A STUDY OF MARKET SEGMENTATION OF THE HONG KONG PAGING MARKET AND ITS IMPLICATIONS FOR FORMULATION OF MARKETING STRATEGIES

by

CHIU KWOK-YEE
趙幗儀

LOUIE HON-KUEN
雷漢權

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Dr. Julie H. Yu

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ABSTRACT

This research identified potential target segments through the use of four market segmentation bases: demographics, psychographics, product usage, and product benefits. The usage gap between pager users' expectations and the existing products / services provided by their paging companies was also studied. It was found that the services required by users were supplied by some, but not all, paging companies. Hence "not provided by my paging company" appeared to be the most frequent response for not obtaining the service(s) desired. The other two most frequent responses were "too expensive" and "too lazy to apply for". Generally speaking, about 75% of the respondents were satisfied with their paging companies, which suggested that there is a "gray area" within which paging companies can improve. Among the four segmentation bases, product usage and product benefits were found to be the most useful. They consistently indicated the opportunities for tapping two major segments: the light / "Sociables" users and the heavy / "Businessmen" users. Individuals in both segments are within the 20 to 39 age range. The former segment mainly consists of students and young professionals, whereas the latter segment is primarily composed of sales representatives and managers / executives. Marketing strategies were formulated with respect to the characteristics of these two segments.

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CHAPTER 1
INTRODUCTION

1.1 Reason for Study

The foundation of every marketing strategy is the concept of market segmentation, a process which partitions markets into groups of similar potential customers likely to exhibit similar purchase behaviors. As the market may consist of numerous segments of individuals with diverse characteristics, it is neither feasible nor possible to pursue every market opportunity, given limited organizational resources. Therefore, companies need to analyze the overall market, identify the profitable target markets which match the company's capabilities and resources, and finally capitalize on those niches with the formulation and implementation of unique marketing strategies. First recognized by Wendell R. Smith in 1956[1], market segmentation has become an indispensable planning tool for today's companies and corporations.

Market segmentation is both an art and a science; throughout the years, numerous approaches have been proposed and developed as alternatives for segmenting markets. According to a review by T.P. Beane and D.M. Ennis in 1987[2], some thirteen bases for market segmentation have been developed over the last three decades, including geographic, demographic, psychographic, behaviouristic, purchase occasion, benefit, usage incidence, user status, usage rate, loyalty status, buyer readiness, marketing factors, and image. Certainly not all of these bases will be examined in this project; for the sake of simplicity, only four segmentation bases, namely, demographic, psychographic (lifestyle), product usage, and benefit, will be adopted as the bases for this project.

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1 Smith, Wendell R., "Product Differentiation and Market Segmentation as Alternative Marketing Strategies", *Journal of Marketing*, July 1956, pp. 3-8.

2 Beane, T.P. and Ennis, D.M., "Market Segmentation: A Review", *European Journal of Marketing*, Vol. 21, No. 5, 1987, pp. 20-42.

Actually, the concept of market segmentation has become a key component in formulating marketing strategies for today's businesses, independent of size. The concept has been proven effective in virtually any industry which one can name. There is no exception, we believe, to the industry of paging. The local paging industry is only one of the many industries in Hong Kong which has fierce and intense competition among individual companies. Although strategies such as price cutting and service diversification are commonly used by various paging companies for survival, less, if any, emphasis seems to be placed on segmenting the local market with provision of unique services to target segments. Further, it seems that most companies are targeting their products to broad demographic categories in terms of age and occupation groups. Other segmentation bases, such as psychographic and benefit, are totally ignored. The applicability of these segmentation bases to the local paging market, and the marketing implications for segments disclosed by these segmentation bases, are the major issues to be addressed here.

1.2 An Overview of the Local Market

Beginning in 1969, the paging industry in Hong Kong has enjoyed a history of over twenty-four years with dramatic growth and expansion. By the end of 1992, the user density in Hong Kong had reached 17.02%, which is the highest in the world, according to a study done by NEC in Japan[3] (Figure 1). The local market is a highly dynamic and competitive one, consisting of a large number of competitors in a gradually-saturated market. In the following section, some key aspects of the local paging industry will be addressed and examined with the purpose of providing an overall picture of the current market situation.

