According to Webster, a science is "any branch or department of systematized knowledge considered as a distinct field of investigation or object of study." By this definition, marketing certainly may be designated as a science, albeit a science in the early stages of development. Scholars and students of marketing are concerned with the collection, analysis, and interpretation of marketing knowledge; and some progress has been made in systematizing and classifying marketing phenomena.

In recent years social scientists have begun to employ a method known in the physical sciences as *systems analysis*. As one social theorist has observed:

"As judged by history of the physical, biological, and social sciences, study in any field is apt to begin with a none-too-ordered description of phenomena in the field, followed by a cataloguing of them on bases that seem to make sense. As understanding grows, the systems of classification become more closely related to the functioning of interacting elements. Gradually, generalizations about functioning are reached which are useful in predicting future events. As the generalizations gain in rigor, they take the form of analytical models of the behavior of the elements being studied. They take the form, that is, of systems."  

The development of marketing knowledge seems to be going through similar stages.

A system is a set of interdependent or interacting elements. The investigation of the factors that determine the state of the system is called systems analysis. This type of analysis may be applied to a business firm as well as to a society or other organization. Exogenous and endogenous factors may be examined to determine their influences on the firm in its movement toward an equilibrium.

Exogenous factors influencing the business firm include a profusion of economic, sociological, political, and cultural circumstances and trends. Endogenous factors influencing the movement of a firm toward equilibrium include the several elements in a firm's marketing program, usually described as the firm's marketing mix. The marketing mix, in its general form, includes decisions and activities of business firms in the areas of product policy, channel policy, promotional policy, and pricing policy.

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The term “marketing mix” suggests a relationship between interacting elements. The development of the term constituted a step forward in the classification of interrelated marketing efforts. Although more is becoming known about the relationships among elements of the marketing mix, it is still common practice to think of it as a blend of marketing efforts, essentially nonquantifiable, the development of which often depends on experience, judgment, and perhaps a measure of good fortune.

The concept of a system provides a means of improving further the framework within which we think about the interrelationships between and among marketing activities. After all, a business firm engages in marketing activities (endogenous factors in the system) in order to adapt to its environment (exogenous factors). This adaptation is intended to move the firm toward an equilibrium in which the level of operation is such that the goals of the firm are being achieved.

The Characteristics of Goods Theory

An observable relationship exists between the characteristics of a product and the approximate marketing mix for that product. This is by no means a startling assertion. However, up to the present, there appears to be no systematic statement of the relationships between product characteristics and each of the elements in the marketing mix.

Historically, one of the most widely accepted classification of goods has been that of convenience, shopping, and specialty goods. The definitions of these goods are based on consumer buying habits. They focus on consumer behavior and assist in answering questions as to why the consumer “shops” for some goods but not for others. Although the classification is helpful in guiding marketing policies, it is not altogether satisfactory.

If a businessman classifies his product in the traditional manner, the relationships between product classification and marketing policies still may be quite uncertain.

The theory presented here is a revision and an extension of “The Characteristics of Goods Theory” proposed by Leo V. Aspinwall. But whereas Aspinwall discusses the characteristics of goods theory

only in respect to channels of distribution and promotional policy, the theory presented here is broadened to include the areas of product and pricing policy.

Definition of Product Characteristics

If product characteristics are to be utilized to explain marketing policies and methods, each distinguishing characteristic must be reasonably stable during the period of time the explanation is to be valid. Also, each characteristic must be universal in the sense that it is to some degree a feature of all products.

A product is defined by most modern marketers as the sum of the physical and psychological satisfactions the buyer receives when he makes a purchase. For example, when he makes a purchase the consumer receives an article with certain physical characteristics, or a service with certain features; he receives the item at a convenient location; he is able to purchase at a convenient time; he receives an item about which he has some knowledge (from the salesperson or from consumer advertising).

