THE DIFFUSION OF INNOVATIONS IN
A MARKETING CONTEXT

by

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ABSTRACT

This study investigates the processes associated with the diffusion and adoption of an innovation. Work on diffusion by persons in fields other than marketing is reviewed along with some speculative discussion of the relevance of those studies to marketing. Various categories of adopters of innovations are identified and some indications given of how one differentiates between members of those several categories. One category of adopter, the influential, is examined in detail since influentials play an extremely important part in the successful introduction of new products and services. Finally, the results of an exploratory field study of the early phases of the adoption of the Touch-Tone Telephone are described and compared with earlier diffusion studies.
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CHAPTER I

INTRODUCTION

Statement of the Study

Understanding the process of new product adoption and diffusion is vitally important for effective marketing of new products. Expenditures on research and development exceed $21 billion annually and the thousands of new products generated each year reflect the emphasis on product innovation within the firm.¹

A recent report of the United States Department of Commerce estimated that 90 percent of all new products fail within four years of their introduction. Why is this rate of failure so high? Are customers really unpredictable? Or is failure due to our inadequate knowledge of the process by which an innovation is accepted or rejected by consumers?

There are many innovations that have changed the lives of all mankind, from the wheel to the airplane and from the bow and arrow to the hydrogen bomb. Because innovation has become a key concept in modern life, the marketer of today has to be aware not only of the cultural inventory of the society but also of social change. Those same marketers recognize that an inadequate knowledge of the early market of a new

product may be the reason for the failure of most innovations to go through their introductory period.

Given an innovation, the problem then becomes that of analysing the diffusion and adoption processes that may furnish scientific foundation to increase the understanding of the critical period of introduction to a market. "Diffusion is a process of social contagion by which new ideas, tastes and patterns of behavior spread through a society." Rogers, in summing up the concepts of diffusion theory, has presented diffusion as a process including four elements: innovation, communication of the innovation from one individual to another, social systems in which the communication takes place, and the period of time over which the communication takes place.2

The adoption process has been defined as a series of distinct but related stages by which a new idea is adopted or rejected. Behavioral scientists divide the adoption process into five stages: awareness, interest, evaluation, trial, and adoption.3

The two interrelated processes identified in the preceding paragraphs bring new ideas from their source to acceptance by people. A major difference between these two processes is that diffusion occurs between persons while adoption is an individual matter.4


Research studies indicate important differences among the adopter categories; attention has been mainly directed towards the early adopters—those first to adopt a new practice or product. All individuals do not adopt an innovation at the same time, neither do they exert an equal amount of influence on the decision of others to adopt an innovation. Those individuals who have a great share of influence are called influentials, or opinion leaders. It is necessary to have greater knowledge of the individuals who initiate a diffusion process; not just where they are located, but also how they think, feel, and act in relation to an innovation. General acceptance by this group will enhance the probability of an innovation's acceptance by a market since they account for the initial levels of penetration and they also influence the adoption decisions of other people.

I agree with Walter P. Gorman III in his "Analysis of Consumer Markets through Diffusion Research" when he concludes that general decision theory (classical utility theory) and product life cycle theory have become insufficient for the analysis of new product acceptance. Those theories provide unprovable explanations of the decision process and consider complicated interrelationships of many variables. Such an approach is unsuitable for practical application. I recognize that these decision models provide some useful approaches for examining the volume of sales and consumption for a new product; for example, use of these models enables one to measure the utility derived from each commodity consumed. But they do not represent an empirical approach to the nature and direction of product penetration into successive socioeconomic segments of the market; they do not recognize the spread of
new products, a highly dynamic process. By contrast, diffusion theory relates market penetration to socio-economic changes in the character of the market.  

The marketing manager will have to bring his attention to this diffusion process. He must answer many questions concerning both the adoption of innovations in general and the adoption of specific products. Who are the influentials, what is their social character, and under what types of actual marketing conditions can they best be reached?

Purpose of the Study

This study is an investigation of the diffusion and adoption process, drawing heavily upon previous treatments of this subject. The purpose is to condense past studies and to present a general view of the diffusion process of an innovation. Elements of the diffusion process will be defined and, subsequently, an explanation of the adoption process dealing with the stages through which individuals go in accepting new ideas and practices will be given. Some attention will also be brought on the characteristics and functions of different adopters within the adoption process. Finally, a field study conducted by the author will be described and its results analysed. The survey examined consumer reaction to the introduction of the "Touch-Tone Telephone" (T.T.T.) and sought to determine the nature and extent of differences between adopter groups.

Limitation of the Study

This work is an attempt to develop an introductory study of the components of the diffusion process. The diffusion process has just recently been applied to marketing. Because there is a shortage of research and theoretical materials, one must be careful in the application of these concepts. The solutions developed must be viewed with some degree of scepticism.

Since the author was restricted both by finances and time, the number of respondents in the field study was small. A valid cross-sectional sample of adopters of this type of telephone was not achieved. Ideally, one would interview both adopters and non-adopters in sufficient numbers to be representative. The constraints mentioned above made such an approach impossible. Consequently, the field study must be regarded as purely exploratory.

Finally, there is a problem related to the variety of innovations. In the present study, the analysis has been restricted to only one innovation. It would have been preferable to examine the adoption process associated with diverse innovations in order to gain a better idea of general adoption behavior.
CHAPTER II

APPROACH TO THE DIFFUSION OF INNOVATION

In today's society, innovation has become a key-concept; man-hour productivity has increased, industrial automation has had widespread adoption, thousands of new products are made available each year, there is widespread acceptance of new antibiotics and tranquilizers, and so on. Despite the interest in science and technology, there is a notable time lag before an innovation gains wide acceptance. Before an innovation's acceptance, it must go through a certain process called diffusion. Diffusion refers to the spread of an innovation and depends upon the patterns of adoption in the social system into which the innovation is introduced. Rogers defines it as "... a spread of new idea from its source of invention or creation to its ultimate users or adopters." ¹ For the marketer we might say that diffusion of new products is the spread of new products from its sources of creation to its consumers, in other words from factory to buyer.

Diffusion theory has been used in anthropology and sociology. In anthropology, the diffusion of innovative ideas was used to explain man's cultural progress in obtaining the ideas and tools which have advanced civilization. ² In sociology, the emphasis has been placed on


the identification of individuals spreading novel ideas into social systems. The main purpose of many diffusion studies has been to determine methods by which diffusion can be formulated into meaningful elements. Today this research has come to have a particular appeal for the marketer; before they were viewed as a luxury that few business firms could afford.

This theory of diffusion is still in the infancy stage within the marketing context. If we could build a general theory of the consumer acceptance process of new products on a scientific foundation, it would be useful in demonstrating and predicting the diffusion process of new products. The elaboration of concepts such as the two-step flow of communication, adopter categories, and influentials would help to give an understanding of purchasing decisions. All these concepts show our inadequacy in employing the mass-media to best advantage; it is more important to reach particular segments of the public rather than the public as a mass. In practical terms, marketers could use these concepts to conduct special campaigns to reach and influence influentials, to mix the use of media in order to maximize their impact on special groups and to generate favourable social images of their products.

Consumers may accept or reject new products upon their introduction into the market place, and it is estimated that many more products are rejected than accepted. This is a problem of research and development activity, and the answer is ultimately to be found in the market.

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What is Innovation?

Innovation takes various forms. It may be an improvement in the product itself, a new mode of human action, a new concept of belief, or a creation of a unique and, to a significant degree, unprecedented mental construct or idea.

Economists are the social scientists who have carried out the most direct studies of innovation. One of the foremost in this field is Joseph A. Schumpeter, by whom theories of innovation in business have been developed. He characterized innovation by "... technological change in the production of commodities already in use, the opening up of new markets or of new sources of supply, tailorization of work, improved handling of material, the setting up of new business organizations such as department stores." In other words, the economists have concentrated their research on the implications of introducing new developments rather than on the process itself.

Only in the last decade have behavioral scientists given much attention to the subject of innovation, e.g.: "any thought, behavior or thing that is new because it is qualitatively different from existing forms." We can see from these two presentations a difference in their methods of handling the subject of innovation: Schumpeter regards innovation as "doing things differently in the realm of economic life", and Barnett considers innovation the basis of cultural change.

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5 Barnett, op. cit., p. 7.
Sociologists have investigated technological developments and the impact they have upon the social structure and behavior of our society. Sociologist Everett M. Rogers proposes the following definition: "Innovation is an idea perceived as new by the individual." An idea need not be perceived as new by all individuals in order to be an innovation. If only one individual considers an idea to be new, that idea would be an innovation to him.