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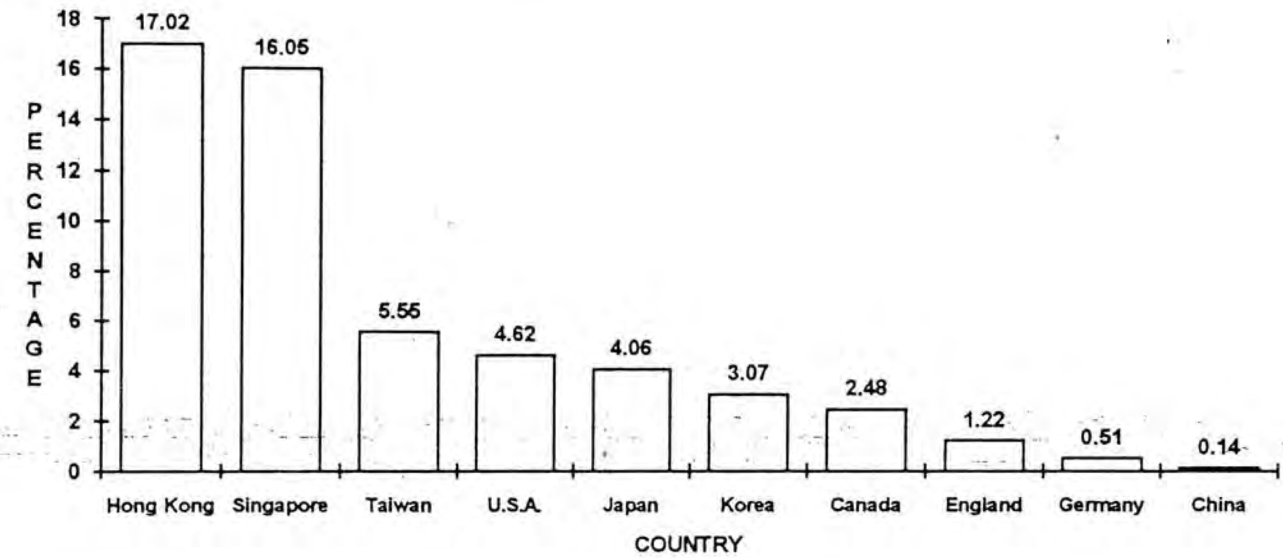
3 Anonymous, "Statistics of Global Pager Markets: Hong Kong Takes the Lead in Terms of User Rate" (title translated from Chinese), *Ming Pao Daily News*, Feb 24, 1993, p.27.

FIGURE 1
TOP TEN PAGING MARKETS IN TERMS OF USER DENSITY



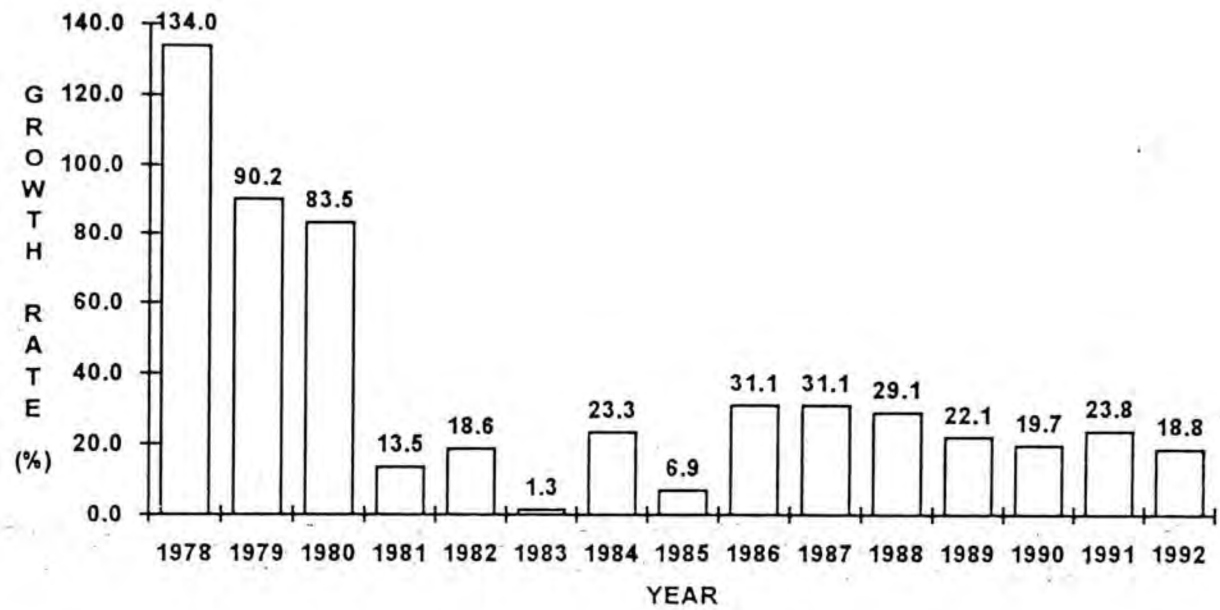
Source: Anonymous, "Statistics of Global Pager Markets: Hong Kong Takes the Lead in Terms of User Rate" (title translated from Chinese), *Ming Pao Daily News*, Feb. 24, 1993, p.27.

