ASSESMENT OF THE PRESENT DISTRIBUTION CHANNEL OF PERIODICAL MEDIA, AND AN ATTEMPT TO STUDY ITS DISTRIBUTION CHANNEL EFFECTIVENESS IN TURKEY WITHIN CONTENTS OF GELİŞİM A.Ş. PERIODICALS FOR THE PERIOD OF 1983

by

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FOREWORD

In reading this paper, one should keep in mind that there exists competing descriptions of the social reality we live in, and the matter at issue indicates that the analysis of both system costs and effects depend in part on that description of the world we choose. The distinction is that decisions are made for 'political' reasons and that for reasons of 'economic rationality' there is less a distinction on the basis of rational decision-making (for both may or may not be rational), but more a distinction along the lines of what specific goals are being sought after, how one evaluates efficiency, effects, effectiveness and benefits divided among competing interest groups, and in general, who has what degree of control of the relevant desicion-making power. Economic and heuristic approaches seem to be useful to the extent that they make desicion-makers more aware and more explicit about alternatives and their various consequences.

Even more useful than techniques and approaches themselves, is the broad conception of effectiveness (cost and effectiveness to be more exact) analysis within the decision making framework, at each level of :

- Planning
- Implementation, and
- Evaluation 'vertically' and 'horizantally' in <u>time</u>

and also at each section of the institutional organization ; in <u>space</u>. In other words, effectiveness analysis of periodicals at a specific time throughout all the selling end-points in all regions (horizantally) and/or analysis of periodicals in a specific region throughout a period of time (vertically).

Such analysis should not be taken as definitive, but as informative, to be interpreted with caution and common sense, based on the knowledge of both its strengths and weaknesses.

This paper would serve its purpose, only to the extent that it proves the need for more research on the subject.

PREFACE

Perhaps one of the primary reasons for the void in distribution effectiveness is the fact that no overall cohesive and appealing analytical framework has been developed which has spurred satisfying text. Although several important frameworks based on classical economic models or on game theory have been formulated, none seems to have provided the impetus for a comprehensive statement of channel practice and management. Unfortunately, because of their limiting assumptions, many of the analytical models presently available, fail to capture the exciting behavioral dynamics of the marketplace distribution and thus are less rooted in reality than they otherwise might be, especially for Turkey.

Clearly, there exists both a practical and a scientific need for a better illumination of the behavioral dimensions of the distribution process. Although there can be no doubt that economic incentives provide the major motivation for many of the organizations engaged in the process, there is also no doubt that the way in which the wide variety of distributive relationships are maintained is a key determinant in accomplishing the task of making goods and services ; periodicals 'per se' available for consumption. A series of complex social interactions is critical to the success of any one distribution organization in its efforts to serve its clients better. Because of the complexity and significance of these interactions, marketing channels-that is, the networks of institutions involved in the distributive process-can be analyzed more completely when they are viewed as social systems. Placing the emphasis exclusively on the economic incentives inherent and manipulated in them is 'myopic'. This understanding is particularly impor-

tant when attention is turned to the channels for educational goods and services, especially like Gelişim's encyclopedia part-works. The paper also attempts to underscore the need for inter-organization management through the use of approaches, frameworks, and perspectives that have been developed and investigated in such fields as sociology, psychology, organizational behavior, and economics. Understanding the management of channel re - lationships is the center of the analysis, and the marketing channel, as a whole, is viewed as the relevant unit of competition. The approach adopted is systems-managerial, and use of whatever tool developed, at the end of this paper by the management team of Gelişim A.Ş. is foreseen.

It is possible to employ a specific simulation model as manager's decision tool for the purpose of manipulating the distribution effectiveness and efficiency of periodical publications of Gelişim. Here if efficiency is loked at as an index of quantity and quality of sales, and assumed to be defined by η , then ;

$$\eta = \text{Sales/Distribution} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (1)$$

The manager simultaneously decides on the periodic quantification of distribution in different territories, thus aiming at quantification of sales in the respective territories. Thus profit maximization can be attained by manipulating through simulation. This provides us with a very powerful, yet very flexible tool.

However, other projection techniques such as regression analysis and future extrapolation programs can also be employed per se, but due to the fact that they provide one-shot answers, and because they are not interactive programs providing answers on the spur of the decision moment, they are less desirable.

Here, in the related parts of this paper, other controllable variables besides distribution that can effect profit maximization such as promotion, advertisement, physical and substantive quality of the products, price, increase in general cost of living, decrease in publication cost and distribution costs etc. are assumed to be constant for the regression analysis and the extrapolation program. This assumption is justified 'per se' by the fact that due to lack of historical figures, this is an analysis carried out in one year and during this year all other controllable variables are factually constant and monthly figures are feeded into the analysis, thus monthly analysis within one year is in effect. In the future, analysis of similar sorts, can be carried over the years for a better picture of any trend and/or point situation, freer of monthly and seasonal fluctuations.

Distribution efficiency as defined above, can be rephrased, then from the equation ;

$$\eta = \text{Sales} / \text{Distribution},$$

Since net sales are the difference between quantity distributed, and quantity returned; one can develope the formulation : $S = D - R$ where,

S = Sales,

R = Returns, and

D = Quantity distributed.

Thus ;

$$\eta = 1 - \frac{R}{D} \quad \text{.................................(2)}$$

Here the unsold portion of sales (which is returns) is used in the above formulation as follows :

$$R = D - S \quad \text{.................................(3)}$$

Thus as returns decrease, net circulation of periodicals ; its distribution efficiency increases. But, use of efficiency is not explanatory enough for the concept of magazine effectiveness since effectiveness is an index of quantity of sales, and its perception by the readers.

Let us assume two competitive periodicals : magazine A and magazine B. Let us also assume that the former has a distribution figure; circulation of 1 million and sales of 800.000, and that the latter has a net circulation of 10.000 and sales of 9.000.

Thus, magazine A has efficiency index of 0.8, and magazine B has an efficiency of 0.9. However, Magazine A is appealing to 800.000 actual customers, and Magazine B is appealing to 9.000 customers only.

Here, no doubt, by virtue of the communication industry rule and/or publications industry, magazine A is the more effective periodical, regardless of its efficiency.

Thus, market potential, penetration and mere size of the figures and how it fits the system as a whole, have a dictating tone in any effectiveness analysis.

For a manager who uses the simulation model developed in this text, the ultimate business objective : profit maximization is easily tackled until it obtains a satisfying level and/or optimum level, and until the manager chooses to quit playing the 'game' .

This text is attempted to be both descriptive and prescriptive. That is, there are descriptions of what takes place within channels and how channels are organized as well as discussions concerning how channels should be organized ; the emphasis of the effort is on the strive for development of

effective methods of inter-organization management within commercial channels of distribution, in general, within Hürdağıtım's channels of distribution of periodicals in specific.

The approach of this paper may be found more useful in providing to Gelişim's general manager's, a viewpoint on distribution, on marketing information etc., than emphasising on research methods and techniques.

ACKNOWLEDGEMENTS

I would like to acknowledge many people who have co-operation with me at each level of this study, to all Gelişim A.Ş. staff and especially to ;

Mr. Ercan Arıklı for his help and understanding co-operation in disclosing his compiled market information, even in disguised form, and especially, for his letting me have access to the computer system of Gelişim A.Ş. Mr. Yasef Tovya, and to Mr. Nuri Umar and who have helped me in compiling the work together, and actually taking turns for running the 'show' on the computer programs, all throughout the very misfortunate breakdowns of the hardware and software systems of Gelişim A.Ş. that lasted on and off a year and a half, and also to Dr. Behçet Altaylı or his moral support and to Ms. Nalan Güler and to Ms. Züleyha Özkan for their help in typing, and last but not least Mr. Fikret Gürsoy for his great help in data compiling and support in putting the details together.

Prof. Ahmet Koç's width of vision and innovative thinking has been a constant source of inspiration to me.

LIST OF TABLES

Page

LIST OF FIGURES

PREFIX

To whom it may concern, Ms. Kurtuluş Sawyer has been supplied with confidential 1983 net circulation figures of the periodicals of our firm, Gelişim Holding. Thus the figures she has used as input to her computer programs, has been treated with a dummy all throughout the data ; however horizontal vertical and geometric relations between the figures are consistent with the true picture.

Chairman of The Board
of Trustees
Mr. Ercan ARIKLI

ABSTRACT

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ABSTRACT

It is suggested that the distribution effectiveness of marketing organization need a systematic evaluation.

A probabilistic definition of effectiveness is suggested and parallelogram and/or dichatomy of effectiveness with efficiency is accentuated.

Although research on the subject is abundant, lack of a theory on which researchers agree, creates a situation where the number of different conceptual contracts is almost equal to the number of investigators. In this paper :

Description of the structure, and dominant management modes within periodical retailing and wholesaling is made, and the set-up of Hürdağıtım distribution channels is studied in relation with 14 of Gelişim's periodicals within the year 1983. An overview of physical distribution activities by channel members is then cited.

Channel structure and institutional change is paired. (Why the channel have emerged, and taken the shape that they did ? Why specific institutions within the channel system have altered over time ? etc.)

An attempt is made for the assesment of the performance of channels and institutions comprising them; incorporating both the broad, societal viewpoint and a managerial 'micro' viewpoint.

There is a distinct need for role specification, the use of power, conflict management, channel leadership, and effective communication within channels.

A description is made of the interorganization management and the marketing flows in general, and in particular, the limitations in the use of social and economic power in the channel system, and how the principles of interorganization management that are inherint in the distribution process have or might be implemented is studied.

Given, and proven the need for communications within channel systems, examination of communication problems, structure of competition and management modes, vertical marketing systems and development of information systems within retailing and wholesaling is attempted to be tackled by means of questionnaires.

The notion of monetary compensation for channel participation is extrapolated as directly relevant to activities in the commercial channel subsystems.

Looking into some of the factual details, this involves that the channel members should be paid only for what thet actually do carry, and distribute within the system.

However, examination has proven that such is not always the case. For example, in the position (e.i. wholesaler, retailer, carrier etc.) that an institution occupies within the system, although there are discounts which are frequently called "functional" discounts, they are often based not on what flows a specific institution (e.i. Başbayii) is performing and its coverage of these flows, but rather on trade tradition.

For example, some publishers have been known to grant large discounts to their distributors on the basis of the storage and distribution (physical possession) functions these perform.

In a closer analysis of distributors' financial positions, it was found that they were earning 20 percent while middlemen (e.i. Tali Bayi) are entitled to earn only satisfactory returns

amounting to five percent.

It is clear from observations that role relationships had not been delineated in an effective and meaningful way from the outset and that the domains of both the publishers and the distributors especially some functions of wholesalers and retailers, were overlapping.

What is needed in this situation is an audit of the flows in the channel in order to determine the extent of participation of the members in each. An audit of this nature will not only permit an adjustment of the compensation structure within the channel, but will also lead to the elimination of dublication reduction of costs and thereby eventually result in the lowering of prices to end-users the beginning point of such a channel audit may probably involve the construction of a matrix of system relationships ; a matrix describing the channel ; comparing the operations of the various regional channel components within one system of whosalers and retailers and also comparing one channel system (e.i. Başbayilik) with others of one region from other regions.

Thus, simultaneous and continuous use of Appendix C, D, and E might lead to such an audit application.

Institutions and agencies included in any given channel can be portrayed as components of the system. Important elements of the task environment (e.i. the portion of the environment, one of the eight regions of Hürriyet upon which the system depends geographically, as can be seen in the enclosed tables can also be shown. By employing such an outlook, it is possible to represent the structure of various relationships within the channel system and between system components, and the task environment;thus employing a systems approach with interorganization outlook, utilizing logistics.

When we review the literature on distribution, we see that the importance of the distribution channels is evaluated in the light of new developments of the marketing theory and concept.

Different approaches regarding channels of distribution are reviewed and evaluated in order to determine the criteria to be used in measuring the effectiveness of channels. Thus the systems approach is judged to be the better one.

Then, models are developed to assess the effectiveness of channels. Descriptive, predictive and normative models are traced and are evaluated in terms of validity and reliability. A more valid and reliable-multi-objective model is also searched for.

Since a good model should include all the important variables, a model to be developed for measuring the effectiveness of channels of distribution has to cover appropriate criteria, and overcome all the handicaps discussed here.

Channels of distribution is one of the most promising areas for application of simulation models. The basis for the simulation model has been built on the output of the linear market model, extrapolated and studied by means of a regression equation, tested for statistical soundness and predictive power, carefully outlined by maticulous assumptions. The attempt is hypothesising that it is possible to use distribution quantities, price and cost as controllable variables and last period's sales and some quantitative demographic characteristics of the market as some of the uncontrallable variables in this predictive model.

Some quantitative and qualitative questionnaires are designed and due results are obtained, but they are not yet

TABLE OF CONTENTS

I. UNDERSTANDING THE DISTRIBUTION SYSTEM

II. UNDERSTANDING THE RETAILING SYSTEM

A. 'Wheel' of Retailing Concept

III. UNDERSTANDING THE WHOLESALING SYSTEM

IV. ANALYSIS OF CHOICE

A. Criteria for Wholesaling

1. Point of View of Publisher

a. Evaluation of Sales Efforts of Wholesale Agency.

b. Evaluation of Relationship of Wholesaling Agency to Channel of Distribution for The Product.

2. Point of View of Retailer

a. Product Lines (Magazines, Encyclopedia part-works).

b. Services.

B. Classification of Wholesalers and Application of Wholesale Classification to Gelişim's Case

1. On Basis of Functions

a. Merchant Wholesalers.

(1) Full Function Wholesalers.

(2) Self-employed Merchants.

(3) Driver-Salesmen.

b. Selling Agents.

c. Factor Agents.

2. On Basis of Breadth of Line

a. General Line Wholesalers.

b. Limited Line Wholesalers.

EXTRAPOLATING ON THE THEORY OF DISTRIBUTION EFFECTIVENESS

CHAPTER I

EXTRAPOLATING ON THE THEORY OF DISTRIBUTION EFFECTIVENESS

Viewing the traditional marketing literature, we observe the following : in an article by Gattorna, (1978) it is mentioned that as a separate marketing function, channels of distribution were first defined by Borden. In spite of its historical importance, distribution channels have not received enough attention by marketing academicians.

On the other hand, distribution costs, the costs undertaken by the members of the channel throughout the flow of product or service, are the most important ones. Following the oil crisis and high inflation and high unemployment rates, stagflation, as results of the crisis, several marketing acedemicians have suggested complementary revisions of the modern marketing concept. In addition to its consumer orientation Kotler and Levy, (1969) proposed to broaden the concept of marketing to nonprofit organizations. Lazer, (1969) Feldman, (1971) and Fisk, (1973) have introduced "social marketing" trying to protect the consumer and the environment and develop the concept of responsible consumption patterns. Some authors like Kotler and Tucker, (1972) also introduced "macro marketing" and "demarketing" to fulfill the social and macro requirements of the society and regulate the marketing technology according to social preferences. This marketing concept had to be renewed on the above mentioned dimensions ; rationalization of marketing activities, application of cost reduction techniques, such as value analysis in marketing decisions, macro and social considerations in planning marketing activities, have gained greater importance. In some parts of the world, the marketing systems will

probably begin to give greater priority to social needs whereas in the centrally planned economies greater priority will be given to the private goods consumption. These trends on both sides indicate that channels of distribution should be studied with more emphasis.

As a key element of the marketing mix, the term "distribution" was recommended as an alternative to "marketing" by the Committee on Definitions of the American Marketing Association. In his book Alexander,(1963, pp.120) reveals that the committee also defined the channel of distribution as :

....."the structure of intra-company organization units and extra-company agents and dealers, wholesale and retail, through which a commodity, product, or service is marketed".....

Thus by using channels of distribution, an important marketing process is employed for performing the several functions required to bridge the gap between production and consumption. Maller, (1976) also calls this "creation of place utility". Several different definitions of channels of distribution can also be found in the literature. The terms "distribution channel", "marketing channel network", "vertical marketing structure", "vertical marketing system", "distribution system" and "channels of distribution" have been used synonymously by the authors. There is also Ataç's(1981.ppl) probabilistic definition of effectiveness which states that;

....."effectiveness is the probability of giving a correct decision and the probability of correcting a wrong one".....

Here, extrapolation can be made on the fact that effectiveness can be descibed in terms of six system variables :

(1) formation gathering capacity

(2) Intellectual clearness of the communication

(3) Degree of centralization in the organization

(4) Degree of role inambiguity

(5) Degree of cultural control

(6) The reward orientation and the degree to which the reinforcement system is reward oriented.

At least three dimensions should be used in defining the distribution channel :

(1) The typology dimension : what characteristics of which channel members should be included in the definition ? Thus, which typology exists ?

(2) The vertical dimension : where does a channel start and end ?

(3) The horizontal dimension : how many institutions of each type at each channel level are to be included in the definition ?

In spite of the existence of different definitions of distribution channels, it is widely accepted to view the channels as inter-organizational systems that is, as sets of interdependent organizations that, by an exchange of outputs, are involved in the process of making a product or service available for consumption.

One has to develop and measure certain criterion variables to be able to make more efficient channel decisions, such as decisions concerning the selection of distribution systems and channels, evaluation of channels, changes in existing distribution systems etc. The most commonly used criteria in the literature says Sturdivant, (1970) are the level of profitability, the degree of control and adaptability of the channel to the changing conditions. Before developing appropriate criteria or a criterion to

assess the effectiveness of channels of distribution, views of different schools of thought or approaches regarding channels of distribution should be examined. Gattorna, (1978) ascertains that one can distinguish at least six major schools of thought for this purpose.

It should be noted that this classification is somewhat arbitrary and may have some overlaps.

I. SCHOOLS OF THOUGHT

A. Economic Approach

Perhaps the most traditional view of distribution channels came from micro-economists. Micro-economic theory has regarded channels as flows of economic goods and services and the idea of external economies has been stressed as a central element. Thus, creating utilities of time, place and possession is essential for this approach. In this respect, marginal analysis has gained great importance. All cost reduction possibilities through delegation of selected activities to external organizations which specialize in such activities were studied by Stiegler, (1967).

In essence, the micro economic approach developed by Bucklin, (1967) aimed to minimize total channel costs. However, economists focused on the issue of effectiveness in existing channels, in addition to obvious shortcomings of the optimization models used. They have ignored non-economic factors, such as, social, environmental, legal, political etc. This very brief evaluation shows that the micro-economic approach is a very important view but not the unique one.

B. Functional Approach

A second approach is suggested by those who employed a functional criterion. According to the functional approach developed by Mc Common, (1973, pp.80) a distribution channel is regarded as :

....."The combination and sequence of agencies through which one or more of these marketing flows or functions move".....

The author viewed the channel as a "functional system". Functions were defined as the various types of job tasks or activities which channel members undertake. Then these functions were allocated to different channel members in a way which provides the greatest profit.

Mc Garry, (1950) defined six basic functions for channel members, namely;contractual,merchandising, pricing, propaganda, physical distribution and termination. Functions can also be classified as buying, selling, transportation, sorting, warehousing, financing, contracting and so on.

Bucklin, (1965) also suggested five functions; transit, inventory, search, persuasion, and production. He claimed that through the use of the set of his five functions, the manufacturer-wholesaler-retailer channel may be operationally defined, and thus, cost curves for institutions performing different functions may be derived by aggregating the costs of each function. Therefore, an integration may only occur when the cost of operating two or more of the required functions by a single firm is less than when they are undertaken by separate firms. Alderson, (1949) suggested to match segments of demand and segments of supply in the channels instead of allocating certain tasks or functions to the channel members. The functional conceptualisation of channels is cerainly one of the most useful contributions to the subject.

C. Institutional Approach

Instituonal approach is underpinned by both microeconomic and functional approaches.

A marketing institution should acquire its particular designation of retailer, commission merchant, wholesaler etc.

As mentioned earlier, the traditional concept regards a channel simply as a combination and sequence of physical agencies through which various marketing flows, especially flows of goods and information, move, and physical exchange occurs between production and consumption points. Of course, these two extreme points should be included in a channel. It is obvious that these intermediary institutions do and will exist in the longer term only and if their contribution to increased efficiency is sustained.

For Artle, and Berglund, (1959) it is also obvious that there is a contractual rationale of channel intermediaries in reducing the number of transactions. For minimizing total costs, routinisation of transactions, namely, designing of procedures in such a way as to obviate the need for specifying in detail what is wanted for every successive purchase of the same article. The vertical and horizontal dimensions of channels served by intermediaries have also gained importance in the literature through Davidson, (1970). One of the major weakneses of this approach is that it does not reveal anything about the evaluation of channels. But market institutions must adapt continously to their environment that has a very dynamic nature in order to avoid "economic obsolescense". Therefore, Cunningham and Hardy, (1977) have introduced massive quantitave and qualitative changes among firms in the distributive industries. It is concluded that the innovation and change in the distribution system should be carefully determined, and that reactions of channel members are very important.

As a summary, it is apperrant that intermediary institutions exist because of the transactional and exchange economies that they allow. Unfortunately, despite the visible evidence of institutional configurations, very little is known about this mechanism. Therefore, say Dommermuth and Anderson, (1973) functional approach may have greater value than institutional approach in generating ideas about dynamics of channel structure, efficiency and profitability.

D. Organizational Approach

This approach is underpinned by organizational theory. Administrative theory has found direct application in the distribution channels literature. Proponents of administrative theory such as Taylor, (1911) and Gilberth, (1912) primarily aimed at improving the efficiency of relatively small closed systems, namely departments within the firm. The administrative theorists concerned with describing and improving performance at the individual firm level rather than the interfirm net-works in which they existed. But marketing theorists took the opposite stand and have been preoccupied with environmental forces and external trading channels. Ridgeway, (1957) was the first administrative theorist who suggested that the body of theory and research accumulated for the purpose of understanding administrative processes within single organizations could be extended to take in the inter-organizational situation by using the findings of Barnard, (1958) and Thompson, (1967) and others. Thus he viewed the channel as an integrated whole or a system. As a result of new developments in the same direction, organizational

school showed an awareness of the need to "manage" a collection of firms in the channel alignment, as an integrated whole. In this regard the movement was a forerunner to the "systems" school.

E. Systems Approach

This approach regards distribution channels as an operating system with an identifiable and distinctive pattern of behavior. The first use of the "system" notion in a marketing context may be attributed to Mc Kenzie, (1968) who suggested to view marketing activities as a process. Thus, the interdependencies of structures and functions which exist within and between organizations appear to have stimulated the systems approach to marketing problems.

In the broader sense, a system is a set of objects together with relationships between the objects and between their attributes. Regarding the channel as an organised behavior system, recognises that a channel is a :(1)

....."Purposive and rational assemblage of firms rather than a random collection of enterprises and emphasises the existance of cooperative, as well as antagonistic behaviour within the channel".....

It should be noticed that a channel of distribution is a dynamic network. New types of marketing institutions will continue to develop in relationship to the performance of functions, typically offering an opportunity for improving the output/input ratio of a channel. Thus channels may be highly unstable systems with their configuration changing dramatically over time.

Viewing the marketing function and channels of distribution as a system within a larger system has been noted for many years,

(1) Ibid., (1968, pp.109)

but marketing theorists have not been generally successful in developing this application to anywhere near the potential it offers. The channel as an operating system has been told by Common and Little, (1973) to have the following characteristics.

(1) The channel consists of interrelated components that are structured to produce predetermined results

(2) Members of the channel strive to achieve mutually acceptable objectives

(3) Activities performed by channel members are undertaken sequentially, and thus, it is logical to think of such activities as "marketing flows"

(4) A marketing channel is an open system in the sense that participation in it is voluntary

(5) A single enterprise usually "administers" the channel, and

(6) The behaviour of channel members, particularly in a well established channel, is "regulated".

As a consequence, it should be noted that viewing channels as a system is still the most valid and realistic approach. Unfortunately, it has not been fully developed.

F. Behavioural Approach

This approach emphasises the socio-political behavioural influences in channel networks.

Recent research studies indicated that the conduct of channel members as well as the performance of channels are

affected significantly by the behavioural interactions among channel members.

Power was defined by Rucks and Etgar, (1978) as "the ability of a channel member to control the decision variables in the marketing strategy of any member in a given channel at a different level of distribution. Few studies have been done by Stern and El-Ansary, (1972) to measure power relations empirically in channels, and those which have been done, have mainly used perceived rather than absolute measures of power.

Unfortunately, the power literature tends to adopt an arbitrary and largely untested classification scheme for different types of power.

Cooperation and conflict behaviour are inherent in channels due to functional interdependence among channel members. Rosenberg, (1974) defined conflict as covert in the form of underlying tension which takes on an overt form when an incident occurs, and lasts while the flare-up maintains intensity. Channel conflict is inevitable and arises from goal differences, task inderdependency in channel relationships and lack of concensus among channel members regarding their respective roles. In the literature there is a considerable disagreement on whether or not the presence of conflict in the channel has beneficial effects. Of course, the achievement of channel member's goals requires a certain minimum level of cooperation. Three approaches for managing conflict were developed in the literature. The first assumes that members of a particular system are not working properly together, through no specific fault in the system itself. The second requires development of additional conflict-resolution machinery; and the final approach

requires alternation of the existing institutional structure in order to lessen the inherent conflict. Developing empirical measures of conflict is still an important problem. Rosenberg and Stern's, (1973) view appears to be that the goal to pursue should be one of conflict minimization and co-operation maximization. One should also take into account the implications of varying types of systems arrangement. Stern, (1971) stated that some form of centralised power is a prerequisite for orderly behaviour within a channel system. Power is a key concept in understanding channel control and leadership. Thus the channel leader is defined [2] as ;

....."the member institution with the greatest power; he has more values or values of greater magnitude to exchange".....

Some levels of communication and bargaining, characterize all channel relations. Bargaining pertains particulary to the determination of roles and control over issues in the channel relationship. It may be observed that the concepts of power, conflict, leadership and others appear to have been treated largely seperately. A much more comprehensive approach is needed. This may help to explain why the early promise of the behaviouralist approach has largely been unrealised to date.

Some conclusions can be derived from the foregoing discussions. However, although every conceptual approach reviewed has added something to the literature of distribution channels, no single approach has reached an adequate conceptualization. But the systems approach shows great promise despite its somewhat disappointing application so far. New developments and propositions are needed in this ares. Validation of new proposals should not be ignored. Model construction, validation and measurement are the major problems.

(2) Ibid, (pg.89)

II. EVALUATION OF THE EFFECTIVENESS OF CHANNELS OF DISTRIBUTION

Evaluation of the effectiveness of channels of distribution is necessary if effective and efficient distribution channels are to be developed and then maintained. Channel performance is a legitimate concern for practitioners and researchers. Actually the evaluation of channel effectiveness should be the concern of every primary agency in the channel, i.e. publisher, wholesale middlemen, and retail middlemen and the consumer.

A. Goals Approach

When we adopt Revzan's, (1971) goals approach to publishing we see that the objectives of channel evaluation can be summarized as follows :

1. The Publisher's Level

The principal objectives can be stated as follows :

(1) To determine the contribution of the channel alternatives to the achievement of the company's overall marketing program, in quantitative and qualitative units;

(2) To determine the direct and indirect relationship between channel alternatives and the company's product lines, area by area;

(3) To determine the contribution of the channel alternatives to consumer recognition and acceptance of the marketing programs and especially promotion campaigns;

(4) To define the contribution of the channel to the company's knowledge of market characteristics;

(5) To determine the contribution of the channel to the company's favorable or unfavorable cost-profit position, periodical by periodical in different distribution zones.

2. The Middlemen's Level

The middlemen's point of view can be summarized, and the following main objectives can be listed similarly :

(a) The extent to which the channel alternatives maximize the middlemen's freedom of managerial activity with respect to product handled, territory covered, and functional activities to be performed;

(b) The extent to which the channel arrangement maximizes or circumscribes each middleman's freedom to expand;

(c) The extent to which the channel arrangement permits the wholesale or retail middleman to enter the managerial struggle for control of the channel;

(d) The extent to which the middlemen are permitted in the channel to maintain their type-of-operation identity;

(e) The extent to which the wholesale and retail middlemen are permitted to realize price spread margins or commissions or fees commensurate with their cost-profit requirements.

Unfortunately, there has not been a commonly accepted model even though evaluation criterion or criteria have been developed for measuring the effectiveness of channels of distribution.

It seems that the differences among effectiveness, efficiency, and productivity needs more consideration from a marketing standpoint. One can list a number of reasons why the effectiveness of marketing functions should not only be differentiated from efficiency and productivity but should also be examined with added head. One such reason is the tendency of many organisations to restructure their organisations to be market oriented. It seems that the emphasis that is placed upon the marketing function is increasing beyond what one would ordinarily expect under the marketing concept. Some businessmen even define their entire organisations as one big marketing department, especially as levels of technological development have forced production levels to scales where they push sales to upper limits. Some multinational corporations accept the marketing concept as their primary policy. In addition to the increasing acceptance of the marketing concept the innate importance of the marketing function for overall business success, makes the effectiveness of this function indispensable. The effect of the marketing function on the other functions of the business organisations seem to be growing everyday, together with the cristicisms against the marketing function. Although the answers to these criticisms can also be provided by the marketing function, the mere existance of these cristicisms justifies the need for more effectiveness in marketing. Finally for underdeveloped countries effectiveness in marketing is synonymous with economic development. It is therefore imperative

that the effectiveness of any marketing function be examined specifically.

In spite of the mentioned need for effectiveness research for the marketing function, it is seen that the marketing literature emphasises efficiency and productivity rather than effectiveness. Of the two basic approaches of studying organisational effectiveness the "organisational goals approach" seem to be preferred over the "systems approach". Kotler, (1980) extrapolates that effectiveness is primarily defined in terms of planning and control or strategic control.

The study is where certain system properties are viewed to be revelant to the "effectiveness" of marketing functions. Such attempts may be viewed as examples of the systems approach to the study of distribution effectiveness. However most of these attempts are in the form of check-lists with no well defined theoretical background. Among those, the marketing audit seem to be the leading approach. It is claimed that the marketing audit will play the role of a thermostat. However it is contended that a thermostat does not lead to effectiveness.

One of the most specific attempts to measure the "effectiveness" of marketing functions is by means of marketing effectiveness questionnaire. With the use of e.i. Kotler's, (1977) questionnaire, the effectiveness of the marketing function distribution can be defined in terms of the

(1) Use of distribution concept,

(2) Existence of an integrated distribution organisation, and

(3) The existance of a distribution plan. This approach can be viewed as an example of the systems approach

to effectiveness, and therefore suffers from the same weaknesses.

A similar attempt defines effectiveness, in terms of resources accumulating ability. Although no clear references to this approach can be cited, system properties like :

(1) Number of trained personnel,
(2) Number of affiliated wholesalers and retailers, and
(3) Market share

are viewed as properties relevant to effectiveness.

Mc Namara, (1972) uses the social purpose of marketing as an effectiveness criterion. The social purpose of marketing is developed into a new concept of social marketing. The social purpose of marketing is frequently challanged in the literature. But it is inappropriate as an effectiveness measure. Not only the concept is quite abstract, it is not clear whether it is the firm or the government who should seek social goals. In short, it can be concluded that the systems approach to the study of effectiveness has been rather unsatisfactory with respect to its theoretical thoroughness.

The goal approach to the study of effectiveness is, by and large the leading approach that is favored by the marketing scholars. Objectives like sales, market share, profits, corporate image are all examples of criterion of effectiveness. All of these approaches suffer from rather well known deficiencies which limit their use as effectiveness criterion. Sales, market share, and profit objectives have been criticised by scholars, thus

corporate image suffers from the same shortcomings of the social purpose of marketing.

On the other hand marketing literature abound in studies of efficiency and productivity. Establishment of efficiency measures, according to Bell, (1966) and criterion for such measures seem to be the two basic avenues of research. Considerable emphasis is devoted on the efficiency and productivity measures of various marketing subfunctions. Most of these efficiency measures are in the form of individual ratios of output to input calculated with respect to the various marketing sub-functions or activities. Such individual criterion and their measures are not integrated in a model which will yield a measure of distribution efficiency. However Buzell, (1972) says that the need for an overall efficiency measure necessitates the use of criteria like the return on investment. The solutions proposed by some authors like Hubbert and Toy, (1977) assume that the examination of distribution costs and sales volume is not sufficient for an overall evaluation of the distribution activity. Examination of the sales volume is sometimes viewed as a strategic issue, and sometimes as productivity. It would not be misleading to state that not only a confusion of terms and concepts with respect to effectiveness, efficiency and productivity exist in the marketing literature but among the three; effectiveness is probably the least understood one.

The task of classifying the related studies of effectiveness have been attempted by different authors such as Gouldner and Stern, (1977). It seems it is quite impossible to differentiate various models of effectiveness since none rests on a well defined theoretical

construct. Tosun's, (1981) survey of effectiveness literature indicates that there are around 191 variables suggested as determinants of organisational effectiveness. It is not surprising to read from Scott, (1977, pp.64) that "we should not look for explanation of effectiveness since it is not clear what this concept refers to, if it refers to anything" .

Studies that include efficiency would clarify the issue, since it is possible for a company to be effective but not efficient or vica versa. But in the long run it is expected that effective organisations will also be efficient. With Ataç's, (1982) study, an attempt has been made to conceptualize how to measure the effectiveness of marketing organisations with respect to the probability of making correct decisions and the probability of correcting wrong decisions which was proposed as a definition of effectiveness.

III. MODELS of EVALUATING EFFECTIVENESS, and EFFICIENCY

Evaluation models will be examined into three main groups, namely descriptive models, predictive models, and normative models.

A. Descriptive Models

Model is descriptive where focus is on how channels should be organized in order to remain viable.

Kotler, (1971) examines two of them, namely weighted factor score and hierarchical preference ordering method.

1. Weighted Factor Score Method

This method calls upon management to list the major factors that the company should consider, to assign weights to reflect their relative importance, to rate each distribution alternative on each factor, and to determine the overall weighted factor score for each alternative. In this way, the several distribution alternatives can at least be ranked and the lowest ranked ones can be dropped.