Thus we can summarize that innovation has been interpreted differently in various academic disciplines as each may foresee a different employment of their perspective.

We should not be confused by the distinction between invention and innovation. Rogers defined innovation as "an idea perceived as new by the individual"; Allen considered invention as "the creation of an idea and its reduction to practice." In other words, an invention is the creation of a basically new and distinct concept; an innovation is a modification of an existing idea or product.

In order to make the distinction more precise, let us take the telephone as an example. The telephone, conceived by Alexander Graham Bell, was considered an invention because it was something that had not previously existed. As time passed it was continuously improved, but the later product still bore the basic concept of the original. Those improvements can be considered as innovations which enhance the use of the invention in question.

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6 Rogers, op. cit., p. 13.

Characteristics of an Innovation

Specification of the characteristics of an innovation is important because it will lead to a prediction of an innovation's speed of adoption and diffusion. The diffusion of some innovations will take only a few years from first introduction to widespread use, while others may require five to fifteen years or more. Each innovation is a combination of characteristics; to be useful, these characteristics must satisfy a need of potential accepters.

The attributes of an innovation affect the rate at which it is diffused and becomes widely used. Rogers concluded that certain basic characteristics, as perceived by the individuals in a social system, could be used to predict the rate of adoption. He suggests that relative economic or social advantage, compatibility, complexity, divisibility and communicability are probably the most important attributes of an innovation.8

1. Relative Economic or Social Advantage

It is not the value of an innovation as seen by experts that is important; what really matters is what is perceived by the potential adopters. The important factor is whether it is superior to the product or idea used before. Therefore, the speed of diffusion of an innovation will depend upon the ease with which the adopters become aware of its particular merits. As Wasson said: "The ease or difficulty of introduction depends on the nature of the new in the new product, the new as

8 Rogers, op. cit., pp. 311-14.
the customer views the bundle of services he perceives in the newborn."^{9}

There must be some additional quality or advantage to recommend the innovation which is not otherwise obtainable; it will be welcomed if it is seen as superior to existing devices in saving time, labour, money, space or it possesses any other advantages.

2. **Compatibility**

Compatibility refers to the degree of similarity between an innovation and the existing values and past experiences regarding implements that have served the purpose the innovation is intended to serve. In most cases an innovation will be related to an existing idea that it may supplement, complement or replace. The compatibility and rate of adoption will be associated with the degree of similarity between an innovation and its traditional counterpart. An idea that is not compatible with the conceptions and values of a group will not be adopted as rapidly as an idea that is compatible. We can point out as an example the resistance to the use of birth control techniques among certain religious groups.

A typical example of resistance and rejection is the attempted introduction of an improved hybrid seed corn in two Iowa communities.^{10}

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Two years after its introduction, nearly all farmers had returned to planting their original varieties, because it was found that the new corn had a strange flavour. As seen by these consumers, the new corn was not compatible with or similar to traditional standards of taste.

3. Complexity

Complexity is another factor that may influence the innovation's rate of adoption. We can define this characteristic as the degree to which an innovation is difficult to understand and use. Some innovations are clear in their meaning to members of a social system, while others are not. Television, for instance, was shown not to be complex from the point of view of consumers, necessitating only the ability to turn a knob. 11

It is likely that for a population identified by lower levels of education, the complexity of innovations would be an important factor in adoption decisions.

4. Divisibility

Divisibility is the degree to which an innovation may be tried on a limited basis. The possibility of trying an innovation on a small scale prior to full adoption may minimize possible unanticipated consequences. "Many innovations, just because they are untried, are clumsy, inefficient and untrustworthy. Prospective acceptors are not willing to take a chance or serve as experimental subjects or dupes. They do not

want to invest in white elephants or to accumulate gimcracks."\textsuperscript{12}

Innovations are viewed with hesitation before they have been tried. Therefore, the relationship between divisibility and rate of adoption is important. Most of the innovations can only establish themselves after trial, if at all. However, there are innovations which cannot be tried on a small scale. We may have innovations presented on the basis of "take-it or leave-it" such as computer systems or home air-conditioners.

There is evidence from several investigations that early adopters may appreciate divisibility more than later adopters. Being first to adopt an innovation, these individuals are more innovative and do not have precedent to follow, the later adopters are surrounded and influenced by peers who have already adopted the innovation.\textsuperscript{13}

5. Communicability

Communicability is the degree to which an innovation may be described to other members of the group. The communicability concerns not only the spread of newness, but also the understanding of the new practice or idea and its consequences, in order that intelligent decisions can be made with respect to its adoption. It is not my purpose here to elaborate all the possibilities under this paragraph; additional attention


will be given later to the subject of communication.

Having enumerated the most important attributes of an innovation we should not neglect the importance of cost as a factor in the adoption of an innovation. The cash outlay of acquiring or using an innovation can be related to the rate of adoption of novelties. Given a limitation of capital it is reasonable to say that high initial cost, continuing cost and rate of recovering costs should inhibit adoption behavior. On the other hand, cost is sometimes considered to be a minor factor in the adoption decision. The price of an innovation is weighed against the prospective adopter's total wealth, the cost of some alternative, and his estimation of his need for it.

In the evaluation of an innovation by the consumer, the product research and development will have to answer some basic questions, such as: Is the innovation compatible with existing values of the consumer? Is it easy to understand and to use? May the new product be subjected to a brief trial? Finally, can its superior qualities be easily observed and communicated to others?

How the Diffusion Process Occurs

The process of social contagion by which new ideas, tastes, and patterns of behaviour spread through a society has been commented on by philosophers, social scientists and entrepreneurs for centuries. Around the turn of the century, the European diffusionists (early diffusionists who worked in the context of the development of anthropology) were impressed with the significance of diffusion, and some important generalizations about the genetic aspect of diffusion were
advanced. Later, with the revolution in communication, which began with radio, diffusion started to gain the interest of sociologists due to its increasing cultural impact. Now, the diffusion of innovation is one of the major mechanisms of social and technical change which is stimulated by the increase of contact and communication.

Many individuals thought that mass media was capable of influencing the masses directly and simultaneously. Indeed, in research done on the effects of mass media, it has been pointed out that there is a problem of understanding the rate at which new ideas and behaviour travel through society; it has also been concluded that we now have to take into account the social processes and the social impact involved in the spread of an innovation. If the mass media are not as powerful as was originally imagined, the problem still remains of understanding the rapid rate at which new ideas and behavior travel through society.

We now propose a working concept of diffusion from a sociological point of view since marketing, obviously, has to do with the diffusion of new products in a society. Today it seems that we are looking more closely at the itinerary of change in the sense in which the diffusion process is defined.

As mentioned before, Rogers conceived the diffusion process as consisting of four component elements which we will now consider in some detail. The purpose of elaborating these components in the

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spread of innovation is to formulate an operational description of the diffusion process.

**Innovation**

Since we have already defined innovation, we now direct our thoughts towards the process of innovation itself. Most innovation is not a radical process. The majority of changes that occur in our society result in an evolutionary stream of rather small modifications. But when thousands of innovations are combined they sometimes produce dramatic improvements. Let us take as an example the development of digital computers; there were many small improvements, but when combined they produced fantastic advances. Barnett has proposed that "... innovation does not result from the addition or subtraction of parts. It takes place only when there is a recombination of them." The idea of recombination lies in the restructuring of the parts so that a new pattern results, a pattern of distinctness. 16

**Communication**

"The essence of the diffusion process is the human interaction in which one person communicates a new idea to another person." 17 The communication takes place through different channels: impersonal media, i.e., television, radio, journals and direct mail advertising; and personal ones, such as salesmen or colleagues. The importance of interpersonal relations in the flow of influence has begun to be included in the process

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16 Barnett, *op. cit.*, p. 9

of diffusion by the marketers; formerly, interpersonal relations were considered irrelevant to the institutions of modern society. Furthermore, they have begun to be aware of the "two-step flow of communication" which implies that the mass media influences opinion leaders; persons who, in turn, influence less influential people.

Different studies have examined the manner in which attempts to influence consumers by the mass media are intercepted and actually implemented by interpersonal networks of communication. These were studies of decisions of voters, of housewives considering a new kind of food, and of doctors deliberating on the adoption of a new drug. From this research, personal influence appears to be more effective in gaining acceptance for change than are mass media.

Social System

It appears that the term social system should involve values and rules of conduct as well as interacting individuals. In a social system, the individuals are considered as actors or role-players whose interactions are governed by rules or norms. These norms determine certain boundaries within which innovations spread. Boundaries are of interest in diffusion theory because the frequency and character of social relations across those boundaries will determine status and patterns of interaction among the occupants through which diffusion flows. For example, acceptance of an innovation by a lower social stratum may obstruct acceptance by higher strata. On the other hand, upper-status

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groups may try to block the diffusion of high status items to groups of lesser status.