1.2.1 Market Size and Growth

During the past fifteen years, the number of pager subscribers in Hong Kong has been growing at an average rate of 36.5% per annum; by the beginning of 1993, there were over a million[4] pager users in Hong Kong. The annual growth rate of the number of paging subscribers is shown in Figure 2. However, the initial growth rate during the period from 1978 to 1980 is stunning, with an average rate of over 100%. After a period of initial fluctuation (from 1981 to 1985), the growth rate become more steady again, with a trend of gradual decline (from 1986 to 1992). Although the opening of the 280 MHz channel by the Hong Kong Post Office in 1990 did bring new entrants into the paging market and thereby attracted more new pager subscribers, the stimulation lasted only a short time; the downward trend of the growth rate resumed in 1992. The paging market in Hong Kong is slowly becoming saturated during these years, and in 1993, it is projected to have a growth rate of about 16%. The projected market growth for the next three years is shown in Figure 3 for reference. A slowly growing market accelerates and intensifies rivalry among competitors, a situation which is expected to become increasingly fierce in the coming years.

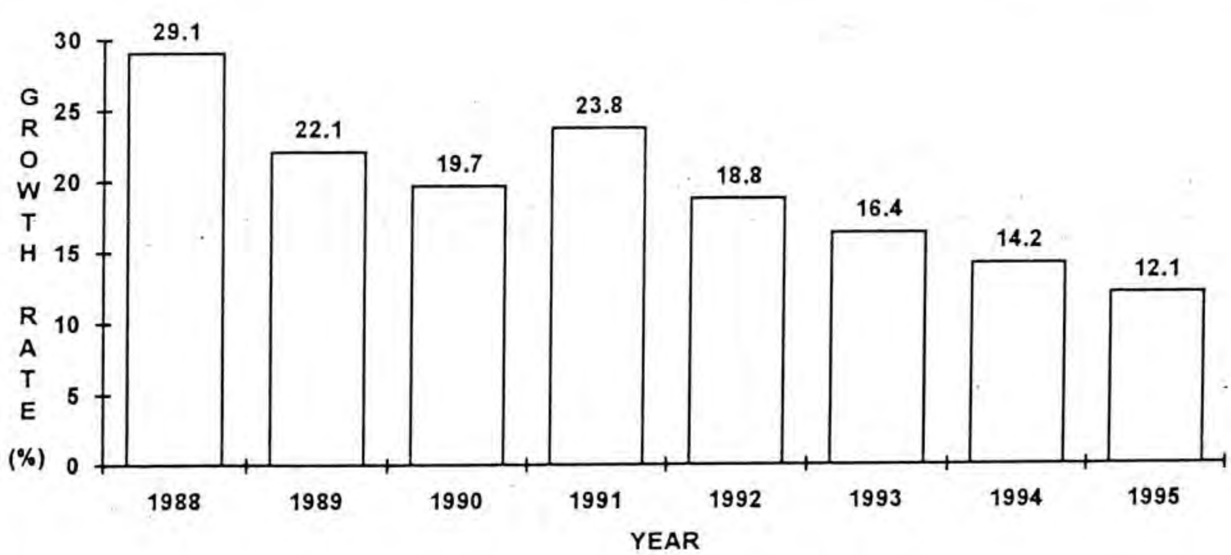
[4] The figure of one million pager users is the one officially quoted by the Hong Kong Post Office. This figure is far from the reality: there are only 730,000 to 800,000 pager users in Hong Kong, as estimated by the local paging companies. Since the official figure is estimated from the amount of license fee obtained from all paging companies each year, duplication in counting occurs when pager users switch companies during the year. This phenonmenon is quite common in the local paging market.