While the product may not be absolutely perfect from the point of view of each consumer, producers and sellers usually attempt to offer a “total product” that suits a large number of consumers reasonably well. The “bundle of utilities” purchased by the consumer is “collected” by incurring product development costs, channel costs, promotional costs, and other marketing costs. The “total product,” in a broad sense, includes all of the features and conveniences for which the consumer pays in the retail selling price of the item.

Considerable ambiguity often exists in the definitions of product characteristics, consumer characteristics, and market characteristics. The amount of time and effort spent in purchasing a product may seem to be a consumer characteristic. But if convenience of location is part of the “bundle of utilities” and hence part of the “total product” for which the consumer pays, it seems reasonable that the “short” length of time the consumer spends

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searching for a place to buy a pack of cigarettes is a characteristic of the product. The "convenience" is provided as one feature in the "bundle of utilities." Another way of stating this point is that the nature of the product determines how much time (or what kinds of effort) consumers will wish to spend in buying the product. Thus, "consumer" and "market" characteristics may be described in terms of product characteristics.

Redefining consumer and market characteristics in terms of product characteristics permits development of a single list of characteristics instead of several.

Classification of Products

Observation of a large number of "products" indicates certain "product characteristics":

1. Unit value
2. Significance of each individual purchase to the consumer
3. Time and effort spent purchasing by consumers
4. Rate of technological change (including fashion changes)
5. Technical complexity
6. Consumer need for service (before, during, or after the sale)
7. Frequency of purchase
8. Rapidity of consumption
9. Extent of usage (number and variety of consumers and variety of ways in which the product provides utility)

By reviewing a list of products (for example, candy bars, hardware, radios, automobiles, and electronic computers) the variations in product characteristics can be observed in detail. Unit value ranges from low to high; the significance of each individual purchase to the consumer ranges from low to high; and so on down the list.

Products such as candy bars would be rated low for the first six characteristics, and high for the last three. For electronic data processing equipment, the opposite would tend to be true for each product characteristic. Hardware items or radios would be rated somewhere between. Thus, if products are arrayed on a continuum, they might range from such items as cigarettes and razor blades at one extreme, to steam turbines or large specialized machine tools at the other.

For convenience in exposition, it was decided to "break up" the array of products into five arbitrarily chosen groups, ranging from one extreme to the other, and including in each group some examples of items with similar product characteristics. The following groups were chosen:

Group I: Examples are cigarettes, candy bars, razor blades, soft drinks.

Group II: Examples are dry groceries, proprietary pharmaceuticals, small hardware items, industrial operating supplies.

Group III: Examples are radio and television sets, major household appliances, women's suits, tires and inner tubes, major sporting and athletic equipment.

Group IV: Examples are high quality cameras, heavy farm machinery, passenger automobiles, high quality household furniture.

Group V: Examples are electronic office equipment, electric generators, steam turbines, specialized machine tools.

Table 1 shows the variation in product characteristics for each group.

It is, of course, an artificiality to classify products by groups; and it would be more accurate to place products on a continuum, or within a spectrum ranging from one extreme to another. Leo A. Aspinwall utilizes the "color classification" to express the idea of gradation of products on the basis of