Considering the adoption decision to be an individual one, it could happen that the deciding individual is influenced by others. In other words, we might have an idea accepted by a group that will force acceptance upon an unwilling person. Thus, in the study of diffusion, it will be important to have knowledge of the social structure in which potential adopters are located.

**Time Factor**

What will happen after an individual learns about a new idea from another individual? He may decide to adopt this new idea, implying that the adopter is satisfied with the innovation, or he may reject it. The time between first knowledge of an innovation and the adoption of it is called the period of adoption. Time is important not only because it enables one to identify different adopters or to establish the direction of the flow of influence; but because it furnishes a basis for the charting of diffusion curves making possible the elaboration of mathematical descriptions of variations in the diffusion process. Fourt and Woodlock, for example, used time as the independent variable in their mathematical model for prediction of new grocery product success.  

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Conclusion

The whole process of innovation has to be seen against the background of rapid economic change. Technology produces new products and raises standards of living, enabling people to indulge new tastes. People are no longer limited in their spending to the bread and butter necessities, they have discretionary spending power. This has changed not only the pattern of production, but marketing and business thinking as well.

Sometimes we get an innovation because a change is imposed by other technological changes. As an example, cars and roads; the growth of motoring imposes the need for a new type of road. A second purpose of innovation might be simply to create or increase variety of choice and thereby hope to sell to people who were not previously interested in one's range of products. Another reason may be to provide substitutes for expanding consumption in other sectors.

This raises the question of forecasting, that is, estimates of what the future holds in the form of demand for the product. The diffusion process has a great deal to offer to the businessman concerned with how his new product will be accepted by the consumers; it is important to him to know what is likely to happen in his own market. Innovation must not be left to chance. The new product usually alters or replaces something which has been part of the consumer's pattern of thought. If the change is drastic, the attitudes and feelings associated with the old product might cause a great deal of resistance. On the other hand, if the change is relatively insignificant the consumer may readily switch his loyalty to the new product. The real importance here
is the level of complexity of the innovation in question; the more complex it is, the more resistance is likely to arise in the perception of an innovation. However, complexity is not the only attribute that the marketer has to consider; there are others enumerated above that will determine the amount of the time between introduction and adoption of an innovation. The consumer often sees the innovation as a threat or as a source of some difficulties; he has to consider it in terms of his habits and preferences.

Having pointed out an approach to the diffusion process, the problem now remains to determine the stages in the decision making process of adoption and to define differences among adopter categories and how the communication occurs among these adopters. Many academic disciplines have done research in this field and each will be examined in the following chapters.
CHAPTER III

THE ADOPTION PROCESS OF AN INNOVATION

Adoption of an innovation involving new learning is usually a slowly accelerating process. People do not adopt new ideas or practices immediately after hearing about them. Adoption is a prolonged activity of the individual taking place over a period of time rather than instantaneous activity. From first awareness to regular use, there is a transformation in the orientation and behavior of an individual. It is believed that an individual goes through this gradual process by first developing an interest in an innovation, then going through some evaluation process before trying and finally adopting it.

It has been found by rural sociologists that one can classify different adopter categories by time of adoption.  

1. Innovators are the first two to three percent to adopt an innovation. They actively pioneer a new product, often before it is released for general use.  
2. Influentials, sometimes qualified as opinion leaders or key communicators, are the next ten to thirteen percent of the adopters. They are the earliest to adopt an innovation after its general release.  
3. The early majority are the remainder of the first half of the adopters. The late majority have a longer period of adoption than the

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early majority. Finally the late adopters, also called laggards or diehards, are the last twelve to fifteen percent to adopt an innovation.

It is important to recognize the influences of personal and impersonal information sources on the different stages of the adoption process. The use of impersonal sources appears to increase rapidly as people pass through the successive stages of the adoption process. These impersonal sources are used to acquire technical information prior to adoption and to obtain additional information about its use after it has been adopted.

These information sources also vary in relation to the different adopter categories. Few personal sources are available to early adopters; at a later time, however, these early adopters may exert personal influence on the adoption decisions of later adopters.

Finally, a review of the basic pattern of the adoption process should be helpful to a marketer faced with a decision on the introduction of a new product or service. Buying the first washing machine is a different experience from buying a replacement some years later. The early adopters have neither had experience with the product themselves nor can they refer to the experience of others in making their decisions.

Stages of the Adoption Process

In the study of adoption of innovations, research studies have recognized that the process of adoption is not a unilateral act.² It

is a complex combination of unit acts which occur over a period of time as the individual adopts a new practice.

From first awareness to regular use of an innovation there is a transformation in the orientation and behaviour of the adopter. The type of behaviour occurring at each stage is the result of the adopter's perception of stimuli, interpretation, and response about the new idea or practice. These stimuli come from different communication devices that present information about the innovation. The interpretation of a response to the stimuli are made in terms of that adopter's experiences and expectations.

However, for operational purposes, this complex process of adoption has been divided into five stages, distinct but related: awareness, interest, evaluation, trial and adoption.  

**Awareness**

In the awareness stage, the individual first becomes exposed to the innovation through some form of impersonal or personal communication but lacks complete information about it. He simply knows the innovation exists. The motivation to seek information has not yet been created. "The primary function of the awareness stage is to initiate the sequence of later stages that lead to eventual adoption or rejection of the innovation."  

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4 Rogers, op. cit., p. 82.
Interest

At this stage, the potential adopter's behaviour becomes purposive rather than passive awareness. The individual is motivated by his curiosity and interest in the new idea. He actively seeks the kind of information that will help him relate the innovation to his past experiences. He will then be in a position to make a preliminary decision about the probable utility of the innovation to him.

Evaluation

At this stage the potential adopter estimates the worth of the innovation to himself in the light of his present and anticipated needs. He then decides whether to try it on a small scale. He goes through a "mental trial" involving reflection upon past meaning of similar stimuli, and its value in regard to his objectives. At this point the individual considers relative advantages of the new idea over other alternatives. If he decides that the new idea is applicable to him and his situation, he will attempt to try it out.

Trial

The individual is now concerned with trying out the idea in his own situation in order to determine its utility. This activity involves the specifics of how, what, when and where. He will seek information regarding the techniques involved in the application of the innovation rather than searching for evaluative information, as at the previous stage. At this stage the individual will get from the trial a definite idea of the usefulness of the innovation.
Adoption

Adoption is the decision to incorporate the innovation into one's behavioral patterns. At the stage of adoption, an individual has evaluated the innovation, has been satisfied with the trial and has decided to use it. He no longer goes through the process, "should I or should I not adopt it."

It is believed that an individual does not go through the same process each time he is faced with a given innovation; over time, many decisions are simply made on the basis of habit or tradition.

It is also manifest that some people adopt innovations more rapidly than others. The different rates at which people go through these stages of adoption will depend on the relative advantages of an innovation and the ease with which that new practice can be communicated. It will also depend on social factors: the values and expectations of the particular community and the extent to which the individual is expected to conform. In some communities, the dominant attitude is toward acceptance of change; when an innovation comes, it will be accepted rapidly. In other communities, where the status quo prevails, innovations win ground slowly. Finally it will depend on individual and family variations: amount of education, age, and family values. All these components will have some effect on one's attitudes toward an innovation. One must have a good idea of how the adoption process occurs and of the behavioral patterns manifest in this process, in order to know where and in what manner to concentrate the promotional program of an innovation.

In summary, I would like to use the words of Lionberger: "these
stages in the process of adoption represent a way of describing a relatively continuous sequence of action, events, and influences that intervene between initial knowledge about an idea, product, or practice and the actual adoption of it.\(^5\)

**Classification of Adopters**

All individuals do not adopt an innovation at the same point in time. One individual may adopt an innovation, one may try but reject it, and another may not try it at all. This is due to the differences among these people with regard to their attitudes, values, abilities, group memberships, and social status. These different characteristics are likely to place them in different adopter categories.

A research group on human behaviour has conducted a sociometric analysis by interviewing the professionals (e.g. lawyers, doctors, engineers, architects) in four small urban communities in which an innovation had been introduced. They determined, from this experience, four different categories of adopters on the basis of the time at which these professionals adopted the new practice and by the social networks of which the various professionals were members. The categories were innovators, influentials, followers and diehards.\(^6\)

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From their analysis the research group mentioned above determined a pattern of adoption of an innovation (Figure 1). The "innovators" took the lead in adopting the new practice but their action did not cause a rapid increase in the adoption rate. The next group to adopt was called "influentials" because their action caused a large increase in the frequency of adoption. The "followers", who composed the largest group, adopted the innovation immediately after the influentials from whom they took their information. Finally a decrease in the rate of adoption involved the last of the adopters. The last few percent who adopted the new practice were called "diehards".

