

# An Approach to the Market Analysis of KoreaSat Services

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*The field of marketing research in the satellite communication services is still in the early stage of its development. Particularly, in Korean domestic satellite service market, many theoretical and methodological opportunities now exist. In this paper we develop a model, which identifies target markets and promising application services in Korean satellite communication service market. One key contribution of this paper is a modeling approach to the assessment of market potential and priorities of the application services in each Korean industry.*

*We define and estimate the degree of attractiveness for each segmented market which represents the market potential estimated by current usage of terrestrial services and each market segment's willingness to adopt satellite technology. Since all possible satellite application services are not equally important in the market, they should be differentiated in terms of the likelihood of success. We introduce another*

*index prioritizing application services by tying together three important factors affecting Korean satellite service demand. Some marketing implications of model results are also discussed. Finally the findings of our model are compared with those of other similar studies.*

## I. Introduction

After a long debate Korean government finally decided to build its own satellites called KoreaSat. It is scheduled to be launched in 1995 and to be used to provide domestic communication and broadcasting services. Satellites represent a powerful technology that can do many things well. Terrestrial telecommunications, even fiber optic cables, cannot duplicate certain functions that satellites do. Mobile services, global television broadcasting, and VSAT (Very Small Aperture Terminal) networks are unique satellite capabilities

which fiber optics cables simply cannot equal. Satellites are amazingly versatile because they provide such broadband frequencies, such broad coverages, and such easy interconnection among widely separated areas. Satellites are also highly cost effective particularly over very long distances or within networks.

Satellites can do these things and more. But whether they will be used in these ways or other ways appears to be a question not of 'technology', but of a myriad of other factors that could be best summarized as 'policy.' Why are the satellite systems owned by developing countries such as Arabsat, Brasilsat, Mexico's Morelos, and Indonesia's Palapa operating at only partial capacity? Even though these developing countries have large territories and poor terrestrial telecommunication systems, they could not fully utilize their satellite system capacity due to various reasons [1,2,3].

However, Korea has a very well-developed terrestrial communication system as well as a relatively small territory. Will the full-potential of KoreaSat be realized? This is one of critical questions to be answered for the successful implementation of KoreaSat project. There appears to be many political, economic, sociocultural, and technical issues which should be addressed to answer that question. Among those issues discussed in [2], marketing issue is surely one of crucial factors affecting the utilization of the satellite capacity.

Based on the plan [4,5], KoreaSat will provide six different kinds of domestic services through 15 ku-band transponders. The planned services are DBS(Direct Broadcast Satellite), video relay, inter-city relay, rural/administrative communications, high speed digital data communications, and VSAT services. For technical details of KoreaSat, see [4,5]. Market demand of some of those services is heavily dependent upon the marketing

efforts of the satellite communication service providers. In terms of marketing perspective for communication service providers, only three services are of interest: video relay; high speed digital data communications; and VSAT services. Since DBS will be provided by broadcasting companies such as KBS, MBC, and inter-city relay and rural/administrative services will be provided not by commercial incentive, but by public purpose, the market demand of those services may not be dependent upon marketing activities of the communication service providers. Thus our study focuses on three domestic communication services, of which demand appears to be dependent upon marketing efforts.

This paper considers marketing issues to utilize KoreaSat capacity better. Although some researches addressing satellite service demand forecasting have been done, Korean satellite service market appears to be very uncertain at this moment [6,7,8]. Since those researches were mainly focused on forecasting annual satellite service demand, the results are not enough to derive marketing strategies for the satellite service providers. To do that, more applicable studies focusing on analysis of the satellite service market structure are needed. This paper is one of those efforts. We develop a model which can identify target markets and prioritize possible satellite application services in terms of the likelihood of success in Korean communication service market.

This paper is organized as follows. In the next chapter, we describe research problem more specifically and its approach. Chapter III presents a model which can identify the target market segments and prioritize the possible satellite application services for developing effective marketing strategies. Chapter IV includes a discussion of the results of our model compared with those of other similar studies, and finally chapter V summarizes

this research and suggests future research directions.

## II. Problem Description and Approach

### 1. Research Problem

The marketing objectives are generally profit maximization, revenue maximization, or market share maximization. Whatever marketing objective is adopted, selecting target market and developing application services are necessary procedure in setting the marketing strategy of the service providers. There are a variety of possible application services using satellite technology and many different types of users. Each type of user will demand different type of application services. For example, users in the finance/insurance business field may want to use satellite technology for backing up the current terrestrial data transmission networks, and auto makers may demand video broadcasting services to send their auto information to their dealers. Further, a careful application service development planning is needed since the development of new application services not only determines future marketability but also requires such investment for implementation. Thus we address the following two questions which the satellite service providers may be interested in.