Alderson and Green, (1964) have criticized this method. They mentioned that this method misleadingly uses an interval scale for ordinal data, the factor weights may not be independent neither from the factor scores, nor from each other. The procedure assumes that the rater has equal competence in rating all the factors and distribution alternative.

2. Hierarchial Prefence Ordering Method

This avoids the criticism of misapplying an interval scale

to ordinal data, i.e. ranking of factors. It examines all the distribution alternatives in terms of the first important factor, then the second, etc., eliminating at each stage the less satisfactory alternatives, those that fail to satisfy a minimum pass level of the factor. This method has certain advantages over the weighted factor score method. But it gives no credit to how well a particular distribution alternative exceedes a minimum level required by some factor. A particular alternative may be almost perfect on the most important criterion and slightly below the minimum level on a less important criterion and as a result be eliminated. Thus, some trade-off should actually be established.

3. Strategic Profit Model

Stern and El-Ansary, (1977) suggest another descriptive model to evaluate the performance of distribution channels in terms of systems output; costs, efficiency, and profit ability, namely; equity. The output of a channel of distribution is defined in terms of lot size, i.e., goods and services in desired quantities, delivery time, market decentralization, and assortment breadth. They concluded that no quantitative measures are available which provide an insight into aggregate performance regarding system output beyond global estimates of the monetary value and physical amount of goods and services passing through the distribution system. The strategic profit model (SPM) evaluates and diagnoses cost, efficiency and profitability problems. This model involves multiplying a company's profit margin by its rate of asset turnover and its leverage ratio to derive its rate of return on net worth, i.e., (net profits/total assets)x(total assets/net worth)= net profits/net worth.

This model ignores some important performance variables such as innovativeness and adaptibility of channel instititutions, social considerations (quality of the environment, energy consumption, etc.). Another weakness of the model comes from its descriptive nature.

B. Predictive Models (Heuristic Approach)

Hinkle and Kuehn, (1967) have defined the term heuristic as a shortcut process of reasoning that searches for a satisfactory rather than an optimal solution. Heuristic programming, therefore, is an approach to problem solving in which the emphasis is on working optimum solution procedures rather than optimum solutions themselves.

In the theoristic approach to the problem of location, Kuehn and Hamburger have proposed a heuristic program that permits fast screening and evaluation of alternative types of distribution and transportation systems, and location. Three important heuristics were introduced in the program, which are

(1) Locations with the greatest promise are those at or near concentrations of demand.

(2) Near-optium distribution systems can be developed if at each stage the warehouse offering the greatest cost savings is added.

(3) Only a small subset of all possible wholesaling locations needs to be evaluated to determine which distribution at which cost should be added. (Here in the 'cost' concept, 'oppurtunity cost' and 'stock-out costs' are also included.)

For the heuristic approach the most frequently applied method is Simulation.

Mostly, simulation predicts the future developments under different assumptions that have been developed.

1. Simulation

A strategy simulation method is introduced by Kotler, (1980). This method examines the estimated monetary consequences of each alternative under different assumptions and sets of data : ei : calculated three different measures of performance, namely payback period, share of potential, and accumulated discounted profit over this period. Here, the share of potential refers to the ratio of the company's potential share of the market which is realized by the particular distribution alternative.

In the analysis, for example, the acquisition, purchasing alternative was considered to require the highest investment, while the private brand alternative required the lowest level of investment. Furthermore, each distribution alternative involves a somewhat different pricing and contribution margin, as well as diferent levels of advertising expenditures and effectiveness. Thus, under the new distributors alternative, the initial number of distributors would be low but the growth rate would be high, because it is assumed that potential distributors would react favorably to the large advertising budget and the higher margin given to them under this alternative. Simulation provides answers to basic distribution questions (e.g., number, location, allocation of demand, etc.) by manipulating data associated with a variety of physical distribution system variables such as ;

(1) Time from order receipt to order shipment.

(2) Order size and assortment constraints.

(3) Percentage of items out-of-stock.

(4) Percentage of customer orders filled accurately.

(5) Percentage of customer orders filled within ' X ' days from receipt of order.

(6) Percentage of customer orders filled.

(7) Percentage of customer orders that arrive in good condition.

(8) Time from order placement to order delivery (order cycle time.),

(9) Ease and flexibility of order placement.

Among all methods simultation method would be a better one, requiring the executives to think hard about sales, costs, marketing programs, and investment requirements for each alternative. It would also permit management to project the logical consequences of its estimates and readily test the effect of introducing new assumptions. In spite of common weaknesses of simulation models, such as high costs, high level of complication, difficulties in testing the predictive power of the model, etc., channels of distribution is one of the most promising areas for application of simulation models.

To develop a valid and reliable simulation model for this purpose, a much more detailed model should be developed. An excellent example of this kind of simulation model for a competitive market response was given by Amstutz, (1967) and for physical distribution systems was given by Wong, (1968). Some marketing games including channels of distribution decisions were also developed.

Simulation presents unusual challenges to users. Exercises, problems, and cases are only rarely characterized by single, objectively correct answers-as is also the case with real-life decision situations. Methodologies are descriptive and supportive in nature; their purpose is to aid in developing a way of thinking about problems, their structuring, and variety of possible anwers, not to provide single-answer approaches to be memorized and applied regardless the context, circumstances, and participants in a decision situation.

Facing the same problem, different decision makers will employ different values, priorities, and criteria, choose and apply different approaches and techniques, and, inevitably, arrive at different answers and solutions. That is where insight, experience, and creativity become combined with science, and decision making becomes an art. Only the simplest, single-objective, well-defined problems have the answer. Such objective, optimal, re-producible and generally acceptable outcome is not, unfortunately, dominant characteristic of complex and human-oriented real-life problems.

Analyzing past cases of managerial desicions although important, is not sufficient and could be misleading. Decisions were already taken and, if successful, their rationalization and reconstruction could lead to a conclusion that there is a single way, a single correct answer. Nothing can be further from truth. Many other, and often "diametrically" different desicions, could lead to similarly desirable outcomes. Each desicion problem is a new situation, irreproducible in its circumstances and context, and must be approached freshly and creatively. Thus, the point is not to teach answers but to learn about ways of arriving at answers.

C. Normative Models

Mostly, profit maximization models have been developed in this category. Two detailed optimization models, namely by Montgomery and Urban, and Theisen, are seen.

1. Optimization Models

Montgomery and Urban, (1969) developed a model by utilizing the market segmentation, market response concepts and economic and functional approaches. Their model assumes that the publisher aims to establish a distribution system that will achieve the optimal marketing program in each market segment so that he will generate the maximum profit. Thus each segment is to receive a particular market exposure designed to optimize the profits of the publisher. Each market segment is to be served by a different channel alternative. In each alternative, the channel members expand their effort in the performance of needed marketing functions, namely, availability, information and demand creation. By performing these functions, the channel member earns a reward that depends upon his degree of performance of the possible functions. The availability function is related to the physical availability of products or services, i.e., the activities necessary to place the product or service before the customer. They have argued how these functions can be determined. The information function is related with the information transformation from producers to customers and visa versa. The availability functions are developed on the assumption that information functions are known. Demand creation functions represent to some degree the performance of both the availability and information functions. They separated the demand creation function into three areas, namely, service, customer efficiency and persuasion. The ability and willingness of the seller to provide service for the product is an

important factor for customers. Customer efficiency relates to the reduction in the amount of effort expended by customers to purchase products or services to satisfy their needs and wants. Of course, the use of distribution intermediaries may improve customer efficiency. The persuasion functions of distribution are necessary to convince customers of the desirable features of the product and to encourage purchase. These functions may be carried out by the use of promotional activities. However, although Montgomery and Urban tried to develop a detailed quantitive model of the distribution system; they have designed the model to maximize only the manufacturer's profit. Another weakness of the model comes from not covering all important criteria for measuring the effectiveness of channels of distribution.

Theisen, (1978) tried to develop a detailed profit optimization model of the distribution system (rather not optimization but satisficing, or subobtimization). His model has included minimum order quantity, minimum number of calls for the salesmen, maximum capacity of production, maximum capacity of the distribution system and financial restrictions as constraints of the model. His work has obvious limitations, like all simple optimization models. By having only simple objective function and several constraints, this model oversimplifies the reality. Accepting the maximization of the publishers profit as a unique objective function may be critized as a serious handicap.

Stasch, (1964) also developed a model which aims to maximize the total profit of channel members. His model deals only with the economic and functional variables also.

D. Where Models and Techniques Meet : Heuristic Guidelines to Logistic Systems

Cannon, (1973, pp.55) states that :

....."The process of making goods physical available is a crucial element in the marketing mix with important implications for all other aspects".....

Smith, (1968) deems that a company's distribution policy may, at times, constitute a form of promotion in itself, at least within the trade, i.e. the choice of which distribution channels to use for the supply of a product can result in demand simulation, not only for that one product but for others in the company's range.

There is furter evidence from other sources that logistics can be regarded as a contributor to the marketing mix. For instance, Kotler, (1972) notes the increasing attention being paid to the "demand aspect" of physical distribution system design. He points out that each component of physical distribution desicion can affect company sales. For instance, warehouse locations are a promotional tool in that they give confidence to local buyers with respect to better availability and customer service; inventory level policies affect product availability, and hence sales volume; packaging and handling procedures, insofar as they affect the incidence rate of damaged goods, can affect the number of customers; the modes of transportation employed, insofar as they can mean faster or slower arrival of goods, can affect buyer satisfaction and sales revenue.

It can be envisaged that the influence of customer goodwill will be felt to a degree that is going to vary with the ease of product availability. With less capital available in industry

generally, there is increasing pressure to reduce inventories of materials at all states of conversion. If a product, or a range of products, is in short supply and frequently unavailable, then the logistics contribution can be absolutely critical. The term "customer service" is used to describe this contribution as it affects the customer and influences his level of co-operation and goodwill towards the publisher.

Stasch, (1972) recognises that a proliferation of interactions or trade-offs would result if considering all the functions of a logistics system in total. Unless some means of reducing the number of relevant interactions is used, the complexity of the logistics system analysis will be formidable. This applies not only to an analysis with a view of deriving a total logistics cost but also of assessing a measure of effectiveness for the logistics system.

It is proposed that a heuristic model, of some kind, is an appropriate means for reducing the number of interactions to be included in an analysis of the logistics system of a periodical publisher. Heuristic models are basically simulations of the decision processes used by individuals. In simplified form they are rule-of-thumb procedures, contributing to a reduction in the complexity of problem solving.

A logistics system exists in any company in order to operate and control the flow of material through it. For a publisher, raw materials are converted into finished goods through a series of conversion states; the flow through each stage being the concern of logistics management.

Faced with a multitude of possible interactions to be included in an analysis of this flow, it is suggested that the basis

of utility theory might provide a guide to reducing the complexity of the problem.

As Fishburn, (1970, pp.129) suggests :

....."Preferences between decision alternatives can be characterised in terms of several factors relating to the alternatives. These factors may be regarded as utilities".....

In the context of the logistics system, logistics activities can be said to provide utility to the materials as they flow through the system. In this connection he adds that :

....."Logistics functions create time and place utility
- publishing creates form utility
- distribution creates ownership utility".....

Since marketing, as an operative function, is excluded from the logistics system, the materials flowing through the system can be said to change utility with respect to time, place and form.

If periodicals progressively increase their time, place and form utilities, then the value, to the publisher, of those periodicals can be likewise said to progressively increase. Some examples of how the activities of logistics functions can change a material's utility, and hence its value, are as follows : production and packaging activities can change a material's form utility; materials handling and transportation activities can change a material's place utility. Additionally, as each activity takes a finite time to complete, a material's time utility will change continuously from raw materials acquisition to receipt of the finished goods by the customer.

If a material's value to the manufacturer is progressively increasing as its utility is changed by each logistics activity, then the costs to the manufacturer are also progressively increasing. Changes in form, place and time utility are the result of logistics

activities. These activities incur costs in the form of expenditure on such items as labour charges, capital investment in equipment and facilities, raw material and packaging component costs, equipment running charges, capital investment in inventory and general overhead expenses, and the like.

Although the nature of the costs may be varied, one general conclusion can be drawn : as costs of logistics, they are incurred whenever a material changes its form, place or time utility.

Midgley and Wills, (1975) have reconstructed a logistics system flowchart to show the materials flow path between a succession of conversion points.

When material exists purely as inventory, in one form or another, its form and place utility cannot be said to be changing, only its time utility.

By logically extending the earlier statement that costs of logistics are incurred whenever material changes its form, place or time utility, each component activity can be assigned to one or more of the conversion points.

The materials flow path and the tabulation of conversion points, utility changes and component activities will provide a framework for reducing the number of activity interactions to be included in the total utility analysis.

It can be intuitively presumed that the closer two activities are to each other in the material flow path, as linked through their designated conversion points, the stronger is likely to be their interactive effect on costs of logistics. This presumption can form a link between the logistics system analysis framework, and the formulation of a necessary heuristic procedure to aid the calculation of the total cost of logistics.

These suppositions represent heuristic procedural guidelines that may possibly provide a basis for reducing the number of activity interactions to be included in a cost analysis of the manufacturer's logistics system.

The earlier stated proposition that utility theory can provide a guide to reducing the complexity of the logistics system analysis implies that logistics activities progressively incur time, as well as costs since one of the utility factors is time itself. Time through the logistics system may be regarded in one of two ways, regardless of whether or not the activity in question is classed as a decision or an operation either ;

(1) contributing towards the duration of the customer's lead time, or,

(2) contributing towards the total residence time of the logistics system. This distinction must best be illustrated.

This can apply equally well to an effectiveness analysis of the logistics system,as they do to the cost analysis, in providing a framework for reducing the number of activity interactions.

Again, it can be intuitively presumed that the closer two component activities are to each other in the material flow path, the stronger is likely to be their interactive effect with respect to customers' lead time, or the total residence time of material within the logistics system. In other words, a change in the operations of a logistics activity will cause greatest distruption, leading either to delay or accelerated throughput in those activities most adjacent to it on the materials flow path of the logistics system.

These represent the heuristic procedural guidelines that may possibly provide a basis for reducing the number of activity interactions to be included in an effectiveness analysis of a publisher's logistics system. The following examples should serve to illustrate the application of these two research suppositions :

(1) A change in the duration of an activity (e.i. supervising the physical receipt and shipping of the goods) will exhibit the most important time interactions with activities corresponding to conversion points, equivalent to changes in form, place and time utility respectively within the customer's lead time squares.

(2) A change in the timing of an activity (determining when other competitors, supplies are to be delivered) will exhibit the most important time interactions with activities corresponding to conversion points numbers equivalent to changes in place, time and form utility, respectively, within the portion of the periodicals flow path, outside of the customer's lead time square.

The lead time response; taken as a measure of the effectiveness of the logistics system, can be considered in a number of different ways; these are lead time characteristics.

Christopher and Wills, (1974, pp.48) remark :

....."Often the criterion adopted for grouping customers or accounts is by the volume of business placed, in other cases the criterion may be the type of company, in other cases geographical. However, it may be more appropriate to attempt to define segments of customers according to their service needs. Not all customers will have the same requirements for service, whether in terms of lead times, flexibility, or whatever".....

The following research suppositions are proposed in order to identify a particular lead time criterion with a particular type of customer :

(1) Lead-time consistency is a primary criterion of customer service for wholesalers.

(2) Lead-time duration and flexibility is a primary criterion of customer service for retailers.

The main reasons behind each of the three assertions are as follows :

(1) Wholesalers are being exclusively served by scheduled deliveries from the publisher, indicating that this practice is a response to the wholesalers' desire for lead time consistency.

(2) Retailers, through necessity, have to maintain low levels of inventory on a wide variety of products. For many regular and also irregular customers (first-sight customers) they require flexibility. Their dependence on frequent deliveries from wholesalers (once, twice or even three times a day) indicates that lead time duration and flexibility may be their primary concern.

GOING INTO DETAILS ON DISTRIBUTION SYSTEM EFFECTIVENESS

CHAPTER II

I. UNDERSTANDING THE DISTRIBUTION SYSTEM

In order to provide the basis for effective management of distribution systems, it is imperative that one understands the structure, orientations, and management practices of each of the several key levels within these systems. Next we deal with the major components of channel systems. Examination is undertaken of the history, evolution, structure, and management of retailing, wholesaling, and logistical institutions.

Decisions as to how the product(s) of a company should be distributed are made infrequently. They are made when the product line is introduced and, unless a bad initial decision was made, there are no changes unless (and until) conditions change sufficiently to warrant it. It is usually costly to change established distribution methods, both in terms of out-of-pocket costs and in lost sales. It is therefore important to make good distribution channel decisions when they arise.

The important considerations involved in the choice of a distribution channel include the nature of the producer, the product and the market. Specifically, they include the following as per Brown, (1955) ;

(1) Nature of the producer: size, financial strength, desire for control
(2) Nature of the product(s): length of line, unit value, seasonality of products requirement for technical advice, perishability
(3) Nature of the market : number of segments, the market potential of each geographic concentration,

average order size; distances of publisher from wholesalers, retailers.

Of these, the first two sets of considerations will be known without research and so only research on the markets for the firm's products will be required.

The bulk of the research on markets will be concerned with what the market segments are and what the market potential is for each, and with their geographic location and customer buying characteristics and preferences.

Where there may be several methods, in most situations for locating a single sales outlet, it is not designed to cope with the complexities involved in determining how many sales outlets should be used and where they should be located in an overall regional or national distribution system. A computer is requred to work on multiple location problems because of the large amounts of data that have to be processed for each of the many possible configurations of numbers and locations of distribution.

The central concept involved in computer simulation for this purpose is very simple. Data that describe the customer characteristics and distribution costs (costs per Km. by volume shipped, fixed and variable costs of operating are developed and read into the computer.) The computer is then programmed to simulate various combinations of numbers and locations and to indicate which one (or ones) gives the most desirable results. In this paper, distribution costs are held constant as per assumption.

The role of marketing research in such simulations is typically;to develop the data on customer location (this is usually done vertically in time (at a given area), and horizantally in space (at a given time).

Forecasts of sales volumes, and forecasts of the effects of shipping delays on demand require a separate treatment. Research for trade area analysis is first decribed and research for outlet location decisions is described thereafter.

Although theoretical models are available that allow the prediction of a given outlet's trade area based on relative size, the more common and accurate approach requires the determination of the location of a sample of the outlet's customers.

Individual firms and, more commonly, chains, financial institutions with multiple outlets, and franchise operations must decide on the physical location of their outlet(s). The cost and inflexible nature of the decision makes it one of critical importance.

Both single firms and multiple-outlet organizations with limited operating experience must attempt to locate in areas with a population and traffic mix that closely match the target market. Secondary data sources such as census data represent the primary input into such decisions. These data are frequently supplemented by survey data to update or expand the census information. Traffic counts are generated by observation and characteristics of the traffic by observation and surveys.

Multiple-outlet organizations with sufficient operating history often develop models using regression analysis. This is particularly appropriate for firms with standard operating procedures for all outlets.

The analysis consists of using sales of each outlet as the criterion variable and customer characteristiccs as predictor variables. The multiple regression analysis provides an estimate of the effect of each predictor variable on the criterion variable.

An attempt is then made to locate new outlets in areas that have the characteristics associated with high sales levels in existing outlets.

Data for building the model and for evaluating new potential locations are obtained through secondary data analysis and surveys.

II. UNDERSTANDING THE RETAILING SYSTEM

Retailing management can be defined as the planning, organizing, staffing, directing, co-ordinating, and controlling of the different facets of a retailing operation. The fundamental task of retailing management is to develop and implement a retailing strategy. Designing retailing strategy involves five basic steps.

(1) Segmenting the market for the type of product or service offering.

(2) Identifying competitive organizations that handle this class of products and assessing their merchandising strengths and differential advantages.

(3) Assessing the resources of the organization in light of the competitive environment.

(4) Defining the specific market target in terms of local market segment or segments.

(5) Developing the retailing mix that represents a plan for the allocation of available resources among alternative uses in a co-ordinated manner to maximize the total impact generated to influence the customers in the defined market target.

Davidson and Doody, (1966) discusses that the two elements of the retailing mix that pose special problems for retail decision-makers are ;

(1) Location management, and

(2) Merchandise management.

Policy formulation regarding these elements demands precise knowledge not generally available outside retail markets. In other words, marketing managers, irrespective of type of firm

served-manufacturer, wholesaler, or retailer - have or can acquire broad knowledge of the principles of promotion and display. But questions of outlet location and merchandise management are unique to retailing and demand particular attention. Other policy decisions, such as those having to do with service hours and customer services, are of somewhat lesser importance than the central issues of location, and assortments.

Retailing involves the direct sale of goods and services to ultimate household consumers. The overwhelming majority of retail sales is consummated in stores or retail establishments as opposed to other conduits, such as the mail, house-to-house selling, or automatic vending machines. Aggregate statistics regarding retail trade, tend to mask the revolutionary changes that have taken place in the structure of retailing since the turn of the century. The emergence of department stores, chain store systems, supermarkets, planned shopping centers, and discount houses as well as the growth of automatic merchandising and mail-order selling has dramatically altered the way in which the business of retailing is in fact conducted. To a significant extent, many of these institutional forms have been subject to life cycles and thus have witnessed periods of early growth, accelerated development, maturity, and, in some cases, decline. In fact, there is evidence which indicates that the life cycles of retailing institutions are becoming considerably shorter, making the structure of retailing even more volatile.

In light of the trends which have been established, it appears that an increasing proportion of retail trade in the near future will be garnered by low-cost, merchandise-intensive approaches to distribution. (e.i. low-stock, many variety goods.) Specifically, the application of supermarket and warehousing

principles to the marketing of general merchandise is likely to have a profound effect on the structure of retailing over the next decade. In addition, emerging environmental trends, such as the growing institutionalization of the consumption process, the increased segmentation of sonsumer markets, and the strong emphasis on the part of consumers on economy and convenience, will accentuate the trend toward massive publishing, despite the fact that large numbers of specialty kiosks will continue to exist.

Even though these formidable trends are present, retailing still remains heavily populated by establishments of relatively small size. In addition, economic concentration in retailing is low (compared with the level of concentration found in many manufacturing industries), enterprise differentiation advantages are often short-lived, and entry barriers are slight (again, compared with other industries). Thus, competition in terms of price, securing locations, type and content of advertising in, assortment and services provided to customers, and the like-is intense. The need to employ effective management practices is essential for survival, not to mention growth.

Thus, elements of the retail marketing management mix must be combined in such a way as to secure even temporary differential advantages, given the nature of retail competition. Two crucial determinants of success in this regard are location and merchandise management desicions. Location decisions involve delineating a trading area and selecting a specific site within the area. Key dimensions of merchandise management are merchandise budgeting, buying, and inventory control. An understanding of the various choice strategies employed by retail buyers in the selection of supply sources leads to more effective interorganizational relations between publishers, wholesalers, and retailers.

Maintaining appropriate inventory (stock) balances is critical in distribution; if appropriate levels are not achieved, especially via careful merchandise management at the retail level, profits will not be forthcoming and eventual demise can be predicted with certainty.

While it is likely that new retailing institutions will continue to emerge and that existing institutions will continue to evolve, there is considerable room for innovative management within the present institutional mix. As Bucklin, (1976, pg.65) observes :

"..... There are substantial frontiers yet to be conquered in tying to other wholesale and retail sectors of the business, improving logistics and inventory control" .....

A. 'Wheel' of Retailing Concept

The wheel of retailing concept is built arount the innovator. The focal point here is that both the innovator and the processes he may use, such as specialisation and vertical integration, etc., are limited by the environments both assist and impose limitations on the development of retailing and retail institutions. The wheel of retailing can only revolve if the environment is favourable for the successful introduction of a new institution. If the forces in the environment permit retail institutions, their operational methods and techniques can be introduced. There cannot, then, be universal introduction of the most appropriate or advanced retail institutions and techniques, as what is most appropriate will be different from one environment to another.

A retailing system can be meaningfully "advanced" or "under-developed"

depending upon whether the environment in which that system operates is advanced or under-developed. The important variables in the retailers' environment are the suppliers and the consumers. For survival, retailers must adjust to that environment by offering suitable packages of goods, services and prices. Few retailers can change their environment; new types of retailers, in a wheel pattern, can emerge but their survival depends on consumer acceptance or rejection. If this is the case, the nature of the relationship can be postulated in more specific terms than simply advanced or under- developed. If one can identify the stages of socio-economic development, then it would be possible to predict in general terms the kind of retail patterns which are found to be associated with given stages of development.

Retailing institutions, methods and techniques evolve with a changing social structure which in turn has evolving political, economic and business components. Certain combinations of these components produce specific social structures that create the need for suitable retailing institutions and operational methods. At respective points in the development of the society, the retailers are able and willing to offer a specific package of retail institutions, methods and techniques, and also the consumers are able and willing to accept that retailing package. Different countries with differing economic, political, social and business conditions have differing societies, and therefore have differing retail systems. Even within the same country, different cities with differing combinations of economic, political and business conditions have differing retail systems. Thus, the retail system differs with the different environments provided for retailing and a retail system changes with changes in that environment. In the developed Western economies, the

retail innovations of this century are, to a large extent, a reflection of the changes in the retailers' environment : increase in discretionary purchasing power, growth of production capacity through technological progress, growth of private automobile transportation, the movement towards suburbs, and changes in consumer attitudes.

A limiting factor identified in McNair's, (1971) hypothesis is that the emergence of a considerable number of retailing institutions cannot be explained by the wheel of retailing concept. Not all new institutions begin with comparatively low levels of prices and service which are later upgraded. On the contrary, many start with comparitively high levels of prices and service which are later downgraded. To give an example; in the developing countries, the first supermarkets and department stores were positioned as high-service, high-priced luxury institutions in areas where the higher income group people lived. In Turkey, the supermarket entered as a luxurious and prestigious self-service store with variety, compared to the existing local stores. Thus, supermarketing innovation penetrated at the high end of the market in developing countries, contrary to the-wheel pattern.

Retailing is, in fact, a social process and a retail institution is a social institution. It is the nature of the society that determines what a particular retail institution can and will do for the society concerned. The operational rights that retail members of a society are granted to carry out their basic functions will be rooted in and, teherefore, circumscribed by, the political, economic, social, and business conditions in that society. The personal wants, aspirations and goals of both retailer and consumer members of the society will therefore limit the mandate sought by retailers and the licence

III. UNDERSTANDING THE WHOLESALING SYSTEM

Next attention is focused on the wholesaling institutions comprising channels and on the management of logistical and physical distribution activities. Following a discussion of those areas, attention is then focused on explaining the emergence of channel systems, understanding institutional change, and assessing the performance of existing institutions and channel systems. Thereafter, the main topic for discussion is the effective interorganization management of channel systems, which is viewed as the means by which the "frontiers" will be "conquered."

The significance of the wholesaler's role in a channel of distribution is defined by the efficiency of his sorting function whereby he helps match the heterogeneous output of suppliers on the one hand with the diverse needs of retailers, industrial, and personal users on the other. There have been increased pressures on wholesalers to prove their economic viability in this respect. Evidence of their ability to maintain such viability through adaptation to changing conditions is seen in the structural variety of wholesaling and the fact that there has been considerable growth in the volume of trade produced by wholesale establishments.

While the size of wholesale establishments is not growing as rapidly as the size of those in retailing, both wholesaling and retailing are still industries of small businesses.

Wholesaling can be classified as an industry having very low economic concentration when viwed on a national basis. However, limited data indicate relatively high concentration in local market areas and on a product-line basis. To some degree, the extent of concentration is due to the existence of multiunit

or chain operations. Despite relatively heavy market concentration, price competition is intense. This is so because price leadership is difficult to institute due to the large number of items carried by wholesalers and because large buying organizations can play off one wholesaler against another. Furthermore, intermarket penetration is possible due to large lot purchasing, entry is relatively easy, and new distributive patterns have emerged and generated a high degree of intertype competition for wholesalers.

Many suppliers use wholesalers to reach their customers because they prefer to turn troublesome, supposedly lower-return distribution activities over to specialist. The benefits available to suppliers (manufacturers, growers, etc.) from wholesalers are continuity in and intimacy with local markets, local availability of stocks, coverage of small-order business, lower costs, (because wholesalers can spread overhead over many suppliers' products,) and relief from the burden of holding inventory.

Often wholesalers' perceived self-interests are more directly involved with the well-being of retailers than those of publishers : therefore, it is logical to assume that wholesalers would develop approaches to assure the survival of retailers. Many wholesalers do, in fact offer retailers direct selling, aid expert assistance in all aspects of retail operations, local and speedy delivery, relief from inventory burdens, quick adjustments, credit extension, and, in some cases, guaranteed sales. Business users can receive many of the same benefits, which may be especially important when it comes to production scheduling and technical assistance.

There is a wide overlap between the fundamentals of retailing and wholesaling merchandise and marketing management. Diffe-

rences do exist, however. Wholesalers place heavy stress on the use of various catalogs, "outside" salesmen, showrooms, and delivery services as well as abovementioned technical assistance programs like: personel contacts, social and personal image, groop meetings. There is, however, a strong similarity in the emphasis placed on merchandise management and inventory control. In both sectors, the management of assortments is crucial to success. Aspecially in case of publications of Gelişim (with 9 Monthlies and 5 weeklies) forms a little portion of the job to be done at the kiosks. The same kiosk handles, on the average, 150 publications varying in size from important to negligable totals of sum. Adequate and reasonable inventory turnover rates lead to appropriate returns on investment. Therefore, effective inventory management is essential.

It is important to reemphasize, in any discussion of wholesaling, that a wholesaling agency can be eliminated from a channel of distrubution as an entity, but some other institution must be willing to perform the tasks formerly done by the agency. Elimination of a wholesaler is valid from a societal point of view only if the tasks performed by the wholesaling agncy can be either partially eliminated or performed more efficiently by some other institution. In fact, elimination of the agency often means only that some other institution takes over the same tasks.

Changes are, however, continuously taking place within wholesale trade, many of which have a strong interorganizational overtone and are adressed in succeeding chapters. For example, Lopatra; (1968, pp.143) has observed that : ....."It is possible to identify some commodity wholesalers who will pass from the scene.

Others will swiftly shift to new commodities. Some will build regional or national networks of warehouses along with single commodity lines, as have the paper merchants, electrical supply companies, and automotive parts distributors. Others will form tighter wholesale retail franchised groups. Still others will become multicommodity supermarketing systems, with all the accredits of more sophisticated marketing technology."

IV. ANALYSIS OF CHOICE

A. Criteria for Wholesaling

Here we can diversify into an analysis of choice criteria for whalesaling both from the upper-end (publishers) and also from the lower-end (retailers) within the context of seing it as an interorganizational system.

Possible Criteria[3] of choice in the decision of what type of wholesaling establishment to use is as follows:

1. Point of View of the Publisher

a. Evaluation of Sales Efforts of Wholesale Agency.

(1) Extent and activity of sales force of wholesale agency

(2) Does sales force sell, or does it just take orders?

(3) Extent to which manufacturer must supplement wholesaler's sales efforts with own promotion, salesmen and/or retail men.

(4) Number of lines handled by wholesale agency:

(a) Does agency handle too many lines to give sufficient attention to publisher's periodicals.

(i) Use of heavy advertising, good margins, realistic pricing to stimulate attention on part of wholesaler.

(ii) Preference, sometimes, for more attention

(3) Source: Department of Marketing, University of Pennsylvania as per book named "Marketing Channels" (Stern, Louis W. and El-Ansary, Adel I., 1977, pp.117.)

to individual line by use of specialty or limited-line wholesalers.

(b) Does agency handle competing lines?

(i) Use of sales or publisher's agents sometimes indicated.

(ii) May necessitate criterion of exclusive distributorsihps.

b. Evaluation of Relationship of Wholesaling Agency to Channel of Distribution for The Product.

(1) Type of agency that can give widest distribution and assurance of sufficient retail outlets for line.

(2) When particular types of retail outlets are desired, what types of wholesaling agency can best handle them?

(3) Quality and continuity of relationships maintained between wholesaling and retailing agency.

(4) Degree to which wholesaling agency co-operates in promotion, pricing, financing, and other marketing activities.

(5) Willingness of wholesaling agency to maintain continuous relationships with publisher.

2. Point of View of the Retailer

a. Product Lines (Magazines, Encyclopedia part-works).

(1) Does wholesaling agency supply all or most the lines needed by the retailer?

(2) Does wholesaling agency supply all or most the brands required by the retailer for each of his lines?

(3) Extension of credit by wholesaling agency ?

(4) Delivery by wholesaling agency ?

(5) Do types of agencies used result in too frequent and time-consuming calls by salesmen ?

(6) Help given by salesmen ?

(7) Does wholesale agency's cost structure permit selling price to retailer such as to allow retailer sufficient margins ?

b. Services

As far as further relations of wholesaler with upper and lower interorganizational system components go, it can be said that :

(1) Wholesalers can give their retail customer a great deal of direct selling aid in the form of price concessions on featured items, point-of-sale material and co-operative advertising.

(2) Wholesalers often can provide expert assistance in planning store layout, building design, and material specifications.

(3) Wholesalers generally offer retailers guidance and counsel in public relations, housekeeping and accounting methods, administrative procedures, and the like.

Whereever wholesalers function effectively ;

(1) In many instances re-orders are filled more quickly.

(2) Wholesalers guarantee the sale (any items which are not sold can be returned)

(3) Defective products are replaced promptly.

(4) The wholesaler extends long-term credit.

(5) The percentage of mark-up by working through a wholesaler is more than offset by decreased inventory costs and improved service.

B. Classification of Wholesalers, and Application of Wholesale Classification to Gelisim's Case

1. Classification on Basis of Function

When one tries to classify wholesaling, on basis of functions; one can proceed and identify that there are :

a. Merchant Wholesalers.

b. Selling Agents

c. Commission Merchants (Factor Agents.)

Going into the details of each :

a. Merchant Wholesalers.

The principle business of merchant wholesalers is buying goods and re-selling them for a profit to customers who either resell the goods again to someone else like a retailer, or consume the goods in the course of operating a profit-making enter. prise. (e.i. tell themselves to the consumer.) Thus the compensation of a merchant wholesaler is a profit that is made on the sale of the goods. They classify into subgroups as such :

(1) Full function or service wholesalers.