**FIGURE 1**

ADOPTION OF A NEW PRACTICE


The first to adopt are innovators, who are eager to try an innovation. An innovator compared to those members of his immediate community may have a greater ability to understand the, sometimes, complex
technical information dealing with an innovation and also may have more financial resources, the latter being necessary to absorb a loss if an innovation is not beneficial. What mainly differentiates an innovator from the common run of men within a society is that he chooses to distinguish himself from his fellows by promoting or developing something new. In addition to being more enterprising than others, he may take the risk of adopting an innovation that is neither fully developed nor socially accepted.

The information available to an innovator about an innovation necessarily comes largely from impersonal sources since the innovators are among the first to adopt that innovation. Innovators also tend to be either younger or older than average. "In some communities they are regarded as "crackpots" because they adopt an innovation or new idea sooner than the average adopters."7

Individuals who are innovators for one new idea may not be the innovators for other innovations, this is due to the nature of the innovation and the social system and the individuals involved.

Influentials more than any other adopters have, as their name suggests, the greatest degree of influence in a social system; they are considered to be leaders and tend to have a higher level of education. Potential adopters look to them for advice and information about an innovation. The influentials are slower than innovators to adopt an innovation because they are less willing to take a chance on the new

7Rogers, op. cit., p. 169.
idea; they want to preserve and maintain local group relationships and the values that support them. However, they are also eager to derive benefits from innovations.

**Followers** will make special efforts to contact influentials for advice before they accept a new idea. Their adoption period is relatively longer than that of the innovator because of their contacts with early adopters and their search for information. "Adoption may be for them an economic necessity and the answer to increasing social pressures." ⁸

**Diehards** are the last adopter group to adopt an innovation; their point of reference is the past. Their tendency towards tradition-orientation and many of them are of advanced age, slows the adoption process. They usually have few social contacts and many of them have little education. They reflect the conservative and traditional values of a community.

**Importance of Early Adopters**

I suggested earlier, the innovators represent a unique market. "Increasing the probability of new product success requires knowledge of the consumer innovator. Gaining initial levels of acceptance is crucial, yet most new products never do." ⁹ A new product marketing program should

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therefore, take into account the innovator's characteristics in order that advertising and sales strategies may have a better chance for success.

In the promotion of an innovation's acceptance, perhaps the most crucial point in getting an innovation accepted is acceptance by the group of adopters qualified as influentials. We have to recognize their positions of leadership and the influence that makes them an important channel for the adoption of a new product or idea.

Individuals may shift from one adopter category to another over time because they do not necessarily remain in the same position in the social structure at a later time and also because different innovations may be perceived differently. While the individuals within each group may change, the groups themselves retain their structure and the relations between the adopter groups still remain. Therefore, this model is still valid for determining the probable number of buyers within each segment of time.

Information Sources

Many people in the field of communication think of societies as an aggregate of individuals connected with the mass media, but rarely is attention given to the informal relationships between those individuals. The point is not that communications researchers were unaware that the members of a society have families and friends, but they did not believe that those other persons might significantly affect the result expected from a marketing campaign. In effect, personal contact was considered irrelevant to the communication of an
innovation. It is now obvious, however, that not only mass communications but personal interactions as well are necessary for the successful diffusion of an innovation.

Wilkening has suggested that it is possible to predict the function that a specific information source will perform in the individual adoption process. In a survey of 636 young farm operators in six Wisconsin counties, Wilkening asked them to indicate where or from whom they learned about new ideas in farming. He found that information sources could be grouped into personal and impersonal contacts. Personal contact is defined as those informal sources where social interaction takes place between two or more people. This category of personal sources of information are: relatives, friends and neighbours, salespeople, etc. The category of impersonal sources of information include magazines, newspapers, advertisements, radio and television, and printed directions attached to a product.

When the adoption process is broken down into stages, the mass media play the dominant role as sources of information in providing awareness and interest. At the evaluation stage, personal sources appear to be the most effective. There is evidence that the farther beyond the time at which an innovation has been introduced, the more people are likely to depend upon personal sources of information in an adoption decision. At the trial and adoption stage "the greatest thrust" is provided by the experiences of others.

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Personal influence is more effective in gaining acceptance for innovations than are the mass media or other types of influence. A number of studies have found that there is a tendency for adopters of an innovation to credit other people with having influenced their decisions. For example, Katz and Lazarsfeld in their study, *Personal Influence*, have analyzed the importance of personal influence in consumer purchasing decisions and they concluded that "personal contact again has considerably greater effectiveness than any of the other media." It is fairly clear that it is beneficial to have the right people talking about your innovation because they are in a position to offer advice with the information they transmit, and to incorporate positive or negative recommendations. It is important here to recognize that people can influence others negatively in the spread of an innovation. Having had an unpleasant experience with an innovation, the influential may tell his peers about the negative aspect of a new idea and influence their decisions. Therefore, people who influence the decisions of their peers act not only as channels of information but also as sources of social pressure and social support.

From studies done in the field of communication, it is apparent that the most important source of information for the followers and diehards at all stages from "awareness" through "trial" are the personal sources. When later adopters adopt a new idea many individuals have already accepted it which makes possible the availability of this

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source of information. For the innovators and influentials, impersonal communications are the most important source of information as they supply more accurate information about the nature of the innovation, and by definition, that is the only source of information available to them. In other words, those quickest to accept an innovation are more likely to have been influenced by mass media or impersonal sources; later adopters are more likely to have been influenced by personal sources.

Summary

Individuals do not adopt an innovation immediately upon hearing about it. The time from first becoming aware to final adoption of an innovation may range from a few minutes to many years. In the interim, there are several distinct stages likely to be gone through before the eventual adoption of that innovation. Information sources play a vital role in this process; the individual adopter becomes aware of an innovation mainly by impersonal sources and, at the evaluation stage, personal sources are more important.

Adopters were classified according to the function performed by them in the adoption process and also by time that they take to get from the original stage, awareness, to adoption. It is obvious that some people adopt new ideas or practices more readily than do others; that members of the various adopter categories possess characteristics by which they may be identified by marketers; and that new products and services should be promoted with such information in mind.
CHAPTER IV

INFLUENTIALS

It was suggested in the preceding chapter that there are differences among adopter categories due to their attitudes, values, abilities, group membership and social status. These various categories of adopters perform diverse functions in the adoption process, e.g., introducing, communicating and legitimizing a new idea or practice.

The position of an individual group member on the time continuum of adoption is no accident but reflects a true role structure. The purpose of this chapter is to consider the most important group of adopters, the influentials.

Influentials are those individuals from whom others seek advice and information. They are often credited with special abilities by setting trends, by causing change, by taking new courses of action and by exerting influence through their opinions or behavior. Therefore, if an innovation is to be accepted by a general population, it must first be accepted by influentials since they are an important channel in the diffusion of an innovation.

Characteristics of Influentials

Influentials are individuals who exercise influence in the decision making process of other persons. If influence is a unique quality, those who possess it must be distinguishable from those who do not. At this point it will be appropriate to define some characteristics of
influentials and how they are related to the persons whom they influence.

Influentials are sometimes characterized by their positions of leadership in some locality and their activities in formal groups. Holding such positions, they have direct contact with their followers and can influence them in the adoption of an innovation. We know this is true since leadership is accomplished by changing the goals of others or by providing ways for others to obtain personal satisfaction. The success of the influentials will, of course, depend on their personalities, the nature of their situation, and also their followers. We should not, however, be mislead by the position of leadership that some influentials may occupy. They can be termed influential without holding formal positions of influence, and influence can be effected through their personality and demeanor with others.

When an influencee contacts an influential to seek information about a new product, the influential serves as an adviser. This characteristic of adviser is operational because of the influentials' unique position between the innovators and the followers in the process of legitimizing innovations. This situation permits them to give advice and to reinforce decisions which have been made. Also the influential or opinion leader is likely to receive information sooner and, often, from more technically-accurate sources. His sources of information are concentrated more on mass media than personal communication; there is less chance of message distortion in the former. Menzel and Katz carried out a study of the adoption of new drugs applied by physicians.¹

If was found that the doctors who were influential were more likely to read a large number of professional journals and to value them more highly than doctors of lesser influence.

Furthermore, the influentials are characterized by their innovativeness; they are more receptive to new developments or ideas. Because they are particularly interested in ideas; they are prone to change, and expose themselves to more external sources of information than others.