- 1) What types of users should be the primary targets for each satellite service? In other words, what kind of market segments should be attacked to effectively create new satellite service market?
- 2) What kinds of specific application services are possible using satellite technology? All application services may not be equally important in terms of achieving the marketing

objectives. Among all possible specific application services, what kind of services should the priority be given to?

### 2. The Approach

We develop a model to answer the above research questions. The model consists of three steps as depicted in Fig.1.

In the first step, we decompose Korean satellite communication service market into several segments, estimate the market segment's opportunity, and market targeting and positioning strategies are suggested. In the second step, we prioritize the possible specific application services through satellite networks. In the third step, some relatively important application services for each market segment are recommended.

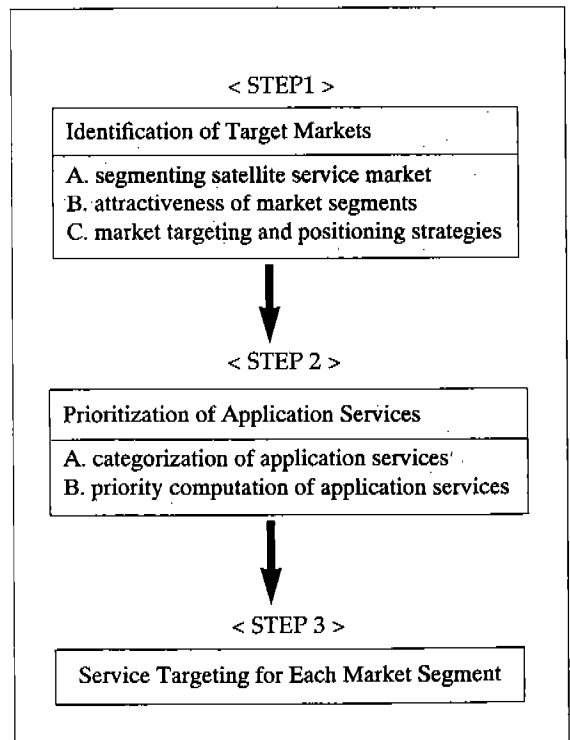


Fig. 1. A Marketing Model of KoreaSat Services.

In order to identify the attractive markets the domestic satellite potential market should be divided into several segments, and each segmented market should be differentiated in terms of its market potential. Yet, there are no historical data available since all domestic communication services have been provided through the terrestrial network so far. Although some annual forecasts of the satellite services are available in [6,7,8], those forecasts are not detailed enough to be used for evaluating each market segment's potential. Thus other approach is required.

For effectively analyzing the market structure of new services, we need to limit the scope of analysis. That is, we need to confine our interest to the most expectant users of satellite services. Most satellite services are generally effective in the long distance communication. We exploit this characteristic of satellite services. In the research[7], a sample of 300 companies of potential customers were selected based on the amount of expenditure of the long distance leased-line service, and they were questioned about their plans of the future use of satellite services. We use that survey result. Even if the sample of those 300 companies is not exactly representative of the population of potential customers, most early adopters of satellite services will be among them. Three assumptions used in the model and their rationale are described below.

*Assumption 1: Most early adopters of satellite services will be among the customers currently using large volume of long distance leased-line service.*

Since Korean terrestrial communication networks are currently well-developed, diffusion speed of satellite communication services may not be fast especially at the early stage of KoreaSat. The adoption of satellite services requires such

new investment for procuring relevant equipment and facilities. It might be reasonable to assume that the companies currently using large volume of terrestrial communication services will be also market leaders in the satellite service marketplace, especially at the early stage of KoreaSat. It might be good enough to attack those companies to effectively create a new market in the earliest period.

*Assumption 2: The market potentials of various customer's groups are not the same. Rather it may depend upon the potential customer's field of business or industry.*

All user's groups are not equally important. They belong to various groups of industries. Some industries require large volume of communication services, while others do not. They should be differentiated based on their potential contribution of creating a new market. We use the average expenditures of long distance leased-line service of each user's industry group to reflect the relative importance of each user's group.

*Assumption 3: The utilities of all specific application services possible through satellite network are not the same. Various user groups will vary in the value they assign to each application service.*

There are lots of different possible application services using satellite technology. Service providers may want to concentrate their management efforts on developing only a few of marketable service products at the earliest stage. Thus various application services should be differentiated according to their marketabilities. In viewpoint of each application service, higher priority should be given to the service wanted by various user groups than to other one wanted by few groups.

Even in the same user group, this observation is true. For example, although both 'distant learning' and 'E-mail' service can be used by the users in the 'private education' industry, they are not equally significant to that user group. The utility of 'distant learning' service may be greater than that of 'E-mail' service.

### III. The Model

#### 1. Step 1: Identification of Target Markets

The first step of the model identifies the target markets of satellite services. We will describe how the market is segmented, how the attractiveness of the segmented market is estimated, and what positioning strategies are effective.

