable.

**Speed**

Product development is a long-term proposition, and most companies recognize the futility and costliness of hurrying things up. There are instances, however, when management place a priority on immediacy and are willing to take the enormous risks associated with such situations. They can be said to have a short-term time dimension on their new-product value system. Professional baseball managers do exactly the same thing when they pick up a twelve-year veteran relief pitcher during a pennant drive rather than draft a seventeen-year-old from the farm system. Some firms are in “pennant drives,” some are “rebuilding,” and some are doing neither. The strategy implications are obvious.

**Risk/Failure Factors**

Campbell Soup Company may have changed subsequently, but in 1966 its Product Advertising Manager said, “…uppermost in our new products marketing philosophy—avoid failure!" Feelings differ widely on this point, ranging from the Campbell position (which may be temporary or standing) to the completely opposite strategy in which the firm accepts the inevitability of failure on new products. The latter approaches the market frequently and fails frequently, but, if development and market launch expenses are modest, one success out of every three attempts can be highly profitable. This strategy works best, however, when the chief marketing effort is advertising, since frequent new product failures play havoc with sales force morale and customer confidence.

Occasionally the failure factor is functional, not total. A firm may want to avoid production hazards or may feel ill-equipped to undertake technically complex quality control procedures. As Bon Vivant found, an outbreak of botulism can threaten a firm’s existence. At least one management has gone on record as wanting no part in transporting explosive materials.

**Pay-Back Conditions**

Most firms’ financial conditions change from time to time, from periods of cash prosperity to periods of cash constringency, yet, the many people involved down the line in new product development are rarely informed of these conditions. Only when some particular idea or completed product is rejected because of the excessive cash drain it would impose (for outside technical development, patent purchase, or introductory advertising) or its slow pay-back are R & D people aware of the overall financial situation.

No one suggests that the new product program should shift gears with every turn of the company’s financial condition. But the product development strategy does have the flexibility to absorb some of the setbacks. Ironically, the development departments of high-prestige firms often harbor a few product

8. Speech by John W. Dodd, Jr.
ideas that are idle for lack of glamour but which can generate cash for a short-term. Of course the converse set of circumstances also exists.

Minimum Sales

Although it applies only to those situations where a sizeable fixed expense commitment attaches to the new product, it nevertheless is not too uncommon to hear management talk of a minimum dollar sales criterion. One industry in which this reality must be recognized is ethical drugs; there each new item is usually detailed to doctors and hospitals at least once. Every drug firm, then, can estimate the share of fixed costs entailed in the initial sales approach and pretty quickly come up with the minimum level of sales necessary to support it. One large midwestern pharmaceutical company uses two million dollars as their minimum. This is profitable strategy because, if volume is expected to be significantly less than this, the detailing effort should not be pulled off established products.

Need for Basic Research

Basic research is enormously expensive while making no promises. Most firms avoid it by including in their strategy statement a provision stipulating the immediate rejection of any idea which necessitates it. Even those firms with research programs addressed to significant knowledge breakthroughs are wise to ask the basic research question—Are such ideas desirable?—as a matter of course, now and then.

Using a procedure which I suspect is rather common, one electronics firm announced to all concerned personnel that basic programs had been carefully selected and adequately funded; these were to comprise the company's total research in the speculative unknown. All other new product ideas were to be rejected if they called for basic efforts. This may seem arbitrary, as may most of the stipulations in a strategy statement; it is in the sense of out-of-hand rejection. The limitations should be based, however, on a careful appraisal of research opportunities; thus, they are not arbitrary in the sense of casual or flippant. Research design is a gamble, as is all strategy; any resource commitment decision necessarily rejects certain alternatives. (The criticisms of this aspect of new product strategy are considered later.)