(2) Self-employed merchants

(3) Driver-salesmen

(1) The full function wholesalers is the traditional wholesaler who performans all or most of the marketing functions normally associated with wholesaling. The merchant wholesaler is the typical wholesaler who participates directly in all or most of the flows of marketing, (particularly good for broad retail lines) such as ;

(a) Physical possession

(b) Ownership

(c) Promotion

(d) Negotiation

(e) Financing, and

(f) Risking.

(2) Self-employed merchants (wagon jobbers) are characteurized by the fact that they have litte capital; often extend no credit to customers. (except for kiosk's monthly payment for settlement of dues). They may own goods but prefer to get them on basis of conseignment from suplier, and they often maintain no warehouse, but rather on hand-to-mouth basis.

(3) On the other hand driver salesmen (not really wholesalers) take goods on conseignment or salary basis rather that on profit basis.

When we apply the wholesale classification to Gelişim's case, we see that distribution of Gelişim Holding has two phases and three facades. At phase one, the partworks of encydopedias produced and are distributed to kiosks through 'Hürdağıtım'. At phase two, the returns of periodicals are recycled as raw paper into new printing, and partworks of encyclopedias are consolidated into sets of encyclopedias and marketed through two firms:

(1) Gelişim Yayın Pazarlama San. ve Tic. A.Ş.

(2) ANSA Ansiklopedik Satışlar A.Ş.

Thus field study conducted in the company revealed that the periodic weekly, monthly etc. distribution system applied in Hürdağıtım as per characteristics definition and application, suits merchant wholesaler broadly speaking, and selfemployed merchants specifically speaking.

b. Selling Agents.

These differ from brokers and publisher's agents because they normally handle entire output of the principal, this, in effect, become sales force of publishers. They are given more complete authority over price, terms of sale, teritory etc. They may use publisher's agents or buyer's in places where they maintain no office. Last but not least, they may have quite an extensive sales force and promotional program.

In case of Gelişim, there are weekly encyclopedias that are re-introduced into the system through two firms. One is 'Gelişim Yayın Pazarlama A.Ş.' where goods are marketed when the whole set of encyclopedia is finished and binded. This suits as per definition and actual practice, selling agents.

c. Factor Agents. (Commission Merchants)

Factors and Agents receive goods on conseignment for sales on a commission basis (Commission merchants). They maintain a warehouse, are involved in physical handling of goods, thus participate in the flow of physical possession.
They receive goods on consignment basis, thus have no title. They may maintain full sales force, print catalog, have sales offices in various cities, advertise in trade magazines. These agents have full power to negotiate price, terms of sale with customers and they may extend credit to customers, often assuming the risk of making collections. Commission merchants finance their principals often by discounting accounts receivable. May order entire output of publisher on conseignment in anticipation of orders from customers, and last but not least, may collect from customers, forward payment to principal after deduction of expenses and commissions.

As discussed above, the second firm which is 'ANSA A.Ş.' is the second alternative where Gelişim's sets of encyclopedias are marketed in a fashion which suits the definition of commission merchants as analysed above.

2. On Basis of Breadth of Line

Classification of wholesaling on basis of breadth of line is :

a. General Line Wholesalers

They carry general and full line of nearly all the items of merchandise needed by the type of retailing establishment to which they cater. The product lines, typically will be numerous. They may however not always have too much depth or specialized selection within all lines. (e.i. One product in each of the magazines line, one for women, one for men, one for children etc.)

b. Limited - Line Wholesalers.

Limited-Line wholesalers on the other land, maintain stoocks that are limited to one or a few product lines.

Neither of these two exist per se in case of Gelişim.

V. THE PHYSICAL DISTRIBUTION (PD)

It is necessary to look at the management physical distribution systems from the perspective of channel members. Concern here is on how commercial channel members should view the opportunities made available to them by the various institutions responsible for movement (i.e., transportation modes) and storage (i.e., facilities). Emphasis is also placed on understanding how inventories can be effectively and efficiently managed by channel members. Attention is first focused on the underlying rationale that should guide the management of the PD system;the-so-called-physical distribution concept. Four of the critical decision areas that are important in implementing the PD concept are:

(1) the determination of customer service standards,

(2) the establishment of appropriate storing facilities,

(3) the setting of inventory management and control procedures, and

(4) the selection of transportation modes.

Finally, attention is turned to overall PD system management, or the effective melding of the various decision areas of eight regions of Hürdağıtım into a meaningful whole.

In a renowned study completed over twenty years ago, Howard T.Lewis, James W.Culliton and Jack D.Steele, (1960) found that, for a number of companies, 10 to 20 percent of the products carried in inventory accounted for nearly 80 percent of the companies' distribution systems because of the costs associated with carrying these more slowly selling items in inventory. Such costs can be highly significant,and summarized in a physical distribution service (PDS) decision model.

VI. MALDISTRIBUTION

A. The Problem of Maldistribution

Despite the availability of sophisticated techniques such as simulation, many channel members are not effective in managing the physical possession flow. In fact, research shows that companies with comparatively high distribution costs frequently provide poorer service than some of their competitors who have lower distribution costs, even though they are supplying essentially the same products to indentical markets. This problem-termed "maldistribution" -occurs repeatedly in companies of varying sizes across a wide variety of industries.

One of the major reasons for the significance of this problem. seems to be a lack of top management support and effort in integrating the different areas required for effective PD systems management. Another major reason is the seemingly overabundance of "technique"-or "equipment" -oriented approaches to solving distribution problems as opposed to a truly integrated "systems management" approach. Although specific problems-such as inaccurate sales forecasts, losses from inventory stockouts, inadequate inventory information, and the like-can be "remedied" through the use of sophisticated models, the changes required to implement the remedies often create new unexpected problems that are not accounted for by models and which generally outweight any improvements achieved. Thus, in practice, the more popular distribution techniques should be viewed only as aids in solving the complex problems frequently encountered. What is required is a method of organizing and performing the complex interdisciplinary analysis needed to avoid maldistribution for each individual case!

There are four signs of maldistribution. If any of these signs appears, a channel member should undertake a careful study of his PD system.

B. The Signs of Maldistribution

According to Stephen B. Oresman and Charles D. Seudler, (1974), the signs of maldistribution are multifold, namely :

1. Inventories That Turn Slowly.

   Distribution inventories should turn between six and twelve times per year in most companies except in unusual product situations : distribution inventories that turn less than six times per year are a frequent sign of control problems. Gelişim has a turnover rate of 4.

2. Poor Customer Service.

   Inventor investment equal to about half this amount in item 1 above, should provide about 90 percent service. Failure to achieve this level of results can mean that the inventory is in the wrong products, the wrong location, or both. Customer service of Gelişim is above standard.

3. Interwarehouse Shipments.

   Because stock transfers require double handling, distribution managers reraly transship except in emergencies. A significant amount of interwarehouse transfers is a sign of a system in continual trouble. Gelişim, unfortunately undertakes interwarehouse shipments.

4. Premium Freight Charges.

   A distribution systems that relies on premium freight is in trouble for the same reasons. Cost savings are usually significant when the problem is corrected. In case of Gelişim, premium freight is around 25% of Hürdağıtım's outlet price.

   Thus, we can trace facts to the effect that Gelişim, through efforts to have impact on Hürdağıtım's distribution, can improve the present maldistribution.

C. Checklist

The checklist provided here is a useful starting point for determining when an evaluation is worthwhile.

-When is an evaluation worthwhile? We will try to answer by way of a checklist.

An example of a checklist (4) method for determining whether or not a distribution evaluation is worthwhile could be as follows:

-When the company makes significant changes in its marketing strategy (for example-going direct versus selling to wholesalers).

-When the size of the company changes significantly.

-When new businesses or products are added to the distribution system.

-When the company's geographic mix of shipments changes appreciably.

-When five to ten years have passed since the last evaluation.

-When any of the four signs of maldistribution appear.

(4) Ibid.

D. The Discrepancy of Assortment and Sorting.

In addition to increasing the efficiency of transactions, intermediaries smooth the flow of goods and services by creating possesion, place, and time utulities. These utilities enhance the potency of the consumer's assortment. One aspect of this "smoothing" process requires that intermediaries engage in the performance of a "sorting" function. This procedure is necessary in order to bridge the discrepancy between the assortment of goods and services generated by the publisher and the assortment demanded by consumers.The discrepancy results from the fact that manufacturers typically produce a large quantity of a limited variety of goods, whereas consumers usually desire only a limited quantity of a wide variety of goods.

According to Mc Innes, (1964) categorically, discrepancies in the market exist in terms of space, time, perception, ownership, and valuation. Spatial separation is created by the distance between producers and consumers. Increases in specialization and mass production require wider and larger markets, thus making exchange on a local basis insufficient. As a result, regional, national, and international markets must be found for the increasing variety and quantity of goods.

Temporal discrepancy is created by the lack of synchronism between the publishing and consumption of goods, yet this discrepancy must be bridged in order for supplies to be available at times when they are demanded. There is always a perceptual separation between producers and consumers in a market, because consumers do not know about supply sources,and producers do not know where consumers are. In this sense, perception refers to both ignorance and inertia

the separation can, therefore, be closed through the dissemination of information and the use of persuasion. Even when fully informed and motivated makers and users of goods and services are brought together, no exchange is completed until the separation of ownership is closed, that is, until the title of ownership is conveyed. Allied to this separation of ownership is the discrepancy of values placed upon the good or service by producer and consumer. Intermediaries provide a means for adjusting value to meet the needs of both suppliers and consumers.

The sorting function performed by intermediaries includes the following activities:

(1) Sorting out; breaking down a heterogeneous supply into separate stocks which are relatively homogeneous. Sorting out is typified by the grading of all the products.

(2) Accumalation; bringing similar stocks together into a larger homogeneous supply.

(3) Allocation; breaking a homogeneous supply down into smaller lots. Allocating at the wholesale level is referred to as "breaking bulk." Goods received in carloads are sold in case lots. A buyer of case lots in turn, sells individual units. The allocation processes generally coincide with geographical dispersal and successive changes in ownership.

(4) Assorting; building up the assortment of products for use in association with each other. As per Tousley, (1962) wholesalers build assortments of goods for retailers, and retailers build assortments for their customers.

While sorting out and accumulation predominate in the marketing of agricultural and extractive products, allocation and sorting predominate in the marketing of finished manufactured goods. It should be noted that the discrepancy of assortment induces specialization in the exchange process, and the need for such specialization may impede the vertical integration of marketing agencies. For example, a manufacturer of a limited line of publication items could open his own retail outlets only if he was willing to accumulate the wide variety of items generally sold through those outlets. In general speaking, wholesalers can perform such services more efficiently than can individual publishers.

E. Routinization

Each transaction involves valuation of and payment for goods and services. The buyer and seller must agree to the amount, mode, and timing of payment. The cost of distribution can be minimized if the transaction are routinized : otherwise, every transaction would be subject to bargaining with a concommittant loss of efficiency. Moreover, routinization facilitates the development of the exchange system. It leads to standardization of goods and services whose performance characteristics can be easily compared and assessed. It encourages publishing of items that are more highly valued. In fact, exchange relationships between buyers and sellers are standardized so that lot size, frequency of delivery and payment, and communication are routinized. Because of routinization, a sequence of marketing agencies is able to hang together in a communication case.

F. Speculation

As to Bucklin, (1965 pp.108) speculation is the opposite of postponement. The speculation concept holds that "changes in form, and the movement of goods to forward inventories, should be made at the earliest possible time in the marketing process in order to reduce the costs of the marketing system". Thus risk is shifted to or assumed by a channel institution rather than shifted away from i Speculation makes possible cost reductions through:

(1) Economies of large scale publication, which are the result of changing form at the earliest point,

(2) The elimination of frequent orders, which increase the costs of order processing and transportation, and

(3) The reduction of stockouts and their attendant cost of consumer dissatisfaction and possible subsequent brand switching.

The character of variables involved in the postponement-speculation theory are common in literature.

Here, since publications are 'perishable' products and their "normality" perishes, they can't be considered equal to a common-good-stock manupulation.

Bucklin's literates(5) portray the situation that the costs of postponement are minimized by the use of a speculative inventory, if, however, the costs of risk to the customer had been less, or the general cost of holding inventories at the customer's home (or warehouse, as the case may be) had been lower, then costs incurred by the buyer would change, indicating that direct shipment in the channel would be the means to minimize postponement cost, thus accentuating once more the importance of effective distribution.

(5) Ibid.

VII. CHANNEL STRUCTURE

A specific channel structure may be determined by calculating the trade-off between risk assumption, economies of scale, and customer service. The postponement-speculation principle weighs the cost of postponing changes in form, time, place, and possession utilities against the cost of adding such utilities early in the marketing process. The greater the savings generated by making changes early, the greater the likelihood that inventory-holding intermediaries will be used in a channel system. It is also possible to expand the trade-off analysis to other marketing flows beyond physical possession, ownership, and risk-taking. If a flow is subject to increasing returns, a firm with low output is likely to undertake a process of vertical disintegration with respect to it, but by employing channel specialists, will reintegrate the flow when output increases.

Thus, when a firm's output and its market are limited, it will likely find itself shifting flows onto others in its channel, if it can, in fact, convince others to accept responsibility for these flows. As market size expands, it becomes increasingly economical to vertically integrate, which is a pattern of behavior fully evident among the largest publishing and distributive organizations.

In order better to understand the evolutionary and changing nature of channel structure, it is important to comprehend how the various institutions that make up a channel system undergo

changes over time. By understanding the basic forces underlying institutional change, it should be possible to predict the future advancements and developments in distribution, and, thereby, design channel systems that are more viable over the long term. To aid this understanding, several plausible theories have been formulated which describe the process of institutional change.

Added to these economic-oriented explanations about why channels take on certain structural properties, Preston, (1933) says, there must be considerations of technological, cultural, physical, social, and political factors. For example, the emergence of the supermarket in the structure of food distribution was contingent upon the availability of technologies such as the mass media and mass communications, the cash register, packaging and refrigeration, and the automobile. However, according to Langhoff, (1965) the introduction of the supermarket in developing countries is impeded by cultural variables, such as the high rates of illiteracy, the habit of tasting food products before buying to maids and domestic help. The employment of vending and change machines provides another example of technological and cultural determinism relative to the distribution structure of candy, newspapers, magazines, and the like. Thus, in affluent societies with convenience-oriented cultures, consumers are willing to pay the extra cost associated with buying from vending machines, and the advent and continuous development of electronic data processing systems have enabled publishers and middlemen accurately to assess their distribution costs and redesign their respective channels.

Geography, size of market area, location production center, and concentration of population, among other physical factors, also play important roles in determining the structure of channels. Distribution channels tend to be longer (i.e., include more intermediaries) when production is concentrated and population and markets are sparse. Furthermore, we find that urban ereas are served by a wide variety of retail outlets, ei. for manufacturing goods: department stores, discount houses, and supermarkets, while rural areas may be served solely by a general store, and for publishing goods: kiosks, bookstores, bakkals, etc.

In addition, commercial and federal laws can influence channel structure in both direct and indirect ways. There are laws that prohibit territorial restrictions on distribution, pricing, discrimination, fullline forcing, and unfair sales practices. There are also laws that protect channel members from the competition of larger, more efficient rivals or that penalize "bigness" in distribution. And there may be some boards and other social factors that screen entrants.

Concentration on economic factors in channel structuring is however, too restrictive from an analytical perspective. It is necessary to expand the analysis by incorporating technological, cultural, physical, social, and political factors. Only by such incorporation, is it possible to explain, for example, why seemingly uneconomic (nonnormative) channels persist over time. To sum up, the focus of analysis here, has been on assessing the performance of the distributive trades, particularly retailing and wholesaling in terms of system output, costs, efficiency, profitability, and equity.

System output is generally evaluated in terms of the services (lot size, delivery time, market decentralization, and assortment breadth) that the commercial channel provides to ultimate household consumers. Theories describing the emergence of marketing channels, the structure of channels, and institutional change provide an appropriate framework for assessing the work of channels.

The emergence of marketing channels can be explained in terms of a series of logically related steps in an economic process. Intermediaries increase the efficiency of exchange and arise to adjust the discrepancy of assortments through sorting processes (sorting out, accumulation, allocation, and assorting). Channel arrangements provide for the routinization of transactions and facilitate the searching process of both buyers and sellers.

Channels are structured so as to provide outputs (lot size, waiting or delivery time, market decentralization, and product variety) to consumers at minimal cost. The exact structure is influenced by consumers when they select combinations of service outputs that minimize their total costs. In theory, structure that stands out gravitates to a normative structure under competitive circumstances via functional flow substitutability and shiftability.

A. Points of Consideration in Observing Channel Structure

(1) Retail personalities.

The aggressive, cost conscious entrepreneurs who start the new institution relax their vigilance and control over cost as they acquire age and wealth. (This explanation

is, of course, similar to some mentioned before.)

(2) Conservative and apethetic management.

Management becomes organization-oriented rather than customer-oriented and therefore blind to the opportunuties of a new market situation.

(3) Misguidance.

Retailers lure by store equipment and supply promotions into superiluously modernizing their stores.

(4) Imperfect competition.

Retailers avoid price competition because of relased price maintenance and the fear of retailation. Retailers resort instead to the selection of prime locations. Elaborate facilties, full assortment and added services to diffirentiate their product and gain a differential advantage. As the retailer adds services, consumer expectations are raised. Thus, it becomes difficult for the retailer to reduce his services. On the contrary, he is forced to add new services as he loses his differential advantage when other retailers match his original set of services.

(5) Incremental management decisions.

Management decisionmaking becomes greated to slight modifications of existing operating patterns because of the uncertainty inherent in large-scale changes.

(6) Established institutions have history.

Thus, they tend to be committed and rigid. The innovator has no history and is not committed to any operational patterns. Therefore, innovators are flexible.

(7) Secular trends.

As some market segments become wealthier, they demand more

services : therefore, institutions move along the whell to provide for consumers' needs. Meanwhile, because of the uneven income distribution, some opportunities remain for the new low-service, low-margin institution.

(8) Non-Economic Considerations.

As Mc Cammon, (1973) points out, uneconomic channels may persist for the following reasons ;

(a) Reseller solidarity.

Channel participants organize and function as groups that tend to support traditional trade practices and long established institutional relationships. Trade assoctiation actions, attempts by independent retailers to outlaw chain stores, and department store operators' efforts to block discount-store operations attents to the role of reseller solidarity in determining channel structure.

(b) Entrepreneurial values.

Large resellers are growth-oriented, tend to adopt economic criteria for decisionmaking purposes, and use new profitable technologies. On the contrary, small resellers have limited expectations, tend to maintain the status quo, view their demand curve as relatively fixed, and resist growth beyond their limited growth expectations.

(c) Organizational rigidity.

Firms respond incrementally to innovations because of organizational rigidities. Thus, the process of change takes a long time.

(d) The firm's channel position.

Mc Cammon[6] grouped channel intermediaries into insiders

who are members of the dominant channel ; strivers, who want to become members of the channel ; complementors, who perform functions complementary of functions performed by insiders; and transients, who take advantage of temporary opportunities and are not interested in becoming members. While transients usually disrupt the status quo by engaging in deviant competitive behavior, insiders, strivers, and complementors are more interested in maintaining the status quo. Thus, firms completely outside the channel are most likely to introduce basic enduring innovations in the channel structure. Market segmentation. New institutions do not appeal to all market segments. Traditional institutions seem to have loyal segments that they appeal to. Thus, these institutions are not compelled to change.

(9) Time.

This, especially for Gelişim is a vital issue since its periodicals, are 'perishable' commodities in the sense that they have a date indicating their validity period. Furthermore, most companies deal with multiple products and services for which costs are shared. There is also a time horizon involved as well as a host of noneconomic considerations. Nevertheless, the concept of shifting flows is a viable one : like so many management decisions, it demands appropriate accounting procedures to be implemented correctly. The timing problem occurs frequently because information will often arrive at a particular

point in the channel either too early or too late to be of maximum value for decision and control purposes. Finally, as indicated earlier, it is likely that channel members will often attach different meanings to the same symbols and assign different weights to the value of information, which leads to perceptual differences within the system.

(10) Noise.

In response to the abovementioned problems, several "noise" -reducing techniques have been suggested (by Grabner and Rosenberg, 1974). These include :

(a) Queuing.

The placing of messages in a line and delaying their receipt until adequate receiving and decoding capacity is available (i.e., "backlogging" messages).

(b) Sequencing.

Assigning specific times for each member of the channel to transmit specific pieces of information, such as orders, merchandising plans, and pricing schedules.

(c) Bypassing.

Avoiding one or more links in the normal communication network to eliminate bottleneck situations, especially during periods of crisis within the system.

(d) Specialized languages.

Systematically omitting some details or elements of message by attaching a common, yet unique, meaning to a specific set of symbols to be shared

by all senders and receivers in a channel system (e.g., uniform product codes).

(e) Altering technology.

Changing the form in which messages are transmitted and received by substituting machines for people, adding both machines and people to the system, or turning over a portion of the communications task to units or agencies specializing in some part of the communication process.

(f) Instituting feedback.

Providing a mechanism by which the sender can verify that the intender ; receiver has received and understood the message.

VIII. CONVENTIONAL MARKETİNG CHANNELS

As mentioned above, conventional marketing channel networks are generally comprised of isolated and autonomous units, each of which performs a traditionally defined set of marketing functions. Co-ordination among channel members is primarily achieved through bargaining and negotiation. The operating units within such channels are frequently unable to achieve systemic economies. Furthermore, there is usually a low index of member loyalty and relatively easy entry to the channel. The network, then, tends to be relatively unstable. However, in case of Gelişim, the opposite of this holds true;there is high index of member loyalty very hard entry to the channel, and the network (Hürdağıtım) is a very stable one.

A. Conventional Channels

Conventional marketing channels comprised of independently owned institutions and agencies frequently suffer from several weaknesses, the foremost among them being the absence of a systemwide orientation and inclusive goals. If a locus of power is also absent, the specification of roles and the management of conflict in conventional channels are likely to be difficult, at best. Even when a locus of power is present (as in the marketing channel for motion pictures), there is no guarantee that the performance of the channel will be any better than when power is diffused.

B. Vertical Marketing Systems

Vertical channels have emerged as significant forms of channel organization and represent, for the most part, sophisticated attempts on the part of management to overcome the inherent weaknesses of conventional channels.

1. Administered Vertical Systems

Administered vertical marketing systems are those in which coordination of marketing activities is achieved through the use of programs developed by one or a limited number of firms. Administrative strategies combined with the exercise of power are relied on to obtain systemic economies. Such strategies have been most frequently adopted by suppliers and by carriers. They have involved the use of facilities management, modular merchandising, co-ordinated display, and automatic replenishment programs as well as programmed merchandising agreements.

2. Contractual Vertical Systems

Contractual vertical marketing systems are those in which independent firms at different channel levels integrate their programs on a contractual basis to achieve systemic economies and increased market impact. They include, among other forms of organization, wholesaler-sponsored voluntary groups, retailer-sponsored co-operative groups, and franchise systems. By virtue of the use of legitimate power in their formulation, contractual systems tend to be more tightly knit than administered systems, proven by Hürdağıtım.

3. Corporate Vertical Marketing Systems

Corporate vertical marketing systems are those in which channel members on different levels of distribution are owned and operated by one organization. In fact, such systems are synonymous with both forward and backward vertical integration. Rarely, partial forward integration is seen, whereby retailers make an attempt to become wholesalers as well. Backward integration has been typified by various wholesalers and kiosks-systems in a chain, which are owned by publishers. The key trade-offs in instituting any publishing vertical marketing system are the investment required plus the flexibility lost, on the one hand, versus the control secured over distribution activities of channel members plus the operating economies gained, on the other, and is being considered seriously by Hürdağıtım, on a broader scale.

Vertical marketing systems appear to offer a series of differential advantages over conventional channels. The former employ a systemic approach and are committed to scientific decision-making while endengering channel member loyalty and network stability. Tasks are routinized, and economies of standardization are likely within them. Because a locus of power is available and utilized in a positive manner, it is possible to gain at least some control over the cost and quality of the functions performed by various channel members. Furthermore, inherent within systems management is the notion that the channel itself is the relevant unit of competition.

IX. DETERMINING THE DEGREE OF MARKET EXPOSURE

Among the various channel policies, perhaps one of the most crucial, from a producer's perspective, relates to how many sales outlets should be established and, from a middleman's perspective, how many suppliers should be used within a given product category. As stated above the decision will be determined primarly through studying consumers' purchasing habits relative to product or brand in question. Three basic choices appear to be available.

(1) A publisher could decide on a policy of intensive distribution in which he will place his product or brand in every available outlet. Likewise, a middleman could decide to purchase all available brand within a periodical class in order to offer the broadest possible assortments to his customers.

(2) Or a publisher could use selective distribution, whereby he will place his product or brand in a more limited number of outlets within a defined geographic area. A middleman may use concomitant celectivity in his purchasing patterns.

(3) Or a publisher could decide on a policy of exclusive distribution, in which he will place his product or brand in the hands of only one outlet in a specified geographic area. In similar fashion, a middleman may decide to concentrate his effort on one publisher's brand(s) within a given periodical category.

Marketing programs can fail because managers at the publisher's level do not tailor their programs to the capabilities and orientations of their middlemen. For example, a promotion campaign may be too complicated for middlemen to understand or implement properly, the number of calls per customer required by a manufacturer from his wholesalers may exceed the wholesalers' capacit, or the minimum orders specified by the manufacturer may be beyond the inventory handling and storage facilities of a middleman.

First of all, says Curhan, (1973) the middleman is in business to satisfy his customers. In customer goods marketing, there are relatively few exceptions to the statement that consumers buy products from retailers, not from manufacturers. Thus, retailers possess "veto power" over virtually all marketing programs. (An analogous situation holds when manufacturers of industrial goods employ industrial distributors or manufacturers' representatives.) Star, (1973) adds that although the publisher could theoretically market his products directly to consumers, consumer buying behavior and distribution economics often preclude this possibility. As Star observes (7) : While retailers can influence brand sales significantly in most product categories, such influence is cleary a more decisive factor in some product categories than in others. Conceptually, we would expect such influence to be must important in product categories.

(a) Where the buying process is very unimportant to the consumer (e.g., frequently purchased, lowpriced stable commodities) and,

(7) Ibid.

(b) Where the buying process is extremely important to the consumer (e.g., infrequently purchased, high-priced products perceived to be differentiated along complex dimensions). In the first case, the consumer's need for information is so low that manufacturers are generally unable to create strong brand preference. As a result, retailers are free to carry and brand (s) they wish without wear of lost sales or lessened consumer goodwill. In the second case, the consumer's need for information is so great that manufacturers can directly satisfy the need only partially. Under these circumstances, the retailer must provide additional information in order to "close" a sale. In the process of providing this information, the retailer has considerable opportunity to influence the consumer's ultimate brand choice.

Thus, the publisher is continuously engaged in seeking support from middlemen, especially for the kinds of products mentioned by Star (and their analogues in the industrial market). Such support is not, by any means, automatically available; receiving it depends, to a great extent, on the ways in which power of all types (coercive, reward, expert, referent, and legitimate) is employed within the channel.

Second, independent middlemen are in business for themselves, not for publishers. For example, retailers resort to selling private brands to increase their independence from publishers of branded periodicals and to guarantee a

continuous source of supply of products they desire to provide for their customers. Third, middlemen generally have existing lines of products. The manufacturer seeking to "employ" a specific middleman must develop a product that closely fits the line that the middleman handles. Finally, Lambert, (1966) states his view on this subject and says that in the case of retailers, the middleman allocates display space, which is, indeed, a scarce resource, given the number of items desiring placement.

The majority of manufacturers must 'ask' for this space by granting significant concessions or by investing heavily in consumer promotions of various kinds.

In addition, a manufacturer seeking to market through middlemen must recognize and sell to three publics. The first are the middlemen's customers. The second are the managements of the various wholesale organizations. The third are the salesmen employed by the latter. Successful handling of management does not automatically mean that market penetration will be forthcoming. A middleman's salesmen have to be convinced of the merits of the product, and thus manufacturers must engage themselves in selling to the salesmen via sales training programs, sales contests, special promotions, and other incentives.

On the other hand, a publisher may have considerable power in his attempt to recruit and influence channel intermediaries. Instead of trying to push his brand through a channel and pursuing a hard-sell policy with regard to middlemen, he has the

option of trying to pull his brand through the channel by advertising heavily to gain consumer preference. If the latter strategy works, middlemen may actually solicit the publisher to carry his brand, and reseller support is likely to be available to him. However, the alternative costs must be carefully assessed in a manner similar to that specified earlier. The different strategies require varying amounts of capital investment. The key problem according to Craig and Gabler, (1940) is to determine whether greater channel performance can be generated by manufacturers assuming more participation in the marketing flows or by shifting more of the work of the channel to middlemen or consumers.

Channel organization and design is only one aspect of marketing strategy. At the outset of the channel planning process, managers must acknowledge the important interelationship between channel design and all other elements of the marketing mix. The starting point in designing and organizing a channel is, however, at the consumer level, irrespective of the type of goods and services involved. Furthermore, channel design is always conditioned by the particular characteristics of products, middlemen, competitors.

The choice of outlets or suppliers may be highly restricted. Not every wholesaling and retailing establishment is available to every supplier, and visa versa. Achieving distribution through Sears Roebuck is not a foregone conclusion for manufacturers, just as obtaining clothing supplies from Hart, Schaffner, and Marx is not a certainty for channel

middlemen. If however, there is some freedom of choice available to a manager in designing an approprivate channel for his products or brand, there are four basic steps involved in determining the types of middlemen to use. These include:

(1) Itemizing the alternative ways in which ultimate (household or industrial) consumers can purchase the product in question and assessing the relative volume of the product class moving through the purchase outlets, their relative rates of growth, and their relative profitability. Underlying this step is a thorough evaluation of consumer preferences.

(2) Specifying the primary channel paths that can be used in reaching these various outlets or in tapping the relevant markets for the product.

(3) Quantifying the relevant factors in the consideration of each channel path by employing the weighted factor score method, the hierarchial preference method, and/or the simulation method.

(4) Evaluating qualitative criteria relative to the amount of control and adaptability desired.

Having determined the type of middlemen, managers can then turn their attention to deciding on the degree of market exposure their products should have. From a wholesaler's perspective, this decision can involve a determination of both the number of suppliers and the number of retailers with whom to deal. As we look down the channel (from publisher to wholesaler to retailer), the three basic policy choices seem to be

(1) intensive,

(2) selective, or

(3) exclusive distribution.

It is likely that the more intensive the distribution of a periodical or brand, the greater its sales will be in the short run. However, there is an important trade-off between sales and control over the channel which must be taken into consideration by the manager. Loss of control can result in lower long-term profits.

Development of an appropriate distribution policy for consumer goods requires consideration of the relationship between type of good and type of store. Again, as in choosing the relevant middlemen, knowledge of consumer purchasing behavior is critical.

If channel strategy is a more exclusive type of distribution policy, specific agreements are possible with regard to the allocation of marketing effort among channel members. An appropriate allocation is arrived at through bargaining over products covered, class or types of customers, territory covered, inventories, installation and repair services, prices, sales quotas, advertising and sales promotional obligations, and exclusive dealing. These agreements should be put in writing, reviewed on a yearly basis, be reasonably flexible, and contain information on the duration, renewal, and termination of the agreement. The forging of such an agreement, if it is to be functional over the long term, must reflect mutual support and an

equitable division of benefits and costs in carrying forward distribution. It involves the specification of the rights and obligations of each of the parties.

Despite efforts on the part of managers to organize an efficient and effective channel system, such efforts are sometimes futile, because they do not fully account for the differences in perspective and orientation of independent middlemen. The latter are in business to satisfy their customers and are not in business to satisfy the desires of other channel members. In addition, middlemen generally have existing product lines from which they frequently do not wish to deviate. Finally, middlemen, especially retailers, control display space and the process by which it is allocated. Therefore, gaining reseller support is often not a simple matter, to say the least. Various approaches have been employed to gain such support and have evolved into modes of channel organization called vertical marketing systems.

X. PATHS TO FOLLOW

The step in the analysis of alternatives is to specifiy the primary paths the company might follow in reaching various outlets or in tapping the various markets. Five radically different paths the company might take to market a product are for example :

(1) Market through the present distributiors of newspapers and periodicals (present distributors alternative).

(2) Marketing through new distributors already selling to the trade (new distributors alternative).

(3) Buying a small company already in this market to utilize its distributors (acquisition alternative).

(4) Packaging and selling the periodicals through mail campaigns directed at customers (direct mail alternative).

Each of these alternatives has, obviously, drawbacks as well as strength. In order to assess these in an analytical manner however, it is useful to go beyond qualitative debate as to their merits and demerits. Thus, the third step in the channel alternative assesment process is to attempt to quantify the relevant factors in the consideration of each. These techniques seem to be out of Gelişim's reach because they couldn't be tried radically without a daily newspaper in the product line. Just Magazines weeklies and Monthlies are not 'enough' for costs to say the least, but if newspaper is introduced, this above argument on e.i. 'chemicals' may well be applied to Gelişim's periodicals. However, three different desicion techniques can be fruitfully applied to this problem : the weighted factor score method, the hierarchial preference method, and the simulation method. In addition, it should be noted that the multiattribute choice strategies specified before are also directly applicable to the problem of channel design.

XI.BASİC CRITERIA IN CHANNEL DESIGN (INTERORGANIZATIONAL OUTLOOK)

Aside from the strong stipulation that channel design must start from an understanding of consumer purchasing patterns, there are several additional factors that provide constraints on channel organization that are important in structuring an interorganizational distribution system. These factors are discussed in some detail in basic marketing and marketing management texts and, therefore, will be reviewed only briefly here.

(1) First, it is important to realize at the outset that the choice of outlets, in the case of publishers, of suppliers, and in the case of middlemen, is frequently highly restricted.

