A DISCUSSION FRAMEWORK FOR TEACHING ABOUT ADOPTION/DIFFUSION IN MARKETING

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ABSTRACT

The adoption process is presented in most marketing principles texts. Here, the classic marketing adoption/diffusion literature is reviewed and updated. From this analysis, a discussion framework for use in marketing classes is developed.

INTRODUCTION

Marketers have long been interested in identifying the characteristics of the earliest buyers of new products. The proliferation of so-called new products has provided many opportunities for such studies. Researchers have tried to isolate the generalized innovator, the person who is prone to be first to try new items from several product classes (Ostlund 1972; Summers 1971; Green, Langeard, and Favell 1974; Martilla 1971). Different stages in the adoption process have also been examined (Uhl, Andrus, and Poulsen 1970; Ozanne and Churchill 1971; Reynolds 1971).

Many attempts have been made to relate innovative buying behavior with other factors, including trial use (Donnelly and Etzel 1973; Lambert 1972, Shoemaker and Shoaf 1975), personality types (Coney 1972; Robertson and Kennedy 1968; Jacoby 1971; Donnelly 1970; Robertson and Myers 1969), sociodemographic characteristics (Feldman and Armstrong 1975; Kegerreis and Engel 1969), information sources (Berning and Jacoby 1974; Schiffman 1972), attitude change (Ginter 1972; Lancioni 1972), and product perceptions (Ostlund 1969, 1974).

Overall, then, marketing's diffusion tradition has developed steadily, coming into its own in the 1960s. Marketing has relied heavily on earlier diffusion work, especially that conducted by rural sociologists (Rogers 1983) and geographers (Brown 1981). This is not surprising when one realizes that many rural sociology studies dealt with agricultural innovations. During marketing's formative years "distribution" and "marketing" were often used interchangeably, and early marketing studies focused on the distribution of agricultural products. Hence, agriculture has provided a substantial common ground between marketing and rural sociology.

Yet conflicting findings and questionable assumptions have hindered the development of substantial generalization to assist the marketer introducing introducing new or revised products. The reasons underlying these inconsistencies must be explored in detail. To overcome these problems, several scholars have developed research frameworks to guide innovation research (Bigoness and Perreault 1981; Gatignon and Robertson 1985; Mahajan and Muller 1979). These schemes have provided recent diffusion researchers with guidance as they develop their methodologies and provide empircally-based findings.

Such frameworks, however, are difficult to explain to undergraduate business students who do not have the backgrounds necessary to appreciate the implications and subtleties. Thus the purpose here is to review diffusion theory, with emphasis on a comparison between marketing and rural sociology, to point out the inherent research difficulties. Ultimately, the research issues and a teaching/discussion framework are suggested for presenting diffusion material to students.

REVIEW OF EXISTING DIFFUSION RESEARCH

Relying on previous research as a point of departure is standard practice in all disciplines, especially applied areas such as marketing. The crucial factor is knowing when to utilize other findings as is and when these earlier studies are not appropriate unless modified. Marketers may have leaned too heavily on the opinions of diffusion researchers in other fields (Boker 1987). Marketing analysts have not recognized the dissimilarities, in terms of both the underlying theory and the situation-specific issues, between the diffusion of new goods or services and innovations in other spatial-temporal settings (Black 1983).

The fundamental elements in the diffusion process serve as a basis for comparing marketing diffusion studies with others (Rogers and Shoemaker 1971): (1) the innovation, (2) communication channels, (3) time, and (4) the social system. Robertson (1971) first suggested such a comparative base. The following analysis of diffusion research across these four components reveals that marketers will encounter difficulties if they do not modify the foundations of better-established, yet different, diffusion traditions. Beyond this, certain of the assumptions underlying existing diffusion theories may not be entirely reasonable. The combination of these two types shortcomings has impeded the synthesizing of a consistent diffusion theory in marketing.

Innovation

Diffusion theorists define the innovation as an idea, practice, or object perceived as new by the individual. The marketing innovation has, however, included mainly the physical product and such intangible attributes as product image, brand name, and warranty. Services have been examined only on rare occasions (Robertson and Gatignon 1986). The study of diffusion of ideas, even though conceptually interesting, does not seem to intrigue marketers in a practical sense (LaBarbera 1983). Marketing innovations which have been analyzed to date have almost always been objects, have sometimes resulted in broad generalizations, and have rarely been purely ideas or concepts.