Thousands of small manufacturing firms exist outside the range of inventiveness by simply making something that others have created and selling it at a lower price. This is not the strategy of innovative imitation. There is nothing innovative about it. These firms opt for Me-Too as a total strategy. It is common, however, to find other managements rejecting the identical product approach. As one president said, "Unless it's an important part of a line which we must have, we hold up on duplicates until we can significantly improve upon them."

Other restrictions on competitive positioning run the full range: no product price can increase more than 20 percent, no product can require significantly more service, no product can be larger, longer, hotter, deeper. If these things matter, tell people about it.

Product/Service Relatedness

Increasingly these days, firms are relating their products to systems of use or service. One small midwestern instruments manufacturer decided that his analog and digital computers could best be sold as parts of total measuring and control systems, so he immediately ordered a halt to every development project whose output would not fit this concept. Other firms have decided that service is their best chance of differentiation and so seek products with a high service commitment. Still others push in precisely the opposite direction.
Miscellaneous

There is actually no end to the possibilities, as the following might attest:

1. Products which offset a sales or production seasonality problem.
2. Products which utilize some particular raw material, one common to that now used, common to that of a sister division, or incorporating a by-product or even waste material.
3. Products to fill gaps in sales calls, such as when a high volume product leads to calls upon a given customer group for which the firm has no other products. New items could capitalize on the wasted (free) selling time.
4. Products which capitalize on a given technical skill, such as the Corning Glass strategy that new items should exploit the firm's excellent glass technology.
5. Products which avoid certain types of markets, such as the drug firm whose executives recoiled from marketing rectal medications.
6. Coca-Cola wants new products which exploit its outstanding distribution system.
7. Hertz wants products to rent.
8. Warner-Lambert wants products which can be mass-marketed.

The Knock of Opportunity

Several objections have been raised against the practice of new product strategy statements. Some critics point out the difficulty of coordinating an assessment of market opportunities with the company resources and the time involved as obstacles. Others cite the bookshelf fate of many strategy statements. But these concerns are more than offset by the reduction in wasted programs and false starts, the enhanced morale which comes to an organization that is working together, and the degree of managerial control that good strategy permits. By clarifying assignments, management maintains control. Strategy organizes the thoughts of the corporation, provides rationale for decision models, and affords the specific and detailed criteria by which all new ideas are ultimately evaluated.

The one other major criticism, and the only really serious one, is that a thorough statement of new product development strategy is inhibiting and restrictive. Supposedly, creative people cannot function under such restraints; ideas with great potential are rejected because people who execute strategy lack the broad vision and flexibility of those who set it.

Critics who take this position do not lack for examples. They point out that no strategy could or should have contained Thomas Edison. Or, how many strategy statements would have rejected the xerographic process or Dr. Land's camera. How many times every day do researchers in various laboratories around the country glimpse the rough outline of a truly great idea only to reject it immediately as falling outside the firm's scope of interest?

No one knows, of course, but it's a lot less often than the question implies, for several reasons:

1. Most people have adequate range within the strategy—they don't want for stretching room and are so busy within their range that they are not tempted by "glimpses" outside of it.
2. Most ideas inhibited by strategy should be inhibited. One role for new product strategy is to stipulate those areas where the firm's researchers are most likely to find good ideas, based on the fertility of different fields, researchers' capabilities, and the firm's ability to capitalize on different types of ideas. By definition then, other fields are most apt to yield only fool's gold.
3. Finally, strategy serves the policy function of a guideline, not a prison wall. Most researchers who are capable of having really great ideas know this and are not adverse to requesting an exception. By this means, the issues of strategy interpretation and strategy change are regularly reviewed; an ongoing evaluation process by those who set the strategy is forced by the appearance of an idea or market change which has survived the first-line challenge of established guidelines before it became an issue for mandating change.

Like any other policy, new product strategy operates with two assumptions. The first one is that there will be mistakes, such as the rejection of good ideas, but these errors are more than compensated by the savings of the time and effort not spent on inappro-
Strategies for New Product Development

Appropriate ideas. Besides, who really knows whether good ideas are rejected? It is claimed, for example, that several top companies, including Kodak, rejected the xerographic concept. It was worth a fortune to those who later made it successful, but who is to say it would have been equally successful for one of the established firms? The odds against a Xerox must be in the million to one category, making it quite appropriate for a venture capital situation, but far outside most new product strategies.