Certainly, the extent of financial and other sources of power held by a channel member seeking to enter or enlarge a distribution network will have a strong effect on the amount of freedom of choice available to him.This is a strong desicional factor especially for Hürdağıtım since they seek credibility as the most important criteria of acceptance

(2) Second, the number, size, and geographic concentration of customers will have a direct effect on channel design. for a complete discussion of each of these constraints, see Kotler.

(3) Third, as mentioned above, product characteristics will directly influence channel design. Perishable products like Gelişim's require direct marketing or at least the use of middlemen who can assure rapid turnover of merchandise, whereas bulky products require channels that minimize shipping distance and excessive handling. Similary, unstandardized products that call for technical expertise in

their sale may require direct selling because of the need for specialized attention. Last but not least, nonperishable, nonbulky, standardized products can be handled more readily by indirect channels.

(4) Fourth, middleman, competitive, company, and environmental characteristics also influence channel design. Thus, in certain lines of trade (e.g., furniture), manufacturers' representatives are particularly well adapted to serve producers and customers because of their ability to carry full lines of complemantary products assembled from a variety of manufacturers. For shopping goods, comparisons as to style, price, and suitability are significant to consumers, and therefore, the selection of appropriate channels is dictated, to a large degree, by the need to provide such comparisons. Furthermore, companies obviously vary in their financial strenght, the breadth of their product mix and assortments, the orientation of their marketing policies, and their experience with certain types of outlets or suppliers. All of these latter factors constrain channel design. Finally, economic conditions and legal restrictions are influential in determining the amount of channel strategy discretion an organization will have. The above constraints clearly limit the distribution strategy to be employed in any specific situation and thus place boundaries around interorganization management. Once the constraints are assesed, two crucial desicions must

be made. First, the way in which an organization will try to make its products availabe to designated end-markets must be determined. Second, the number of outlets or suppliers with which a channel member wishes to work must be arived at. Once these decisions are made, the manager can then turn his attention to the means by which he can allocate resources within the system efficiently and effectively via role specification and conflict management. The first step in determining the type of middlemen to use in reaching this market would be to itemize alternative ways in which ei: swimming pool owners could purchase this product. In other words, as emphasized earlier, the consumer represents the starting point in channel design. For example, the owner may obtain the product from at least the five sources listed below:

(a) Conventional retail outlets.
(b) Specialized retailers.
(c) Service companies.
(d) Direct mail supply companies.

The same principle above that works for ei. 'swimming pool owners' applies well to Hürdağıtım's products: "periodicals of Gelişim" as well.

XII. CHANNEL AS AN INTERORGANIZATIONAL SYSTEM

A marketing channel may be defined as an interorganizational system made up of a set of interdependent institutions and agencies involved with the task of moving things of value (ideas, products, services) from points of conception, extraction, or production to points of consumption. Its primary focus is on availability-delivering valuable objects to points at which they may be easily examined, evaluated, and consumed. Marketing channels should be considered as the relevant units of competition: the viability of any given organization depends greatly on how well it interacts and coordinates its efforts with other organizations which survey its ideas, products, or services.

To a significant extent, marketing channels may be thought of in terms of superorganizations, because they possess many of the attributes of complex organizations. Thus, any given channel can be characterized as including a cooperative relationship among its members, collective goals, differentiation of function among its members, explicit rules and policies, structural complexity, communication, and interdependecy among its members relative to task performance. Channels often differ from complex organizations in that they do not always incorporate a stable and explicit hierarcal structure. In order to implement interorganization management within a channel without such a chain of command, it is necessary to seek informal sources of authority based on the social and economic power of its various members.

In Turkey, the function passes from father to son for several generations because of social values such as dependability, reputation and so on.

Because channels are comprised of sets of interdependent institutions and agencies involved in producing an output (e.g., consumer satisfaction), they can be viewed as socioeconomic systems. The dependency relationships that exist within such systems breed conflict that must be managed if the system is to remain viable. However, onflict can be functional as well as dysfunctional: it is, therefore, the task of interorganization management to harness the conflict that arises and to aid in preventing pathological waves as a reaction to conflict situations.

A crucial element in interorganization management in marketing is the specification of roles to be performed throughout any given channel system. Such role specification involves outlining the relevant domains of each member: that is, the population to be served, the territory covered, and the functions or activities to be performed. Certain flows-physical possession, ownership,promotion, negotiation, financing, risking, ordering, and payment-must be incorporated if the channel is to operate at all. The allocation of participation in the flows will determine the roles of the various members in the system. Compensation for each member should be based on its degree of participation in the flows. For on-going distribution channels, the setting of compensation levels will depend, to a large extent, on an evaluation of performance based on a channel audit. In addition, efforts to achieve greater effectiveness will depend, in large measure, on shifting the flows between various channel members.

It is postulated that a channel of distribution might be viewed as an interorganizational system comprised of interdependent and interrelated institutions and agencies involved in the task of moving goods and services from points of publishing to points of comsumption. The commercial channel of distribution is the subset of the entire channel that excludes the consumer. The institutions and agencies within that subset can be manipulated and organized in such a way as to enhance competitive abilities, that is, to satisfy consumer needs and wants in a more complete way than other less organized systems might.

From a normative perspective, the allocation and exchange of resources in commercial channels first require a specification of role relationships for each of the channel members who will or do already act within a given interorganizational system. In order to accomplish such a specification in a reasonably efficient and rapid manner, either a formal or informal chain of command must be established within the channel. However, because of the interdependency that exists among channel members, conflict is inevitable. In other words, the dependency relationship will lead, at varying times, to frustration of individual members' goals. Furthermore, the use of power in role specification may generate additional conflict. It is, therefore, necessary to develop responses to conflict so that the frustration that is bound to arise within the system does not become dysfunctional. Thus, despite some possible negative side effects, economic and socail power must be used to further rearrange the marketing flows and to alter roles, if need be, in order to arrive at a channel condition where only functional conflict exists-that is, a condition where solutions to conflict situtations provide for more effective commercial channel performance than previously existed.

The interrelation among role specification, conflict, power usage, conflict management strategies, and commercial channel performance is depicted, in a simplified manner, It should be noted that feedback reconnects performance to conflict and to power usage. Thus, if performance is unsatisfactory, it is likely that a heightened sense of frusration will develop leading to increased levels of conflict, that power and its use may shift within the system, and that, as a result, roles will be further respecified and realigned.

XIII. SYSTEMS MANAGEMENT

The complexity of the physical distribution function implies that the different data discussed above must be managed as an intergrated whole. A vital link that permits effective planning and control of the activities involved in the flow of physical possession is information. Therefore, Gentle, (1965) says that the design of a system is a critical and continuous process that secures the proper implementation and functioning of the system. The necessary steps in the development of a system, enumerates the basic areas of cost information usually needed by physical distribution managers in making a system operational.

In manufacturing and production firms, also publishing firms, the logistics information systems that are developed should include, ideally, data on the following components:

(1) Production planning and scheduling
(2) Purchasing
(3) Traffic (raw materials and finished goods)
(4) Raw materials and supplies warehousing
(5) Material handling
(6) Finished goods storing
(7) Inventory control
(8) Protective packaging
(9) Order processing
(10) Billing
(11) Location of plant and storing facilities

Generally, the only components that are, in fact, integrated into manufacturer's systems are purchasing, location, inventory control, packaging and handling, and traffic or transportation. On the other hand, the components that should be included in a retailer's system include purchasing (store supplies other than merchandising), receiving, marking, stock rooms, packaging (alterations), warehouses, traffic (publication supplies and delivery service), packing and pickup, and customer service.

Once the appropriate data have been supplied by the logistics information system (LIS), a variety of mathematical techniques are available that can aid the distribution manager in anlyzing the information and solving systemwide logistical problems. One of the most popular distribution (D) systems management techniques according to Dearden, (1966) is simulation. Via simulation a manager can construct mathematical models of each of the major distribution activity areas and their interrelations. Then, by manipulating these models, Shycon, and Maffer, (1960) can draw conclusions as to appropriate policies and strategies, Simulation permits distribution management to change one or two variables and know that the resulting changes in the system's operation as a whole are due to that manipulation alone. Great savings can be achieved from the use of simulation, because alterations can be made and tested without disturbing the actual system. Moreover, with the speed of computers, changes whose impact might require years to determine can be assessed very quickly.

A. Role Specification

According to Gill and Stern, (1969) the concepts of positions and their associated roles are basic to understanding the relationship of members in a socioeconomic system. A position pertains, in general, to the location of a person or class of persons in a network of social relationships. Roles are the unifying factors relating persons or groups of persons to positions in that they define appropriate behavior for the occupant of each position, says Biddle and Thomas, (1966).

Positions connect the individual to the system and link each system in turn to the larger system of which it is a part. For example, an individual may occupy a position in a sales department. The sales department in turn occupies a position in a distribution channel system.

In summary, attendant to each channel position is a set of role prescriptions. Each channel position-occupant brings to his chose position, different role behavior or performance that is determined by role prescriptions as well as by situational variables, organizational objectives, personal expectations, and channel communications. To the extent that different organizations in the channel have the same prescription for a role, that their prescriptions are the same as the channel member's conception of his own role, and that the channel member's performance is consistent with the prescriptions: consensus exists in the system. Consensus enables the members of the channel system to anticipate each other's

behaviors, and therefore to operate collectively in a relatively unified manner. Functional role (domain) specification is, therefore, a key determinant of the effectiveness and efficiency of channel performance. Firat, Tybout and Stern, (1975)point out that it should clearly not be left to chance, for if it is, dysfunctional conflict is likely to erupt among channel members. That is, the parties must usually first become aware or cognizant of the conflict situation as well as personalize the conflict so that hostile feelings develop.

B. Channel Conflict

Pondy, (1967) points put that channel conflict is a situation in which one channel member perceives another channel member, to be engaged in behavior that is preventing or impeding him from achieving his goals. According to Mack and Snyder, (1957) it is, in essence, a state of frustration brought about by a restriction of role performance. Stern, (1971) argues that the degree to which the behavior of one channel member could potentially destroy, thwart, or hinder the goal attainment of another, is a function of goal incompatibility, domain dissensus, and differences in perceptions of reality between them as well as the extent of their interdependence.

Thus, conflict will inevitably result when there is an imbalance between inducements and contributions.

Boulding, (1964) on the other hand says that if the conflict becomes dysfunctional or destructive (in which "pathological" moves are made that ultimately impede the performance of the conflicting parties and the system itself), the channel system will move forward, and in order to achieve effective role congruence and performance

and to keep conflict within its functional range, it is necessary to employ economic and social power.

Simply put ; 'power' is the ability of one channel member to get another channel member to do what the latter would not otherwise have done. More rigorously stated, one channel member's (A's) power over another (B) can be defined as the increase in the probability of B's enacting a behavior after A has made an intervention, compared to the probability of A's intervention.

C. Power in The Distribution Channel

Some tentative steps have been taken towards developing a methodology that permits a determination of the locus of power within specific marketing channels. The approach reported below was employed by authors like Robicheaux and El-Ansary, (1974) and has been subsequently applied, in modified forms, by Hunt and Nevin, (1974) and also by Etgar, (1974) .

If channel management is going to be instituted, it will be necessary for appropriate information and communication systems to be established. Such systems are particularly crucial if a variety of institutions take a role in channel leadership. The dovetailing of decision-making must form an essential part of the overall channel management job; otherwise, suboptamization of the marketing flows can be expected. The marketing flows, taken as a whole, comprise a system; they must be combined in such a way as to permit strong impact of the channel on its environment. This combination can only be achieved through the sharing of relevant data among channel members. Therefore, concern with the development of effective communication within channels.

D. Channel Management

Here focus of discussion is on the potential of manufacturers, wholesalers, retailers, and common carriers to assume the role of channel managers or leaders. In coming to grips with this issue, a crucial consideration is the amount and kinds of power available to each institution.

The question as to who should lead the channel cannot be answered without an in-depth empirical analysis of channels on a case-by-case basis. Because each and every institution has at least some power relative to the various marketing flows, leadership may take the form of control over or management of only one or a few of the flows, depending of course on the scope of power enjoyed by the various institutions comprising a given system. Furthermore, leadership will clearly be constrained by consumerism issued and by the increase of antitrust enforcement and regulatory agencies.

1. The Need For Channel Leadership

In order to achieve effective conflict management and thus improved coordination and performance within a channel system, it may be necessary to locate an institution or agency within the system that is willing to assume a leadership role, that is, an organization that will use its power bases to aid in overcoming the spontaneous variability of individual channel member behavior and to allocate the resources within the system so as to enhance the system's viability.

Thus channel leadership can be viewed as the use of power to intentionally affect the behavior of other channel members in order to cause them to act in a manner that contributes to the maintenance or achievement of a desired level of channel performance. In fact, the system may have to gravitate to one where control is required.

Channel control is the ability of a channel member to predict events and achieve desired outcomes in his relations with other channel member. Channel control can result from channel leadership. Furthermore, like channel power, the level of channel control achieved by one firm over others in a channel may be 'issue' specific. For example, while the publisher may have control over pricing,retailers may have control over inventory levels in the channel. Whether or not control can be exerted depends, of course, on the power at the command of the channel leader, on the drive for autonomy on the part of the members over whom control is being exerted, and on the latter's tolerance for control. Clearly, numerous intra-and extra-channel factors will determine how successful leadership attempts can be. According to Robicheaux and El-Ansary, (1974) some of these factors include the demand and supply conditions pertaining to each source of power held by the potential channel leader, his efficiency in controlling his resources, the attractiveness of alternatives, the activities of other competitive channels, and developments in the socio-political-economic environment of which the channel in question is a part.

The primary function of a channel leader will be to engage in channel management; using his power to further coordinate efforts

and to dampen activities so as to assure adequate performance throughout the channel system; frequently modifying decisions based on economic criteria alone. Management may be willing to trade off short-term economic benefits in order to gain a long-term ability to manipulate the channel. In conventional channels of distribution, the members are independent businessmen. Therefore, each is primarily interested in maximizing his own profits, which can sometimes lead to suboptimization within the system, as pointed out earlier, here suboptimization refers to the fact that each channel member may make a set of decisions on the various topics, elements of marketing strategy (e.g., price, advertising, and physical distribution) which maximizes his profits but which conflicts with the ability of the entire system to perform most efficiently or effectively. As Stasch, (1972) has observed, the demedy to this problem is to seek an adjustment to the strategy decisions of each member so that total channel performance (measured in terms of profits, market share, or some other commonly shared goal) will be higher. Stasch, (1964) argues that greater the difference between present channel performance and projected channel performance under the systems approach, the greater will be the incentive of channel members to pursue joint planning or to vertically integrate.

The accomplishment of some semblance of channel control requires the use of power in order to generate appropriate role specifications for each channel member in the system. A channel can be viewed as being in equilibrium when there is no structural or functional change that would lead to increased channel performance. A structural change

involves the addition or elimination of some level in the channel, whereas a functional change calls for a reallocation of one or more of the marketing flows among the channel members. Maximum control can be achieved through vertical integration: however, the investment required may be beyond the reach of certain firms. Furthermore, there are benefits available in operating nonintegrated systems that may be desired by the channel members.

Stigler, (1951) extrapolates that there are numerous means by which an organization can use its power to secure effective control within a system comprised of independently owned units. One of these means is the establishment of a franchise system whereby legitimate power is combined with reward and expert power in developing a programmed network.

Historically, there has been an increase in the size of retail transactions, which has generated more direct buying on the part of retailing institutions. As a result, the need for wholesalers' services in the form of large-lot buying has been reduced. On the other hand, there appears to be no slackening in the desire of customers for rapid delivery, although it is possible that such demands may soften somewhat as periods of shortages are experienced.

Market decentralization requirements have been reduced relative to convenience goods due to the development of greater mobility in personal transportation. But decentralization has been increased relative to shopping goods with the emergence of planned regional shopping centers. In addition, the requirements on the part of customers for broader assortments have spurred the movement toward larger retail stores and have, concomitantly, created an increased need for wholesaler services in gathering together diverse

merchandise for retail display. A similar development has been witnessed in certain industrial good markets (e.g., machinery, equipment, and supplies) that have sustained relatively rapid growth and have traditionally relied on a full range of services from wholesalers. On the other hand, the incidence of "double wholesaling" has been declining as manufacturers have become more sophisticated in managing promotional flows for their industrial products.

The costs of distribution - measured in terms of gross margins and "value added" - have remained high. These costs have, to a large degree, resulted from the process of industrialization and economic growth. If economic growth slows down, it can be expected that more emphasis will be placed, by both management and government, on reducing these costs. In order to do this, however, productivity will have to be increased. Productivity in the distributive trades-measured in terms of output per man-hour and output per employee-has historically been quite low relative to the manufacturing and agricultural sectors of the economy. The results have been that wage rates in distribution are below those in many other sectors, and, therefore, the ability of retailing and wholesaling institutions to attract skilled and competent labor has been poor. This factor, in turn, has bred further reductions in productivity levels.

The strategic profit model (SPM) has been employed here to assess financial productivity and profitability in the distributive trades. Profit margins (net profits/not sales have declined for both retailing and wholesaling over time. Asset turnover

(net sales / total assets) has increased in retailing but declined in wholesaling, while leveraging operations (measured in terms of total assets/net worth) have increased for both sectors. Overall, the decline in profit margins has not been offset by improvements in asset turnover or in leveraging, with the result that return on invesment (net profits/net worth) is relatively poor for both retailing and wholesaling institutions in the aggregate. These findings, based on an application of the SPM, indicate that in general, management in the distributive trades has not been highly innovative or effective.

While there is undoubtedly a great deal of flexibility and choice provived by the variety of available retailing and wholesaling instutions, from both a macro-and a microperspective, inequities in distribution do, in fact, exist, particularly with regard to the servicing of ghetto and rural communities. Although racial, economic, and social discrimination accounts for some of the inequity, the predominant reason for the problem appears to be structural inadequacies, especially in the ghetto marketplace, The atomistic retail market structures present there, are not performing as well as industrial organization. Economists would lead us to expect they should. Incentives on the supply side and improvements on the demand side are required if the inequity is ever to be eliminated.

2. Channel Management by Wholesalers

Despite this rather gloomy description of the wholesaler's opportunity for channel leadership, it is shown below that there are certain circumstances in which wholesalers do in fact engage in strong and effective interorganization management. Hower, it is equally important to observe that not every institution can or should assume a leadership position within a channel and that efficient followership is as essential to a channel's longterm viability as the existance of a centralizing force.

3. Channel Management by Retailers

They can control resources, "buy" time by utilizing staff specialists, and employ their resources in a manner to help the channel reduce conflict arising from any of the basic sources of organizational conflict. For example, they can employ research personnel to learn more about customers and markets and therefore reduce uncertainty and improve communications through the channel. They have the economic power to communicate and enforce a greater recognition of the system's common goals which are congruent with some goals in each member firm. They have the ability to enforce, through economic sanction, a reward and penalty system within the interorganizational structure. They are thus able to design and administer joint-decision efforts and responsibilities in a manner that can

lead to less conflict than would likely be the case without their intervention.

4. Channel Management by Channel Participants

Power relationship within the channel can be measured by gauging the perceptions and attributions of individual channel members through the use of survey research techniques. Such measurements might focus on the relationship between perceptions and attributions of power (i.e., control over marketing strategy variables), the relationship between power and dependence, and the relationship between power and sources of power.

5. Who Should Lead The Channel?

Although the question as to which institution or agency should lead the channel has been debated in the literature for many years and for a variety of scholars like El Ansary and Stern, (1972) there exists no single satisfactory answer. The fact is that the answer demands empirical evidence from specific settings. It is necessary to look closely at the issues involved in each commercial channel member with respect to each of the marketing flows. It may even be necessary to break the flows down into component parts in order to perform an adequate analysis. For example, the flow of physical possession incorporates both

transportation and storage of merchandise. One channel member may be able to exert more influence with regard to the first component, while another may have more power with respect to the second. Clearly, an analysis based on empirical findings will englighten the subject.

It should, however, be clear from the discussion here that each commercial channel member has at least the potential for leadership with regard to one or more of the marketing flows, because each has 'amassed' or is capable of amassing power of one form or another relative to other channel members. The ultimate answer as to who should lead must, however, be left to an empirical analysis of power and the relevant payoffs from its use on a case-by-case basis.

6. Some Performance Variables in Channel Management.

There are a host of other variables that would be meaningful to avaluate in order to arrive at an overall judgment about performance in distribution. From a "macro" perspective, it would be useful to know whether channels and channel institutions have been progressive over time, that is, whether they have been innovative and adaptive, especially with regard to changes in technology. From a social perspective, the effect of various distributive practices on energy consumption, hard-core unemployment, and the quality of the environment should be assessed. On the "micro" side, an evaluation of the number

of stockouts, obsolete inventories, damaged shipments, and markdowns over time, scrap value among other operating variables would provide a closer approximation to actual performance.

Unfortunately, aggregate measures for these "macro" and "micro" performance variables are generally unavailable or are restricted to narrow lines of trade. It is necessary, therefore, at this time to rely basically upon the information pertaining to system output, cost, efficiency, profitability, and equity provided above in arriving at a judgment about the performance of the distributive trades.

To sum up, physical distribution management is a critical factor in the effective and efficient marketing of all products. Hower, the costs of activities, associated with the flow of physical possession are surprisingly high-so high, in fact, that efforts must be expended to reduce them if distributive firms are to reach their profit goals, particularly during economic periods when sales are growing at very slow rates. Underlying effective and efficient physical distribution management is the physical distribution (PD) concept. This concept takes a cost-service orientation that is aimed at minimizing the costs and/or maximizing the revenues profits, but heuristic approaches modify the optimization process into satisfying, rather satisficing prosesses, thus suboptimization.

In general, there is a lack of data available to assess key performance variables, such as progressiveness, ecological and environmental considerations, and operational efficiencies. Thus, it is necessary to rely on the present data in evaluating aggregate performance. On this basis alone, the conclusion must be that the overall picture is not very

impressive, although it must be recognized that the standards applied are very high relative to those that might be employed in other parts of the world.

According to Baligh and Richartz, (1967) from both a macro and micro viewpoint, what appears to be needed is more coordination in distributive systems. Suboptimization is likely to occur in the absence of effective co-ordination. Mc Common and Hammer, (1970) argue that from a management perspective, improved results for retailers and wholesalers are most likely to be achieved when working in concert with other commercial channel members; profit margins and rates of asset turnover can simultaneously be increased, especially in light of the fact that retailing and wholesaling organizations are already highly leveraged. On the macro side, it is likely that increased intra-channel coordination will lead to less duplication of efforts within the system and thus greater output at lower or at least stable costs. Furthermore, a resolution of inequities in distribution will, obviously, demand a synergistic effort on the part of government and commercial channel members.

The coordination required can be accomplished through effective inter-organization management combined with enlightened government policies and actions. In order fully to comprehend the variables involved in achieving such management within distribution systems, it is necessary to understand and analyze the behavioral dimensions of channel relationships. Through the judicious use of socioeconomic power and the employment of functional conflict

management strategies, more efficient and potent distribution systems can be and, to some extent, are currently being structed.

Here, an analytical framework for achieving effective coordination is discussed by Bain, (1968) where emphasis is placed on understanding the relevant behavioral dimensions of interorganizational relations, because it is through such an understanding that the manager can learn how to organize, manipulate, and exploit the resources available to him in the commercial channel system of which his firm is a part . While attention is primarily focused on channels comprised of independently owned institutions and agencies, the same principles and premises apply directly to situations typified by vertical integration where ownership arrangements among channel members are prevalent. However, in vertically integrated systems, the managerial technique and dimensions are more of an intra-than an interorganizational nature. Here the approach taken is prescriptive.

E. Communication and Interorganization Information

Inadequate or inappropriate comminication, or miscommunication can lead to wasted resources and stimulate interorganizational conflict. The development of a working information system is a prerequisite to securing efficient channel co-ordination. However, an information system will always be imperfect, because its construction will be impeded by legal, cost, and privacy constraints. Information systems, no matter how carefully developed, are also always subject to distortion, given the perceptual bias inherent in all individuals.

Problems in channel communications generally center around structural and activity issues having to do with the length of the channel, inventory levels, promotion, products, and prices.

The longer the channel, the more highly developed the feedback system available to each channel member must be. Also, there should be mechanisms permitting the bypassing of messages in the channel. There is also likely to be a need for the repetition of messages, given the number of links in the channel that can distort message contents. This point all the more, needs further attention in vertical marketing systems like Gelişim's Hürdağıtım allignment.

Inventory management is a channel-wide problem and demands channel-wide communication. Inventory difficulties are intimately tied to problems associated with ordering, shipping, and delivery. To solve these problems, the first step must be the development of an effective intraorganizational information system. Programs associated with the use of high-speed electronic data processing have revolutionized management's capability to deal with problems of inventory management and control. An especially significant innovation has been the introduction of computerized point-of-sale or front-end systems, but not in Turkey yet ! These various systems have the potential for facilitating the queuing and sequencing of interorganizational messages relative to inventory management and control as well as providing instant feedback throughout a marketing channel. They represent communication breakthroughs whereby a significant amount of "noise" can be reduced via the formation of specialized languages and the alteration of technology. However, the economic, social, ethical, and political issues surrounding the wide - spread adoption of such systems are profound and must be carefully assessed and or accounted for as the development of such systems progresses.

Beyond computerized systems, and perhaps in conjunction with them, there is a strong need for informational assistance programs, especially on the part of the larger firms in the channel for the smaller ones, who are less able to afford sophisticated inventory programs. Obviously, such assistance will be self-serving if it is succesful.

Co-ordinated systems involving transportation modes and storage facilities demand appropriate queuing and sequencing of messages if communication attending timing problems is to be reduced in physical distribution. The development of specialized languages and the aid of computer technology have been significant in securing on-time delivery and adequate inventory, billing, and shipment information for a number of companies elsewhere. The application of the concept of shared services also is likely to help reduce redundancy in physical distribution services and communication.

Adequate feedback is critical to the solution of promotion problems.

The starting point in initiating an interorganizational information system must come from analysis of a channel's performance and profitability. Four approaches should be taken in making this assessment :

(1) developing a channel audit of marketing flows

(2) determining channel member's perceptions as to role behavior

(3) formulating strategic profit models and

(4) analyzing distribution costs. Distribution cost analysis, which here has not been focused on, permits an evaluation of revenues and costs associated with the use of alternative existing channels.

The first step in distribution cost analysis is the reorganization and reclassification of accounting data found in the firm's profit and loss statement into marketing function (flow) categories or groupings. The

second step calls for allocating the various costs associated with each functional flow category to each channel used by the firm. The third step is the preparation of a profit and loss statement for each channel.

The results of a distribution cost analysis do not constitute an adequate informational basis for taking corrective action. Such an analysis can only be on symptoms. Despite controversies over the relevant cost to include, it can be a powerful diagnostic tool, especially when coupled with additional analysis.

In case of Gelişim, since distribution costs are fixed for a period of minimum one year-normaly 2 years, as per pre-signed contract, the cost analysis remains to be a periodic analysis, and beyond the scope of this paper.

XIV. INTERORGANIZATION MANAGEMENT OF MARKETING CHANNELS AND DISTRIBUTION: (AN OVERVIEW)

The central theme here is that a high degree of inter-organizational co-ordination is required within a marketing channel if that channel is going to have a long-run impact on the markets that it serves. Such co-ordination is achieved via concerted efforts at interorganizational management. Emphasis has been placed on a normative rather than a descriptive treatment. In essence, this chapter contains a prescriptive model for channel relations and management.

The basic model may be summarized as follows: functional role specification among channel members is a prerequisite to achieving effective and efficient channel performance and is accomplished through the judicious use of social and economic power. However, conflict arises within channels due to

(1) the interdependency of channel members relative to goal attainment and

(2) the use of power in specifying roles. Thus, power must be re-employed in order to evoke conflicting management strategies. These strategies will be significant in bringing about a realignment of channel roles and reallocation of resources within the channel system. The level of channel performance attained via this dynamic process will, in turn, affect the level of conflict in the system as well as the extent, use, and bases of power of

the channel members. Each component of the model is briefly reviewed below.

Positions link channel members to each other, while roles define appropriate behavior for the occupant of each position. In the process of specifying role relationships, a series of prescriptions for role behavior evolves. The prescriptions are determined by the norms or behavioral standards of channel members for each other. Role prescriptions indicate what each member desires from all channel members relative to their respective degree of participation in the various marketing flows. There is, however, a strong likelihood that role performance will deviate, at least occasionally, from prescriptions because of situational factors, differing objectives, communication problems, and differing personal expectations among channel members. Thus, says Kaufman, (1971), the process of role specification is likely to generate conflict within the system.

More generally, conflict is brought about because of the operational interdependence of channel members. The need to cooperate is juxtaposed to the desire to retain autonomy, and thus channels can be characterized as systems encompassing mixed motives. Channel conflict can be defined as a state in which one channel member perceives another channel member to be engaged in behavior that is impeding or preventing him from achieving his goals. Conflict is caused by goal incompatibility, domain dissensus, and differences in perceptions of reality as well as by the level of interdependence in the system. It

results when there is an imbalance between the rewards a member receives from, and the contribution he makes to the channel. While conflict is a positive social force which breeds adaptation and innovation, efforts are required to manage it, because it has the potential of preventing a system from achieving effectiveness and efficiency in providing outputs.

Viewed from a normative perspective, social and economic power must be employed in a marketing channel to assure role congruence, induce satisfactory role performance, and manage conflict. Power is the ability of one channel member to get another member to do what the latter would not otherwise have done.(8) Power is synonymous with depandance: the more highly dependent one channel member is on another, the more power the latter has relative to the former. Available to channel members are several power bases that they may use to evoke change; these include rewards, coercion, expertness, identification, and legitimacy. They are most potent when used in combination. There is a cost associated with their use however, which must be included as an integral part of the analysis in the development of interorganization effectiveness management programs.

Perhaps one of the most significant functions of interorganization management is the generation of conflict management strategies, given the fact that conflict is an inherent phenomenon in interorganizational systems. Bargaining and negotiation strategy which involves the making of commitments, the development of trust, and the willingness to compromise appears to underlie the institutionalization of channel diplomacy, the effective use of

(8) Please refer to Chapter II - XIII - C.

exchange-of-persons programs, co-optation, conciliation, mediation, arbitration, and the establishment of superordinate goals. Perhaps even more important, the implementation of these latter strategies is likely to bring forth more rational and functional collective decisionmaking within the channel.

In order to activate the model of interorganization management, it is likely that channel leadership will be a prerequisite. It is even possible that control will need to be exercised within the system. The only means remaining for achieving control in certain situations will be vertical integration. There are, however, a number of interorganizational programs that can be enacted prior to actually acquiring a variety of channel institutions and agencies. Such programs (such as franchising and programmed merchandising) can also be brought into the discussion.

Communication is the vehicle through which channel systems are likely to be effectively organized. There are, however, problems of "noise" in communication created by omission and distortion of message contents. Some of the primary causes of "noise" are overloaded comminication network capacity, the secrecy of information, the timing of message flows, and perceptual differences between channel members. Several "noise" -reducing techniques are queuing, sequencing, bypassing, developing specialized languages, altering technology, instituting feedback, and repetition.(9) From an interorganization management perspective, there is a strong need to develop "noise"-free data systems that cross the company boundaries.

As indicated at the very outset of this analysis, the approach to the marketplace advocated here is very different from one that

(9) Please refer to Chapter II - XIII.

might be put forth by a welfare economist who believes that pure or perfect competition among and within the various levels of distribution will produce the greatest good for the greatest number. Although the latter argument may be valid, it would be foolish for the manager to ignore reality. Reality is that organized approaches to the marketplace have historically been permitted to exist, that such approaches have been commercially successful, and that it is unlikely, even in the very long run, that anything approximating pure or perfect competition will exist in industrialized societies. Thus, in order to ensure long-term viability, interorganization management appears to be important for distribution channels. There are, however, contsraints on the extent of vertical "collusion" that is possible; innumerable laws restrict certain channel activities, and also annual contractual agreements between Gelişim and Hürdağıtım. Thus there is place for further dwelling on the subject.

Last but not least, there has been an overview developed by Kurtuluş (10) where he discusses that economic and functional criteria have been mostly used for evaluation purposes. One needs a more valid and reliable aggregate model for measuring the effectiveness of the distribution channel. In any case, it is necessary to view the channel as a system, thus more than one effectiveness criterion should be included in, to the model and, if possible, they should be expressed in the objective function or functions, not only as constraints.

(10) As per open-end interview with Dr.Kemal Kurtuluş on the subject

At the verbal stage of a hypothetic model, it can be stated that the model may aim at the minimization of the total distribution costs and utilization of the optimum production and distribution capacities as economic criterion, maximization of market response to the functions performed by channel members or the optimum allocation of these functions to get the maximum market response as a functional criterion, maximization of co-operation or minimization of conflict among members of the channels as a behavioral criterion, maximization of the level of service supplied to the consumers, optimization of delivery time and maximization of the consumers, optimization of delivery time and maximization of the channel's adaptability. It is possible to add some other objectives such as social considerations, to the model. Ideally all of these objectives should be trated as objective function or functions in the model. Limitations on different variables should also be included into the model as constraints.

Financial restrictions, break-even points, minimum order quantity, minimum number of salespoint calls, maximum production capacity are the main constraints in such a model. To develop a mathematical model of this phenomena, one should determine all of these as explicit functions. Having specified these functions, Drysdale and Sendiford, (1974) choose an optimization technique, such as mathematical optimization, linear programming, dynamic programming or a satisfying technique such as simulation and heuristic programming to solve the problem. Of course, the major difficulty is whether all these objectives and constraints satisfy the assumptions of these specific techniques. In other words, the question is the following : "Can this problem be solved by using one or more of available techniques ?"