There is a tendency for influentials to influence more horizontally than vertically. This was first established by Katz and Lazarfeld in their study, Personal Influence. Apparently people can influence others only if they are in more or less continuous personal contact with them. People are in closer contact with other people like themselves, who live in the same neighbourhood and engage in the same activities. Therefore, it is reasonable to say that marketing influence is usually exerted within the boundaries of each of the several social strata.

This previous statement challenged the view that influence "trickles down" from the higher socio-economic levels to the lower ones. In the case of political influence, by way of contrast, it appears that there may be considerable vertical influence exercised by influentials or opinion leaders who are higher in the social status scale than their followers. This evidence was shown in a Lowe and McCormick study of the influence of formal and informal leaders during an election in Madison, Wisconsin.²

leaders were those who were in approximately the same occupational category as themselves; one third named at least one informal leader of higher occupational status than themselves; and only the remaining 15 percent named anyone of lower status.

Some people may view some products as symbols of their social position or of the social position to which they aspire. The position to which they aspire is normally not much higher than their own. If there is too large a discrepancy in status between influential and influencee, the follower is likely to feel insecure. This feeling of insecurity could prejudice him against the opinions of the influentials and that, in turn, would hamper the flow of communication.

In general, marketing influentials appear to be distinguished more by their position in the life cycle (size of family, age of children, marital status, etc.) and their degree of interest in an innovation than by their socio-economic status. There is evidence to suggest that each social stratum generates its own influentials. Different people are influentials for different topics of opinion; the advice of the informal leader in public affairs is not usually questioned about what kinds of things to buy. Each class and prestige level, each neighbourhood, seems to have its own influentials.

The Role of Influentials

The main role of influentials is to mold followers' opinions, either by example or by positive or negative verbal recommendations about an innovation. This situation is made easier because one of the strengths of personal influence is the willingness of individuals to
think or do things simply because their friends provide an example.

Lionberger points out that legitimation is another role of the influence. "When they put their stamp of approval on an idea, product or practice, it is regarded as acceptable by most people."^3^ This is well demonstrated by the adoption curve illustrated in the preceding chapter (see page 27). After the influence have adopted an innovation, the rate of adoption shown by the curve increases sharply and the process will continue even if promotional efforts by outside agencies are reduced.

Briefly the influence may stimulate awareness, provide the facts in the process of communication about an innovation, and assist in the followers' decisions of whether or not to adopt an innovation.

This brings us to the idea of "two-step flow of communication". This concept suggests that information about an innovation spreads from the source of the new idea via mass media and other impersonal channels to influence, and by way of personal communication, which varies from casual conversations to deliberate advice-seeking, to their followers.

From this concept of communication, we notice the reason why they are labeled "influence". They are like a "bridge" in the transmission of information. The influence occupy such a position because they exert personal influence upon a number of other people.

How to Reach the Influence

The key to efficient marketing lies in locating and reaching

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influentials who, through personal contact, influence the purchasing
decision of the majority of consumers. Marketers should vary adver-
tising and selling strategies in order to reach those individuals.

Francesco M. Nicosia, in an investigation of influentials in
the field of auto insurance, found that influentials are seen as "hooked
into" mass media networks. They operate like switchboards passing
information and influence on to their peers through a series of social
networks.4

A radical re-appraisal of advertising strategies may be neces-
sary in order to influence influentials. At the initial stages of a
campaign attention should be concentrated on aggressive advertising
and selling. When an advertiser knows who the influentials are in his
market area, it is easier for him to direct his advertising to this
select group that will eventually, by its influence, establish the
buying pattern of that market.

However, some problems arise in trying to locate those influen-
tials or marketing leaders. Lazarsfeld has one suggestion on a local
level: "They could be pinpointed through the membership lists of
organized groups such as club and civic associations."5 This method
can be especially useful when the marketers are working through local

4 Francesco M. Nicosia, "Opinion Leadership and the Flow of Com-
munication", in L. G. Smith (editor), Reflection on Progress in Mar-
keting, Proceedings of the 1964 December conference of the American
Marketing Association (Chicago: American Marketing Association, 1964),

5 Paul F. Lazarsfeld, "Who are the Marketing Leaders?", Tide,
dealers or distributing trial samples of products and using direct mail advertising.

On a national level it becomes a more complicated problem; again Lazarsfeld goes about locating influentials by isolating characteristics that distinguish influentials. At this point he uses three factors: their position on the social and economic ladder, position in the life-cycle and their degree of social integration. Therefore, it is obvious that a single advertising campaign is not the most effective way to reach the total market. The use of separate approaches, to deal with these different levels, will be useful. By using separate advertising media, it may be easier to reach the influential for each product and give some specifications about the attributes of the product to be emphasized.

We have to recognize that the marketer will have to determine a basic advertising appeal that will induce people to take the desired action. He must also develop a media plan that will deliver his message to the right people.

**Conclusion**

Increasing the probability of the widespread adoption of an innovation requires knowledge of the influential. We have seen that those people, through their personal contact, will take the lead in influencing the opinion of others. The function of an influential is to change another individual's behavior through altering that other

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6 Lazarsfeld, *op. cit.*, 55.
individual's motivation and habits. Most of the time, followers seek advice from a member of their own group who has some superior qualities but is fundamentally similar to themselves.
CHAPTER V

RESEARCH FINDINGS

Successful innovation implies not only technical excellence but also knowledge of the nature of diffusion of an innovation. Having gone through the process of development, testing, and revision of an innovation, it is necessary to have an idea of the potential of the market, its components and characteristics. Furthermore, the introduction of an innovation requires changes in potential adopters' practices; the marketing researchers must be aware of this in order to gain acceptance of an innovation.

Consumers break established patterns of behaviour when they buy new products. Each innovation is unique and each requires a certain combination of characteristics that must be perceived favourably by adopters before acceptance can take place.

Diffusion theory has provided us with concepts and definitions that describe the process of the diffusion of an innovation; those concepts were employed by the author in a real market situation. The objective of this chapter is to analyse some of the differences between adopters of the Touch-Tone (push button) telephone. Secondly, attention will be given to the influential who are credited with special significance in the adoption process of an innovation. The findings are based upon preliminary analysis of data collected in a survey done recently in Bellingham, Washington. Bellingham, a city of 35,000, is situated on the coast. While not highly industrialized,
the pulp and paper industries and agriculture play a strong role in its economy.

Nature of the Field Study

Fifty adopters of the touch-tone telephone were interviewed during the month of December, 1968. The interviews were conducted in three residential areas of Bellingham which were chosen because they had the highest density of the consumers using this push button telephone, (see Appendix A). Since the addresses of the users were not available from Pacific North-West Bell Telephone Company, it was necessary to contact a large number of families before fifty users of the touch-tone telephone were found. The interviews were conducted by a single interviewer. Limitation of time did not permit the completion of a larger sample.

The interview consisted of thirty questions, (see Appendix B) some concerning the respondent's attitudes toward innovations in general and also a series of questions on the individuals use of the touch-tone telephone. The questionnaire included factual questions concerning the respondents' position in the life-cycle and finally there was provision for recording certain observations and comments of the respondents. By knowing the average telephone bill, number of calls made per week, participation in sports, and so on, the interviewer was able to check the validity of the answers to questions pertinent to the field study.

The object, of the interviews was to determine at what time an individual first learned about the new type of telephone; from
which source he learned about the innovation in question, whether from advertising media or from personal contact; and his reasons for using it.

The information obtained from this study was organized according to the time of adoption by any given respondent. These early users of the new type of phone were divided into adopter categories determined by the length of time from when an individual first heard of the touch-tone telephone until he adopted it. Since a division has to be made in order to distinguish the characteristics of the early and later adopter groups, the time of adoption of one and one half months was chosen as a dividing line. This differentiation was based on the sort of adopter breakdown described in the literature on diffusion theory.

Aspects of the Touch-Tone Telephone

The touch-tone telephone provides to telephone users a push button telephone instead of the older dial type. Since this innovation was recently introduced in Bellingham, the adopters could recall their purchasing decision pattern. The description of this phone (T.T.T.) is best classified by its benefits to consumers. This new telephone offers many benefits to the customers: calls are easier to make, fewer dialing errors are made, there are musical tones accompanying the dialing which are pleasant to hear, and calls may be keyed faster. Less obvious, but potentially more important, the same touch-tone unit used for voice communication is now used in some places to communicate with business machines. This capability to communicate with computers and data receivers via the telephone makes possible
new benefits such as: paying bills by phone, merchandise ordering, billing and shipping from "phoned in" data, transmittal of sales orders from remote locations to home office and so on.