##### A. Segmenting Satellite Service Market

There is no single way to segment a market. Markets consist of buyers, and buyers differ in one or more ways. They may differ in their wants, resources, locations, buying attitudes, and buying practices. Any of these criteria can be used to segment a market, and they can be selected based on the characteristics of the service and its market

environment[9]. Most satellite services will be bought not by individuals but by companies. The market potentials and application areas of satellite services depend on the user's field of business.

We decompose Korean satellite communication service market into 24 segments based on two dimensional aspects: type of users and type of satellite services. The potential users can be classified into eight categories: Government; Public Education/Research; Financing/Insurance; Retailing/Distribution; Mass Media; Transportation /Warehouse; Manufacturers/Construction; and Religion/Private Education. We confine our interests to three satellite services: Video; High-Speed Digital Data; and VSAT service. Each combination of these two dimensional instances constructs one unique market segment. Fig. 2 shows the conceptual segmentation of satellite service market.

##### B. Attractiveness of Market Segments

For selecting attractive target markets, each segmented market should be evaluated in terms of its market potential. To do that we need to know the expected service demand of each segmented market and service rates. The rates of KoreaSat services, however, are not determined yet, and the demand forecasts of each service for each seg-

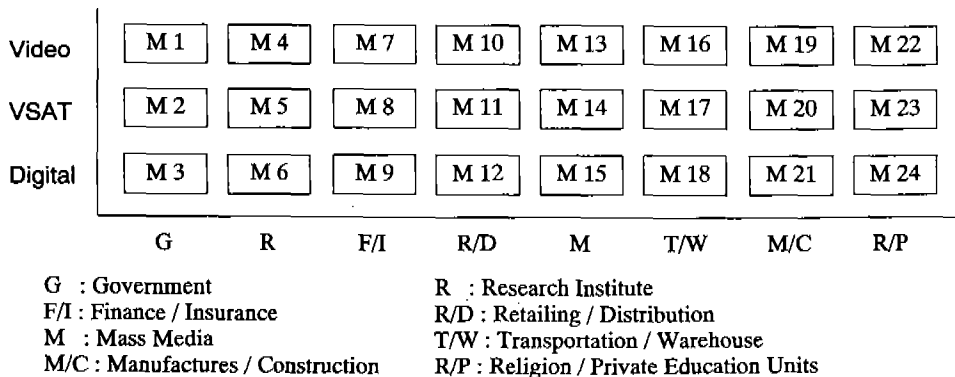


Fig. 1. Conceptual Segmentation of KoreaSat Service Market.

mented market is neither available at this moment. Thus we could not estimate potential revenues of each market segment in that way. Instead, we use a different approach.

We define the index of 'the attractiveness of market segment' as follows:

$$M_{ij} = L_i * N_{ij} \quad (1)$$

where  $M_{ij}$  : market attractiveness of  $i$  user's industry for  $j$  service (i.e. market segment  $[i,j]$ )

$L_i$  : the average of monthly expenditure of  $i$  user's industry on the long distance leased-line service

$N_{ij}$  : the number of companies of  $i$  user's industry who want to use  $j$  service.

The index of attractiveness for each market segment represents the relative satellite service market potential estimated by current usage of terrestrial services and each market segment's willingness to adopt satellite technology. The reasoning for using  $L_i$  and  $N_{ij}$  in the definition of  $M_{ij}$  is already explained in the assumptions 1 & 2 (in section II.2). That is, most potential users at the initial period of KoreaSat can be confined to the companies which plan to use KoreaSat services in the survey [8] because the sample was selected based on the large-volume users of telecommunication services, and their potential contributions in

creating new market can be estimated based on their current usage pattern of terrestrial leased-line service. Note that the computed indices of the attractiveness do not represent the potential revenues from selling satellite services. Rather they represent the relative strength of each market segment in creating new satellite service market.

Table 1 and Table 2 show the input data for  $L_i$  and  $N_{ij}$  respectively, which is adapted from the research [8]. The computed indices according to equation (1) and their first 5 high-ranked market segments are denoted in Fig.3.

Table 1. Average Expenses on Long Distance Leased-Line Service by Industry

(Units : Thousand Won/Month)

Industry	Expenses
Government	6,209
Research Institute	826
Finance/Insurance	13,826
Retailing/Distribution	3,540
Mass Media	17,327
Transportation/ Warehouse	4,368
Manufactures/ Construction	6,464
Religion/Private Education Units	2,496

Table 2. Number of companies which answered to use satellite services in the survey

Industry Service	G	R	F/I	R/D	M	T/W	M/C	R/P
Video	4	8	28	28	10	4	62	2
VSAT	2	5	19	11	5	2	32	0
Digital	7	11	25	21	10	4	52	0