To solve a problem having more than one objective function

by using optimization techniques, one needs to use multiple objective optimization techniques. However, these techniques are not commonly known and applied techniques, in the literature, multiple objective linear programming technique with the help of parametric programming and game theory, may be a possibility. The problem should be reformulated to use a multiple objective linear programming technique. First of all, all of the objective functions should be minimizing or maximizing[11]. Thus, the objectives mentioned above must be put into a priority list. From this list minimizing or maximizing objectives should be selected as objectives of the model and the others should be included in the constraint set. For our problem, at least minimization of the total distribution costs, minimization of conflict among members of the channel and minimization of the investment level can be selected as functions. Other objectives can be formulated as constraints in the model. As a result, a mixed objective function can be generated by utilizing the game theory. Thus, the decision maker is allowed to make his own preference among different objectives given in the mix objective function. A new solution can also be calculated. Non-linear functions can also be treated in this model by using piece-wise linear programming techniques. Among optimization techniques, this technique seems to have a great promise in measuring the effectiveness of channels of distribution. Another possibility can be the application of dynamic programming to the problem.

Besides optimization models, simulation is the most appropriate technique for the effectiveness measurement as previously mentioned. A detailed, valid and reliable simulation model of channels of distribution, in addition to the existing ones, can be and has been developed for the purpose of Gelişim. Thus, this summarizes the heuristic approach in general, under logistic influences.

(11) As per unguided interview with Ms.Birsen Karpak on the subject.

GELİŞİM's DISTRIBUTION EFFECTIVENESS CASE IN PERSPECTIVE

CHAPTER III

I. PRESENT SITUATION OF DISTRIBUTION CHANNEL (HÜR DAĞITIM) IN TURKEY.
(GELİŞİM'S PERSPECTIVE)

Hür Dağıtım and Gameda are the only two companies, responsible for 100 percent of the Distribution Channels that are available for publication industry in Turkey. The mere size of figures, the dispersion of scattered end-point-retailers dictate the size and organization of distribution channels. The fact remains that distribution channel for periodicals in Turkey reflects almost an 'oligopoly' -rarely an oligopolistic competition.

The artery of the channel is daily newspapers and the physical distribution problem itself dictates the biggness of the necessary investment for such a distribution system. Thus, Hürdağıtım (Güneş, Gelişim, periodicals and Encylopedias) Hürriyet and its affiliated daily newspapers, Hergün's periodicals, Görsel, (Encyclopedias) and Gameda (Cumhuriyet, Milliyet, Tercüman, Günaydın, (Newspaper and their respective affiliates) Karaca and Ceylan periodicals) emerge as the two 'trusts' of puplication industry.

Oddly enough, the wholesalers and retailers in Turkey are chosen mainly by the merit of credibility and the family reputation. Thus a closer study of them reveals that most wholesalers remain to be wholesalers once they are appointed upon request and / or chosen and asked by Hürdağıtım or Gameda, or by both. As revealed by interviews[12] with related wholesalers and retailers, in most cases, the 'agencyship' passes down in the family from father to son, for several generations.

In Hürdağıtım, among wholesalers and Retailers 50 percent of them have been in the 'game' for as way back as Hürdağıtım A.Ş. itself like:

(12) With Nihat Aydın, Director of Hürdağıtım.

40 % of them in the last 20 years

5 % of them in the last 10 years and,

5 % of them in the last 5 years.

There are about 1 or 2 wholesalers and about 5-10 retailers approved in the last 2 years. The fluctuations in the system are secluded to the lower levels of the distribution channel where Hürdağıtım has neither any information, nor any control about. Hürdağıtım also doesn't have any desire to include these 'lower levels' in its communication channel. The magnitude of this fluctuation runs to about - 5 %. There is a distinct delegation of authority as far as this fact is concerned. Thus the leading characteristics of the channel is its 'stagnation' of intermediaries and the main reason for this 'non-fluctuation' is the business ethic of paying the dues on time, security of equities put up as collateral, general dependability on the efficiency of performers, and also the fact that the authority of 'family clan' is there, if the distribution company anthorities chooses to pull the strings if need be. It is said that a similar rule of business applies also for Gameda. The end result of this picture is the fact that there is an overlapp of both wholesalers and retailers. In other words, most members of the distribution channel perform both for Hürdağıtım and Gameda. The overlappers are about 62 percent of the channel network.[13] An average retailer in the network handles 12 daily newspapers and 103 periodicals ranging from weekly to bi-weekly and monthly periodicals. (magazines and encyclopedia

The average retailer as an organization composes of the following five persons;

1 owner and manager

[13] As per interview with Sedat Simavi,jr. ;Genel Manager of Hürriyet

2 Responsible staff that works at night

1 Accountant and,

1 Worker.

Thus, mere physical handling of the publications poses a severe problem, leave alone the managerial desicions related with distribution, costs and revenues. The opinion survey conducted with the wholesalers and retailers revealed that the situation at hand has been a mere marathon against time rather than a business to be run with due respect tu the problem allocating enough time and energy to every issue that deserves and needs every specific attention a wholesaler and retailer can provide.

The publisher judges the efficiency of distribution system with the percentage that returns as unsold, out of the total puplications distributed. For Hürriyet and its affiliated puplications, when the return rate exceeds 11 percent, Hürdağıtım has in the past considered seriously to alter its retailer at the point in question.

This continues to be the case at present time, and 2 ultimatoms were sent out to such retailers, before positive action is taken to replace them with others.

On the other hand, historical analysis proves that if returns fall to 8 percent of total distribution, it is generally accepted that stock-out situation is in hand.

The major explanatory factor here is the fact that the multiplicity of end-points (somewhere past 40 000, all together) dictate that scrupulous 'exact' allocation to each and every one of them is impossible, thus excess in the amount of ten percent of the whole is a minimum spill-over, and anything below that, dictates stock-outs at some points.

The mere size of end points; 40 000, also dictates another interesting phenomena that a minimum publication of approximately 40 000 is necessary to enable one publication at each end-point : Thus any publication below this means that some points will automatically be left out and some others will enjoy the privelage of holding more than one per publication in stock, depending on the desicion maker. As far as stockouts is concerned, it seems to be a common experience and Hürdağıtım feils to control the situation even for its own publications.

This is mainly due to the fact that rational allocation of distribution lots are not rationed wisely and the whole situation is handled by "the most practical solution-approach", rather than by the "most effective" way.

Thus it is said in general, the publication reader, especially the magazine reader, has high brand loyalty and the customer will 'search' for the stock-out item until he /she finds it. Suffice it to say taht encyclopedia partworks demonstrate the utmost brand-loyalty.

The cost of distribution is set constant as per yearly agreements, mutually signed by each party before the begining of the year, both by Gelişim Holding and Hürriyet Holding after a series of longlasting negotiations.

As per agreement, for the year 1983, Gelişim has agreed to pay 25 percent commission to Hürdağıtım for each periodical sold throughout the channel. Here, Hürriyet applies discriminatory policy in favor of Gelişim, because normally Hürriyet charges 27 percent to all of its other clients. The difference comes from the fact that

total monthly sales volume generated by Gelişim's publications runs an average of 300 Million T.L.; thus the "small favour"....

Out of this 25 percent, five percent remains at Hürdağıtım's company base, and 20 percent is sent down the channel, where wholesalers perform with ten percent selling commision and retailers keep the remaining ten percent.

For Gelişim AŞ., Hürdağıtım charges one-way commisions, that is to say the unsold returns are not charged a commission. Its other clients besides Gelişim do not enjoy this privelage either, hence another "favour", In case of daily newspapers, the wholesalers charge 15 percent commission, and retailers charge eight percent.

The normal wholesaler size covers the ground for 150-160 retailers, all engaged in the selling activity themselves as well as majority of them being distributiors to other smaller end points branching - off.

The payment of publications sold back to Hürdağıtım is completed within the week after sales, and Hürriyet holds a liquid asset collateral of 15 day's worth of sales per retailer and wholesaler, regardless of the sales volume. The returns of unsold portion and accounts are finalized appoximately 20 days after the sale is finalized, where each level of distribution channel members settle their financial terms with Hürriyet weekly in cash form.

The effect of price change is in general said to have an invers effect to the quantity sold and generally 15 percent price rise is the sensititivity echelon where quantity sold tends to decline, but generally recuperating back to its original volume sold after 2-3 months later, provided 'ceterus paribus' holds and that

There is no change in the quality of the product.

A privilage that Gelişim enjoys over its competitors is that it can play around with its wholesale distribution figures, and supply the format reflecting quantities with which Gelişim prefers the wholesalers to work with supplying them lists when dealing with Gelişim's publications and disperse to related retailers.(14) Thus, a great deal of the planning activity is carried on by Gelişim, where once the desicion is made, its implementation and related pitfalls necessitate due care and enthusiasm with which laqic deserves, and swiftness in action especially as each Gelişim publication has a specific day in which it has to appear in the general market ready to be sold at the kiosks, and five different publishing houses which it works with, all sub-contracted, namely: "Hürriyet Halkalı Matbaası", "Apa Ofset", "Mısırlı Matbaa", "Cağaloğlu Matbaası" and "Bosna-Halkalı Matbaası". The weekly calender beeing: two days prior to sales date for İzmir and Ankara, one day prior to sales date for Bursa, three days prior to sales date for Adana, and also three days prior to sale for foreing countries like Western Germany and Cyprus, one day prior to sales for İstanbul and the like.

Monthlies are relatively easier to organize delivery dates for, since beginning of the month is the deadline, where weeklies are harder, since Nokta is offered for sale on Sundays, TV guide on Fridays, Çocukça on Saturdays, and Encyclopedia partworks on Mondays.

The Gelişim distribution trucks aid Hürdağıtım, and take over the publications from publishing houses, (the latest one night before the delivery scheduled at 6 PM) and arrange in 100 lot size

(14) Please refer to Appendicies.

bundles and ship according to pre-arranged schedule. Lot size may go up to 200 in rare publicationslike Erkekçe and the like. Then the lots are labeled, written and addressed. Gelişim's scheduling and anlysis of actual distribution and shipment figures remain to be workable only for İstanbul, and each wholesaler that the periodicals are shipped to is also given a suggestive tentative distribution plan for their retailers and subgroups of retailers to cover Gelişim's publications. In case of Taşra where the bull of sale come from, the distribution plan is actually worked out as a rule-of-thumb game between Hürdağıtım and the wholesalers at stage one, then at stage two the game goes on between wholesalers and retailers, thus down the line. At each stage, the working chart reflecting percentages and/or lot sizes to each subsequent groups is a valuable tool to work with and to reflect back upon, after the results are obtained when the returns materialize. But unfortunately the case is not so and the work-tool is a neglected utophia. Referring to the questions of returns, Gelişim's historical analysis reveals that an average of 20 percent return rate (for unbought partion of total circulation) is a satisfactory point of operations. Some periodicals do better of course, and some show a less desirable performance, levelling off at the last analysis.

As a careful eye would observe, the whole distribution network is quite a flexible web, thus accentuate the need for a closer audit, a continious re-orientation and re-education program for updating and a closer communication in every direction, both upwards, sideways and all-over. Still, as the molecular growth of end-point retailers would suggest, the end points of the present distribution

system remains to be inconspicious and non-declared in this huge 'melting-pot'.

A. Organizational Chart of Distribution Channels

A closer look at the organization chart of Hürriyet distribution company operations, would reveal the wholesaler, and operating retailer 'web' to look like the distribation chart enclosed.[15]

This chart reflects the network of information, command, complaint, physical and psychological reward systems and the like.

Whereas the physical delivery of goods is concerned, the organization chart shows a more geographical allocation as such:

HÜR DAĞITIM

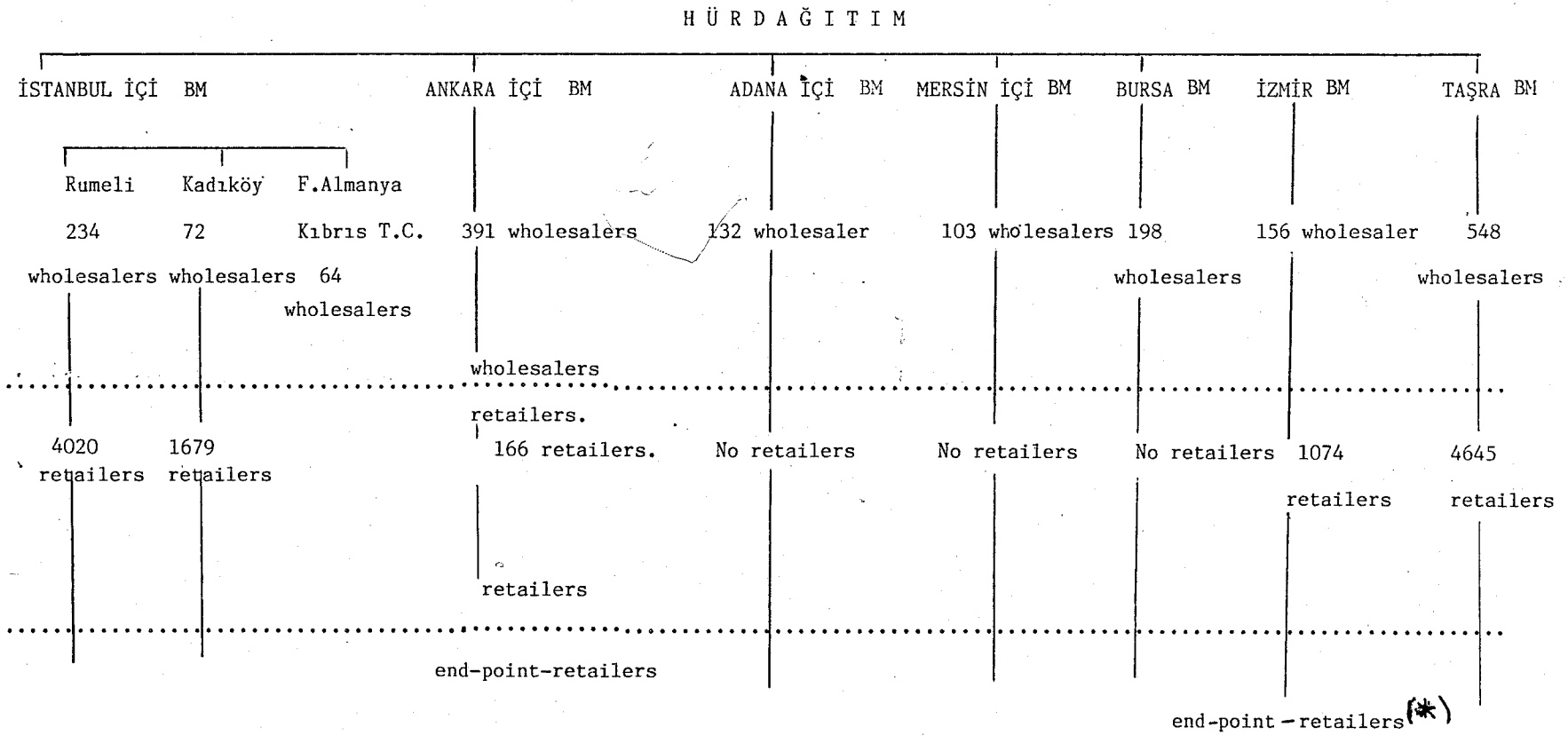
İSTANBUL	ANKARA	İZMİR	ADANA
- Trakya	Samsun (I and II)		Mersin,
- Kadıköy (Erenköy)	Erzurum		Tarsus,
- Kıbrıs	Sivas (I and II)		Yenice v.s
- F. Almanya			
- Saudi Arabia			
- Australia			
- Bursa			

Going to the bottom of the 'melting-pot' the physical allocation of periodicals reflects a bi-fold selling function;

1- Selling as a result of home-delivery by retailers mostly through 'bakkal's' and kiosks

2- Free Sales; as a result of marketing capability of the person at the kiosk, and/or 'bakkal.'

[15] As per Appendix C, and Organization chart on next page.



1946 Wholesalers

11 648 retailers

≅ 40. 000 end-point retailers. [individually operating single personalities]

ORGANIZATION CHART

(*) :numbers unknown

BM: Area Managemement Ofices.

B. Information Collection of System Samples

Enclosed samples[16] illustrete the daily, weekly, bi-weekly, and monthly periodical distribution information flow as discussed in section A of this paper in Chapter III.

Be it Gelişim distribution center, be it that of Hürdağıtım, each day that shipment physically takes place, a set of these information lists have to be filled out for each periodical, depending on the geographical wide-dispersion desired by the desicion-maker.

Here, 'wide-distribution' refers to wholesalers that actually sell the periodicals as well as handle them down the line to their affiliated retailers and/or wholesalers that only handle the publications, without selling them themselves. What happens next below that line, the desicion maker has no control over. He knows merely that it exists and how many of them there are all together "out there"; that's all.

As referred to before, Gelişim has a better grip of the actual situation in İstanbul, if not in Taşra.

Here in İstanbul, Gelişim enjoys another privilage of being able to play around with its distribution figures, thus has designed its own information channel in order to perform efficiently, if not effectively. In this context, we can site the Enclosed Shipment list[17] limited into four geographical areas, namely;

(1) Cağaloğlu - SURİÇİ

(2) Cağaloğlu - SURDIŞI

(3) Karaköy - Sarıyer

(4) Kadıköy - Erenköy

[16] As per Appendix C

[17] As per Appendix E

Thus here with this list, all the wholesalers and wholesaler-retailers are listed, in their numerical order within their respective territories, with their addresses included.

They are closely scrutinized for their periodic [monthly and weekly] performance[18] with each case systematically noted and analysed mainly for the performance of their affiliated retailers, size of returns, stockouts, width of item coverage etc. etc. The more sucessful and important ones [both wholesale-retailer and retailer] pointed out with red dots in the list number and an informal interview-discussion-is held with them using free, open-end questions with no leads, no structure, no pre-designed form etc.

[18] As per Appendix D

C. Systematic Questioning
of the Distribution

The questionnaires, freely used were many-fold.

[1] With Hürdağıtım management team

[2] With kiosk owners.

[3] With wholesaler-owners from the list Questions to the Distribution Channel

[4] With the customers

[Point-of-purchase research]

[5] With Gelişim distribution management. [Checklist]

The sample questions that accurred to my mind were mostly played by the ear[19] except those in the fifth category, above.[20]

These questions were repeatedly applied, personally by me in different seasons, at different points of İstanbul, [as addresses would reveral] at different months of the year, [Fall, Summer, Winter, Spring] at different weeks ['payroll-week', versus last week] at different days [beginning, mid, end-of-week] and hours. [morning, mid-day, afternoon, and at night]

They were conducted to different customers within dispersed age groups, from different sexes, with different monetary, social, cultural, educational, professional and geographical classifications, and qualifications.

The Managers of Gelişim and Hürdağıtım mutually agree on a good many of the problems shared, questions answered, thus grounds covered.

Here, systematic manupulation of results of these questionnaires are not calculated and analysed 'per se' but results are held in good reserve for interpretation of outcomes of the model and also

[19] Systematic evaluation of Answers have hot been compiled.

[20] Questions in Appendix G have been discussed with the " Holding Managers."

for logical assumptions that one had to undertake, with the intention of covering a lot of ground while working with the model, the regression equation and also simulation.

A set of questions have been prepared, namely:[21]

1. Questions to the Retailer and Wholesale-Distributors
2. Questions to the Distribution Channel Responsible (Hürdağıtım)
3. Checklist for Management Regarding Distribution Function
4. Point-of-Purchase Research

These questionnaires are neither decisive nor precisive. Their content, coverage, language, sequence, scope and length of questions and their type (mostly open end) is haphazardly chosen.

The lists of questions have been compiled in order to facilitate a starting point for systematic thinking and/or systematic questioning of several issues.

They, therefore are to be considered as a starting point, stepping-stone; where further detailed, and better systematic analysing by means of questions can be created and implemented with due arithmatical, and statistical research applied to the answers as well as a content analysis. Thus an over-all synthesis could be pulled out and results could only then be interalized and implanted into the research, thus attempting to complete the picture.

[21] As per Appendix G

II. READER PROFILES OF GELİŞİM'S PUBLICATIONS

A. General Explanation

Gelişim has conducted a systematic reader profile research for each of its publications for every type of its publications. (e.i. weekly, monthly) These questions have been decided upon by a committee, and the work has been conducted professionally by 'PIAR' Company.

The statistical qualities of the method have not been challenged scholastically. But technically, the sample size has been checked out from a text book by Piercy and Evans, (1983) for confidence levels.

Here the sample size judgement can be illustrated as such as per an interview with general publishing director of Kadınca Ms. Duygu Asena, 55 percent of the magazine market have responded; the sample size is given by the equation:

$$\text{Sample Size} = \frac{P.Q}{S_p^2} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Where, (P) is the estimate of population percentage. Thus, (q) is then egual to (100-p) and (S_p^2) is desired standard error of prediction. Then, going back to our analysis to be in the 95 percent confidence limit, our Standart Error of prediction is $\pm$ 2.

$$\text{Thus} \quad S_p^2 = 2\,\frac{2}{4} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

then, going back to our equation; sample size is; 55 x 45/4 and this rounds up to 618 profiles. Looking into our Kadınca profile, we see 967 respondents, thus proof of a good sample size.

Thus results of profiles have been obtained, and demographic specifications of each of Gelişim's publications have been analysed and listed for further analysis of the picture they reveral.

It would be preferrable if buyer of each periodical could be demographically analysed by means of monthly sample surveys, at each distribution territory, for the purpose of speculating wisely on the target market size.

The yearly Turkish Statistics figures for the whole county could then be a good 'pool of information' to blow up by means of market models, and the sample survey results; and extrapolate on the potential buyers of each issue per periodical, Thus by utilusing perceived method of aiming at maximization of exposure to sale, minimization of returns, and maximization of sales, thus ultimately maximization of profits, when costs are minimized.

However since such specific surveys are monetarily and technically beyond the scope of this paper, best use is made of customer profiles in order to obtain similar demographic information and to speculate on target markets per month per periodical, per territory, by means of some inevitable assumptions.

B. Sample

The sample of a'customer profile' presented as an enclosure here in this paper is Kadınca.

Similarly, all other Gelişim publications also have customer profiles, conducted annually for them, sometimes monthly.
The primary objective of these 'profiles' is for use in obtaining advertisements for the publications. "The ultimate reader....., when revealed to the producer, may, seem more tangible thus the advertising agents use our 'profiles' as a tool in convincing the producers to decide for advertising to reach the customers he prefers, via the ....." specific Gelişim publication(s) he chooses.[22]

(22) As per interview with Ms. Asena and also with an anynomous reader/commentator.

III. DETAILS ON THE MARKET MODEL AND DISTRIBUTION RESEARCH

The market model can be simplified as such: quantity of sales fer month, per periodical per territory of distribution is a function of prior month's sale of each periodical at each teritory of distribution, a function of distribution figures for that month per territory, per periodical, a function of education level at that month at that territory among the target buyers of each periodical, a function of, income level at that month at that territory among the target buyers of each periodical; a function of sex discrimination of the potential buyers of each periodical at each teritory at each month, a function of potential buyer density of each periodical, at each teritory, each month.

This is a 'linear market model,' and is the best workable model that would reflect the present situation because the analysis covers a period of one year and any model can be safely assumed to reflect a linear form within such a short-sighted spectrum. The model could also he formulated in a non-linear form, for a mixed integer programming course-of-action: however from point of view of workability, it would rank lower in the desirability list. Such a model might offer a better 'optimizing' solution, however its usability for the desicion-maker might indeed be minimum, thus a workable, simpler, easier model has been preferred here in this paper. Further on, a simulation model has been designed after utilizing the regression method, and applied to analyse the market, thus aiming at providing the desicion-maker with an interactive desicion making tool which he can utilize according to his preference and satisfaction limits.

The Turkish market is analysed as a potential target for Gelişim's fourteen publications, challenged by the model, using Turkish statistical yearbook.(23)

The Turkish population breakdown for age has been grouped in five main categories(24) as logical age group of potential buyers of periodicals. Then, potential population within those five age groups have been added to a total.

The reader profiles reveal the characteristics of readers of each periodical as per age groups of each.

Thus, generalizing with the assumption that each distribution territory carries same characteristics as the whole of Turkey, the reader groups of each periodical are grouped as subgroups into each distribution territory: a total of eight territories all together. Here, the primary most decisive fact about the literate population to be helpful in categorizing, is the age composition.

Thus 'age' factor is integrated into the 'literate population' figures. To illustrate with an example, one first finds out the literate population in Turkey which is assumed to be 15 years or older, and groups into five categories of age: ei: basing on the reader profile, it is revealed that 16 percent of the literates of this age group forms total target market for onyedi. Thus total buyer markets of each periodical is calculated.

Assuming that the population scattering of readers of periodicals reflect same trends as total Turkish population, then the target market of each periodical is rationed out to Hürdağıtım territories according to the same ratios and same fractions of total

(23) Year (1980) Here primary decisive fact about the literate population to be helpful in categoriying is the age compontion

(24) As per Reader profiles, Appendix F

Turkish population that particular territory holds, working out each territory in turn.

Here Turkish target buyer population of periodicals is boiled down and re-grouped according to territory of coverage of Hürdağıtım, city by city, using again the customer profiles of periodicals, where the ratio of buyers to readers reveals the true picture.

Geographical area coverage. (km^2) of each of Hürdağıtım distribution territory has been calculated(25) by the same way, city by city, also in line with distribution territories of Hürdağıtım.

Then, buyer population density of periodicals for each distribution territory is calculated by the general formulation(26) where buyer density is a function of the buyer population of each periodical per square klometers per territory of distribution, per month.

In other words: it is the literate buyer population of periodicals per km^2 of each Hürdağıtım distribution territory, monthly handled for each issue of periodical. These target buyer market population figures, rationed out to territories of distribution are then treated for further analysis like:

(1) The breakdown of female, and male groups

(2) Breakdown of education groupings of the buyers of periodicals,

(3) Breakdown of professions of the buyers in order to reflect their income groupings and related social status as further qualitative stratification of the buyer population of periodicals.(27)

(25) As per Tables Supplied.
(26) Please refer to Tables, supplied in this paper
(27) Ibid.

These analysis of quantification of the buyers, reflects an average profile result, taking the mathematical average of the yearly profile ratios, and applying to each territory's buyer figure, the same throughout the country. This assumption is due to lack of further detailed knowledge, thus is the best available at the moment without field research and could be said to be representative of the whole target population since answers to the 'pole' run from İzmir to Van, from Muş to Edirne. One major assumption however is the monthly change of these figures, in fact an analysis of this sort has to be carried out for each month, but due to limitations of this case, the monthly fluctuations are assumed to be minimum, or close to 'stagnation'; however population education, profession income etc. are all based on human beings, thus growth rate of figures has been introduced into the model, here in order to account for any inter-territory migration of each 'bit' of analysis 'to' and 'from' each other, all the time.

Thus 'time effect' and 'territory effect' are to be considered, and incremental analysis is thus introduced as a further 'zest' to the game. However, further limitations are at hand when we start working with five-year population statistics. Thus then taking the year 1980 we have to break up our information into months by using 60 'th roots, as there are 60 months, in 5 years. As the base to 'lean' on, we bring up our figures by three years using: (36+k) as the formulated rate of up-bringing for any figure of any month per periodical in 1980, to be brought up to year 1983 as the fact implies (12 x 3 = 36 months in three years).

The same logic has been applied to all supplied data, thus all monthly figures are derived whenever not supplied. Sales figures of prior month, distribution figures of this month, also sex, education, population density, income (social stratification), etc. are all treated with same logic, whenever had to be derived.

Here, seing distribution as a function of sales is not a 'maljudgement', it is a necessary and desired assumption derived from previous applied questionnaires, if there has been no periodicals distributed, there would be no sales, on the other hand, if there are no sales, then there are no periodicals to be distributed also. A typical chicken-and-egg position.

If quantity distributed, reflects a 'good', a 'significant' parameter, this would mean that distribution is one of the better explaining factors of sales quantity.

The inevitable, but re-occurring question is whether all these variables interact in a non-linear form, and/or whether they show any re-adjustment, any 'solidarity' of market to figures: a solidity of analysis against further interrogations. Thus further extrapolation reveal that multi-object observations could also be expected.

The concern here with developing models of the market as a focus for making distribution/decisions and design of the marketing mix: 'place' being one very important 'P' the marketing mix. The term 'model' is used here to indicate not simply the mathematical simulation of a market based on management science, but also the use of marketing research data to describe and analize markets. Modelling can be (a) descriptive-describing the phenomenon and its parameters, such as market size and shares: (b)predictive-having

some ability to forecast what might happen in different circumstances, like sales forecasts; and (c) normative-suggesting what should be, in optimal circumstances-for instance optimising the allocation of publication distribution between territories.

In this present context, the concern is primarily with descriptive models on the grounds of practical use and the more common application of prescriptive models rather than complex normative methods. The main components of distribution analysis can be summarised as focusing on (a) a merket's requirements, (b) the actions taken by others in the field and (c) market size.

Market Size and Share:

A starting point is to identify the size of the market as a base for marketing planning, distribution scheduling, and forecasting sales.

Market size dimensions include numbers of customers, the volume of periodicals consumed and its financial value, although there may also be a reservoir of potential buyer-readers to be tapped by greater and/or more effective distribution effort. There are, therefore, two sides to the market size question: first, what is happening in terms of total distribution, and secondly, what could happen if current non-costumers were or could be converted, reached!

Distribution research in general can be divided into two broad categories: first, research that publishers require in order to study their distribution channels: and second, research that distributors carry out (or commission) to study their own operations.

In the latter category, many of the applications of research in this context have already been discussed, for example, in terms of market size, distribution, evaluation of returns etc.

Management Science Models:

In addition to the types of model discussed earlier, there are deterministic models, that is, those involving the use of calculable mathematical relationship, as well as some that are based on the laws of probability known as stochastic models.

One fundamental model discusses organisational objectives and their relationship with marketing (especially distribution and pricing). As to manegerial desicons; the sales maximising model of Baumol and Blinder, (1982) is a compromise between economists' theoretical profit maximising approach and the real world. Profit is made where total revenue exceeds total cost, and although maximum profit is made where revenue exceeds costs by the greatest amount (by definition), the compromise position is likely to be where acceptable profits are returned and, subject to this, sales maximised. Price is calculated by dividing revenue by output. although marketers would argue that price would help determine output.

Kotler's, (1971) optimising technique as discussed in chapter I of this paper, is linear programming which has been applied to areas like distribution scheduling, and optimising the marketing mix. However many more constraints and hence there is a source of weakness of the model.

Many marketing programmes require all degrees of scheduling and planning; a technique that can help (for example, in planning new distribution of new products developed) is network analysis. By comparing each possible route, through the series of tasks with the time required for each phase (as shown by the horizontal axis) the shortest lead time to sales can be identified . Such a procedure

therefore employs the critical path method.

In fact, Montgomery and Urban, (1969) attempt to use marketing and distribution research data to build management science models. Many further studies attemp to demonstrate the application of marketing research to the decisions involved in analysing markets and developing the marketing program, moving from the development of descriptive and predictive models towards the optimising and stochastic models associated with management science. The objective here is not to catalogue all such applications and models but to illustrate one posible way to make the use of marketing and distribution information in this area.

IV. ANALYSING THE MARKET MODEL IN LINE WITH PRESENT DISTRIBUTION SITUATION

A. Description of the Objectives (Maximization of profit by way of: minimization of returns, maximization of exposure to sale with minimum distribution costs, and maximization of sales)

Formulation follows;

$$T\,\Pi = \sum_{i:1}^{14} \Pi\, i \qquad \ldots\ldots(3)$$

$$\Pi\, i = Q\, i \left[P_i - FC_i - VC_i\right] - R_i \left[FC_i + VC_i\right] + S_i R_i + Adv \qquad \ldots\ldots(4)$$

$$F\,C\,i = W_i\, FC \qquad \ldots\ldots(5)$$

$$W\,i = \frac{Si}{TS} = \frac{Qi}{Q} \qquad \ldots\ldots(6)$$

$$Q = \sum_{i=1}^{14} Q\, i \qquad \ldots\ldots(7)$$

$$G\,i = Qi + Ri \qquad \ldots\ldots(8)$$

$$\Pi\, i = Qi\ Pi - Qi\ \left[FCi + VCi\right] - Ri\ \left[FCi + VCi\right] + SiRi + Adv \qquad \ldots\ldots(9)$$

$$\Pi\, i = Qi\ Pi - \left[FCi + VCi\right]\left[Qi + Ri\right] + SiRi + Adv \qquad \ldots\ldots(10)$$

where, $T\,\Pi$ = Total profit

Π = Profit of 'i' th periodical

Q = Quantity of net sales for 'i' th periodical

P = Price of 'i' th periodical

FC = Fixed cost of periodical 'i'

VC = Variable cost of 'i' th periodical

R = Returns of 'i' th periodical

S = Scrap value of 'i' th periodical

W = Weight of 'i' th periodical in

(1) Scrap value proportionate to total scrap

(2) Net Sales proportionate to total sales

(3) Fixed costs proportionate to total fixed costs.

Q = Total Net Quantity Sold

Gi= Gross Sales of 'i' th periodical

Adv= Advertising Revenue

Thus, in short;

Total profit = Net Revenue - (Cost x Gross Sales)+Scrap Value + Advertising Revenue

Here, in our model fixed costs are not revealed, variable costs, rather costs per unit of our periodical, reflects the fixed costs,appropriately rationed, per periodical, per month.

Moreover,scrap value of the periodicals are twofold;

1. Encyclopedias are re-grouped and binded, thus made ready for door-to-door sales
2. Other periodicals are re-cycled into the system as scrap and raw material for further new issues.

However, as our simulation model will reveal, periodicals not only in Gelişim, but everwhere in Turkey and not only in Turkey, everywhere in the world, are almost always at break-even points or below break-even, and the 'new blood', 'fresh money' comes from advertisements.

In our interactive model however,(28) scrap value and advertisement revenue are left out assumed to be '0'; prices are assumed to be constant throughout the year as per company policy. There has been rare occasions however, where prices have been slighty fluctuating within the year due to high costs. Thus in case of any such situation, the effect have to be isolated. All these are beyond the scope of this analysis, thus are grounds fur further research.

(28) Where Managers intereact with the model to reach Statisfying ends.

V. DETAILED EXPLANATION OF THE PROGRAMS

A. Description of the Regression, Projection and Simulation Models Used.

The indices if our model are threefold, i,j,k, where 'i' denotes the periodicals 'j' denotes territories of distribution,and 'k' denotes period; 'months' to be exact.