### Table 1

<table>
<thead>
<tr>
<th>Product characteristic (see list)</th>
<th>Group I</th>
<th>Group II</th>
<th>Group III</th>
<th>Group IV</th>
<th>Group V</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Very low</td>
<td>Low</td>
<td>Medium to high</td>
<td>High</td>
<td>Very high</td>
</tr>
<tr>
<td>2</td>
<td>Very low</td>
<td>Low</td>
<td>Medium to high</td>
<td>High</td>
<td>Very high</td>
</tr>
<tr>
<td>3</td>
<td>Very low</td>
<td>Low</td>
<td>Medium to high</td>
<td>High</td>
<td>Very high</td>
</tr>
<tr>
<td>4</td>
<td>Very low</td>
<td>Low</td>
<td>Medium to high</td>
<td>High</td>
<td>Very high</td>
</tr>
<tr>
<td>5</td>
<td>Very low</td>
<td>Low</td>
<td>Medium to high</td>
<td>High</td>
<td>Very high</td>
</tr>
<tr>
<td>6</td>
<td>Very low</td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
<td>Very high</td>
</tr>
<tr>
<td>7</td>
<td>Very high</td>
<td>Medium to high</td>
<td>Low</td>
<td>Low</td>
<td>Very low</td>
</tr>
<tr>
<td>8</td>
<td>Very high</td>
<td>Medium to high</td>
<td>Low</td>
<td>Low</td>
<td>Very low</td>
</tr>
<tr>
<td>9</td>
<td>Very high</td>
<td>High</td>
<td>Medium to high</td>
<td>Low to medium</td>
<td>Very low</td>
</tr>
</tbody>
</table>

Journal of Marketing, January, 1965
Table 2

PRODUCT POLICY

<table>
<thead>
<tr>
<th>Product group</th>
<th>Only one, or very few varieties</th>
<th>Few varieties</th>
<th>Several varieties</th>
<th>Many varieties</th>
<th>Different variety for every sale</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>X</td>
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<tr>
<td>II</td>
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<tr>
<td>V</td>
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<td>X</td>
</tr>
</tbody>
</table>

Their characteristics. He utilizes red and yellow as the extremes of the spectrum, indicating that the blend of these colors produces orange—in fact, various shades of orange. *Products in Group I would be classified as “red” goods. Products in Groups II, III, IV, and V range from orange to yellow.

A product might not always remain in the same classification. It might fall initially into Group III or IV; then, as larger numbers of consumers gradually accept it, as time and effort spent in purchasing is reduced, as consumer needs for service decline, and as other characteristics change, the product may move into Group II, or even Group I. At a later time marketers may succeed in improving or differentiating a product so that it is again in Group III or IV.

Product Policy

An important aspect of marketing is the determination of the number of variations in products that are to be offered: the degree of product homogeneity or heterogeneity.

The problem for the businessman is to determine the effective demand for various product features—for example, style, color, model, quality level, and durability. The marketer must communicate this knowledge effectively to designers and production personnel, so that a product line can be developed that is consistent with the desires of consumers, the state of technology, the firm’s capabilities, and other uncontrollable factors.

If the unit value or size of purchase is low, frequently the product will be highly standardized; perhaps only on variety within a brand category will be offered for sale—for example, Baby Ruth candy bars or Lucky Strike cigarettes. Likewise, if the significance of each individual purchase is low, and if the time and effort spent in the purchasing process is low, product variety offered by each manufacturer tends to be low. Also, when the rate of technical change is low, few varieties tend to be offered; manufacturers are able to develop a product that remains suitable to consumers for an extended period of time.

Also, technically simple products often tend to be standardized to few varieties or a single variety. Likewise, a lack of consumer need for service often is associated with a standardized product. These characteristics with a rating of low or very low are typical of products in Group I.

On the other hand, very high frequency of purchase, rapidity of consumption, and broad usage of the product by a large number of consumers of diverse types, typically are associated with products in this group. Therefore, as indicated in Table 2, a suitable product policy for products in Group I is to keep very low the varieties of products offered for sale.

For products in Groups II, III, and IV, with successively higher values of characteristics 1 through 6 and successively lower values of characteristics 7, 8, and 9, the number of varieties offered tends to increase. At the other extreme, for products with a very high value for characteristics 1 through 6, and a very low value for characteristics 7, 8, and 9, the other extreme is reached in respect to the number of varieties offered.

Usually each product is “custom built” or “custom installed” according to the needs of each customer; every product sold is different from that sold to another customer.

Marketing Channel Policy

Channel policies include selection of the types of distributors and number of each type. Intensity of distribution usually refers to the number of distributors utilized, from among those which might be suitable. A policy of intensive distribution means utilization of all available outlets regardless of their characteristics.