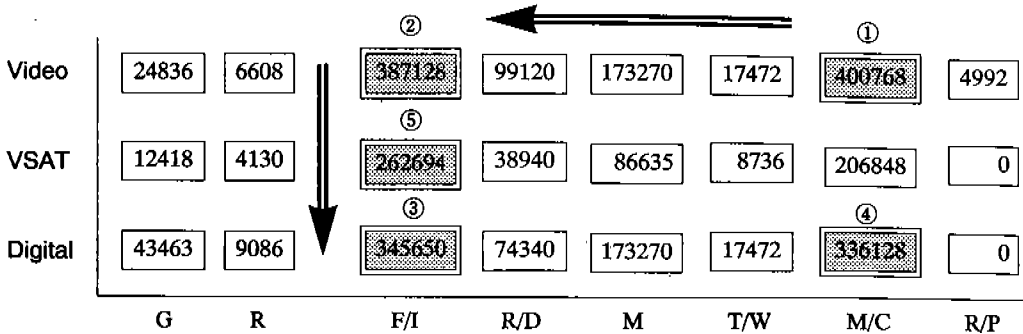


Fig. 3. The Estimated Attractiveness of 24 Market Segments.

### C. Market Targeting and Positioning Strategies

Since the satellite service market is a new market and most communication needs of potential customers may be already satisfied through terrestrial networks, creating a new market appears to be tough. Thus a careful market targeting and positioning strategies are needed. Typically the segment with the most opportunity is attacked first, then relevant market segments are attacked by utilizing competitive advantages gained in the target market segment. It is because that, once we find a target market segment, the know-how for that target market segment will be accumulated, thus it may be reasonable to enlarge market shares by attacking related market segments based the accumulated know-how.

According to Fig.3, the first-ranked market segment is the segment [Video, Manufacturing/Construction]. Further, the video service (among 3 satellite services) and Finance/Insurance user's group (among 8 groups) appear to be the most attractive. Based on this observation, the following positioning strategy at the earliest stage of KoreaSat service can be recommended : first attack the market segment [Video, Manufacturing/Construction], then try to enlarge the market share of video service by aiming the segment

[Video, Finance/Insurance], and then attack the user group Finance/Insurance by encouraging the use of VSAT and High Speed Digital Data services.

### 2. Step 2: Prioritization of Application Services

Even though the same technical characteristics are used, the final forms of application services rendered to the customers can be very different. We considered 3 different types of services in the previous section III.1. Each type can be, however, further classified into many more specific application services. Their potential contributions for creating new market may not be the same, thus we need to evaluate those specific application services based on the likelihood of success in Korean satellite service market environment. The step 2 of the model prioritizes some of the possible satellite application services. We will explain how the application services are categorized, how weights for the categorized groups are given, and how their priority indices are computed.

#### A. Categorization of Application Services in Each Potential User Group

We consider 29 different forms of satellite

Table 3. Classification of Application Services

SERVICES	Application Services
Video	New Product Introduction, Employee Training, Executive Messages, Video Conference, Remote Auction, Distant Learning, SNG, TV Distribution, CATV Program Distribution, CS Broadcasting
VSAT	Distribution Management, E-Mail, EDI, FAX, POS, DB Retrieval, Backup, Data Broadcasting, Medical X-Ray, Ticketing, Telemetry, Remote Sensing, Check Authorization, Credit Card Verification, Remote Printing, Debit Card Transfer, Signature Verification
Digital	File Transfer/Backup, Color FAX

application services as shown in Table 3. There could be more services or other schemes of service classification, since satellite industry is rapidly changing, thus new services are emerging and new features are added to the existing service very often.

As suggested in the assumption 3 (in section II.2), customers will vary in the value they assign to each application service. Some may stress fast and reliable characteristics of satellite service. Others may put more weight on the wide coverage and flexibility of the satellite network. For each user's industry, we first enumerate the relevant application services which can be utilized in each business field. Then, according to the degree of the importance, they are reclassified into four groups, Group 1 through Group 4. The relevant services can be reclassified according to the satellite service market experience of foreign countries, or subjective judgement of an expert. This classification is done based on the research [3,7,10,11], and the results are shown in Table 4. The services belonging to Group 1 are considered to be more significant than those belonging to other groups.

Table 4. Reclassification of Application Services by Industry

Industry	Application Services	
	Group	Service Name
Government	1	E-Mail, EDI
	2	DB Retrieval
	3	Color FAX, Backup, Video Conference
	4	Data Broadcasting, Distribution Management, FAX, Signature Verification, Telemetry, Remote Sensing, Medical X-Ray, Executive Messages, Employee Training, File Transfer/Backup
Research Institute	1	E-Mail, DB Retrieval
	2	EDI, Distant Learning, Distribution Management
	3	Video Conference, Employee Training
	4	FAX, Backup, Telemetry, Remote Sensing, File Transfer/Backup
Finance / Insurance	1	Credit Card Verification, Check Authorization, Debit Card Transfer, Backup, DB Retrieval, File Transfer/Backup
	2	Executive Messages, New Product Introduction, Employee Training
	3	Video Conference, Distribution Management
	4	E-Mail, EDI, Remote Sensing