The appearance of the push button phone is not much different from the older type. The diffusion rate of this innovation is, therefore, facilitated by the ease with which the T.T.T. is used, the compatibility with previous types of telephone, and by the ease with which the operation of the T.T.T. can be explained to potential adopters.

In the field survey, the innovation was seen as having certain attributes that were very meaningful to adopters. Respondents were asked to comment on the most interesting characteristics of this type of telephone. Over eighty percent of the respondents had noticed that the telephone was quicker and more handy for dialing. Over half of the respondents commented on the tone of the push button phone. On the negative side, twenty percent of the users deplored the cost and the difficulty in getting used to this appliance. The interviewer noticed, incidentally, that cost was very often given by non-adopters as the reason for their rejection of the phone. Therefore, high cost appears to be the most disadvantageous attribute associated with the innovation and would seem to be the basis for most non-adoption decisions.

Summary of the Findings of the Field Study

1. Differences Between Adopters

Past research findings indicate that all individuals do not adopt an innovation at the same time. The distribution of people adopting an
innovation generally represents a pattern influenced by the social and personal characteristics of the adopters. It was considered important for the purpose of this study to know the characteristics of early adopters and later adopters of T.T.T.

The pattern of adoption of the push-button telephone is shown in Figure 2. This figure shows the number of people who adopted this innovation according to their time of adoption.

**FIGURE 2**

NUMBER OF T.T.T. ADOPTERS ON TIME DIMENSION

The horizontal axis extends only to eleven months because this researcher did not have more information concerning the longer adoption periods. The total sample has been divided into two groups according to the classification presented in the previous section.

The first attempt to determine the different characteristics of the early and later adopters of this study was by the number of
modern conveniences respondents had in their homes. These innovations were similar to the T.T.T. in that they were easy to operate and not much different from the previous appliances used to perform those tasks. These innovations were: (1) Cordless electric razors, (2) Electric shoe brushes, (3) Electric tooth brushes, (4) Polaroid cameras, (5) Electric wristwatches, (6) Electric dishwashers. The correlation is presented in Table 1 by the adoption period of the 49 adopters of the phone and the number of popular innovations possessed by them. Only one respondent was discounted because the phone was already installed when he took possession of his house.

The horizontal dimension presented in Table 1 is the period of time that an individual requires to pass through the adoption process. The length of time required for the adoption process to take place is called the adoption period. The adoption period was determined by asking each respondent: "When did you hear for the first time about the T.T.T.?" and secondly, "Approximately when did you buy this new appliance?"

The \( \bar{X}_1 \) on Table 1 is the overall mean of the innovative items each subject owned, and the standard deviation, "\( s_1 \)", is the acceptable variation around that mean. The row of means at the bottom of the table is the mean of items per subject for each adoption period.

It is evident from the table that the early adopters have more new items than the later adopters. It is very significant that the mean number of new items possessed by those individuals who adopted the T.T.T. within two months is larger than the mean number of new items of the total sample. You will also notice that those individuals
TABLE 1

NUMBER OF INNOVATIONS ADOPTED BY TIME OF ADOPTION FOR T.T.T.

<table>
<thead>
<tr>
<th>Number of Items</th>
<th>Adoption Period (Months)</th>
<th>1/2</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>6</th>
<th>10</th>
<th>12+</th>
<th>Total</th>
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<tr>
<td>0</td>
<td></td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>5</td>
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<td>1</td>
<td></td>
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<td>11</td>
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<tr>
<td>3</td>
<td></td>
<td>3</td>
<td>6</td>
<td>1</td>
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<td>10</td>
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<td></td>
<td>4.80</td>
<td>3.75</td>
<td>2.67</td>
<td>2</td>
<td>1</td>
<td>1.67</td>
<td>2</td>
<td>0.77</td>
<td>2.50</td>
</tr>
</tbody>
</table>

\[ \bar{x}_1: 2.48; \quad s_1: 1.38 \]
whose adoption period is greater than two months possess less than the mean number of new items. In the first adoption period column (½ month), the mean number of innovations is much greater than the overall mean ($\bar{x}_1$) plus one standard deviation; at 4 and 12 months, the mean number of innovations is less than the $\bar{x}_1$ minus one standard deviation, $s_1$.

Rogers postulates that early adopters tend to be better educated, have a higher income, hold a higher status profession and tend also to be younger.¹ The comparison between them, in this study, reveals differences in their education, occupations, gross income, and age, but their age in this case is not really significant.

The findings of researchers concerned with adoption of innovations indicate that early adopters have more formal education than later adopters. The average number of years of education for each adopter within their adoption period is shown in Table 2. The early adopters averaged approximately 14 years of formal education; on the other hand, later adopters averaged 12½ years. More than 35 percent of the adopters, in the first 1½ months, have received a university degree and only 66 percent of the later adopters have completed high school. In the first two weeks of adoption, the mean number of years of education is greater than the mean plus one standard deviation; at 3 and 4 months the mean number of years of education is less than the mean minus one standard deviation.

## TABLE 2

ADOPTION PERIOD COMPARED WITH YEARS OF SCHOOL

<table>
<thead>
<tr>
<th>Years of School Completed</th>
<th>Adoption Period (Months)</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>½</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>11 or less</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>1</td>
<td>5</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>18</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>8</td>
<td>15</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Mean</td>
<td>15.2</td>
<td>14</td>
<td>13.6</td>
<td>12</td>
<td>12</td>
<td>13.3</td>
<td>14</td>
</tr>
</tbody>
</table>

\[ \bar{x}_2: 13.4 \quad ; \quad s_2: 1.0 \]
Most of the early adopters not only operate their own businesses but also earn a higher gross income than later adopters. From Table 3, we can see that the early adopters of the T.T.T. average a gross income of $12,700.00, while the others averaged a lower income, $10,000.00. Usually the early adopters can take risks in adopting an innovation because of their wealthier situation. They can absorb the loss from an unsatisfactory adoption that is avoided by later adopters. On the other hand, if an innovation is successful, the first to adopt it will gain financial advantage through the use of that innovation. It should be pointed out, however, that economic factors are not the only identifying characteristics of the individuals who are early to adopt new products and services.

The findings in Table 4 show that there is a relationship between the occupation of an individual and his adoption period. In the first two adoption period columns (½ and 1 month), the mean number of weighted occupations is greater than the overall mean ($\bar{X}_4$) of Table 4 plus one standard deviation; at the 3 months period, the mean number of weighted occupations is less than $\bar{X}_4$ minus one standard deviation $s_4$. Almost all the early adopters of the T.T.T. were either in the professional or proprietorial classifications. In the first group about 40 percent owned and managed their own firms, 15 percent were professional. These nonsalaried men are possibly exposed to a high degree of financial risks. The work of rural sociologists established that "venturesomeness" was a characteristic common to early adopters.²

²Rogers, op. cit., p. 169.
### TABLE 3

**INCOME COMPARISONS FOR EARLY AND LATER ADOPTERS**

<table>
<thead>
<tr>
<th>Income</th>
<th>Adoption Period (Months)</th>
<th>( \frac{1}{2} )</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>6</th>
<th>10</th>
<th>12+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under $4,000</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$4,000 - 6,999</td>
<td></td>
<td>1</td>
<td>2</td>
<td>2</td>
<td></td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>$7,000 - 9,999</td>
<td></td>
<td>2</td>
<td>3</td>
<td>1</td>
<td></td>
<td>2</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>$10,000 - 12,999</td>
<td></td>
<td>1</td>
<td>2</td>
<td>6</td>
<td></td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Over $13,000</td>
<td></td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td></td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>5</td>
<td>8</td>
<td>15</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td><strong>Mean (in thousands)</strong></td>
<td></td>
<td>13</td>
<td>13</td>
<td>11.3</td>
<td>10.3</td>
<td>8.5</td>
<td>8.5</td>
<td>8.5</td>
<td>10.5</td>
</tr>
</tbody>
</table>

\[ \bar{X}_3 : 11.1 \quad : s_3 : 3.9 \]
TABLE 4

COMPARISONS OF PROFESSIONS FOR EARLY AND LATER ADOPTERS

<table>
<thead>
<tr>
<th>Occupation and Weighted Value*</th>
<th>Adoption Period (Months)</th>
<th>1/2</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>6</th>
<th>10</th>
<th>12+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retired</td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Unskilled Worker</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Semi-Skilled &quot;</td>
<td></td>
<td>4</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skilled Worker</td>
<td></td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher</td>
<td></td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Sales (except Sales Manager)</td>
<td></td>
<td>7</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Proprietor or Manager</td>
<td></td>
<td>8</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td></td>
<td>1</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Professional</td>
<td></td>
<td>9</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>5</td>
<td>8</td>
<td>15</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Mean</td>
<td></td>
<td></td>
<td>7.2</td>
<td>7.5</td>
<td>6</td>
<td>4.8</td>
<td>6</td>
<td>6</td>
<td>6.5</td>
</tr>
</tbody>
</table>

\[ \bar{X}_4 : 6.2 : s_4 : 0.8 \]

Also Ferber found that families "whose heads were engaged in professional or managerial work were more likely to buy new durable goods than were other families."³

A study of innovation adoption patterns indicates that younger people are particularly likely to adopt a new practice; the young are more likely to try new ideas because they are usually more adventurous and have fewer inhibiting habits than the older persons.⁴ In the present study, however, the age of an adopter was of no use in the differentiation between the two categories of adopters. (See Table 5) The average age of the individuals at the early stage is 44 years, where, at the later stage, the people are younger. This could be due to the type of innovation under investigation. Since we noted that cost seems to be the basis for most non-adoption decisions; the greater purchasing power of mature people might be a significant factor.