The selection of distributors according to their capability and suitability is called selective distribution. A policy of highly selective distribution is understood to mean the utilization of only a few (selected) outlets. The extreme case would be for a
TABLE 3
MARKETING CHANNEL POLICY

<table>
<thead>
<tr>
<th>Product group</th>
<th>Intensive</th>
<th>Moderately intensive</th>
<th>Some selectivity</th>
<th>Considerable selectivity</th>
<th>Highly selective, or direct sale to customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>II</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>III</td>
<td></td>
<td></td>
<td>X</td>
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<tr>
<td>IV</td>
<td></td>
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<td>X</td>
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</tr>
<tr>
<td>V</td>
<td></td>
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<td>X</td>
</tr>
</tbody>
</table>

manufacturer to utilize no middlemen at all, that is, to sell directly to consumers or users, and either assume the wholesale and retail functions or pass them on to the consumer or user.

Intermediate policies, between the extremes of intensive and selective distribution, are indicated in Table 3. Moderately intensive distribution refers to the situation in which products are sold in a wide variety of outlets, but somewhat limited to certain classes. Some selectivity in distribution refers to the policy of selling products through a large number of outlets but limited somewhat to those with desired characteristics. Considerable selectivity means that the number and types of outlets are limited to those with specifically desirable characteristics.

When the unit value is very low; when the significance of each individual purchase is low; when little time and effort are spent in the purchasing process; when the rate of technological change is low; when the product is not complex technically; when consumers need little service; and when the frequency of purchase, rapidity of consumption, and extent of usage are high, highly intensive distribution usually is preferred over selective distribution. At the other extreme, when the values of characteristics are just the opposite, highly selective distribution is the rule. Various intermediate values of characteristics for products in Groups II, III, and IV suggest a range of policies between the extremes.

Note also that products in Group I typically are sold through a relatively long channel of distribution, while products in Group V often are sold through the shortest of channels—direct to user or consumer. In fact, in Table 3 the phrase “length of channel” could be used with some validity instead of “intensity of distribution.”

Promotional Policy

A major aspect of promotional strategy is to decide how much effort is to be placed on mass media consumer advertising vis-a-vis the amount of effort on personal selling.

For products in Group I, observation suggests that the emphasis usually is on consumer advertising. In the extreme case a firm may have no salesforce at all. On the other hand, products in Group V depend almost entirely upon personal selling effort, although advertising in trade magazines may play a supplementary role. Products in Groups II, III, and IV require a combination of consumer advertising and personal selling, as illustrated in Table 4.

Pricing Policy

The pricing policy of a firm depends upon the degree to which a firm has control over price. If the firm has no control, if prices are set “in the market place” by custom or by any other means beyond the control of the firm, there is no need for the firm to have any pricing policy at all (except to sell or not to sell at the going price).

Thus, a starting point in establishing a firm’s pricing policy is to specify the degree of control which the firm has over price. It is only after this has been ascertained that the businessman can turn to the specific tasks of price determination and price administration.

The degree of control that a firm has over price of its products seems to vary according to the enumerated product characteristics. As shown in Table 5, firms have little control over prices of items in Group I, relatively more control in the middle groups, and the highest degree of control in Group V.

Pricing policies are established with regard to (1) the degree of variation from customer to customer, and (2) the degree of adherence to list prices versus dependence on negotiating the price for each sale. As can be observed in Table 6, products in Group I usually show little variation in price, whereas prices of products in Group V change relatively more frequently and often are substantially different for different customers purchasing similar products. Concomitantly, the prices of prod-

7 Aspinwall, same reference as footnote 5, at page 635.
products in Group V are likely to be established independently for each sale. The prices of products in Group I are not often negotiated in this manner.