Industry	Group	Application Services
		Service Name
Retailing/ Distribution	1	Credit Card Verification, POS, New Product Introduction
	2	Backup, Executive Messages, Employee Training
	3	Video Conference, Remote Auction, CATV Program Distribution, File Transfer/Backup, Distribution Management
	4	Ticketing, EDI, E-Mail, FAX, Data Broadcasting, DB Retrieval, Signature Verification, Remote Sensing, Check Authorization
Mass Media	1	Data Broadcasting, E-Mail, SNG, TV Distribution, CATV Program Distribution, File Transfer/Backup
	2	Remote Printing, Color FAX, Backup
	3	Distribution Management
	4	FAX, EDI, DB Retrieval, CS Broadcasting
Transportation/ Warehouse	1	DB Retrieval, POS
	2	E-Mail, Data Broadcasting, EDI
	3	Employee Training, Ticketing, Backup, File Transfer/Backup
	4	Distribution Management, FAX, Remote Sensing
Manufacture/ Construction	1	E-Mail, POS
	2	File Transfer/Backup, Video Conference, New Product Introduction, Color FAX
	3	Executive Messages, Employee Training, Backup
	4	EDI, FAX, Distribution Management, Telemetry, Remote Printing, Data Broadcasting, DB Retrieval, Check Authorization, Remote Sensing, Ticketing
Religion/ Private Education Units	1	Executive Messages, Employee Training, Distant Learning
	2	E-Mail
	3	Video Conference
	4	FAX, SNG, Remote Printing, Backup, CATV Program Distribution

To quantify the relative degree of significance between groups we assign different weights to each group. This weight will be used in computing the priority index of each application service, which will be explained in the next subsection III.2.B. There are many ways of assigning weights. We consider only two extreme cases: linear and logarithmic. The reason of considering these two cases is to look at the sensitivity on the final results of the priority index computed. The schedules of assigning weights are shown in Table 5.

Table 5. The schedule of assigning weights

	Alternative I	Alternative II
$W_{1k}$	1.0	1.0
$W_{2k}$	0.8	0.903
$W_{3k}$	0.6	0.778
$W_{4k}$	0.4	0.602

Here, Alternative I : Type of Linear Function

Alternative II : Type of Log Function

$W_{ik}$  : Weights of service k belonging to group i

#### B. Priority Computation of Application Services

The likelihood of success of each application service may be evaluated by considering three important factors affecting Korean satellite service demand: the usage level of terrestrial communication services for each user group; each user group's willingness to adopt satellite technology; and relative significance of each application service in each user group. The priority index can be computed by tying all three factors together. The first two factors were already considered in computing the attractiveness of market segment in section III.1. Therefore the priority index can be defined as following equation (2):

$$P_k = \sum_i M_{ik} * W_{ik} \quad (2)$$

where  $P_k$  : priority index of the application service  $k$

$M_{ik}$  : degree of attractiveness of the market segment  $[i,j]$ ,  $k \in j$

$W_{ik}$  : weight of  $k$  application service for  $i$  user's industry

Note that, since each application  $k$  can be wanted by many different users' industries, the summation over all industries is required in the equation (2). The computed priority index neither represent the probability nor have practical meaning. Rather it represents the relative importance of

each specific application service to be developed. The computed indices of 29 services, according to equation (2), are shown in descending order in Table 6.

Based on the Table 6, the relative ordering between two the weighting schedules does not seem much different. It means that the scheme of assigning weights may not greatly affect final results. Most video services such as 'employee training', 'new product introduction', are highly evaluated. Those services have also been proved to be very effective through satellite networks in other countries. Generally it can be interpreted

Table 6. The Priority Indices of Application Services

Rank	Alternative I		Alternative II	
	Service Name	Index	Service Name	Index
1	File Transfer/Backup	863929	File Transfer/Backup	925507
2	New Product Introduction	718624	New Product Introduction	798385
3	Employee Training	658834	Employee Training	789557
4	Executive Messages	644386	Executive Messages	770822
5	Video Conference	634225	Video Conference	768542
6	Backup(VSAT)	501608	Backup(VSAT)	555960
7	E-Mail	437673	Color FAX	516040
8	Color FAX	433580	E-Mail	499232
9	DB Retrieval	418463	DB Retrieval	486813
10	Check Authorization	351009	Distribution Management	442980
11	Distribution Management	327466	Check Authorization	410579
12	Credit Card Verification	301634	EDI	382217
13	Debit Card Transfer	262694	Remote Sensing	321248
14	EDI	260757	Credit Card Verification	301634
15	POS	254524	Debit Card Transfer	262694
16	CATV Distribution	234739	CATV Distribution	254524
17	Remote Sensing	213506	POS	253391
18	Data Broadcasting	196906	Data Broadcasting	241995
19	SNG	175269	FAX	215260
20	TV Distribution	173270	Remote Printing	202674
21	Remote Printing	152047	SNG	176275
22	FAX	143082	TV Distribution	173270
23	Ticketing	103556	Ticketing	154681
24	Telemetry	89358	Telemetry	134405
25	CS Broadcasting	69308	CS Broadcasting	104309
26	Remote Auction	59472	Remote Auction	77115
27	Signature Verification	20543	Signature Verification	30918
28	Distant Learning	10278	Distant Learning	10959
29	Medical X-Ray	4967	Medical X-Ray	7476