In our linear model, the main variables that effect outcome are roughly:

1. Quantity of 'i' th periodical at teritory 'j' sold at period (k-1)
2. Quantity of 'i' th periodical distributed at period (k) at territory j
3. Density of literate buyer population of 'i' th periodical at period 'k', at teritory 'j', and
4. The following qualitative factors of buyer groups of periodicals, namely;
   a. The 'sex' discrimination situation of the 'buyer' of the 'i' th periodical at period 'k' at territory 'j'
   b. 'Education' discrimination situation of the 'buyer' of the 'i' th periodical, at peried 'k' at territory 'j'
   c. 'Profession' discrimination situation of the 'buyer' of the 'i' th periodical, at period 'k' at territory 'j'

Let it suffice to say that the qualitative factors of buyer groups of periodicals have their relative subgroupings as such:

(a) Sex has two components

(1) Male buyer group

(2) Female buyer group

(b) Education factor can be summarized in four sub-groupings.

(1) Primary school.

(2) Orta School

(3) Lycée

(4) University

(c) Profession also has six sub-categories as such: Students; workers, entrepreneurs and businessmen; technicians; Craftsmen and tradesmen; Employees and the Retired; last but not least, the House-wives! Thus the simple market model of four variables, suddenly blows its dimensions to 15 variables all together; Thus, when we think of the mathematical and statistical limits of size of figures, our matrix size emerges to include 14 periodicals, 8 territories and 12 months thus dotaling up to 1344 points within the matrix.

$$14 \times 8 \times 12 = 1344 \quad \ldots\ldots\ldots\ldots \ldots (11)$$

When the regression equation is run for each periodical seperately, we obtain the parameters of independent variables that attempt to explain the dependent variable. Thus after statistical aptitude of the analysis is satisfied, then we use the same parameters and tend to extrapolate into the future by means of regression

projection program when monthly planned distribution figures of each periodical, for each territory are feeded into the system, and the outcome can be tested against the true situation as time passes, and as each months actual sales figures materialize.

An interactive simulation program is also designed to aid the desicion-maker for deciding on the most satisfying distribution quantities and selling periodicals, attaining the desired relative profits per teritory per month.

1. Description of the Indicies:

The indices used can be explained as follows;

i: periodicals

i: 1 : Toplum İnsanlar

i: 2 : Erkekçe

i: 3 : Onyedi

i: 4 : Kadınca

i: 5 : Örgü

i: 6 : Bilim D.

i: 7 : Eleştiri

i: 8 : Nokta

i: 9 : Sarı Dizi

i:10 : Beyaz Dizi

i:11 : Atlaslar

i:12 : Coğrafya

i:13 : Evimiz

i:14 : Hayvanlar

j : Territory

j: 1 : Trakya

j: 2 : Kadıköy

j: 3 : Adana

j: 4 : Ankara

j: 5 : İçel

j: 6 : Bursa

j: 7 : İzmir

j: 8 : Taşra

k : Month

k: 1 : Ocak

k: 2 : Şubat

k: 3 : Mart

k: 4 : Nisan

k: 5 : Mayıs

k: 6 : Haziran

k: 7 : Temmuz

k: 8 : Ağustos

k: 9 : Eylül

k: 10 : Ekim

k: 11 : Kasım

k: 12 : Aralık

Independent variables (15 all together)

Q : Prior quantity sold

D : Distribution quantity

P : Buying population density in the area

E : Education Status

E 1 : Primary School

E 2 : Intermediare

E 3 : High School

E 4 : University

M : Male population

F : Female population

Income Groups denoted by denoted by different Profession groups

Q : Students

W : Workers, entrepreneurs, businessmen

T : Technicians

S : Craftsmen, tradesmen

MM : Employees, Retired -men

H : Housewives.

2. Description of the Variables

(a) Controllable variables.

The Distribution quantity of each periodical 'i', at each teritory 'j' for each month 'k' is one of the leading controllable variables, and the second controllable variable 'price' is assumed to be constant for the analysis year, thus, it does not appear in the regression analysis.

(b) Non-controllable variables.

As stated above sex, population density, education and, profession, are incorporated into the analysis with growth formula in order to generate the individual figures for each time period 'k', from 1980 five year statistics, to make them compatible on 'monthly' basis; as follows:

$$\Delta\ Pij = \left(\frac{Pij'80}{Pij''75}\right)^{1/60} - 1 \quad \text{.....(12)}$$

$$\Delta\ E1ij = \sqrt[60]{\frac{E\ 1\ ij'80}{E\ 1\ ij'75}} - 1 \quad \text{.....(13)}$$

$$\Delta\ E2ij = \sqrt[60]{\frac{E2\ ij\ '80}{E2\ ij\ '75}} - 1 \quad \text{.....(14)}$$

$$\Delta\ E3ij = \sqrt[60]{\frac{E3\ ij\ '80}{E3\ ij\ '75}} - 1 \quad \text{.....(15)}$$

$$\Delta\ E4ij = \sqrt[60]{\frac{E4\ ij'80}{E4\ ij'75}} - 1 \quad \text{.....(16)}$$

$$\Delta\ M\ ij = \sqrt[60]{\frac{M\ ij\ 80}{M\ ij'75}} - 1 \quad \text{.....(17)}$$

$$\Delta \; Fij = \sqrt[60]{\frac{F\,ij\,'80}{F\,ij\,'75}} - 1 \qquad \ldots\ldots\ldots\ldots\ldots\ldots (18)$$

$$\Delta \; Oij = \sqrt[60]{\frac{O\,ij\,80}{O\,ij\,75}} - 1 \qquad \ldots\ldots\ldots\ldots\ldots\ldots (19)$$

$$\Delta \; Wij = \sqrt[60]{\frac{W\,ij\,80}{W\,ij\,75}} - 1 \qquad \ldots\ldots\ldots\ldots\ldots\ldots (20)$$

$$\Delta \; Tij = \sqrt[60]{\frac{T\,ij\,80}{T\,ij\,75}} - 1 \qquad \ldots\ldots\ldots\ldots\ldots\ldots (21)$$

$$\Delta \; Sij = \sqrt[60]{\frac{S\,ij\,80}{S\,ij\,75}} - 1 \qquad \ldots\ldots\ldots\ldots\ldots\ldots (22)$$

$$\Delta \; MMij = \sqrt[60]{\frac{MMij\,80}{MMij\,75}} - 1 \qquad \ldots\ldots\ldots\ldots\ldots\ldots (23)$$

$$\Delta \; Hij = \sqrt[60]{\frac{H\,ij\,80}{H\,ij\,75}} - 1 \qquad \ldots\ldots\ldots\ldots\ldots\ldots (24)$$

Then trying to include these incremental figures in the model, introducing the 'k' dimension to these variables however infinitessimal they may seem, the growth formulas have been used as follows;

$$\overset{\star}{P}ijk = (1+\Delta Pij)^{\frac{36+k}{36}} \star Pij\,(1980) \qquad \ldots\ldots\ldots\ldots\ldots (25)$$

$$\overset{\star}{E}1ijk = (1+\Delta E1ijk)^{\frac{36+k}{36}} \star E1ij\,(1980) \qquad \ldots\ldots\ldots\ldots\ldots (26)$$

$$\overset{\star}{E}2ijk = (1+\Delta E2ij)^{\frac{36+k}{36}} \star E2ij\,(1980) \qquad \ldots\ldots\ldots\ldots\ldots (27)$$

$$\overset{\star}{E}3ijk = (1+\Delta E3ij)^{\frac{36+k}{36}} \star E3ij\,(1980) \qquad \ldots\ldots\ldots\ldots\ldots (28)$$

$$E4^{*}_{ijk} = (1 + \Delta E4_{ij})^{36+k} * E4_{ij} \quad (1980) \ldots\ldots\ldots\ldots\ldots \quad (29)$$

$$M^{*}_{ijk} = (1 + \Delta M_{ij})^{36+k} * M_{ij} \quad (1980) \ldots\ldots\ldots\ldots\ldots \quad (30)$$

$$F^{*}_{ijk} = (1 + \Delta F_{ij})^{36+k} * F_{ij} \quad (1980) \ldots\ldots\ldots\ldots\ldots \quad (31)$$

$$Q^{*}_{ijk} = (1 + \Delta Q_{ij})^{36+k} * Q_{ij} \quad (1980) \ldots\ldots\ldots\ldots\ldots \quad (32)$$

$$W^{*}_{ijk} = (1 + \Delta W_{ij})^{36+k} * W_{ij} \quad (1980) \ldots\ldots\ldots\ldots\ldots \quad (33)$$

$$T^{*}_{ijk} = (1 + \Delta T_{ij})^{36+k} * T_{ij} \quad (1980) \ldots\ldots\ldots\ldots\ldots \quad (34)$$

$$S^{*}_{ijk} = (1 + \Delta S_{ij})^{36+k} * S_{ij} \quad (1980) \ldots\ldots\ldots\ldots\ldots \quad (35)$$

$$MM^{*}_{ijk} = (1 + \Delta MM_{ij})^{36+k} * MM_{ij} \quad (1980) \ldots\ldots\ldots\ldots\ldots \quad (36)$$

$$H^{*}_{ijk} = (1 + \Delta H_{ij})^{36+k} * H_{ij} \quad (1980) \ldots\ldots\ldots\ldots\ldots \quad (37)$$

Here, though incremental changes in the independent variables reflect seemingly 'constant' figures, in fact they may be slightly changing within certain limits. In fact, 'People' are not 'constant'; time is not 'constant' . Thus as all the above mentioned variables overlap territories and/or seasons; a 'territory' and 'seasonality' factor have been introduced as (t_{ijk}) and (s_{ijk}). Their main contribution statistically is due to the fact that if all our figures were assumed to be random factors, then error terms, would be in play, and introducing seasonality and territory factors,

though they are assumed to be uniform throughout months and territories at cross-sectional analysis at one period of time, whould counterpart any statistical bias.

Thus, generally speaking, for all quantity of sales at period 'k' and also for period 'k-1' for each territory and periodical, we introduce territory and seasonality factors, and take averages in order to use a considerably unbiased factor throughout the year, throughout all territories.

Thus since sample size (n=12) is not enough for a healthy regression run for variable size of 15; in order to increase sample size to n=96, analysis of figures is conducted in all eight territories simultaneously at once ; regardless of the territory.

To make figures of different territories compatible with each other, regional factor (t_{ij}) is introduced as $t^{Q}_{ijk} = \frac{Q_{ijk}}{\sum_{j=1}^{8} Q_{ijk}} \times 8$ .....(38)

and used a yearly average (t_{ijk}) to simplify calculations with the inevitable nonsequential random input data revealed by the formula;

$$\bar{t}\,Q_{ik} = \frac{\sum_{k=1}^{12} Q_{ijk}}{12} \quad \text{.....(39)}$$

since the only data obtainable was for one year, to increase number of sample size, one derives monthly figure and work them from there on. Similarly to treat monthly fluctuations, we have introduced the seasonality factor as:

$$S^{Q}_{ijk} = \frac{Q_{ijk}}{\sum_{k=1}^{12} Q_{ijk}} \times 12 \qquad \ldots\ldots\ldots\ldots\ldots\ldots \quad (40)$$

and to cope with nonsequential input data, average siasonality factor has been used as;

$$\bar{S}^{Q}_{ij} = \frac{\sum_{j=1}^{8} S\, Q_{ijk}}{8} \qquad \ldots\ldots\ldots\ldots\ldots\ldots \quad (41)$$

The average seasonality and territorial factors as defined above have been calculated for (Q = sales,) (D = Distribution,) (R = Last month's sales respectively. Thus;

$\bar{S}^{R}_{ij}$, $\bar{t}^{R}_{ik}$, $\bar{s}^{D}_{ij}$ and $\bar{t}^{D}_{ik}$ are derived;,

$$S^{D}_{ijk} = \frac{Dijk}{\sum_{k=1}^{12} Dijk} \times 12 \qquad \ldots\ldots\ldots\ldots\ldots\ldots \quad (42)$$

$$\bar{S}^{D}_{ij} = \frac{\sum_{j=1}^{8} S\, D_{ijk}}{8} \qquad \ldots\ldots\ldots\ldots\ldots\ldots \quad (43)$$

$$t^{D}_{ijk} = \frac{D_{ijk}}{\sum_{i=1}^{8} D_{ijk}} \times 8 \qquad \ldots\ldots\ldots\ldots\ldots\ldots \qquad (44)$$

$$\bar{t}^{D}_{ik} = \frac{\sum_{k=1}^{12} D_{ijk}}{12} \qquad \ldots\ldots\ldots\ldots\ldots\ldots \qquad (45)$$

$$s^{R}_{ijk} = \frac{R_{ijk}}{\sum_{k=1}^{12} R_{ijk}} \times 12 \qquad \ldots\ldots\ldots\ldots\ldots\ldots \qquad (46)$$

$$\bar{s}^{R}_{ij} = \frac{\sum_{j=1}^{8} S^{R}_{ijk}}{8} \qquad \ldots\ldots\ldots\ldots\ldots\ldots \qquad (47)$$

$$t^{R}_{ijk} = \frac{R_{ijk}}{\sum_{j=1}^{8} R_{ijk}} \times 8 \qquad \ldots\ldots\ldots\ldots\ldots\ldots \qquad (48)$$

$$\bar{t}^{R}_{ik} = \frac{\sum_{k=1}^{12} R_{ijk}}{12} \qquad \ldots\ldots\ldots\ldots\ldots\ldots \qquad (49)$$

Thus modified Q, D and R are redefined $\hat{Q}$, $\hat{D}$ and $\hat{R}$ after treated with respective average factors. ($R_{ijk} = Q_{ijk-1}$)

$$\hat{Q}_{ijk} = \frac{Q_{ijk}}{\bar{Q}_{t_{ik}} * \bar{Q}_{S_{ij}}} \qquad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (50)$$

$$\hat{D}_{ijk} = \frac{D_{ijk}}{\bar{D}_{t_{ik}} * \bar{D}_{S_{ij}}} \qquad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (51)$$

$$\hat{R}_{ijk} = \frac{R_{ijk}}{\bar{R}_{t_{ik}} * \bar{R}_{S_{ij}}} \qquad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (52)$$

Thus sales, distribution and last month's sale figures is obtained in a usable form for the regression model. Other variables in the regression model are grouped in four variable groups

because leaving them spread-out to a total of 15 variables with subgroupings of 'sex', profession and education' maingroups have literally upset the matrix inversion table by two reasons (1) incremental changes are infinitessimal (2) Percentage use in derivation of sub-groups from profiles have built in a 'total of 100 percent' bias factor. Thus unless figures with individual base have been introduced, one better leaves global qualitative factors in the equation such as:

Population Density, (P)
Education, (E)
Sex, (S) and
Profession (P)

Here population density have been included instead of population figures because population density is more explanatory for the distribution effectiveness. (Increasing sales at one point) Education being the leading explanatory factor for the quality of reader, is subgrouped in four major groups as per graduation, namely E 1 : Primary, E 2 : Intermediary, E 3 : High schools, E 4:University. Sex is a major variable to look into because the 14 periodicals have special sex targets. Last but no least Profession is a major indicating criteria for social stratification and oddly enough, for income grouping here we must admit that we had to obey the grouping of the analysis of D.I.E. in order to be able to blow up our sale into national grounds Thus: O=Students, W=Workers, T=Technicians, S=Free-lance workers, MM:Current and retired employees, H:Housewives as disguised workers. Periodical, territorial and monthly derivation of figures for these variables have been obtained.

Thus our equation 55, for our model is converted into:

$$\hat{Q}_{ijk} = a_0 + a_1 \cdot \hat{R}_{ijk} + a_2 \hat{D}_{ijk} + a_3 P^{\star}_{ijk}$$
$$+ a_4 E^{\star}_{1ijk} + a_5 E^{\star}_{2ijk} + a_6 E^{\star}_{3ijk}$$
$$+ a_7 E^{\star}_{4ijk} + a_8 M^{\star}_{ijk} + a_9 F^{\star}_{ijk} \quad \ldots\ldots\ldots\ldots$$

$$\ldots\ldots\ldots\ldots + a_{10}\ O^{*}_{ijk} + a_{11}\ W^{*}_{ijk} + a_{12}\ T^{*}_{ijk} \ldots\ldots\ldots\ldots$$

$$\ldots\ldots\ldots\ldots + a_{13}\ S^{*}_{ijk} + a_{14}\ MM^{*}_{ijk} + a_{15}\ H^{*}_{ijk} \ldots\ldots\ldots\ldots \quad (53)$$

Due to the fact that summation of $E_1 + E_2 + E_3 + E_4 = M + F$ holds true and also because of use of percentages in derivation;

$$M + F = O + W + T + S + H + MM \quad \ldots\ldots\ldots\ldots \quad (54)$$

also, and this causes degrees of fredom problem and since monthy variation in the E's are not sufficient to run a regression run one has to join E_1, E_2, E_3, E_4, F, M, D, T, W, S, MM, H as a simple variable, and when seperate base figures are obtained, we trace the formula back. When we start from the orijinal formula:

$$Q_{ijk} = a_o + a_1\ Q_{ij(k-1)} + a_2\ D_{ijk} + a_3 \quad \ldots\ldots\ldots\ldots\ldots\ldots$$

$$\ldots\ldots\ldots P_{ijk} + a_4\ (E_{1ijk} + E_{2ijk} + E_{3ijk} E_{4ijk}) + a_5\ (M_{ijk} + E_{ijk}) \ldots\ldots$$

$$\ldots\ldots\ldots + a_6\ (O_{ijk} + W_{ijk} + T_{ijk} + S_{ijk} + MM_{ijk} + H_{ijk}) \ldots\ldots\ldots \quad (55)$$

Then as the percentages add up to total of 100%, thus 1; then loose ends meet, and we derive:

$$E_1 + E_2 + E_3 + E_4 = M + F = O + W + T + S + MM + H \ldots\ldots\ldots \quad (56)$$

These can all be denoted by a capital' $\bar{E}$', and $\bar{a}_4 = a_4 + a_5 + a_6$

Thus $(a_4 + a_5 + a_6)\ E$ stand out, and eguation 53 is re-written as;

$$\hat{Q}_{ijk} = a_o + a_1\ \hat{R}_{ijk} + a_2\ \hat{D}_{ijk} + a_3\ P_{ijk} + \bar{a}_4\ \bar{E} \ldots\ldots\ldots \quad (57)$$

and used in the regression model of this paper. Here one has to bring up one very important factor.

Due to the fact that we used consumer profiles to create our input data for our regression analysis, we have used the percentage figures of our profiles as the 'criterion' and these percentages are assumed the be the same percentages both for all territories, and for

all the months. Moreover, since the basic buyer-reader population is the same basic number for all the qualitative factors, to use the percentages to arrive at the derived figures for qualitative factors, their summation is the same when added, were it is possible to obtain independent variables instead of using percentages, no such 'precaution' could be necessary, and free-run of regression could work as well freely and better estimation capacity as well as detailed analysis would be obtained since more parameters would be involved with more independent variables.

An example of the territory (t) and seasonal (s) factors can be illustrated here by means of Tabla (A), Table (2) and Table(3) and the tables will prove to be self-explanatory upon inspection.(29)

(29) Please refer to Tables of Factor Testing (A,2,3) enclosed (Table XIII)

3. Extrapolating on the Technical Statictical Qualities of the Models

Regression analysis is a statictical technique used to discover the apparent dependence of one variable upon one or more other variables. It is thus applicable to the problem of determining the coefficients of the function in analysis since these express the influence of the independent variables upon the sales of a product. When only the statistical relationship between variables is studied, regression analysis is applied to situations in which the influence of more than one independent variables is studied. For regression analysis we require a number of sets of observations, each consisting of the value of the dependent variable Y plus the corresponding values of the independent variables X_i. The technique of correlation or regression analysis allows conclusions to be dravn from the pattern that emerges in the relationship between these pairs or sets of observations.

Regression analysis can be applied to either time-series or cross-section date. Time-series analysis uses the pairs or sets of observations that have been recorded over time in a particular situation. For example, monthly price and sales levels of a product in a particular firm may have been collected for the past six or twelve months. A problem with time-series analysis, as indicated earlier, is that

some of the uncontrollable factors that influence sales tend to change over time, and hence some of the differences in the sales observations will be due to these influences rather than resulting from say changes in the price level. If the changes in the uncontrollable variables are observable and measurable, we may include these variables as explanatory variables in the regression analysis. Actions of competitors and changing consumer income levels, for example, should be (either directly or by use of a suitable proxy variable) incorporated into the analysis, if they could be readily quantified.

Changing taste and preference patterns, on the other hand, are difficult to observe and measure, since they are likely to change relatively slowly over time. Using time as an explanatory variable in the regression analysis will pick up the influence of all factors (not otherwise included in the analysis) that tend to change over the period. The resulting trend factor may then be extrapolated into future periods as a proxy for changing consumer tastes and whatever other factors may be changing over time.

Cross-section analysis uses the sets or pairs of observations from different territories in the same business environment at the same point or period of time. Hence cross-section analysis largely eliminates the problem of uncontrollable variables that change over time, but it introduces other factors that may differ between and among territories at a particular point of time. If factors such as the effectiveness

of sales personnel, cash-flow position, level of promotional activity, and objectives of management differ among territories, they should be expected to have differing impacts on the sales level. Again, if these factors can be quantified and data obtained, then they may be entered into the regression analysis to determine their impact upon the dependent variables.

Having hypothesized that Y is a function of X or several X variables and having collected data on the variables, one then specifies the form of the dependence of Y upon the X variables. Regression analysis requires that the dependence be expressed in the linear form

$$Y=a+B_1X_1+B_2X_2+\ldots+B_nX_n+e \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots (58)$$

where the (e) term is added to represent the error or residual value that will arise as the difference between the actual value of each Y that has been observed in association with each set of X values, and the estimated value of each Y that the above regression equation would associate with the set of X values. For individual observations one should expect either a positive or a negative residual term, due to the influence of random variations or unspecified influences on the variable Y. In aggregate, however, one expects the residuals to occur randomly, be normally distributed, have constant variance, and have an expected value of zero. When the pattern of residuals does not conform to these restrictions several problems arise.

(30)

(30) Here, no residual is added to the formula, left for frial in a further study.

Although the regression equation must be of the linear form, the hypothesized relationship between the Y and X values need not be linear. Nonlinear forms such as exponential, hyperbolic, and power functions may be used for further analysis, if these best fit the data, since these forms may be converted to linear form by logarihmic transformation. The most commonly used nonlinear form is the power function, such as

$$Z \quad aG^{B_1}H^{B_2}u \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (59)$$

where G and H are independent variables, and u is the error term, and these have negative deviations of similar magnitude when these residuals are summed.

Since computer programs (and pre-programmed or programmable hand calculators) for obtaining correlation and regression equations are becoming more readily available, and since the theary underlying regression analysis is typically covered elsewhere this paper shall not go too deeply into the theory or calculation of regression equations.

How well does this equation explain the relationship between sales and distribution, and/or last month's sales? Could we confidently use this equation to predict what sales would be at certain distribution levels; at certain population qualification limits ? We use the "coefficient of determina - tion" to express the degree of accuracy with which the line of best fit corresponds to the actual observations.

If for example $R^2 = 0,90$ then, it demonstrates that the coefficient of determination is equal to the proportion of the variation in Y that is explained by the variation in X. Thus we are able to say that slightly more than 90 percent of the variation in the sales observations was due to the influence of the differences in the distribution. The remaining unexplained variance is due to some other influence on sales. This remaining variability could be due to differences in promotional activity, consumer incomes, consumer tastes, or other factors that may differ between points of distribution.

Standard Error of Estimate. A high R^2 value alone does not necessarily mean that the regression equation can be used confidently for prediction purposes. Most computer regression programs include as standard output several other statistics which allow the decision maker to evaluate the confidence that may be placed upon certain predictions. The first of these is the standard error of estimate, which shows the range within which we can predict the value of the dependent variable and allows us to attach probabilities to the occurrence of the dependent variable within certain parts of this range. Using the properties of a normal distribution, and assuming the error terms are normally distributed about the estimated values, we can say that there is a 68 percent probability that actual observations of the dependent variable will lie within the range given by the estimated value plus or minus one standard error of the estimate. Furthermore,

there is a 95 percent probability that the future observations will lie within plus or minus two standard errors of its predicted value, and a 99 percent probability that the observed value will lie within plus or minus three standard errors of the estimated value. Thus, if the standard error of the estimate is relatively small, we can have greater confidence in predicting future values of the dependent variable on the basis of the regression equation.

By adding and subtracting the standard error from the estimated value of Y for each value of X, we establish a band within which we can expect the value of Y to fall for a particular value of X. A broader band is established when we add or subtact two standard errors of the estimate, and as noted above the probability is raised to 95 percent that the actual will lie within this band. The latter band is perhaps the most widely used in decision making, and it establishes what are known as the upper and lower 95 percent confidence limits. That is, we can be 95 percent confident that the best and worst outcomes associated with the particular value of the independent varable will be no further than the limits of the band.

The standard error of the coefficient provides a measure of the confidence we can place in the coefficient of each independent variable. Again using the features of a normal distribution, we can say that there is a 68 percet probability that the true coefficient will lie in the interval of the

coefficient; a 95 percent probability that the true coefficient will lie in the interval given by the estimated coefficient plus or minus two standard errors of the coefficient; and 99 percent probability that the actual relationship will be within plus or minus three standard errors of the coefficient of the estimated marginal relationship. Clearly, the smaller the standard error of the coefficient, the greater the confidence we can put in the regression coefficients generated by the data as being reliable indicators of the true marginal relationships between the X_i values and the Y value.

A simple rule of thumb to test for confidence in the regression coefficient is to take twice the value of the standard error of the coeficient and compare this with the estimated regression coefficient. If the regression coefficient exceeds twice its standard error, we can be 95 percent confident that the estimated coefficient does show the true marginal relationship. Alternatively, if the regression program generates[31] "t" statistics for each independent variable, we would require that the t value exceeds 2, since the t-statistic is calculated as the correlation (or regression) coefficient divided by its standard error adjusted for the degrees of freedom.

The foregoing discussion in the context of bi-variate correlation analysis applies "mutatis-mutandis" to the multivariate regression analysis. The formulas for calculating the regression parameters and the coefficient of determination for multivariable situations are not given here. The calcula-

(31) Please note the 't' statistics of the outputs.

tions become increasingly more complex and time consuming as the number of variables is increased and are thus a problem ideally suited to computer solution. The wide availability of computer programs for regression analysis means that essentially we only need to know how to enter the data and interpret the results rather than to enter the data and interpret the results rather than to know the mechanistic processes of obtaining the results.

Understanding how to enter the data and how to interpret the results nevertheless requires a solid appreciation of the major problem areas likely to be encountered in regression analysis. If one more of these problems do arise, the mechanistic regression analysis will still turn out regression parameters and statistics, but these results may well be scrupulous and therefore give misleading explanations and poor predictions. Green and Tull, (1974) say that the computer acts in good faith, presuming that the researcher knows what he or she is doing.

Specification Errors. The first place to create unreliability in the results is in the specification of the relationship that is hypothesized to exist between the dependent variable and the independent variable(s). Two main types of problem occur under this heading: first there is the misspecification of the functional form of the relationship, and second there is the omission of important independent variables. We noted above that the regression equation must

be calculated in linear form, but that this could be achieved for nonlinear relationships by logarithmic transformation of the function to linear form. The first specification error is to specify the relationship as being linear when in fact it is nonlinear of some form, or vice versa. How do we know which functional form is the "true" relationship ? we find which functional form "best fits" the data, by comparing the coefficient of determination R^2 for various functional forms. By running the data in both the linear form and, for example, the power form of the R^2 statictics can be compared to determine which functional form best explains the variance in the dependent variable. For bi-variate correlation analysis, of course, a simple plot of the Y values against the X values should allow a visual assurance that the relationship is either linear or nonlinear.

Omission of important explanatory variables leads to probable unreability in the regression coefficients, and the likely violation of the restrictions that we place upon the error terms. Essentially, since one or more of the explanatory variables are not included in the regression equation, the influence of these variables is attributed to the variables that are included, or it shows up as an unexplained residual.

A further specification problem arises when there are two closely correlated independent variables, and the wrong one is included in the regression equation. Suppose that in

fact Y depends on X, and that X and Z both depend on some other variable w and therefore tend to vary together. Suppose the researcher hypothesizes that $Y = f(Z)$ and tests for the explanatory power of Z upon the value of Y. Since X and Z tend to vary together, the regression analysis will indicated the existence of a statistical dependence of Y on Z. Statistical relationship need not indicate causal relationship, however, and the researcher must be satisfied with the logical causality between the independent and the dependent variable before using the results for explanatory purposes. However, the regression equation may be used (with caution) for prediction purposes as long as the underlying relationship does not change significantly.

Measurement Errors. Having decided which variables to include in the regression equation, and the appropriate functional form of the relationship, the next pitfall to be avoided is the improper measurement of the variables. In any problem, does the proxy measure of distribution or previous sales accurately depict the determining variable we wish to measure ? To the extent that some weaklies may have a superior chance, or that the periodical tends to lie neglected at the kiosks, of some territory, the simple measure of distribution effectiveness may not accurately depict the influence of distribution effort on sales. If a more accurate measure of a particular variable can be generated, at a cost not exceeding the value of the additional information derived, then this measure should be used in the regression calculations.

Simultaneous Equation Relationships. In many situations the single regression equation cannot adequately represent the true relationships existing between and among the variables. The regression analysis proceeds on the assumption that the influence of all other variables remains constant while we investigate for the influence of the specified independent variables. That is, we assume that a single equation explains the entire relationship. One problem with sales estimation arises because the price level is the result of the solution of the simultaneous equations for both sales and availability of supply. The price variable is notorious to its problems of measurement. Hence if supply is shifting over the period for which the data were collected, some part of the variation in the observations may be due to the influence of this second unspecified relationship. for simplicity, price is assumed to be constant, here in this paper.

Multicollinearity. The problem of multicollinearity arises when the independent variables are not independent of each other at all. If two or more of the explanatory variables vary together due to their dependence on each other or another variable, the coefficient assigned to each of the variables by the regression solution may have no relationship to the "true" marginal influence of these variables upon the dependen variable. The regression analysis is unable to detect the true relationships and will assign an arbitrary value to the coefficients. Besides recuding the explanatory and predictive power of the

regression equation, the presence of multicollinearity is likely to cause the standard error of the coefficient (or t test) to be an unreliable indicator of the statistical significance of the coefficients.

The presence of multicollinearity may be uncovered by checking the coefficients of determination between pairs of independent variables. Where variables are highly correlated, says Kotler, (1976) that all but one may be removed from the regression equation, taking care not to fall foul of the specification error of using an independent variable with no logical causal relationship with the dependent variable.

Heteroscedasticity. When the error terms do not occur randomly but exhibit a systematic relationship with the magnitude of one or more of the independent variables, we have the condition of heteroscedasticity. This violation of the requirement that observations have uniform variability about the line of best fit (implied by the restrictions placed on the error terms) causes regression analysis to be an innappropriate procedure and thus produces results that are likely to be unreliable. The presence of heteroscedasticity is likely to cause the standard error of the coefficient to give misleading indications, and cause the coefficient of determination to overstate the explanatory power of the regression equation.

A simple means to discover the presence of heteroscedasticity is to plot the values of the residuals against the values of the independent variable(s). The regression programs

do output these graphs for visual inspection : any systematic relationship that appears will indicate the presence of heteroscedasticity.

Autocorrelation. Autocorrelation is another problem that arises when the error terms do not conform to the restrictions required for regression analysis. Autocorrelation (also known as serial correlation) is indicated by a sequential pattern in the residuals. If successive values of the error terms exhibit a particular trend or cyclical pattern, this indicates that some other variable is changing systematically and influencing the dependent variable. Autocorrelation may be removed by adding to the regression equation the variable thought to explain the systematic pattern. For example, if the residuals appear to follow a cyclical pattern over time, this may be found to correlate well with the levels of national income over the same period. Alternatively according to Johnston, (1963) a continuing upward or downward trend in the residuals could be eliminated by adding time as an explanatory variable.

Gelişim's computer outputs.(32) They are scrutiniged for several technical qualities. The regression program includes as output the sequence plot of the residuals. The Durbin-Watson statistic, which is calculated to indicate the presence or absence of autocorrelation, is also a criterion. Statistic around the value of two indicates the absence of autocorrelation, while values significantly greater or less than two indicate that the residuals do not occur randomly, and therefore that the results are likely to be unreliable. Thus a close study of

(32) As per Appendicies enclosed.

related figures in the computer outputs prove that our regression model equation have passed the due inspections for all; namely; autocorrelation, heteroscedasticity, multicollinearity, and serarched for specification errors, measurement errors, simultaneous equation relationship and errors of estimation

B. Details of Multiple Regression Models for the Selected 14 Gelişim Periodicals for the year 1983 (Linear, multiple (multivariable), recursive: non usable for the introductory magazine publication except where acceptable previous sales could be quoated)

Putting the input data into the regression model, regression equation have been obtained for each periodical and tested for statistical qualities.

To get an acceptable statistical test, some of the variables of some regression equation had to be eliminated(33) and better result are seeked by a re-run of regression analysis.(34)

At several parts of this paper, various assumptions about the market have been cited.

At this point, let us extrapolate a little further on the other related assumptions of the market model used here, in order to understand the regression model to a better extent. As stated earlier, had the individual figures for each independent variable been available there would not be need for these assumptions. It is due to devivation

(33) Please refer to Computer outputs supplied in Appendix A, and related part of this paper for 't' statistics, and other related information

(34) Ibid.

of figures that these assumptions are needed.

(1) It is assumed that dispersion of each age group within geographical territories reflect the same characteristic as the total of Turkish population.

(2) It is assumed that dispersion of literate buyer population of territories are the same for each periodical.

(3) It has been assumed that at each territory the readers of periodicals are the same proportion to buyers, that there is no inter-territory differences.

(4) The revenue from advertisements are assumed to be 'zero' since the figure could be intermingled with model upon management's wish, at any time. Here the main outlook was to study the underlying effects of distribution with sales and thus profits.