The problem is that marketers have extrapolated from studies of innovations in other fields which are often ideas or practices. Thus, marketing innovations tend to be much more tangible than those analyzed in other disciplines.

The new product is usually exchanged for money or a binding promise to pay. This represents a commitment on the part of the consumer. A broader concept of innovation, however, does not imply anything about monetary cost to the receiver/user of the innovation. Most innovations involve some form of psychosocial cost. But is the diffusion of a new product, acquired through the exchange of money and psychological involvement, comparable to the diffusion of new agricultural practices in an underdeveloped country? Exchange implies commitment, but the monetary commitment may have added impact and needs to be discussed and researched more fully.

Another difficulty in studying marketing innovation is newness. Diffusion studies in all disciplines have wrestled with describing relative newness. Researchers seem to agree that newness is determined in the minds of the perceiver (Baumgarten and Summers 1975). Like product marketers, marketing diffusion researchers have also been arbitrary at times in assigning the label "new" to a product under study without polling consumers on the issue (Downs and Mohr 1976).

Sometimes the innovation is obviously new, but marketing researchers should, as a rule, ask for consumers' opinions. To clarify this ambiguity, Robertson (1971) has prescribed a newness continuum in terms of the effect of the innovation on established consumption patterns:

1. Continuous innovation: has the least disrupting influence on established consumption patterns. Alteration of a product is almost always involved, rather than the creation of a new product. Examples include fluoride toothpaste, menthol cigarettes, and annual new-model automobile change-overs.

2. Dynamically continuous innovation: has more disrupting effects than a continuous innovation. Although it still generally does not involve new consumption patterns, it involves the creation of a new product or the alteration of an existing one. Examples include electric toothbrushes, electric hair-curlers, and the Mustang automobile.

3. Discontinuous innovations: involves the establishment of new consumption patterns and the creation of previously unknown products. Examples include television, computers, and cars.

Under this scheme, most new products would be classified as continuous innovations. But many classic diffusion studies, which have provided the foundation for marketing diffusion studies and which have been studied by marketing scholars, deal with discontinuous innovations. Water boiling is a discontinuous innovation in certain less-developed countries; indeed, such an innovation may actually lengthen life-spans. Unfortunately, U.S. consumers are not peasants, and a new toothpaste container does not enhance the quality of life here as boiling water does elsewhere.

This lack of cross-cultural comparisons due to the disparity between continuous and discontinuous innovations should be expected. The global firm has learned through trial-and-error that U.S. marketing practices are not simply transferable to other countries. Naturally there are similarities among countries which, when summarized, lead to higher-ordered generalizations. But such generalizations are not readily operational; they give only broad guidance to the marketer.

The final innovation-related comment deals with the competitive nature of marketing. If three firms introduce their own versions of the latest razor-blade technology, how is the innovation defined? Are there three innovations, or only one unbranded one? Many companies are remarkably skilled at quickly copying competitors' offerings. The consumer's decision is not "A or not A," but "A or B or C or . . . or some substitute product . . . or nothing at all." Most nonmarketing diffusion studies have not had to consider this competitive dimension.

Communication Channels

Communications channels are not an area of major conceptual disagreement when comparing diffusion research in different disciplines. Mass or interpersonal channels are the two basic options. In less competitive environments, potential adopters are not bombarded with so many claims and counterclaims. The basic difference is, the, that communications channels through which consumers learn about new products are more numerous and more contradictory (competitive) than communications channels which are operational in studies conducted researchers in most other fields.

Time

The time dimension is another traditional element of the diffusion process which marketers, and perhaps diffusion researchers in general, have not treated adequately. Two specific areas merit attention: adopter categories and definition of adoption.

Researchers assume that adoption dates for a given item, if arrayed on a time continuum, are normally distributed according to the widely-used innovator-early adopter-early majority-late majority-laggard scheme. Innovators have often been defined as the first x% of the adopting population or all those who adopt the product within a specified time period following its introduction. Both approaches provide analytical convenience and facilitate comparisons between studies, but both are conceptually ambiguous.