The ambivalence of age is also evident if we divide the adopters of the T.T.T. in the early and late categories (See Table 6). We notice that only 22 percent of the adopters between 20-30 are in the early stage. Also in the early stage, the highest percentage is found in the age group of 40-50, which seems to contradict theoretical prediction. It is obvious that, in this study, age does not present a significant and meaningful distinguishing characteristic in the identification


### TABLE 5

ADOPTION PERIOD COMPARED WITH AGE

<table>
<thead>
<tr>
<th>Age</th>
<th>Adoption Period (Months)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \frac{1}{2} )</td>
</tr>
<tr>
<td>Between 20 - 29</td>
<td>1</td>
</tr>
<tr>
<td>30 - 39</td>
<td>1</td>
</tr>
<tr>
<td>40 - 49</td>
<td>2</td>
</tr>
<tr>
<td>50 - 59</td>
<td>2</td>
</tr>
<tr>
<td>Over 60</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>5</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td>43</td>
</tr>
</tbody>
</table>
TABLE 6

DISTRIBUTION OF USERS OF T.T.T. BY AGE GROUP
AND BY EARLY AND LATER ADOPTERS

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Early Adopters</th>
<th>Late Adopters</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 - 29</td>
<td>2</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>30 - 39</td>
<td>7</td>
<td>9</td>
<td>16</td>
</tr>
<tr>
<td>40 - 49</td>
<td>7</td>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td>50 - 59</td>
<td>4</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>Over 60</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>All Users</td>
<td>21</td>
<td>28</td>
<td>49</td>
</tr>
</tbody>
</table>
of adopter categories. Possibly this is because the city of Bellingham has a large segment of its population in the older age group.\(^5\)

2. **Characterization of Influentials**

Influentials, as the term implies, play a major role in the adoption processes of others. In order to locate influentials among all respondents, the interviewer asked specific questions about influence such as:

1. (a) Do you often tell your neighbours or friends about new ideas or products?
2. (b) Do they often tell you about new ideas or products?
3. (2) Compared with your circle of friends, are you likely to be asked for advice?
4. (3) Has anyone asked you for information about the T.T.T.?
5. (4) Have you recently volunteered information about the T.T.T.?

The idea behind these questions was to permit the respondent to designate himself as an influential. Table 7 shows the advice-giving and self-appraisal of influence (answer yes except 1b) of the users of the T.T.T. compared to their adoption period.

Most of the respondents qualified themselves as influentials or opinion leaders. Therefore, this table cannot reveal any correlation between self determination as an influential by an individual and that individual's adoption period. The results from the "self-designating"

---

TABLE 7

FREQUENCY IN PERCENTAGE OF ADVICE-GIVING AND SELF-APPRaisal OF INFLUENCE

<table>
<thead>
<tr>
<th>Question Number</th>
<th>Adoption Period (Months)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1/2</td>
</tr>
<tr>
<td>(1a)</td>
<td>60</td>
</tr>
<tr>
<td>(b)</td>
<td>60</td>
</tr>
<tr>
<td>(2)</td>
<td>80</td>
</tr>
<tr>
<td>(3)</td>
<td>60</td>
</tr>
<tr>
<td>(4)</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
</tr>
</tbody>
</table>
techniques of this survey disagree with Lionberger's characterization of influentials as individuals who are alleged to have exercised a determining influence on decisions of other persons; these influentials should be found in the early stage of an innovation's adoption. This observation holds only if the groups we are comparing are representative of the whole range of adopters. In the present study we have two groups of relatively early adopters. The respondents were not defining their situations as real concerning those questions of "self-designation"; they claim that they were those individuals with great influence on their environment. This author believes that they tried to gain status in the eyes of the interviewer by saying that they were influential.

In order to determine those individuals who are influentials we have constructed a histogram (Table 8) based on three tables used in the first part of this chapter (profession, education, innovativeness) and also on the number of social organizations to which they belong. The table showing the distribution of individuals within the social organizations will be developed later.

From Table 8, we can see that the early adopters (½ to 1 month) are a great deal higher in social and economic status than all of the others. From comparison of the differences between each variable and the adoption periods, we see that club membership, innovativeness, and education are much greater than with later adopters.

Influentials were defined as people who bought the touch-tone telephone from one month to one and one half months after becoming aware

---

TABLE 8

COMPARATIVE TOTALS OF ADOPTERS SOCIAL AND ECONOMIC STATUS

Note: The relative height of each distinctively shaded area was computed by finding the mean of each class (club, innovativeness, education, occupation) for each adoption period and then dividing by the sum of the means for each class. This had the effect of putting all four variables on a comparable 100 point scale.
of this new product. The one-month adoption period of Table 8 is very close to the 1½ month period for the influentials defined earlier. This definition was established by their situation in the early stages of adoption, by their level of education (which is higher than the later adopters), by their receptiveness to new ideas and practices, and also by their participation in social organizations. Gregariousness appears to be the most significant single way of identifying influentials.

Influentials normally participate in more social activities than those whom they influence. The research done among Physicians by Coleman, Katz and Menzel concluded that doctors who were first to prescribe new drugs were members of more intra and intercity medical organizations and held more positions of leadership than did later adopting doctors. 7

Referring to Table 9, one notes that the adopters of the T.T.T. in the one-month adoption period have the highest score on their participation in social activities; those individuals named as influentials participate in, on the average, two different organizations or social clubs. On the other hand, later adopters participate in fewer social activities.

Being active in social groups and more likely to hold positions of leadership in the community, the influentials are highly accessible to others as sources of information. They interpret and pass information to those of their associates with whom they are influential. Table 10 reveals the number of adopters by adoption period according to how they

---

### Table 9

LENGTH OF ADOPTION PERIOD COMPARED WITH MEMBERSHIP IN SOCIAL ORGANIZATIONS (CLUBS)

<table>
<thead>
<tr>
<th>Number of Organizations</th>
<th>Adoption Period (Months)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\frac{1}{2}$</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
</tr>
<tr>
<td>Mean</td>
<td>1.20</td>
</tr>
</tbody>
</table>

$x_{g}^2 : 1.06$ : $s_{g}^2 : 0.45$
TABLE 10

ADOPTION PERIOD COMPARED WITH SOURCES OF INFORMATION

<table>
<thead>
<tr>
<th>Sources of Information</th>
<th>Adoption Period (Months)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\frac{1}{2}$</td>
</tr>
<tr>
<td>Television (N=9)</td>
<td>2</td>
</tr>
<tr>
<td>Newspaper (N=5)</td>
<td>1</td>
</tr>
<tr>
<td>Friends (N=18)</td>
<td>0</td>
</tr>
<tr>
<td>Pamphlets (N=15)</td>
<td>2</td>
</tr>
<tr>
<td>Repair Men (N=2)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
</tr>
</tbody>
</table>

Percentage Influenced by mass media

|              | 100 | 75  | 60  | 40  | 50  | 0   | 50  | 55  |

- 63 -
first heard about the T.T.T. It is seen that in the early stage of adoption the effects of mass media (pamphlets, T.V., newspapers) are mentioned by a relatively large number of adopters.

Part of the advantage of pamphlets over the other mass media is no doubt attributable to the fact that the pamphlet describing and demonstrating the advantages of this new type of phone was included with the monthly bill. At the later stages of adoption, personal communication was found to be more important and more frequently an initial source of information than any of the mass media. Initially, the influentials receive (or seek out) information from the mass media. At later stages in the adoption process personal communication played the vital role in the diffusion of this innovation.