(5) In the categorization of profession groups, the manager, and entreprenuer is accepted as the 'brain-worker' and analyzed in the same group as the worker.

(6) In the 'technicians' group, all engineers, doctors, lawyers, architects etc. are grouped together.

(7) The exposure time of each of Gelişim's periodical to its buyer is the same, regardless of the fact that it is a weekly and/or monthly.
Hürdağıtım collects returns the next week after delivery.

(8) No stockouts are at hand, since as policy of the firm, stockouts are taken care of instantly and thus the stockout probability is taken to be '0', regardless of the fact that distribution figure per territory is less than the number of end-point retailers at that part of the territory.

(9) Price per periodical is taken to be constant throughout the year, as per Gelişim's policy, and is constant throughout all territories.

(10) Cost is a factor beyond direct control of the management because it is negotiated between Hürdağıtım and Gelişim at the beginning of each year, to be applicable for a period of minimum one year.
One other reason why cost is left outside the analysis is because it is a factor tying up with quality of the periodical, at the very extreme end-point.

(11) Also as inflation would inevitably be treated with deflating figures, thus constancy of costs is not an unrealistic assumption.

(12) The demand for periodicals is assumed to be equal to net sales, for reasons of simplicity. It is therefore implicitly assumed that there is no unsatisfied demand.

(13) The figures of 1975 and 1980 Statistical year book have been interchangably employed for the growth formula of the regression, thus, implicitly assuming that the

rates of dispersion of independent variables of 1975 and 1980, aslo extend into the years after 1980, thus bringing up our statistically desired figures up to the year 1983.

(14) Due to lack of sales figures with a history of 10 years, we have used distribution and sales figures of a single year (hence the linear assumption) thus breaking up the analysis to months. Thus, the incremental changes of variables in time series and also cross-sectional analysis are infinitessimal, thus a possible handback that could only be corrected by supplying individual figures, utilizing on-the-spot surveys.

(15) The sales figures of periodicals whether weekly or monthly or regardless of the fact that the days offered to sale also fluctuate according to different periodicals up to monthly basis, using total weekly figures and averaging through the number of weeks, thus creating common grounds for rending figures compatible.

(16) We have treated sales figures as the net sales all through distribution effort. Actual sales are higher than the sales figures included here in the analysis, due to subscription customers. They, therefore, are excluded from the regression, projection and simulation programs.

(17) The variables that effect the sales might be more than those cited here, in this paper. However, for reasons of dealing with model parsimony, we have kept the number of parameters to a minimum,

Thus starting with all these explanations and these assumptions, we have run the individual regression Model for each periodical. The characteristics of the regression model is that it is linear, multiple (multivariable) and that it is recursive. However, due to the fact that one explaining variables is 'last period's sales' ($\hat{R}$) this model will not be applicable to a new magazine that management wishes to introduce. Hence its only application could be possible if a wise assumption could be made about the sales of previous period. Thus, as could be seen from the enclosed computer outputs, First the individual computer program is designed just for this analysis(35) since readly 'available' SPSS programs at the university were not 'available'. Then the designed program was tested for correctness, against a problem from a text(36) and proven to run smoothly.

Then raw data of 1983 figures; distribution, sales, previous period's sales, and all other independent variables, are supplied in (P-2.)

Then with a seperate program Appendix (P-3), this raw data is changed into a semi-processed form, where the related alterations were applied to raw data as previously explained earlier in this paper.

(35) Appendix (P-1)

(36) Appendix B

The outcome of this program Appendix (P-3), is then a list Appendix (P-4), of random variables, for 1344 lines[37]

In fact, the computer memory is not as as seen in this oupput, Appendix (P-4) it has more digits as reflected by the output now, the input data is ready for the regression run, the first output, of regression is Appendix (P-6). The outcome of the individual runs of these regression program is re-run again for aiming at better statictical qualities, and those that pass a scrupulous test of quality, are enclosed as presented in Appendix (P-7), and the discarded ones are kept in Appendix (P-6) for studying purposes.

i:1 (Toplum - İnsanlar)

b	$\hat{Q}$ = 11.62	+ 0.6382 $\hat{R}$	+ 0.05582 $\hat{D}$	+ 3.882 P	+0.00003124 E
s		(0.083)	(0.0266)	(0.984)	(0.0000198)
t		7.688	2.095	3.944	1.575
F_i[38]		59.12	4.403	15.563	2.4806

R^2 = 0.92747

D = 1.26101

F_o[39] = 290.9071

i:2 (Erkekçe)

b	$\hat{Q}$ = 6.390	+ 0.5779 $\hat{R}$	+ 0.1901 $\hat{D}$	+ 01089 P	+ 0.00197 E
s		(0.00731)	(0.00430)	(4.32)	(0.000345)
t		7.903	4.422	2.522	3.465
F_i		62.46	19.55	6.51	12.006

(37) 8 territories x 12 months x 14 periodicals =(1344)

(38) F (İndividual)

(39) F (overall)

$R^2 = 0.98606$

$D = 2.19033$

$F_o = 1609.4514$

i:3 (Onyedi)

b	$\hat{Q} = 25.79$	$+ 0.1663\ \hat{R}$	$+ 0.4796\ \hat{D}$	$+ 9.126\ P$	$+0.0003293\ E$
s		(0.0787)	(0.0632)	(2.67)	(0.000113)
t		2.112	7.591	3.414	2.908
F_i		4.461	57.623	11.655	8.456

$R^2 = 0.9133$

$D = 1.95988$

$F_o = 239.6515$

i:4 (kadınca)

b	$\hat{Q} = -9.508$	$+ 0.05065\ \hat{R}$	$+ 0.5896\ \hat{D}$	$+ 1.572\ P$	$+0.0001343\ E$
s		(0.0923)	(0.0687)	(1.18)	(0.0000613)
t		0.5485	8.579	1.337	2.191
F_i		0.301	73.599	1.787	4.800

$R^2 = 0.96468$

$D = 1.65986$

$F_o = 621.4296$

i:5 (Örgü)

b	$\hat{Q} = -7.76$	$+ 0.08487\ \hat{R}$	$+ 0.6949\ \hat{D}$	$+ 1.55\ P$	$+ 0.00003506\ E$
s		(0.0703)	(0.0570)	(1.10)	(0.0000354)
t		1.207	12.19	-1.365	0.9903
F_i		1.456	148.59	1.863	0.980694

$R^2 = 0.91687$

$D = 1.54520$

$F_o = 250.0653$

i: 6 (Bilim Dergisi)

b	$\hat{Q} = -1.626$	$+ 0.3900\ \hat{R}$	$+ 0.3629\ \hat{D}$	$+ 0.2261\ P$	$+ 0.001010\ E$
s		(0.122)	(0.0860)	(0.539)	(0.0000331)
t		3.202	4.338	0.4194	3.051
F_i		10.253	18.818	0.176	9.308

$R^2 = 0.97687$

$D = 2.14661$

$F_o = 960.7654$

i: 7 (Eleştiri)

b	$\hat{Q} = -0.1020$	$+ 0.4330\ \hat{R}$	$+ 0.5912\ \hat{D}$	$+ 2.002\ P$	$+ 0.0001247\ E$
s		(0.0584)	(0.0653)	(0.796)	(0.0000405)
t		7.416	0.052	-2.515	-3.077
F_i		54.997	81.939	6.325	9.468

$R^2 = 0.3963$

$D = 1.88521$

$F_o = 354.0820$

i: 8 (Nokta)

b	$\hat{Q} = 1.346$	$+ 0.415\ \hat{R}$	$+ 0.2922\ \hat{D}$	$+ 0.4639\ P$	$+ 0.0006855\ E$
s		(0.0948)	(0.0587)	(0.667)	(0.0000287)
t		4.377	4.980	0.6957	2.385
F_i		19.158	24.800	0.484	5.688

$R^2 = 0.91525$

$D = 1.54217$

$F_o = 245.6784$

i: 9 (Sarı Dizi)

b $\hat{Q} = 6.233 + 0.7911\,\hat{R} - 0.01867\,\hat{D} + 0.6711\,P + 0.00005101\,E$

s (0.0669) (0.0585) (0.225) (0.0000226)

t 11.83 0.3189 2.98 2.254

F_i 140.66 0.1017 8.88 5.0805

$R^2 = 0.98020$

$D = 2.18705$

$F_o = 1126.448$

i:10 (Beyaz Dizi)

b $\hat{Q} = -1.872 + 0.03834\,\hat{R} + 0.7001\,\hat{D} + 0.5285\,P + 0.00003782\,E$

s (0.0994) (0.0860) (0.749) (0.0000308)

t 0.3858 8.142 0.7060 1.227

F_{ind} 0.149 66.292 0.498 1.506

$R^2 = 0.96208$

$D = 1.44078$

$F_o = 577.1719$

i:11 (Atlaslar A.)

b $\hat{Q} = 11.81 + 0.3674\,\hat{R} + 0.4605\,\hat{D} + 2764\,P + 0.00004080\,E$

s (0.0899) (0.0645) (0.631) (0.0000434)

t 4.085 7.136 -4.381 0.9394

F_{ind} 16.687 50.922 19.193 0.8824

$R^2 = 0.98965$

$D = 2.03002$

$F_o = 2176.1290$

i:12 (Cofrafya A.)

b $\hat{Q} = 2.169 + 0.2923\,\hat{R} + 0.5350\,\hat{D} + 1.543\,P + 0.0002357\,E$

s (0.11) (0.9865) (0.586) (0.0000506)

t 2.666 6.188 -2.632 4.661

F_i 7.107 38.29 6.927 21.724

$R^2 = 0.99503$

$D = 2.54050$

$F_{ov} = 4553.4552$

i: 13 (Evimiz A.)

b	$\hat{Q} = -0.7779$	$+ 0.1920 \hat{R}$	$+ 0.3955 \hat{D}$	$+ 1.061 P$	$+ 0.00001029 E$
s		(0.101)	(0.0563)	(0.367)	(0.0000202)
t		1.899	7.022	2.894	5.096
F_i		3.606	49.308	8.375	25.969

$R^2 = 0.97916$

$D = 2.39440$

$F_o = 1068.9792$

i:14 (Hayvanlar A.)

b	$\hat{Q} = 2.360$	$+ 0.5941 \hat{R}$	$+ 0.2779 \hat{D}$	$+ 0.04408 P$	$+ 0.00003227 E$
s		(0.0663)	(0.0511)	(0.198)	(0.0000126)
t		8.963	5.439	0.2227	2.553
F_i		80.335	29.583	0.050	6.517

$R^2 = 0.99532$

$D = 1.68859$

$F_o = 4834.4711$

Here (b) denotes regression coefficients, (s) denotes the standard error, (t) denotes the (t) statistics derived from (b/s), (F) is the factor derived from (t^2)

A close study of the outputs would reveal that listing of correlation matrix, mean and standart errors being given, listings of variance-covariance matrix and the ANOVA Table(40) leads us to plot of

(40) Analysis of Variance

residuals and a detailed analysis of specification error, measurement errors, simultaneous equation relationships, multicollinearity, heteroscedasticity, autocoorelation, as analysed in previous parts of this paper.(41)

Thus, a coler study would reveal that.

for $\hat{Q} = a_0 + a_1 \hat{R} + a_2 \hat{D} + a_3 P + \bar{a}_4 \hat{E}$ . . . . . (61)

there are five parameters in the fourteen regressions for indicies;

$i = 1, \ldots\ldots\ldots\ldots 14$

$k = 1, \ldots\ldots\ldots\ldots 12$

$j = 1, \ldots\ldots\ldots\ldots 8$

as the figures would reveal,

$t_{o,05,1,90} = 1.67$ (42) from the (t) statistics tables and from the (F) distribution table ; $F_{0.05,1,90} = 3.98$ for individual F figures, (F_i) and $F_{0.05,4,9} = 3.10$ F overall Figures (F_o) (43)

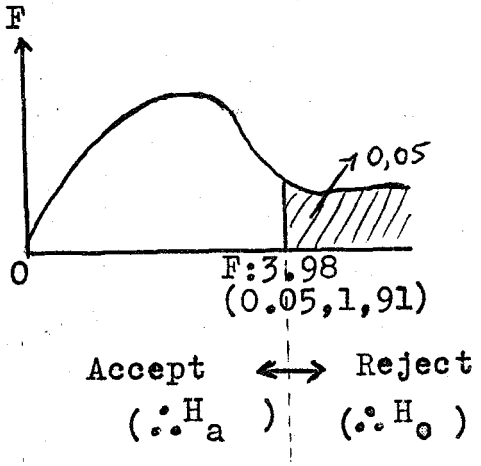
Thus;

H_o : $a_1 = 0$

H_a : $a_1 > 0$

α : 0.05

As in Figure 1



(41) Part V A-3

(42) tn (# of parameters)- 1 (For constant term)

(43) t96-5-1 = t 90 (When n=96)

as the simple refreshing of memory on statistics would remind.(44) Then the relative (t) , and (F) statistics are obtained from the respective tables for one variable, two variables, three variables, four variables and as each variable is kept, and/or dropped, the related figure is used as the criterion of judgement to pass.

Thus the Autput (P-6) is examined and judged for the above tests as follows:

i: 1

F_{a1}=59.12 > 3.98 $\Rightarrow$ Reject H_o , Accept H_a

F_{a2}=4.403 > 3.98 $\Rightarrow$ Reject H_o , Accept H_a

F_{a3}=15.563 > 3.98 $\Rightarrow$ Reject H_o , Accept H_a

F_{a4}=2.4806 < 3.98 $\Rightarrow$ Accept H_o , $\Rightarrow$ Drop E from regression, re-run Regression, Re-evaluate

i: 2

F_{a1} = 62.46 > 3.98 $\Rightarrow$ Reject H_o, Accept H_a

F_{a2} = 19.55 > " $\Rightarrow$ " , "

F_{a3} = 6.51 > " $\Rightarrow$ " , "

F_{a4} = 12.006 > " $\Rightarrow$ " , "

i: 3

F_{a1} = 4.461 > 3.98 $\Rightarrow$ Reject H_o, Accept H_a

F_{a2} = 57.623 > " $\Rightarrow$ " , "

F_{a3} = 11.655 > " $\Rightarrow$ " , "

F_{a4} = 8.456 > " $\Rightarrow$ " , "

(44) F_n = (# of variables) -1 (for constant term)

i: 4

$F_{a1} = 0.301 < 3.98 \Rightarrow$ Accept H_o, Drop R, Re-run, Re-evaluate

$F_{a2} = 73.599 > 3.98 \Rightarrow$ Reject H_o, Accept H_a

$F_{a3} = 1.787 < 3.98 \Rightarrow$ Accept H_o, Drop P, Re-run, Re-evaluate

$F_{a4} = 4.800 > 3.98 \Rightarrow$ Reject H_o, Accept H_a

i: 5

$F_{a1} = 0.301 < 3.98 \Rightarrow$ Drop R Re-run, Re-evaluate

$F_{a2} = 148.59 > 3.98 \Rightarrow$ Reject H_o, Accept H_a

$F_{a3} = 1.863 < 3.98 \Rightarrow$ Accept H_o, Drop P, Re-run

$F_{a4} = 0.980694 < 3.98 \Rightarrow$ Accept H_o, Drop E, Re-run

i:6

$F_{a1} = 10.253 > 3.98 \Rightarrow$ Reject H_o, Accept H_a

$F_{a2} = 18.818 > 3.98 \Rightarrow$ Reject H_o, Accept H_a

$F_{a3} = 0.76 < 3.98 \Rightarrow$ Accept H_o, Drop P Re-run

$F_{a4} = 9.308 > 3.98 \Rightarrow$ Reject H_o, Accept H_a

i: 7

$F_{a1} = 54.997 > 3.98 \Rightarrow$ Reject H_o , Accept H_a

$F_{a2} = 81.939 > 3.98 \Rightarrow$ " , "

$F_{a3} = 6.325 > 3.98 \Rightarrow$ " , "

$F_{a4} = 9.468 > 3.98 \Rightarrow$ " , "

i: 8

$F_{a1} = 19.158 > 3.98 \Rightarrow$ Reject H_o , Accept H_a

$F_{a2} = 24.800 > 3.98 \Rightarrow$ " , "

$F_{a3} = 0.484 < 3.98 \Rightarrow$ Drop P, Accept H_o, Re-run, Re-evaluate

$F_{a4} = 5.688 > 3.98 \Rightarrow$ Reject H_o, Accept H_a

i: 9

$F_{a1} = 140.66 > 3.98 \Rightarrow$ Reject H_o, Accept H_a

$F_{a2} = 0.1017 < 3.98 \Rightarrow$ Accept H_o, Drop D Re-run

$F_{a3} = 8.88 > 3.98 \Rightarrow$ Reject H_o, Accept H_a

$F_{a4} = 5.0805 > 3.98 \Rightarrow$ " "

i:10

$F_{a1} = 0.149 < 3.98 \Rightarrow$ Drop R, Accept H_a, and Re-run (45)

$F_{a2} = 66.292 > 3.98 \Rightarrow$ Reject H_o, Accept H_a

$F_{a3} = 0.498 < 3.98 \Rightarrow$ Drop P , Accept H_o, and Re-run

$F_{a4} = 1.506 < 3.98 \Rightarrow$ Drop E, Accept H_o, and Re-run

i: 11

$F_{a1} = 16.687 > 3.98 \Rightarrow$ Reject H_o , Accept H_a

$F_{a2} = 50.922 > 3.98 \Rightarrow$ "

$F_{a3} = 19.193 > 3.98 \Rightarrow$ "

$F_{a4} = 0.8824 < 3.98 \Rightarrow$ Drop E , Accept H_o Re-run

(45) Please refer to computer outputs for details, as enclosed.

i: 12

$F_{a1} = 7.107 > 3.98 \Rightarrow$ Reject H_o, Accept H_a

$F_{a2} = 38.29 > 3.98 \Rightarrow$ "

$F_{a3} = 6.297 > 3.98 \Rightarrow$ "

$F_{a4} = 21.724 > 3.98 \Rightarrow$ "

i: 13

$F_{a1} = 3.606 < 3.98 \Rightarrow$ Reject H_a, Accept H_o, Drop R

$F_{a2} = 49.308 > 3.98 \Rightarrow$ Reject H_o, Accept H_a

$F_{a3} = 8.375 > 3.98 \Rightarrow$ "

$F_{a4} = 25.969 > 3.98 \Rightarrow$ "

i: 14

$F_{a1} = 80.335 > 3.98 \Rightarrow$ Reject H_o, Accept H_a

$F_{a2} = 29.583 > 3.98 \Rightarrow$ "

$F_{a3} = 0.050 < 3.98 \Rightarrow$ Accept H_o, Drop P, Re-run Re-evaluate

$F_{a4} = 6.517 > 3.98 \Rightarrow$ Reject H_o, Accept H_a

Here, in cases where D remains to be the only explaining variable we can say that in general there is an unsatisfied demand, and as we distribute 'more' and 'better', and more 'effectively' and 'efficiently' we will increase our sales. As we drop D out, it is because in the history of that periodical the distribution desicions were not wisely rationed to territories.

When P is dropped, it generally means that the periodical in analysis is selling just as effectively in small cities with low population densities.

If ϵ is dropped out, it means the qualitative factor of that periodical is not very important: that in general the reader is a loyal reader, and that ϵ is not a well defining variable, and this is true for periodicals with considerably low figures of publishing history.

When P and ϵ Are dropped simultaneously, it means the reader-buyer is not qualified for sex or size of city that the reader dwells in. The reader is very widely dispersed. When R is dropped out only, this means that the buyer is a very loyal buyer, and sales do not fluctuate as being effected by sales of last period.

Thus, as a result, study of the outcome. Appendix (P-7) after re-runs would reveal : (46)

i: 1 (Toplum ve İnsanlar)

b	$\hat{Q} = 18.4 + 0.6565\,\hat{R} + 0.05908\,\hat{D} + 3.332\,P$			
s		(0.0828)	(0.0268)	(0.928)
t		7.923	2.207	- 3.592
F		62.77	4.87	12.903

In 'Toplum ve Insanlar', a fairly new circulation in the market, ϵ is dropped out, Thus it signifies that the qualitative factor of this periodical is not very important for the sales. The reader is a loyal reader.

(46) As R^2 and F, and F_o values have been enclosed previously in this chapter.

i: 2 (Erkekçe)

b	$\hat{Q} = 6.390 +$	$0.5779\ \hat{R} +$	$0.1901\ \hat{D} +$	$10.89\ P +$	$0.00197\ E$
s		(0.00731)	(0.00430)	(4.32)	(0.000345)
t		7.903	4.422	2.522	3.465
F		62.46	19.55	6.51	12.006

i: 3 (Onyedi)

b	$\hat{Q} = 25.79 -$	$0.1663\ \hat{R} -$	$0.4796\ \hat{D} -$	$9.126\ P -$	$0.0003293\ E$
s		(0.0787)	(0.0632)	(2.67)	(0.000113)
t		2.112	7.591	3.414	2.908
F		4.461	57.623	11.655	8.456

i: 4 (Kadınca)

b	$\hat{Q} = 10.30 -$	$0.6672\ \hat{R} -$	$4.856\ P -$	$0.0002842\ E$
s		(0.0775)	(1.49)	(0.0000786)
t		8.608	3.265	3.618
F		74.097	10.66	13.09

In'Kadınca', when R was dropped out, the relationships and technical qualities of other variables have changed to worse, thus dropping P was tried, the same result is obtained, then dropping $\hat{R}$ and P was tried and this suggested leaving D out, and finally it worked, improving the statistical qualities of all the other variables. Dropping 'D' signifies that distribution desicions were not wisely rationed to all territories.

i: 5 (Örgü)

b	$\hat{Q} =$, 17.03 - 0.7636 D	
s	(0.025)	
t	30.555	
F	9.33661	

In 'Örgü' the only variable that remains is D, and in general this shows unsatisfied demand, thus more efficient and effective distribution suggests increase in sales.

i: 6 (Bilim Dergisi)

b	$\hat{Q} = -1.643 + 0.3971\,\hat{R} + 0.381\,\hat{D} + 0.00009016\,E$			
s		(0.120)	(0833)	(0.0000205)
t		3.307	4.572	4.390
F		23.55	16.32	9.1204

In 'Bilim Dergisi' P is dropped out, meaning that it is selling just as effectively in small cities with low population density, as in big cities. The customer is a peculiar, specific customer, regardless of the geogrophical area, they are everywhere.

i: 7 (Eleştri)

b	$\hat{Q} = - 0.01020 + 0.433\,\hat{R} + 0.5912\,\hat{D} - 2.002\,P - 0.000124\,E$				
s		(0.0584)	(0.0653)	(0.796)	(0.0000405)
t		7.416	9.052	-2.515	- 3.077
F		54.997	81.939	6.325	9.468

i : 8 (Nokta)

(When re-run, originall E's P dropped out too,

b	$\hat{Q} = 4.316 + 0.4433\,\hat{R} + 0.3238\,\hat{D}$		
s		(0.0959)	(0.0560)
t		4.623	5.779
F		21.37	33.40

In 'Nokta' E is dropped out first, meaning that the qualitative factor of Nokta is not its major sales impetus, and that the reader is a loyal reader. However, when 'E' was dropped, the texture of the equation changed and we had to drop P too, indicating that it sells just as well in small, non-urban areas, selling to specific buyers.

i: 9 (Sarı Dizi)

b	$\hat{Q} = 6.270 + 0.7807\ \hat{R} + 0.647\ P + 0.0000449\ E$			
s		(0.0518)	(0.211)	(0.0000123)
t		13.44	3.06	3.650
F		32627.19	87.61	177.42

In 'Sarı Dizi' 'D' is dropped, indicating that the distribution desicions of this periodical have not been very successful.

i: 10 (Beyaz Dizi)

b	$\hat{Q} = -4.798 + 0.7791\ \hat{D}$	
s		(0.0162)
t		48.18
F		2321.31

In 'Beyaz Dizi', all except 'D' are left out, implying once again that there is unsatisfied demand in the market, calling for 'better' distribution.

i: 11 (Atlaslar)

b	$\hat{Q} = 10.03 + 0.4028\ \hat{R} + 0.4518\ \hat{D} + 3.036\ P$			
s		(0.0817)	(0.0638)	(0.56)
t		4.933	7.079	-5.417
F		24.33	50.11	29.34

In 'Atlaslar' 'P' is dropped out, meaning that non-urban areas are also calling for demand of this product, mainly due to lack of many side-means of education, in rural areas.

i: 12 (Coğrafya)

b	Q = 2.169	- 0.2923 R	, 0.5350 D	- 1.543 P	- 0.0002357 E
s		0.11	0.0865	0.586	0.0000506
t		2.666	6.188	-2.632	4.661
F		7.107	38.29	6.927	21.724

i: 13 (Evimiz)

b	Q: -0.8219	- 0.4948 D	- 1.386 P	- 0.0001284 E
s		0.0213	0.329	0.0000153
t		23.18	4.217	8.418
F		537.31	17.78	70.86

In 'Evimiz', R is dropped out meaning that the reader is a very loyal one, widely dispersed in the country, thus last periods' sales do not affect sales of this period. It looks as if it is a compulsory sourse for some people.

i: 14 (Hayvanlar)

b	Q	- 0.4515	- 0.7026 R	- 0.2209 D
s			0.0562	0.0458
t			12.5	4.828
F			145.2	23.31

Lastly in 'Hayvanlar', 'P' and 'E' are dropped, meaning that 'P' and 'E' have been beyond the scope of this particular periodical. It is selling just as well effectively in small cities as in big ones. To a variety of people indicating that it is either a second or third set of encyclopedia at home, or buying of this set does not require a specific motive, it is bought ei. to relieve the concions of the parent to the child.

Dropping of 'E' and P simultaneously signifies that the reader-buyer is not qualified for sex, nor for size of city 'per-se'.

In 'Erkekçe' , 'Eleştiri', 'Coğrafya' and 'Onyedi' all the variables are acceptable and thus explanatory of our hypothesis.

Then, as stated before a re-run of regressions is at hand aiming at better results, and the least explaining variable is dropped from each regression equation to obtain (P-7) the new output relations, tabulated as on page 200, it should be noted however, that these variables are assigned to the regression model as a result of logic applied to interviews with Hürdagıtım managers and point-of-purchase questions, questions asked to the retatilers and wholesalers. Their enumeration and assignment is not decisive, the list of variables is not an exclusive list, it could always be revised to include 'better' qualified variables, and as the questions and interviews are evaluated numerically, one could enlighten new variables to explain the situation in the dependant variable better, and this falls into the scope of further analysis.

	(Constant) K	(Parameter for R) A 1	(Parameter for D) A 2	(Parameter for P) A 3	(Parameter for E) A 4
n)	18.4	0.6565	0.05908	3.333	0
e)	6.390	0.5779	0.1901	10.89	0.00197
)	25.79	0.1663	0.4796	9.126	0.0003293
a)	10.30	0.6672	0	4.856	0.0002842
)	-17.03	0	0.7636	0	0
	- 4.981	0.5539	0.3623	0	-1.061
iri)	- 0.01020	0.4330	0.5912	- 2.002	- 0.0001247
)	4.316	0.4333	0.3238	0	0
Dizi)	6.270	0.7807	0	0.647	0.0000449
z Dizi)	-4.798	0	0.7791	0	0
s)	10.03	0.4028	0.4518	-3.036	0
afya)	2.169	0.2923	0.5350	-1.543	0.0002357
iz)	- 0.8219	0	0.4948	1.386	0.0001284
anlar)	- 0.4515	0.7026	0.2209	0	0

C. Use of the Projection Program

Regression analysis is an extrememly useful tool for estimating the coefficient of the sales function. But like fire, precautions must be taken with the use of this tool. Our regression programs will produce the various statistics mentioned above and will plot the residuals such that the experienced researcher can readily discover the presence ot one or more of the major problems that may occur.

The regression analysis of the following section can be used for forecasting purposes by assuming that the estimates of the coefficients will reliably indicate the future relationship between each of the independent variables and the dependent variable. The levels of the independent variables in the future periods must then be used to forecast levels of sales in future periods. Forecasting the level of the independent variables may proceed on the basis of trede extrapolation, constant growth rate, or difference equations, as indicated avove, especially for such factors as consumer incomes, tastes, and price levels. In all cases, according to Chrisholm and Whitaker, (1971) the naive forecast should be modified by any information received that would indicate that the historic pattern of events would provide a poor indication of the most likely future pattern of events. The forecasting of sales in future periods has an additional dimension when compared with demand estimation in the current period.

In sales estimation we knew or could ascertain the current value of the independent variables, and the problem was to find the level of the coefficients. In demand forecasting, the problem is to forecast both the level of the independent variables and the level of the coefficients to those variables. Forecasting the future level of demand is an issue of concern not only to business firms but also to government, banks, and other institutions. Consequently, had there been some, if not much, of forecasting activity at the aggregate, territory and periodical levels: decision-makers in firms and institutions would have access to the results of some of this forecasting activity and could utilize this material in forming their forecasts. If the demand for their particular products is closely correlated with GNP or some other measure of aggregate activity, then the published forecasts, would serve as an inexpensive source of data on future sales levels. On the other hand, individual components of the aggregate may move in different directions, with lags or leads, and the decision-maker must modify the forecast for aggregate, sectoral, or industrial activity to suit the specific circumstances of the individual publishing firm.

A full discussion of the forecasting methods and techniques constitutes a topic in itself and would take us far beyond the space constraints of this paper. In the following sections the methods of demand forecasting, projection of known relationships, and barometric indicators will be outlined for our projection for the first six months of 1984 where we have projected established relationships.

In this major category of forecasting, relationships that are assumed to be known are projected into the future. As per Heskett, (1963) this involves the implicit assumption that the relationship that has held in the immediate past will be a reasonably good predictor of the relationship that will hold in the immediate future. Chisholm and Whitaker (1971) speak of "naive" forecasts as including all simple extrapolations of apparent statistical relationships into the future. In such forecasts no modification is made for any new information that has been received, such as the current state of consumer or publisher intentions. Such forecasts are based solely on the presumption that the best indicator of the near future is the experience of the recent past.

Estimation is concerned with finding the values of the parameters in the demand function that are currently appropriate. This information is important for current decision making and in evaluating whether decisions are optimal in terms of the current demand situation. Demand forecasting is concerned with the future values of the parameters and independent variables of the demand function, and it is clearly vital for decision problems where expected sales in future periods must be estimated.

Buyers' reactions to changes in the independent variables in the sales function may be gauged by interviews and surveys, simulated market experiments, or direct market experiments. Regression analysis is a powerful tool, when used correctly, for estimating the parameters of the demand function, on the basis of the satistical association that appears between and among variables in either

time-series or crosssection data observations. The pitfalls that may indivalidate this technique were outlined in some detail in order that the researcher might better set up the problem for analysis, and better interpret the results of that analysis.

Forecasts of the future demand situation may be duely constructed with the aid of intention surveys, projections, and barometric indicators. Several of the techniques outlined would allow the researcher to estimate the future level of sales and the probable turning points of sales for the product (s) in question. Some forecasting activity is undertaken by official and or semiofficial or scholastic institutions and the information generated should be used as input to the individual firm's or Gelişim's forecasting deliberations. In many cases these public sources may serve as an adequate guide to future demand conditions, but in others it will be necessary to construct surveys, projection models, and barometric indicators for the specific situation to be predicted, this would thus fall in the scope of a further study.

VI. CONCLUSIONS

Here, in this paper, a projection program for the first six months of 1984 has been designed by using the regression model.(Appendix - P-8) Here, the input data is read, then the 1984 distribution figures are feeded for k:13, ... , 18, and then $\hat{D}$ is calculated by assuming that regional and seasonality factors, $(\bar{t},\bar{s})$ have not changed for the first six months of 1984. Then, as sales of last month's sales figure $(\hat{R}=\hat{Q}_{k-1})$ for January is read, and respectively so on for all the months to follow, the $\hat{R}$ figures are obtained when R is treated with $(\bar{t})$ and $(\bar{s})$ factors. Other independent variables of 1984 are then also calculated using the same formula applied for 1983 regression equations.

The input data is integrated and equation parameters are used same as the formulated model for 1983.
Then sales figures are calculated: $(\hat{Q})$ for k=13, using the regression formula.
These are modified sales, $\hat{Q} = \hat{R}_{k-1}$ and this goes on for all k=13, ... , 18.

Then the same procedure is repeated for all $\hat{Q}_{ijk}$, for

i: 2, ..., 10

j: 1, ... , 8

k: 13, ..., 18

Then, in 1984 some of the periodicals are discontinued (ei; i = 1) and/or are to be sold in hard-cover bindings as sets in door-to-door-selling (ei, i = 11, ... , 14). The input data for the projection program is then supplied (P-9) and Sales projection for the first half on 1984 is obtained (P-10) when the outcome of (P-10) is observed, it is seen that the 1984 figures are slower in up and downwards turning points, and that there are smoother fluctuations due to changes in $\hat{D}$: and due to $\hat{R}$ figures.

Thus, this may be explained by the fact that incremental changes in the factoring formulation of the regression equation may have a smoothing effect on the projected figures.

Let us suffice it to say that in actual life, the 1984 figures run a bit higher than as revealed by the projection program of 1984. The linear model assumed, might in fact be a non-linear model, but our assumption is linear due to the shortness of time period in consideration: and also public opinion on the inside quality of periodicals, advertisement and promotional activities of 1984 and cumulative effects of 1983 promotions might have this upward push effect in real life.

The general economic conditions of the country could also change, thus effecting sales, and lack of insight to such variables lessens the predictive value of this projection program. It is also interesting to observe that as $\hat{D}$ is dropped (like the case was for i = 4 and i = 9) then approximation, and projection

estimation power of the model fails more; and it becomes a 'wilder guess' than in case of periodicals where D would remain as explaining variables, and hence the parameters may be estimated using the least-squares regression technique. Given a series of sales levels for previous years, we may fit both the linear expression and the power function to these data and choose for prediction purposes the form that exhibits the higher coefficient of determination.