The Marketing Mix

By way of summary, the marketing mix for products in Group I should be substantially as follows:

1. Relatively little effort and money spent on product development. Since a standard variety of the product is suitable for a broad group of customers, there is relatively less need for frequent change than for products in other groups.
2. Considerable effort spent in achieving intensive distribution. Products must be available quickly and conveniently.
3. Heavy consumer advertising—little or no personal selling. Consumers typically are pre-sold by advertising.
4. Relatively little effort and time spent on pricing. Firms have little control over price; variations in price are relatively infrequent; prices are not negotiated between seller and buyer.

### Table 4
**Promotional Policy**

<table>
<thead>
<tr>
<th>Product group</th>
<th>Sold almost entirely by consumer advertising</th>
<th>Sold primarily by consumer advertising</th>
<th>Consumer advertising needed; neither of predominant importance</th>
<th>Sold primarily by personal selling</th>
<th>Sold almost entirely by personal selling</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>X</td>
<td>X</td>
<td></td>
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<tr>
<td>II</td>
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<td>V</td>
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<td>X</td>
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</tbody>
</table>

### Table 5
**Pricing Policy**

<table>
<thead>
<tr>
<th>Product group</th>
<th>Very little</th>
<th>Slightly</th>
<th>Moderately</th>
<th>Significantly</th>
<th>Substantially</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>X</td>
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</tbody>
</table>

### Table 6
**Pricing Policy**

<table>
<thead>
<tr>
<th>Product group</th>
<th>Stable</th>
<th>Slight variation</th>
<th>Moderate variation</th>
<th>Significant variation</th>
<th>Substantial variation</th>
</tr>
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<tr>
<td>I</td>
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<td>V</td>
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</tbody>
</table>
At the other extreme, we would expect to find that products in Group V usually are:
1. Custom built.
2. Sold directly from manufacturer to user.
3. Sold primarily by salesmen, rather than advertising.
4. Sold on the basis of an individually negotiated price.

The marketing mix of products in Group V would involve relatively heavy efforts in the area of product policy; the marketing channel would be short, perhaps direct; personal selling is relatively more important than mass media; and considerable time and effort are spent on the determination and negotiation of price.

The marketing mix of products in Groups II, III, and IV can be characterized as modifications of the two extremes.

**Conclusions**

Knowledge of the product characteristics can be utilized to predict the nature of the marketing mix which is suitable for a given product. The prediction is, of course, an approximate ideal for a product with given characteristics. As a practical matter, the ability of a firm to engage in the indicated marketing methods may be limited in a number of ways, such as financial capabilities, or availability of personnel with the requisite skills, or management talent.

The primary contribution of the present theory is a modest increase in the analytical character of the marketing mix. Hopefully the next steps will be to develop more precise measures of the functional relationships among the elements in the marketing mix.

Businessmen may find the present theory handy as a shorthand method of ascertaining an appropriate marketing mix for a new product. Or if policies not in accordance with the theory are being followed, a businessman may be well advised to review carefully the reasons for his policies. It may even happen that the characteristics-of-goods theory will point the way to profitable policy changes.

As another example, a firm faced with the need to justify in a court of law its past marketing methods might use the theory as a broad framework to illustrate the reasons for its past decisions. Or the model might serve to direct the attention of researchers into relevant channels, or provide assistance to executives in the tasks of organizing marketing facts as a basis for making marketing decisions.

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**MARKETING MEMO**

**The Image and Reality . . .**

Images can inspire, images can repel. The dissonance between the original and the idealized image can inspire cooperation toward closing the gap. Left open too wide and long, it becomes an abyss from which the beholder shrinks. Big lie or white lie, an image is a likeness, no more. Its substance is not the calculated act or its publicity. It is the daily grind, the big things and the little things which all of us are doing and being asked to do every day.

Powerful communication cannot cover up low stature for long. We may feel we cannot let merit be its own apostle. But those who recognize it are surely its best boosters. Provided the organization continues to strive toward realizing reasonable ideals implicit in the projected image there seems little to complain about.