that, in the early stage of Korean satellite service market, the service with high priority index has higher likelihood of success than one with low priority index. However, a careful interpretation is needed especially when interpreting the services with the low-level priorities. In that case, it is not complete without other supplementary materials. For example, 'CATV Program Distribution' and 'TV Distribution' services are in the low-level priority group. It is only because the number of user groups using those services are very limited. However, those services are known to be very important in the sense of transponder usage. Here is another example: 'distant learning' service. Although 'distant learning' service is also in the lower position, it is expected to be marketable if we consider the very special situation of the Korean people's higher desire for education. Thus all of other special considerations as well as the result of Table 6 should be analyzed together especially when interpreting the low-level services.

### 3. Step 3: Service Targeting for Each Market Segment

The step 3 of the model identifies target services of each market segment. Marketing managers may want to concentrate marketing efforts on only a few important services. For identifying those relevant services for each market segment, a new table could have been generated by rearranging the result of Table 4, where the relevant services for each market segment are enumerated. Since Table 4 has been generated according to the foreign market experience and expert judgement only, however, it may not contain specific information related to Korean satellite communication service market situation. The potential customer's willingness of adopting new satellite services cannot be underestimated to figure out promising ser-

vices for each market segment. Thus we utilize the result of step 2. To be specific, combining and rearranging the results of Table 4 and Table 6 gives us more useful information. Table 7 generated based on that idea shows three high-ranked services or less for each market segment. By concentrating marketing efforts on only a few important services shown in table 7, marketing objective can be more easily attained.

Table 7. Target Services for Each Market Segment

Market Segment	Target Service
Video : G	1.Employee Training 2.Executive Messages 3.Video Conference
VSAT : G	1.Backup 2.E-Mail 3. DB Retrieval
Digital: G	1.File Transfer/Backup 2.Color FAX
Video : R	1.Employee Training 2.Video Conference 3.Distant Learning
VSAT : R	1.Backup 2.E-Mail 3. DB Retrieval
Digital: R	1.File Transfer/Backup
Video : F/I	1.New Product Introduction 2.Employee Training 3.Executive Messages
VSAT : F/I	1.Backup 2.E-Mail 3. DB Retrieval
Digital: F/I	1.File Transfer/Backup
Video : R/D	1.New Product Introduction 2.Employee Training 3.Executive Messages
VSAT : R/D	1.Backup 2.E-Mail 3. DB Retrieval
Digital: R/D	1.File Transfer/Backup
Video : M	1.CATV Program Distribution 2.SNG 3.TV Distribution
VSAT : M	1.Backup 2.E-Mail 3. DB Retrieval
Digital: M	1.File Transfer/Backup 2.Color FAX
Video : T/W	1.Employee Training

Market Segment	Target Service
VSAT : T/W	1.Backup 2.E-Mail 3. DB Retrieval
Digital: T/W	1.File Transfer/Backup
Video : M/C	1.New Product Introduction 2.Employee Training 3.Executive Messages
VSAT : M/C	1.Backup 2.E-Mail 3. DB Retrieval
Digital: M/C	1.File Transfer/Backup 2. Color FAX
Video : R/P	1.Employee Training 2. Executive Messages 3. Video Conference
VSAT : R/P	1. Backup 2. E-Mail 3. DB Retrieval

#### IV. Discussion

In this chapter we will compare the results of our model with those of other similar studies conducted in Japan. It might be interesting because Japan has very well-developed terrestrial communication networks like Korea. Japanese domestic satellite services began in 1989, thus there are now

some available market statistics reported in [12,13]. Thus we may verify our results by analyzing Japanese market situations.

In 1989, before Japanese domestic satellite service began, similar survey was conducted to figure out future satellite service market. Based on the research [12], 1068 companies were selected and questioned about their introduction plans of satellite services. Major results are summarized in Figures 4, 5, and 6. Fig.4 shows the introduction purpose of satellite services, in which the video services seem the most attractive. This is consistent with the results of our model.