The underlying assumption of normality has been questioned before. To say that the adoption pattern over time is normally distributed for every innovation is to ignore the individuality of each new product (Peterson 1973; Morgan 1977). Different factors may have varied degrees of influence from one situation to another, and certain variables may be important in one case and inoperable in others (Eckrich and Peter 1975; Darden and Reynolds 1974.

Adoption has been defined in a variety of ways, but it is typically synonymous with one or more purchases of the new product (Andrus, Knutsen, and Uhl 1971; Morgan 1978). Again operational convenience has been the definitional guideline. Comparisons between studies are difficult when one researcher defines adoption as a single trial and another analyst insists on three or more purchases. Consumption patterns for an innovation over time are rarely examined in marketing diffusion research.

Social System

Two of the important roles taken by individuals within the social system are that of opinion leader and change agent. Opinion leaders have been identified for a large number of products and have been compared across several product classes (Corey 1971; King and Summers 1970). The consensus is that there is no generalized opinion leader across all, or even most, product categories (Schiffman and Gaccione 1974). Within a group of related products opinion leader types have been isolated.

The change agent, according to most experts, is the person who is attempting to bring about certain behavioral changes within a specified group of people. This person is a kind of benefactor in this role of influencing behavioral changes. While failure of the innovation may reflect negatively on the classical change agent's efforts (because of the involvement with or commitment to the innovation's success), the change agent's income and job are not usually endangered. The marketer's livelihood is directly related to his/her abilities to penetrate a new market and to retain a share.

The unique position of the marketing change agent can be further dramatized by examining the paradigm of types of social change presented by Rogers and Shoemaker (1971), as shown in Table 1.

TABLE 1

SOCIAL CHANGE PARADIGM

Recognition of Need for Change	Origin of the New Idea: Internal to Social System	External to Social System
Internal: Recognition is by members of the social system	Immanent change	Selective contact change
External Recognition may be by change agents outside the social system	Induced immanent change	Directed contact change

Immanent change: occurs when members of a social system with little or no external influence create and develop a new idea (that is, invent it), which then spreads within the system.

Selective contact change: results when members of a social system are exposed to external influences and adopt or reject a new idea from that source on the basis of their needs. The exposure to innovation is spontaneous or accidental; the receivers are left to choose, interpret, and adopt or reject the new idea.

Directed contact change: or planned change, is caused by outsiders who, on their own as representatives of change agencies, intentionally seek to introduce new ideas in order to achieve goals they have defined. The innovation, as well as the rcognition of the need for the change, originates outside the social sytem in the cse of the directed change.

In actuality, many new items are nothing more than attempts to match competitors' offerings. And accompanying every marketing innovation is a marketing plan, either stated or implicit, detailing the nature and timing of specific marketing tactics to facilitate the product's acceptance. So new products are planned changes, and exposure to them is not an uncontrolled occurrence. Generally the marketing innovation is a contact change, but the idea for the product may have originated with an inquisitive, helpful, or even irate consumer. The new product does not fit neatly into any of the categories of social change. It has characteristics befitting its inclusion in all categories.

SYNTHESIZING A MARKETING FRAMEWORK

Two conclusions can be drawn from the previous analysis. First, certain unique aspects of the marketing diffusion process must be recognized in the discussion of new product diffusion. Second, various procedures and assumptions of traditional diffusion research must be altered to conform to the needs of the marketer.

Marketing differs with respect to the traditional diffusion process in two fundamental and important ways: the presence of competition for the innovation and the active role taken by the marketer/change agent. The extent of competition is shown in terms of similar new products introduced at about the same time, incompatible messages sent through a variety of communications channels, pricing policies designed to influence the adoption rate or to reflect the limited supply, and the everpresent shadow of legal and ethical considerations. All of these factors cloud comparisons between marketing diffusion studies and other diffusion research carried out in non- or less-competitive environments.

Likewise, the activist marketer must be acknowledged as the driving force behind the new product. Rather than prescribing change, the marketer interprets latent and overt signals from the marketplace. If this forecast is correct and the planning thorough, the success of the item becomes more likely. The marketer is inextricably tied to the sponsored innovation.