Summary and Conclusions

The findings of this study may produce more questions than answers since the data are, for most purposes, inadequate to provide settled conclusions. In order to differentiate the two groups of adopters, the time of adoption was correlated to factors such as age, profession, previous innovations, education, and income. Age was the only factor that was not closely associated with the length of adoption periods. Concerning the influentials, in addition to the factors enumerated before, particular attention was brought upon the "self-designation" technique, participation in social organizations and also on their sources of information about the T.T.T.

The statistical analysis showed that the characteristics of each adopter group were well correlated to the adoption period of that group.
These relations were also consistent with those reported in previous research.

The goal was to determine factors or combinations of factors that are consistently associated with early acceptance of an innovation. If some of these factors or variables can be isolated empirically, one has the basis for a predictive device.

The hypotheses, the methodology, and the orientation of this study appear to be functional in innovation studies with marketing implications. This approach could prove, in general, to be useful in better understanding the diffusion and adoption of innovations.

Diffusion and adoption theory has an important potential value to the marketers. Identification of prospective buyers and some understanding of buying behaviour are certainly critical to a product's success in the market place. It is very important to know the target market in order to decide on advertising, sales effort, pricing policies, and channel selection.

Marketing research should be directed toward locating and understanding groups of influentials. For example, consumer panels may help furnish information on the timing of adoption and the propensities of different individuals or group of individuals to accept new products. Also, from such a panel, it might be possible to determine more conclusively the patterns existing early in the adoption process. Direct questioning of the public about the groups that influence their opinions or actions in a given situation might also be employed. A third approach might be termed an informal sociometric survey. A list of supposed influentials might be obtained from important organizations
or from management groups of companies in a given community. These individuals might then be interviewed and their association with their peers traced.

Having pinpointed potential early adopters, it might be possible for the marketer to concentrate on product development. Early adopters could be used in product testing to predict, more accurately than at present, consumer reaction to new products and serve as a source of new ideas for products. In advertising, messages should be geared to more nearly reach early adopters. Furthermore, many early adopters are considered as advisers within their circle of friends and hence would appear to be effective sales representatives. It is, therefore, important that they have a favourable attitude toward the product.

This study suggests that diffusion theory has great potential for providing marketing researchers with a general understanding of product acceptance. It remains for marketing researchers to give it recognition and extend the theory to its full potential.
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APPENDIX
Areas in which the field study was conducted.
APPENDIX B

QUESTIONNAIRE USED IN THE SURVEY WITH COMPLETED TABULATION

1. Where did you first hear about the touch-tone telephone?

   Television:  9
   Radio: 0
   Newspaper: 5
   Friend: 18
   Neighbour: 0
   Others (specify) pamphlets 15
   repair men 2
   already installed 1

2. When did you hear about the T.T.T. for the first time?

   Month .......... Year .......... (not tabulated)

3. a) Approximately when did you buy the T.T.T.?

   ½ month after heard about it: 5
   1 month : 8
   2 months : 15
   3 months : 5
   4 months : 2
   6 months : 3
   10 months : 2
   12+ months : 10

   b) When was it installed?

   Month .......... Year ...... (not tabulated)

4. Would you mind telling me about how much your telephone bill averaged for the last four months?

   $16.00 (Average of population surveyed).

5. How many calls would you estimate you make per week?

   28 calls (average)

6. If married, do you have any children?
Number of Children | Number of Families | Still Living at Home
--- | --- | ---
0 | 6 | 0
1 | 9 | 9
2 | 21 | 20
3 | 10 | 7
4 | 2 | 1
5 | 2 | 1

7. Do you have a car?

Yes

1 car: 32
2 cars: 15
3 cars: 3

Kind:

Luxury car: 17
Middle car: 31
Compact car: 18
Small car: 5

Year: (not tabulated)

8. Who within the family decided to buy your T.T.T.?

Husband: 19
Wife: 15
Both: 11
Single: 0
Children: 4
Already installed: 1

9. Do you like to travel?

Yes: 50
No: 0

10. Have you traveled in:

Europe: 5
Across the United States: 45
Across Canada: 22
Elsewhere: 10

11. What is your profession?

Professional: 3
Sales (except sales Manager): 7
Skilled worker: 7
Unskilled worker: 2
Proprietor or manager: 19
Teacher: 6
Semi-skilled: 3
Student: 1
Retired: 2
12. Would you mind telling me the last year of schooling you completed?

<table>
<thead>
<tr>
<th>Years</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 years or less</td>
<td>7</td>
</tr>
<tr>
<td>13 years</td>
<td>1</td>
</tr>
<tr>
<td>15 &quot;</td>
<td>2</td>
</tr>
<tr>
<td>18 &quot;</td>
<td>5</td>
</tr>
<tr>
<td>12 years</td>
<td>14</td>
</tr>
<tr>
<td>14 &quot;</td>
<td>10</td>
</tr>
<tr>
<td>16 &quot;</td>
<td>6</td>
</tr>
</tbody>
</table>

13. What newspapers do you read?

- Local paper: 45
- Business Magazine: 12
- News Magazines: 38
- Recreational readings: 24
- Assorted Magazines: 10

14. What is your favourite program on T.V.?

- Comedy program: 2
- Detective Stories Program: 11
- Documentary: 2
- Movies: 1
- Musical Program: 3
- News: 10
- Soap Opera Program: 5
- Sports Program: 18
- Variety Program: 7
- Western Program: 4
- Any Program: 2

15. Do you participate in any sports?

<table>
<thead>
<tr>
<th>Sports</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camping</td>
<td>1</td>
</tr>
<tr>
<td>Hunting</td>
<td>4</td>
</tr>
<tr>
<td>Fishing</td>
<td>7</td>
</tr>
<tr>
<td>Skiing</td>
<td>2</td>
</tr>
<tr>
<td>Golf</td>
<td>24</td>
</tr>
<tr>
<td>Boating</td>
<td>2</td>
</tr>
<tr>
<td>Flying</td>
<td>1</td>
</tr>
<tr>
<td>Scuba Diving</td>
<td>2</td>
</tr>
<tr>
<td>Bowling</td>
<td>8</td>
</tr>
<tr>
<td>Basketball</td>
<td>1</td>
</tr>
<tr>
<td>Swimming</td>
<td>2</td>
</tr>
<tr>
<td>Tennis</td>
<td>4</td>
</tr>
</tbody>
</table>

How many hours: (not tabulated)

16. Do you have any hobbies?

(Not tabulated)

17. To what organizations or club do you belong?

<table>
<thead>
<tr>
<th>Type</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>15</td>
</tr>
<tr>
<td>Service Clubs</td>
<td>20</td>
</tr>
<tr>
<td>Social Clubs</td>
<td>32</td>
</tr>
</tbody>
</table>
18. How often in the average month do you visit with neighbours or other friends?

   6 (average)

19. What is your age (husband)?

   Between 20 - 29: 9
   30 - 39: 17
   40 - 49: 13
   50 - 59: 9
   Over 60 : 2

20. Do you own your home?

   Yes: 46
   No: 4

21. For purposes of classification, I would appreciate having some general information on your income. Would you mind marking the appropriate space on this card. The information will only be used for classification and will be held in the strictest confidence. (This information was on a separate card).

   Information on income, Under $3,999 a year: 1
      $4,000 - 6,999. : 9
      7,000 - 9,999. : 9
      10,000 -12,999. : 13
      Over 13,000. : 16

22. a) Do you have a television set?

   One set: 46
   Two sets: 4

   b) Is your set black and white: 25
      or colour: 29

23. When you bought a T.T.T. was it:

   - an original installation? 7
   - replacement for princess phone? 13
   - replacement for standard phone? 30

24. Do you have any of the following items:

   None of these: 3
   Cordless electric razor: 13
   Electric shoe brush: 22
   Electric tooth brush: 30
   Polaroid camera: 32
   Electric wristwatch: 20
   Electric dishwasher: 6
25. a) Do you often tell your neighbour or friends about new ideas or products?
   Yes: 34
   No: 16

   b) Do they often tell you about new ideas or products?
   Yes: 34
   No: 16

26. Compared with your circle of friends are you likely to be asked for advice?
   Yes: 33
   No: 17

27. Has anyone asked you for information about the T.T.T.?
   Yes: 32
   No: 18

28. Have you recently volunteered about T.T.T.?
   Yes: 17
   No: 33

29. What are the most interesting factors of the T.T.T.?
   Quick: 41
   Nice Tone: 27
   Appearance: 11
   Easy dialing: 15

30. Would you like to comment on its disadvantages?
   Cost: 11
   Difficult to get used to: 9