Yet, some of their findings for the prospective market segment is contrary to our results as depicted in Fig.5. According to our findings, 'Finance/Insurance', 'Manufactures/Construction', and 'Mass Media' are shown to be attractive markets, but, in Japanese market, 'Manufactures' and 'Finance/Insurance' were reported to be less attractive. One of the reasons for that may be the unproven satellite technology in the communication marketplace. It may be because that, in the field of 'Finance/Insurance' industry, a very high network reliability is required, but satellite service

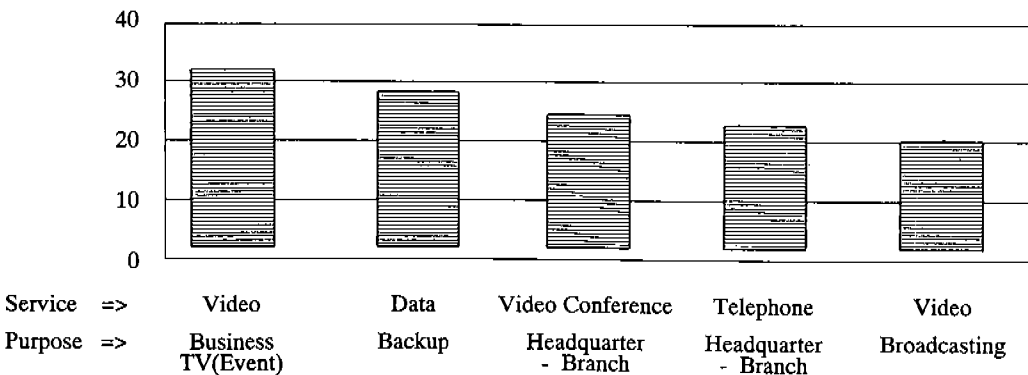


Fig. 4. The Expected Purpose of Introduction of Satellite Communication Service in Japan.

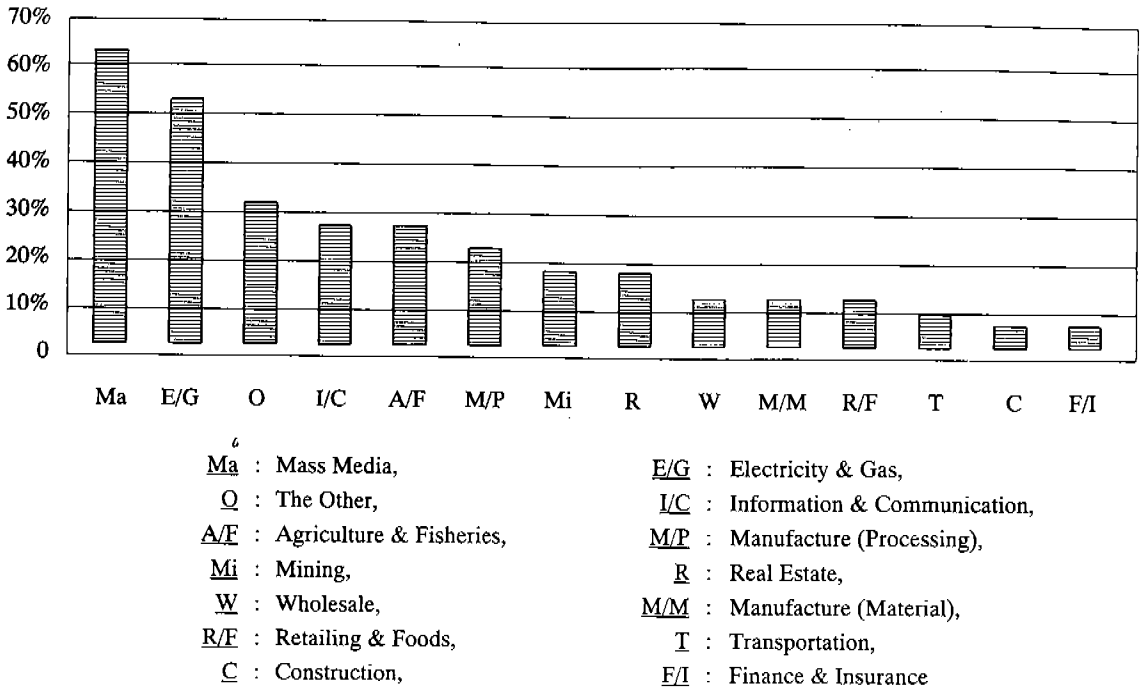


Fig. 5. The Proportion of Expected Users of Satellite Communication Services by Industry in Japan.