This second conclusion, however, is quite operational and cannot be dismissed with only a warning about its significance. It is the basis for systematically examining the diffusion of new products, and it implies the need for a two-part framework:

1. an innovation classification scheme and

2. an adopter classification scheme.

Innovation Classification

New products vary considerably across studies in terms of their attributes and their impact on potential consumers. To facilitate comparisons, new products should be classified or grouped according to the same set of rules. While other criteria may be relevant at times, these four have often been used by marketing diffusion researchers:

1. effect of the product on existing consumption patterns,

2. price of the product,

3. conspicuousness of the product, and

4. trialability of the product.

The first standard is basically that suggested by Robertson (1971). The extent to which a new product is unlike anything else currently available should be verified by soliciting consumers' opinions. One study noted newness on a scale from one ("exactly like existing products or brands") to ten ("unlike anything else available on the market today") (Morgan 1977). Another approach is to have a panel of judges or experts rate the products independently of consumers' rankings. A series of questions, each aimed at a specific aspect of a multiattribute new product, could be used with the result being a weighted aggregate response.

The price of the new product is the simplest of the factors to obtain. Price can be used as a surrogate for degree of consumer commitment. As the price increases, the importance to the customer of the decision to try the new product increases also. An alternative consideration is to relate the price to income or wealth levels so that the relative significance of the purchase to each individual can be assessed. Buying new product A, priced at $100, would probably entail more analysis than buying new product B, priced $5. But if the consumer who was considering A earned $50,000 per year and the potential buyer of B earned only $2,000 annually, then B's decision may actually be relatively more critical to B than A's decision is to A. Knowing price-to-income ratios would greatly enhance comparative analysis of innovations.

Conspicuousness and trialability are attributes which have been proposed by others, but have never been fully implemented by marketers. Conspicuousness could be evaluated by the marketer or a group of experts; however, the consumer is once again the ideal source of information. As in the case of product newness, conspicuousness could be tied to a single scale or a multidimensional index.

Trialability refers to the degree to which the product lends itself to sampling or trial use. Is the product available in several package sizes? Can it be sampled, like many food items which come in very small packages? Or, once purchased, is the product long-lived. What product return policy accompanies the purchase? The answers to these questions can be translated into a trialability rating, a measure of commitment to the item.

Adopter Classification

Instead of the arbitrary definitions of product adoption and innovators, the grouping scheme proposed here has two basic dimensions: time of first purchase or trial use and consumption patterns or usage intensity. Trial date incorporate a time benchmark into the classification system; however, it is not the only variable.

Usage intensity describes the extent to which consumers have co-opted the innovation into their lives. This dimension is product specific; thus, a definitive unit of measure cannot be given. As an example, usage of a video camera could be assessed in terms of number of film cassettes bought in a time period. Other product/services will require other measures.

A further refinement of traditional adopter research is to group consumers on the basis of similar trial dates and usage patterns. Any of several algorithms can be used to cluster the data. These two dimensions can be combined into a complex grouping base. Better yet, trial date can be kept separate to see if usage intensity varies according to time of first usage. In either case consumers are clustered according to data homogeneity, not according to convenient, arbitrary, temporal scales.

CONCLUSIONS

The framework developed in this discussion does not solve all problems confronting marketers studying the diffusion process. Issues such as accuracy of self-designated innovativeness, reporting of consumption data by respondents, determination of sample size, and scaling of the various indexes are not resolved. Research methodology is, thus, a separate matter.

Also, no attempt is to made to classify the nature of the competitive environment within which new product diffusion occurs. Industry structure, including the number and size of competitors, legal restrictions, and currently accepted marketing practices would all have to be considered. However, the effect of competition, when comparing marketing diffusion studies with similar research in other disciplines, has been noted. The dynamic nature of a competitive setting diminishes the value of interdisciplinary comparisons for the marketer.

This systematic organizational scheme will permit marketers engaged in diffusion research to relate to similar research conducted by other analysts. The result will be the development of a consistent theory of diffusion for marketing, founded on consumers's participation in the classificatory process. Students should thus be able to appreciate the difficulties inherent in diffusion studies, making the adoption process a more meaningful notion.

References available upon request.