We should expect the values of the coefficients to decline as we take successively more distant sales observations to explain the current level of sales. One such system is to use exponentially declining weights, which in effect implies that by far the largest influence on the present level of sales is exerted by the immediate past levels, with successively smaller influences being exerted by more-distant-past sales observations. As did the above trend extrapolation and constant growth rate models, the difference equation approach also neglects any current influence on sales, instead giving full weight to the historical pattern that has emerged over previous years. To predict sales in the next period (period k plus 1), we would insert the weights indicated by the past relationship and express Q_{k+1} as a function of Q_k , Q_{k+1} , and so forth. The trend line projection method consists of taking this year's sales level and multiplying it by the trend factor that has become apparent over the past few years, to find the projected level of sales for the next year or the following years.

We should be very fortunate, however, if the actual sales levels of subsequent years fell right on the trend line, since a multitude of influences may cause actual sales to fall below or above the trend. For longer-term projections, when we can take the good with the bad over a number of periods, trend extrapolation may be a relatively useful method, but it is likely to be a relatively unreliable indicator of the actual year-to-year value of sales.

Constant Growth Rate Projection. The trend extrapolation model discussed above imputes a constant absolute increase to sales in successive periods. A common feature of the real world, however, is that series tend to grow at a constant rate of change rather than a constant absolute change.

Investors' intentions are similarly highly dependent upon their expectations as to the future levels of aggregate activity. Investors will feel more confident about investing if they expect aggregate activity to remain high or increase from its present level, since this has implications for the degree of idle capacity in future periods. If the investors' expectations are relatively pessimistic, we might expect investment projects to be postponed or canceled, with subsequent impacts upon the level of aggregate economic activity. The ironic feature about both consumers' and investors' expectations is that these expectations tend to become self-fulfilling prophecies. To counter this phenomenon, we often note governments, banks, and business leaders expressing great confidence in the future levels of aggregate economic activity at times when all other indications

imply the opposite.

The problems with intention surveys as a forecasting device are similar to those that occur when surveys are used to estimate present levels of the demand parameters, except that some of these problems are increased by our asking the consumers or investors to predict their actions far into the future rather than their current actions. A continuing survey of intentions does serve, however, as an ongoing "finger on the pulse" of the people who make the demand decisions. Any change in the expectations of these decision-makers, and by association a change in expected future demand levels, should become immediately apparent. Thus decision-makers have an advance warning of likely changes and can plan their production, inventories, and other matters more effectively.

To beter judge the direction of change in the index, the advance warning we may need to use may be a moving average of the past few weeks or months, or years.

Major limitation of barometric indicators generally is that they predict turning points only, and not the magnitudes of the change, such that we must use some other method to find the likely magnitude of the change in the variable to be predicted. Thus barometric indicators, like surveys, are more suited to short-run forecasting, since they require little lead time and indicate turning points rather than the general longer-term direction of sales. Projection techniques, on the other hand, require substantial preparation time in some cases and in all

cases generate the general trend of the data and may incorrectly predict the immediate direction and magnitude of the change in the variable.

1. Use of Simulation as an interactive Managerial Tool in Order to Increase Distribution Effectiveness and Reach the satisfying Objectives

As previously explained, in verious parts of this paper, the prescriptive approach taken dictates the use of an interactive tool for the manager in order to decide on the distribution figures for each periodical, for each period of distribution, for each territory. The selling price and cost of this periodical is also entered into the simulation program. The paramaters of regression model is adopted from the regression equations of this paper, but they could be supplied by any statistically proven, usable, and effective regression analysis.

The aim of the simulation program used here is to play around with the different desicions to see what results they would imply if they had been applied, thus the desicion-maker has the periodic possibility of aiming at maximizing exposure of each periodical to each territory of distribution, and minimizing the returns, thus setting the target size of the market, comparing actual sales, seing what potential is untouched or seing how the sales and distribution change or reflect target changes, thus it is also possible to aim at satisficing levels if not satisfying

levels. The speed of employing simulation is non-comparable to other methods and thus ranks superior.

Flowchart of the simulation model used in simplified form is as such;(47)

The prices and costs of each periodical since they are constant throughout each territory for the whole year, are given as such:

LIST OF 1983

Name of Periodical	Selling Prices(TL)	Cost (TL)
Kadınca	250 TL.	(Cost : 235 TL)
Erkekçe	300 TL.	(Cost : 285 TL)
Onyedi	200 TL.	(Cost : 175 TL)
Eleştiri	150 TL.	(Cost : 135 TL)
Nokta	100 TL	(Cost : 85 TL)
Örgü	250 TL.	(Cost : 235 TL)
Toplum ve İnsanlar	250 TL.	(Cost : 235 TL)
Bilim Dergisi	150 TL.	(Cost : 135 TL)
Ansiklopediler	150 TL.	(Cost : 139 TL)
Sarı Dizi	200 TL.	(Cost : 169 TL)
Beyaz Dizi	150 TL.	(Cost : 115 TL)

Then the transitionary program of passage from the regression equation employed here in this paper, to the regression model is enclosed as Appendix (P-11) and the simulation program, the flow chart of which has been readily supplied is enclosed as Appendix (P-13)

(47) As per Figure 2 on page 212

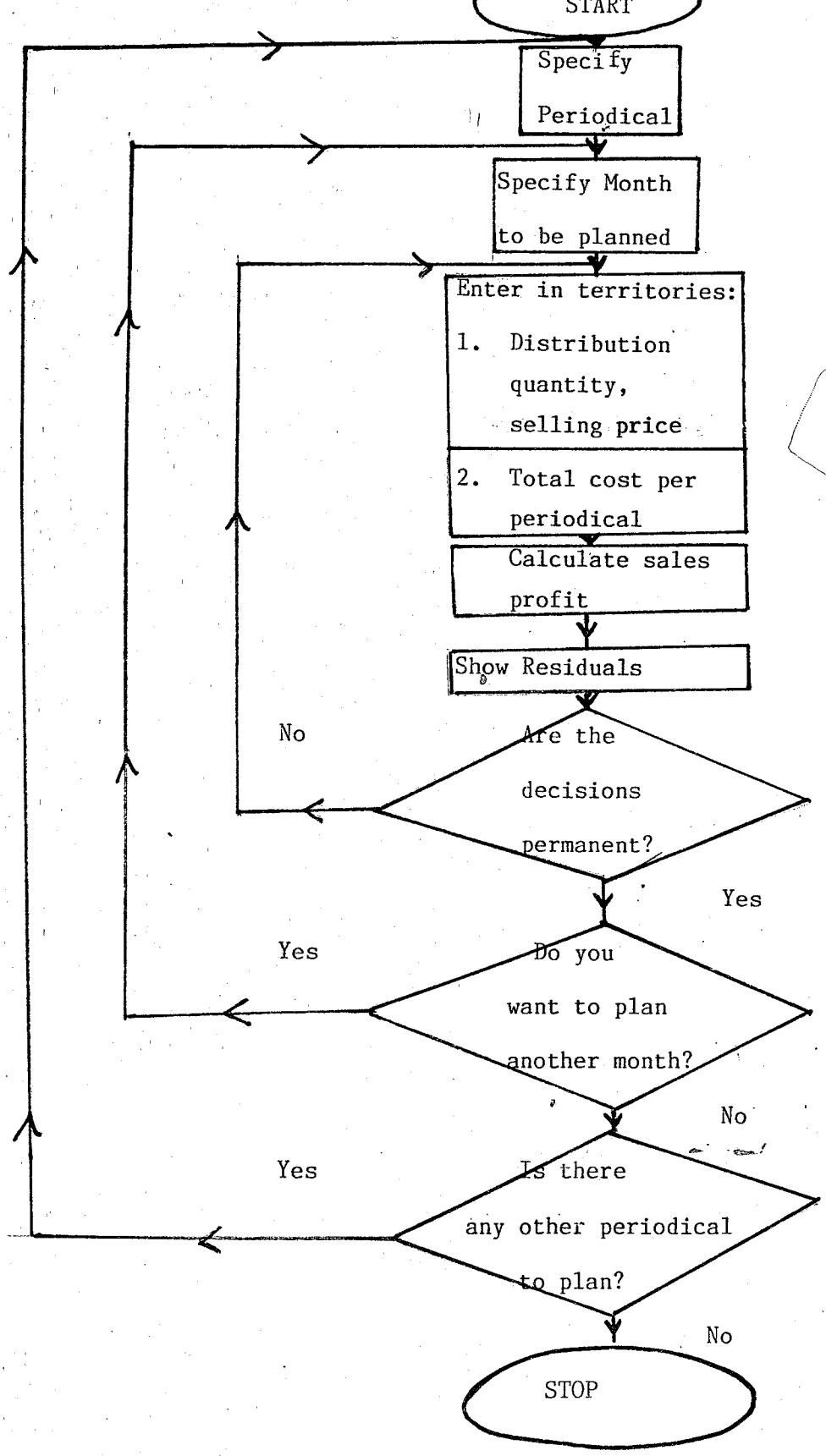


Figure 2

(Simulation Flowchart)

The outcome of each periodical is enclosed as a seperate set of computer outputs donoted by Appendix (P-13). Hence simulation madel proves to be satisfactory, a very quick and easily understandable model and is simply employable. Indeed a useful interactive tool for the manager which is readily available for any change which could be reflected into the model.

The problem of assessing distribution effectiveness could be also be formulated as a non-linear, mixed-integer programming but it is quite complex and would not be ready-use to the desicion maker. Thus, a simulation model which the manager could use safely with his own prefence limits can be preferable.

2. Simultaneous Relationship Between the Regression, Projection and Simulation Programs.

As could be readily observed the three sub-topics of this chapter of the paper: regression, projection, simulation, though seemingly different topics, are closely interrelated. Here, merely by virtue of the fact that the market model, as tried to be solved by employing the regression analysis, is specified clearly. The projection program is also based on the information supplied by this analysis: and the simulation model that is in effect is also making use of this regression analysis: thus as the pyramid gets narrow, the final outcome is based on the simple underlying assumptions and main analysis. Thus at any desicion point, be it for future forecasting or analysis of profit: the market model could/should always be revized for accuracy and/or(48)

(48) Actual data should be individually employed, not derived data.

for better results, for better predictive power, by means of correct choice of variables, value of parameters and more logical distribution figures. Hence it is not a decisive approach that is aimed to be employed here, but just an attempt to analize a way of thinking, that should be constantly challenged for patching up of its pitfalls and drawbacks.

As a side-analysis, a proxy, dummy and error term could be included in the regression analysis, hence improve the predictive powers of both the projection program and the simulation model this proxy and/or 'dummy' could attempt to explain for the general economic conditions of the country, the advertisement effect, the power of word-of-mouth. As, sales and distribution history of Gelişim improves to a span of say ten years, then a better picture of the function could be obtained, and maybe non-linear-relationships could be utilized for better results. A wider use of the simulation model could be to play with distribution quantities at the same month for each territory respectively, and/or at the same territory for each month respectively.

If individual figures (non-dependent on each other like percentage distributions of the same basic 100 percent figures here) could be employed for the variables, then better parameters could be employed thus leading to better results. Maybe , the most important drawback of this paper is the fact that it implicitly assumes that the lower the returns, the better, hence more positive contribution to profit. Any level of returns is assumed to be related with costs, hence a cost figure. However, in real life, any return below 10 percent form any territory, indicates a stockout position, as dictated by the mere size of end-point retailers, since communication is not at its best in this field, in Turkey yet. Hence, this fact could be incorporated wisely into the picture. Fluctuating costs, fluctuating prices is no problem, since at each level, the present program is interactive, and seperate figures could be supplied for each periodical and for each territory.

Moreover, advertising revenue could also be implanted, as well as subscription sales, for a wider coverage of profits.

Where a single equation is inadequate to represent the factors that determine sales, we may need to develop a multiple equation model that incorporates a system of equations to explain the interactions that underlie the demand level at any particular point of time. By pluggung in the forecast values for the independent variables, and assuming that the coefficients discovered in earlier testing will be reliable indicators of the future relationship, we are able to solve the system of simultaneous equations for the forecast level of demand in future time periods. Suppose that we have found the level of sales to be estimated fairly accurately by the system of equations, each reflecting a sepeate 'segment' of analysis: and these are to be called "econometric models".

Market Characteristics: Needs and Wants.

A first market characteristic involves analysing consumer needs and wants-that is, what motivates them. In fact, several models of motivation may be adopted in order to structure research designs. For example, Maslow, (1954) has put forward a hierarchy of needs, which shows how individuals can be motivated by non-necessities such as social, psychological and even spiritual/aesthetic needs, and continuously aspire for more. Another approach has been summarised by Kotler, (1971) in a Freudian psycho-analytic model, which introduced the concept of 'good' and 'real' reasons for behavior. The

research implications of this are that indirect questioning methods may be needed and that the subconscious may be analysed through subtle and specialised techniques.

Segmentation Analysis. Kotler, (1976) suggests that:

'the term market is often used in conjuction with some qualifying term that describes a human need or product type or demographic group or geographic location. If marketing offerings cannot generally hope to be all things to all people, differences between groups and similarities within groups may be analysed for marketing planning purposes, and thus segmentation surveys will fall under the scope of further research.

TABLES

PROFESSION GROUPS WEIGHTED AS PER READER PROFILE

TABLE I

NAME OF PERIODICAL	STUDENT	WORKER	TECHNICIONS	TRADESMEN CRAFTSMEN	EMPLOYEES	HOUSEWIVES AND NON WORKERS
TOPLUM VE İNSANLAR	0.015	0.54	0.04	0.17	0.025	0.21
ERKEKÇE	0.14	0.14	0.09	0.40	0.21	0.02
17	0.968	0.021	-	-	-	0.011
KADINCA	0.12	0.13	0.01	0.14	0.29	0.31
ÖRGÜ	0.05	0.08	0.03	0.11	0.25	0.48
BİLİM	0.34	0.31	0.24	0.08	0.03	0.00
ELEŞTİRİ	0.08	0.01	0.02	0.45	0.41	0.03
NOKTA	0.179	0.102	0.093	0.187	0.434	0.005
SARI DİZİ	0.53	0.09	0.06	0.03	0.16	0.13
BEYAZ DİZİ	0.24	0.04	0.009	0.011	0.27	0.43
ATLAS	0.042	0.168	0.202	0.055	0.464	0.069
COĞRAFYA	0.152	0.174	0.062	0.092	0.407	0.113
EVİMİZ	0.082	0.187	0.103	0.102	0.325	0.201
HAYVANLAR	0.012	0.134	0.202	0.113	0.478	0.061

SEX WEIGHTED AS PER READER PROFILE

TABLE II

NAME OF PERIODICAL	(%) MALE READER	(%) FEMALE READER	AVERAGE READER PER ISSUE OF PORIODICAL
TOPLUM VE İNSANLAR	0.25	0.75	2.48
ERKEKÇE	0.78	0.22	2.10
17	0.29	0.71	2.50
KADINCA	0.07	0.93	2.13
ÖRGÜ	0.02	0.98	3.03
BİLİM	0.87	0.13	3.19
ELEŞTİRİ	0.79	0.21	2.71
NOKTA	0.823	0.177	3.24
SARI DİZİ	0.77	0.23	2.09
BEYAZ DİZİ	0.04	0.96	2.20
ATLAS	0.812	0.188	3.14
COĞRAFYA	0.783	0.217	3.08
EVİMİZ	0.193	0.807	2.90
HAYVANLAR	0.659	0.341	2.47

EDUCATION WEIGHTED AS PER READER PROFILE

TABLE III

NAME OF PERIODICAL	PRIMARY	ORTA	LYCEE	UNIVERSTY
TOPLUM ve İNSANLAR	0.13	0.14	0.56	0.17
ERKEKÇE	0.13	0.17	0.50	0.20
17	0.663	0.169	0.117	0.051
KADINCA	0.12	0.13	0.61	0.14
ÖRGÜ	0.61	0.17	0.127	0.093
BİLİM	0.047	0.118	0.341	0.494
ELEŞTİRİ	0.03	0.13	0.22	0.62
NOKTA	0.71	0.112	0.294	0.523
SARI DİZİ	0.41	0.29	0.24	0.06
BEYAZ DİZİ	0.58	0.24	0.11	0.07
ATLAS	0.34	0.132	0.435	0.299
COĞRAFYA	0.83	0.257	0.389	0.171
EVİMİZ	0.151	0.234	0.374	0.239
HAYVANLAR	0.227	0.382	0.314	0.077

AGE GROUP WEIGHTED AS PER READER PROFILE

TABLE IV

PERIODICAL	15 - 20	21 - 30	31 - 40	41 - 50	50 + ..
TOPLUM VE İNSANLAR	0.16	0.32	0.35	0.12	0.05
ERKEKÇE	0.17	0.41	0.33	0.08	0.01
17	0.38	0.61	0.01	-	-
KADINCA	0.15	0.23	0.37	0.16	0.09
ÖRGÜ	0.07	0.21	0.31	0.22	0.19
BİLİM	0.23	0.39	0.26	0.11	0.01
ELEŞTİRİ	0.07	0.16	0.19	0.23	0.35
NOKTA	0.009	0.093	0.234	0.389	0.275
SARI DİZİ	0.51	0.28	0.11	0.03	0.07
BEYAZ DİZİ	0.48	0.28	0.14	0.06	0.04
ATLASLAR	0.191	0.267	0.432	0.130	0.080
COĞRAFYA	0.13	0.252	0.348	0.223	0.064
EVİMİZ	0.228	0.107	0.315	0.274	0.074
HAYVANLAR	0.143	0.213	0.338	0.181	0.065

AGE COMPOSITIONS AS PER
POPULATION SENSUS OF (SSI)

TABLE V

AGE GROUPS (yr)	1975 POPULATION	1980 POPULATION
15 - 20	4264499	6147663
21 - 30	6364826	6244214
31 - 40	4434330	4998928
41 - 50	3829884	4204115
51 + ..	5045949	5804851

READER (R) AND BUYER (B) POPULATION AS PER AGE GROUP OF PERIODICALS

TABLE VI

NAME OF PERIODICAL		15 - 20	21 - 30	31 - 40	41 - 50	51 + ..	TOTAL BUYER
TOPLUM VE İNSAN	R	983.626	1.991.748	1.749.625	504.494	290.243	2.225.699
	B	396.623	803.124	705.494	203.425	117.033	
ERKEKÇE	R	1.045.103	2.551.928	1.649.646	336.329	58.049	2.686.217
	B	497.668	1.215.204	785.546	160.157	27.642	
17	R	4.274.351	62.442	-	-	-	1.734.717
	B	1.709.740	24.977	-	-	-	
KADINCA	R	922.149	1.431.569	1.849.603	672.658	60.539	2.317.614
	B	432.934	672.098	868.358	315.802	28.422	
ÖRGÜ	R	142.025	431.381	511.442	305.249	57.997	1.755.484
	B	430.336	1.307.085	1.549.668	924.905	175.732	
BİLİM	R	1.413.962	2.427.443	1.299.721	462.453	58.049	1.774.805
	B	443.248	760.954	407.436	144.970	18.197	
ELEŞTİRİ	R	430.336	995.874	949.796	966.946	2.031.698	1.983.168
	B	158.796	367.381	350.478	356.807	749.704	
NOKTA	R	55.329	580.712	1.169.749	1.635.401	1.596.334	1.554.792
	B	17.077	179.232	361.034	504.753	492.696	
SARI DİZİ	R	3.135.308	1.810.822	549.882	126.123	406.340	2.884.437
	B	1.500.147	866.422	263.101	60.346	194.421	
BEYAZ DİZİ	R	2.950.878	1.748.380	699.850	252.247	232.194	2.674.341
	B	1.341.308	794.718	318.114	114.658	105.543	
ATLAS	R	1.174.204	1.667.205	1.648.638	546.535	13.924	1.619.907
	B	373.950	530.957	536.509	174.056	4.435	
COĞRAFYA	R	694.685	1.573.541	1.739.626	937.517	371.510	1.726.260
	B	225.547	510.890	564.813	304.388	120.620	
EVİMİZ	R	1.401.667	668.130	1.574.662	1.151.927	429.559	1.802.050
	B	483.333	230.390	542.987	397.216	148.123	
HAYVANLAR	R	879.115	1.330.017	1.689.637	760.944	377.315	2.039.283
	B	355.917	538.468	684.063	308.074	152.759	

REGIONAL DISTRIBUTION OF READER POPULATION
OF PERIODICALS (1980)

TABLE VII

NAME OF PERIODICAL	TRAKYA	KADIKÖY	ADANA	ANKARA	İÇEL	BURSA	İZMİR	TAŞRA
TOPLUM VE İNSAN	138.639	74.189	73.893	142.445	42.066	57.200	106.388	1.598.943
ERKEKÇE	233.164	108.523	84.616	214.091	52.113	74.677	139.146	1.929.777
17	150.573	70.083	54.644	138.257	33.654	48.225	89.858	1.246.423
KADINCA	201.169	93.632	73.005	184.714	44.962	64.430	120.052	1.664.974
ÖRGÜ	125.695	58.503	45.615	115.413	28.093	40.257	75.011	1.664.973
BİLİM	154.053	71.702	55.906	141.452	34.431	49.340	91.935	1.261.139
ELEŞTİRİ	172.139	80.120	62.470	158.058	38.473	55.132	102.728	1.424.707
NOKTA	134.456	62.814	48.976	123.917	30.163	43.223	80.538	1.116.962
SARI DİZİ	250.369	116.531	90.860	229.890	55.958	80.187	149.414	2.072.179
BEYAZ DİZİ	232.133	108.043	84.242	213.145	51.882	74.347	138.531	1.921.246
ATLAS	140.608	65.444	51.027	129.107	31.426	45.033	83.911	1.163.741
COĞRAFYA	149.839	69.741	54.377	137.583	33.489	47.990	89.420	1.240.145
EVİMİZ	156.418	72.803	56.765	143.623	34.960	50.097	93.346	1.294.592
HAYVANLAR	177.010	82.387	64.237	162.531	39.562	56.692	105.635	1.465.020

REGIONAL DISTRIBUTION OF READER POPULATION
DENSITY OF PERIODICALS (1980)

TABLE VIII

NAME OF PERIODICAL	TRAKYA	KADIKÖY	ADANA	ANKARA	İÇEL	BURSA	İZMİR	TAŞRA
TOPLUM VE İNSAN	58	22	4.42	4.49	2.91	6.14	9.64	2.23
ERKEKÇE	70	27	5.34	5.42	3.51	7.41	11.65	2.69
17	45	17	3.45	3.5	2.27	4.79	7.52	1.74
KADINCA	60	23	4.60	4.67	3.03	6.40	10.05	2.32
ÖRGÜ	38	15	2.88	2.92	1.89	4.001	6.28	2.32
BİLİM	46	18	3.53	3.58	2.32	4.90	7.70	1.77
ELEŞTİRİ	51	20	3.94	4.001	2.59	5.47	8.60	1.98
NOKTA	40	16	3.09	3.14	2.03	4.29	6.65	1.56
SARI DİZİ	75	29	5.73	5.82	3.77	7.96	12.51	2.88
BEYAZ DİZİ	69	27	5.31	5.39	3.49	7.38	11.60	2.67
ATLAS	42	16	3.22	3.27	2.12	4.47	7.03	1.62
COĞRAFYA	45	17	3.43	3.48	2.25	4.76	7.49	1.73
EVİMİZ	47	18	3.58	3.63	2.35	4.97	7.82	1.80
HAYVANLAR	53	20	4.05	4.11	2.66	5.63	8.84	2.04

TOTAL READER AND BUYER POPULATION AS PER AGE GROUPS OF PERIODICALS (1975)

TABLE IX

NAME OF PERIODICAL	READER POPULATION AS PER AGE GROUPS					TOTAL READER POPULATION	AVERAGE READER PER ISSUE	TOTAL BUYER POPULATION
	15 - 20	21 - 30	31 - 40	41 - 50	51 + ..			
TOPLUM VE İNSAN	682.319	2.036.744	1.552.016	459.586	252.297	4.982.962	2.48	2.009.259
ERKEKÇE	724.965	2.609.579	1.463.329	306.391	50.459	5.154.723	2.10	2.454.630
17	4.221.854	63.643	-	-	-	4.285.497	2.50	1.714.199
KADINCA	639.675	1.463.910	1.640.702	612.781	454.135	4.811.203	2.13	2.258.782
ÖRGÜ	298.515	1.336.613	1.374.642	842.574	958.730	4.811.074	3.03	1.578.813
BİLİM	988.835	2.482.282	1.152.926	421.287	50.459	5.095.789	3.19	1.597.426
ELEŞTİRİ	298.515	1.018.372	842.523	880.873	1.766.082	4.806.365	2.71	1.773.566
NOKTA	38.380	591.929	1.037.633	1.489.825	1.387.636	4.545.403	3.24	1.402.902
SARI DİZİ	2.174.894	1.782.151	487.776	114.897	353.216	4.912.934	2.09	2.350.686
BEYAZ DİZİ	2.046.960	1.782.151	620.806	229.793	201.838	4.881.548	2.20	2.218.885
ATLAS	814.519	1.699.409	1.494.369	497.885	403.676	4.909.858	3.14	1.563.649
COĞRAFYA	481.888	1.603.936	1.543.147	854.064	322.941	4.805.976	3.08	1.560.382
EVİMİZ	972.306	681.036	1.396.814	1.049.388	373.400	4.472.944	2.90	1.542.394
HAYVANLAR	609.823	1.355.708	1.498.804	693.209	322.941	4.480.487	2.47	1.813.962

REGIONAL DISTRIBUTION OF BUYER
POPULATION OF PERIODICALS
(1975)

TABLE X

WEIGHT OFERCTOG POPULATION / PERIODICALS	(0.065) TRAKYA	(0.032) KADIKÖY	(0.031) ADANA	(0.064) ANKARA	(0.018) İÇEL	(0.024) BURSA	(0.042) İZMİR	(0.725) TAŞRA
TOPLUM	144670	71222	68997	142445	40063	53417	93479	1456712
ERKEKÇE	159551	78548	76094	157096	44183	58911	103094	1779607
17	111423	54854	53140	109709	30856	41141	71996	1242794
KADINCA	146821	72281	70022	144562	40658	54211	94869	1637617
ÖRGÜ	103208	50810	49222	101620	28581	38108	66688	1151164
BİLİM	103833	51118	49520	102235	28754	38338	67092	1158134
ELEŞTİRİ	115282	56754	54981	113508	31924	42566	74490	1285835
NOKTA	91189	44893	43409	89786	25252	33670	58922	1017104
SARI DİZİ	152795	75222	72871	154444	42312	56416	98729	1709247
BEYAZ DİZİ	144228	71004	68785	142009	39970	53253	93193	1608692
ATLAS	101637	50037	48473	100074	28146	37528	65674	1133646
COĞRAFYA	101425	49932	48372	99862	28087	37449	65536	1131277
EVİMİZ	100256	49357	47814	98713	27763	37017	64781	1118236
HAYVANLAR	117908	58047	56233	116094	32651	43535	76186	1315122

REGIONAL DISTRIBUTION OF READER POPULATION
DENSITY OF PERIODICALS (1975)

TABLE XI

NAME OF PERIODICAL	TRAKYA	KADIKÖY	ADANA	ANKARA	İÇEL	BURSA	İZMİR	TAŞRA
TOPLUM ve İNSAN	54.00	19.00	3.73	4.29	2.5	5.18	7.66	2.03
ERKEKÇE	66.00	24.00	4.55	5.24	3.05	6.33	9.35	2.48
ONYEDİ	46.00	17.00	3.18	3.66	2.13	4.42	6.53	1.73
KADINCA	61.00	22.00	4.21	4.82	2.81	5.82	8.61	2.28
ÖRGÜ	43.00	15.00	2.92	3.39	1.98	4.09	6.05	1.60
BİLİM	43.00	15.00	3.01	3.41	1.99	4.12	6.09	1.61
ELEŞTİRİ	48.00	17.00	3.33	3.79	2.21	4.57	6.76	1.79
NOKTA	38.00	14.00	2.60	3.00	1.75	3.62	5.35	1.42
SARI DİZİ	64.00	23.00	4.36	5.02	2.92	6.06	8.96	2.37
BEYAZ DİZİ	60.00	21.00	4.12	4.74	2.76	5.72	8.46	2.24
ATLASLAR	42.00	15.00	2.90	3.34	1.93	4.03	5.96	1.58
COĞRAFYA	42.00	15.00	2.89	3.33	1.94	4.02	5.95	1.57
EVİMİZ	42.00	15.00	2.86	3.29	1.92	3.98	5.88	1.56
HAYVANLAR	49.00	17.00	3.36	3.87	2.26	4.68	6.91	1.83

REGIONAL DISTRIBUTIONS TOTAL
POPULATION AND RESPECTIVE POPULATION
DENSITY WEIGHTS

TABLE XII

REGIONS	TOTAL POPULATION 1975	1980	AREA (Km2)	REGIONAL POPULATION ALLOCATION WEIGHTS 1975	1980
TRAKYA	2616074	3100044	2405	0.065	0.06229
KADIKÖY	1288514	1491262	3317	0.032	0.03333
ADANA	1240475	1485743	16712	0.031	0.0332
ANKARA	2585293	2704101	29968	0.064	0.06044
İÇEL	714817	843931	14471	0.018	0.0189
BURSA	961639	1148492	9311	0.024	0.0257
İZMİR	1673966	1826183	11022	0.042	0.0478
TAŞRA	29266941	32137201	718483	0.725	0.7184
T O T A L	40347719	44736957	805689		

TABLE XIII

Factor $\overset{0}{-}$ Testing Tables

Table (A)

Table (2)

Table (3)

PERIODICAL i (SALES)

TABLE (A)

months/territory

K / J	1	2	3	4	5	6	7	8	SUM 1
1	100	50	200	500	300	600	800	450	3.000
2	150	75	250	400	350	500	600	400	3.725
3	180	120	120	300	500	400	300	250	2.170
4	120	140	130	280	200	350	350	350	1.920
5	100	110	80	250	600	350	400	350	2.290
6	50	80	100	260	300	400	400	400	1.990
7	60	90	90	300	200	300	250	600	1.890
8	90	60	60	320	150	200	300	550	1.730
9	100	70	100	380	250	200	350	450	1.900
10	120	100	150	400	300	350	400	450	2.270
11	180	100	200	500	450	750	550	450	3.180
12	200	120	180	550	600	800	600	500	3.550
SUM 2	1.450	1.115	1.660	4.440	4.200	5.200	5.300	5.200	28.565

PERIODICAL i (TERRIORY FACTORS)

$$\text{TABLE 2} = \frac{\text{TABLE Ax8}}{\text{SUM 1}}$$

Month \ Terr.	1	2	3	4	5	6	7	8	SUM 5
1	0.2667	0.1334	0.5333	1.3333	0.8	1.6	2.1333	1.2	8
2	0.4403	0.2201	0.7340	1.1743	1.0275	1.4679	1.7614	1.1743	8
3	0.6635	0.4423	0.4423	1.1060	1.8433	1.4747	1.1060	0.9216	8
4	0.5000	0.5833	0.5416	1.1667	0.8333	1.4583	1.4583	1.4583	8
5	0.3494	0.3842	0.2794	0.8733	2.0960	1.2228	1.3973	1.2228	8
6	0.2010	0.3216	0.4020	1.0452	1.2060	1.6080	1.6080	1.6080	8
7	0.2540	0.3809	0.3809	1.2699	0.8465	1.2699	1.0582	2.5397	8
8	0.4161	0.2774	0.2774	1.4798	0.6937	0.9249	1.3872	2.5433	8
9	0.4210	0.2948	0.4210	1.600	1.0527	0.8421	1.4737	1.8948	8
10	0.4230	0.3524	0.5287	1.4097	1.0572	1.2334	1.4097	1.5860	8
11	0.4528	0.2515	0.5031	1.2579	1.1320	1.8868	1.3837	1.1320	8
12	0.4507	0.2704	0.4057	1.2395	1.3521	1.8029	1.3521	1.1268	8
SUM 6	4.8385	3.9123	5.4494	14.9556	13.9403	16.7917	17.5289	18.4076	
Average Territory Factor SUM 6 / 12	0.4032	0.3260	0.4541	1.2463	1.1616	1.3993	1.4607	1.5340	= 8

ERIODICAL i (SEASONALITY FACTORS)

TABLE 3= $\frac{\text{TABLExAx12}}{\text{SUM 2}}$

onth \ Terr.	1	2	3	4	5	6	7	8	SUM 3	Average Seasonality Factor SUM 3 / 8
1	0.8276	0.5240	1.4457	1.3513	0.8571	1.3846	1.8113	1.0384	9.2400	1.1550
2	1.2414	0.7860	1.8072	1.0810	1	1.1538	1.3584	0.9230	9.3508	1.1688
3	1.4896	1.2576	0.8674	0.8108	1.4285	0.9230	0.6792	0.5769	8.0330	1.0041
4	0.9931	1.4672	0.9397	0.7567	0.5714	0.8076	0.7924	0.8076	7.1357	0.8919
5	0.8276	1.1528	0.5783	0.6756	1.7142	0.8076	0.9056	0.8076	7.4693	0.9336
6	0.4138	0.8384	0.7228	0.7027	0.8571	0.9230	0.9056	0.9230	6.2864	0.7858
7	0.4966	0.9432	0.6506	0.8108	0.5714	0.6923	0.5560	1.3846	6.115	0.7644
8	0.7448	0.6288	0.4337	0.8648	0.4285	0.4615	0.6792	1.2692	5.5105	0.6888
9	0.8276	0.7336	0.7228	1.0270	0.7142	0.4615	0.7924	1.0384	6.3175	0.7896
10	0.9931	1.0480	1.0843	1.0810	0.8571	0.8076	0.9056	1.0384	7.8151	0.9768
11	1.4897	1.0480	1.4457	1.3513	1.2857	1.7307	1.2452	1.0384	10.6347	1.3293
12	1.6552	1.2576	1.3012	1.4864	1.7142	1.8461	1.3584	1.1538	11.7729	1.4716
UM - 4	12	12	13	12	12	12	12	12		$\mathcal{E}$=12