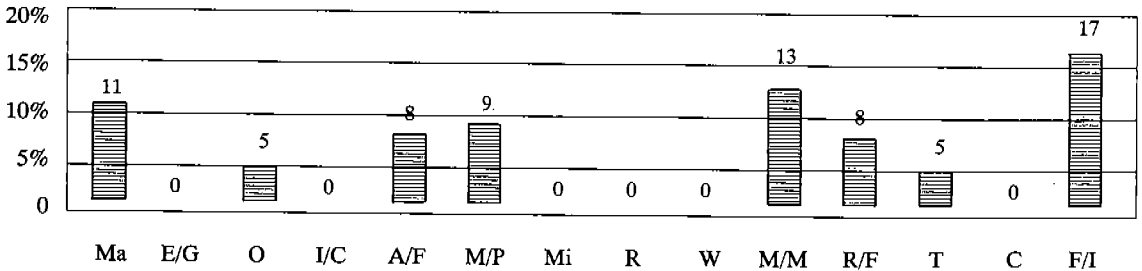


Fig. 6. The Proportion of Expected Users by Industry for Not Using Satellite Communication Services due to Suspected Service Reliability.

had not been proved in the domestic communication marketplace when the survey was conducted. This is evidenced by Fig.6. Fig.6 shows that 'Finance/Insurance' is the highest one among all prospective user groups for not using satellite ser-

vice owing to the suspected service reliability.

However, the reality was found to be contrary to expectation. Fig.7 shows Japanese actual market situation after three years of domestic satellite service provision. This research [13] was con-

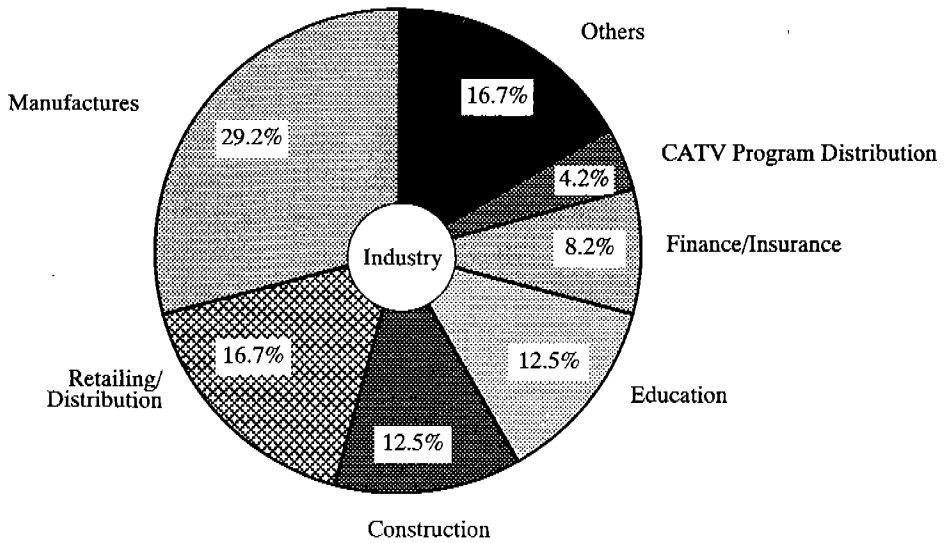


Fig. 7. Actual Market Share of Satellite Communication Service by Industry as of 1992 in Japan.

ducted in 1992. More specifically, Fig.7 shows the proportion of the companies by industry which actually use satellite services. The user group, 'Manufactures' is found to be the largest one, which is quite different from the results surveyed in 1989. Rather, those actual statistics appear to be consistent with our findings presented in chapter III.

## V. Conclusion

Marketing issue is surely one of critical factors which completes the successful implementation of KoreaSat project. We develop a marketing model of KoreaSat services. The model identifies target markets and prioritizes the application services possible through satellite network. The user groups of finance/insurance and manufactures

/construction, and video distribution service are found to be attractive market segments and service respectively. Based on the results from the model, market targeting and positioning strategies have been suggested. Our findings are also supported by Japanese satellite service market statistics.

Our model also has some limitation. First, we analyzed the satellite service market structure based on the usage pattern of the terrestrial communication services. Satellite network produces a variety of services. Some satellite services are substitutes for terrestrial services, some are complements, some are very unique which terrestrial network simply cannot duplicate. These may affect the future market structure in various ways. Current model does not cover that issue. The model will be more accurate if the relationship between satellite and terrestrial services is taken into consideration. Second, the model does not seriously consider qualitative characteristics of

satellite service when prioritizing individual application service. The current model gives high priority when a service is used by many different industries. However, even if a certain service is wanted by only one industry, it could be very important for service providers. For instance, 'TV distribution' and 'distant learning' services. The current model cannot capture this issue. The model can be more comprehensive if this issue is covered. To do that, the detailed traffic forecasts and other relevant data, of course, are needed, which are not available at the moment.

Clearly, the future research direction should be to enlarge the model which can solve the above-mentioned limitation. Even with this limitation of the current model, the model gives a lot of useful marketing information and fruitful managerial implications to the service provider. One key contribution of this paper is a modeling approach to the assessment of market potential and priorities of the application services in the field of domestic satellite service market, where no significant research has been done so far. <sup>1)</sup>

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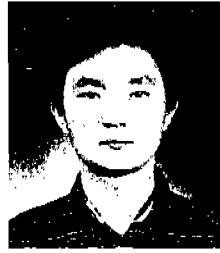
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