It seems safe to hazard an opinion that more money has been lost developing bad ideas within the strategy than by rejecting good ideas outside the strategy.

The second assumption is that the cost of dealing with highly repetitive, though slightly dissimilar, situations is substantially reduced by means of policy guidelines which permit the delegation of decisions. Without strategy, new product ideas are initially evaluated by persons who, guessing about top management desires, will be more conservative and restrictive than if they had strategy guidelines, or by top management itself. Eccentric researchers who object to the restraints of strategy like the latter, but, for evident reasons, management does not. The only exceptions arise in the cases of the really inventive researchers, the Edisons; these necessitate special handling via independent, separately budgeted research centers or via some other technique which separates them from the group restrained by strategy.

The claim advanced in this article is that new product development so engulfs an entire organization and is so crucial to its long-term success that its skillful integration into the company operation requires a guiding strategy: the selection of goals and the purposeful arrangement of resources dedicated to the achievement of those goals. When based upon overall corporate goals and an objective evaluation of company strengths and skills, a new product strategy statement can provide effective and uniform guidance to the many persons in the various places who participate in the product development process.

The fact is, middle managers and staff specialists cannot function without strategy; if they are not given a policy for new products, they will promptly make up one. It will be based on their individual perceptions of what management wants and will be heavily influenced by what they think management should want.

Not long ago the president of a company was telling me how important a certain area of recent diversification was. Later that same week a key research manager in the same firm cited the difficulties in that area as reasons why it should be permitted to “cool” for a while, if not permanently. Only the naive believe that close working relationships prevent misunderstandings like this.

Proof can come from a poll if your firm does not yet have a well-understood new product strategy in writing. And proof is a must for those managers who sincerely believe their new product programs are highly coordinated without a statement of strategy. Ask the firm’s or division’s key people the following questions:

1. How big, in dollar volume, do you think we will be in ten years?
2. Which three of our important product categories will have declined significantly in importance?
3. Name two product or market categories which you think would be good for the firm but which we are not involved with now in any way.
4. Acquisition is: (1) terribly important, (2) important, (3) not really important to this firm for the next ten years.
5. Most important in holding us back from more and better new products is: (1) We’re short on good new product ideas, or (2) we’re not good enough at converting ideas into successful products.
6. Name the two resources, assets, or skills which we have which are the most important in our overall new product activity. Is this pair the same as the ones which should be playing the major role?
7. For researchers: what two skills or tools have been most valuable in the firm’s marketing successes? For marketers: what two attributes or skills have been most valuable to the firm’s technical research and development program?

8. What policy guides our response to successful innovation in our markets by other firms?

Readers can think of many more questions, but whatever the questions, a poll like this can be quite revealing.

The coverage and depth of detail that should be in a new product strategy statement is an open variable. James Geier of Cincinnati Milacron may have covered enough bases when he said recently, “The name of the game is staying No. 1 in technology.” On the other hand, a pharmaceutical manufacturer took six typed pages to spell out some twenty-seven criteria. The approach depends on the complexity of the firm’s business (number of options) and the difficulties of communication. Management can commence with a succinct statement and add coverage as needed.

Fortunately, the process of developing strategy for new products is not significantly different from developing any other strategy. Since the appropriate generic process for strategy determination is becoming known, there is no need to state it here. A new book by Kenneth R. Andrews offers superb insight on this matter and discusses in depth the step-by-step process.¹⁰

But the task is demanding. In most firms today, new products are essential to continued success, so the strategy had better be a good one. And if management is to avoid wasted effort, false starts, confusion, low morale, and even rebellion, it must effectively communicate this strategy to all involved.


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