FIGURE 2
GROWTH RATE OF PAGER SUBSCRIBERS FROM 1978 TO 1992



Source: Hong Kong Post Office

FIGURE 3
PROJECTED GROWTH RATE FOR THE NEXT THREE YEARS IN LOCAL PAGING MARKET



1.2.2 Market Competitors

The opening of new paging channels in 1990 by the government lowered the industry entry barrier, and succeeded in attracting new entrants into the market. This deregulation brought an influx of new paging companies and thereby aggravates the competition within the paging market. By the end of 1992, the government had issued paging services licenses to a total of thirty-two licensees, as shown in Table 1. Among the thirty-two licensees, some have been acquired by other companies (e.g., Hutchison Paging Ltd., Star Paging Communications Ltd., and ABC Communications Ltd.), while others may not be active in the market for reasons such as new entry, etc. Currently there are about fifteen paging companies in the market, with the top three companies (Hutchison Paging Ltd., Star Paging Communication Ltd., and ABC Communications Ltd.) capturing roughly 74% of market share.[5]

[5] Yu, Yat-Wah, "Marketing Image Management for a Local Paging Company: Its Design, Measurement and Implementation", MBA Project Report, May 1992, p. 5.

TABLE 1
A LIST OF PAGING SERVICE LICENSEES (1992)

1.		ABC Communications Ltd.
2.	H	Advance Telecom (Holdings) Ltd.
3.		Asia Paging Co. Ltd.
4.		BB Telecom Ltd.
5.	A	C.C. Communications Ltd.
6.		Chevalier (Paging Services) Ltd.
7.	H	Communication Centre Telecom Ltd.
8.	H	Concord Paging System Ltd.
9.		EPRO Paging Services Ltd.
10.		Financial Telecom Ltd.
11.	H	Good News Paging Services Co. Ltd.
12.		Good Rely Limited
13.	H	Hong Kong Paging System Ltd.
14.		HK Telecom CSL Ltd.
15.		Hutchison Paging Co. Ltd.
16.		In-Touch Paging Service Ltd.
17.	S	Integrity Computer Services Ltd.
18.	S	Integrity Paging Communications Co. Ltd.
19.	H	Inter-City Communications & Services Ltd.
20.		Jetcom International (Holding) Co. Ltd.
21.		Kantone Paging Co. Ltd.
22.		New Telecom Co. Ltd.
23.		New World Paging Ltd.
24.	A	Perfect Paging Services Ltd.
25.		S T Telecom Ltd.
26.		Scaventech (Asia) Ltd.
27.	H	Speedy Paging Service Ltd.
28.		Star Paging Communication Ltd.
29.		Telecom Service Ltd.
30.		Telepaging Ltd.
31.		Telesonic Company
32.		WOL Communications Ltd.

Source: Hong Kong Post Office

A: Companies acquired by ABC Communications Ltd.
H: Companies acquired by Hutchison Paging Ltd.
S: Companies acquired by Star Paging Communications Ltd.

1.2.3 Strategies

For classification purposes, it is more appropriate to label the paging industry as a service industry, since the companies are not merely providing pagers, which are tangible products, but also a wide range of services as well. As there are few manufacturers of pagers (e.g., Motorola, NEC, Casio, etc.), the products offered by different companies are more or less the same with respect to size, shape, and functions. So most paging companies would seek to focus on their services in order to attract new customers. In the following section, some commonly used strategies will be examined and discussed.

1.2.3.1 Low Price Strategy

Some companies address the local paging market as a mass market which is comprised of price-sensitive customers. In order to appeal to these customers, and hence expand their market share, these companies pursue a low price strategy which takes several forms. The most popular one is to provide new users with an exemption of service fee for the first three months after the sale. Alternatively, some companies provide the "rent-a-pager" service, and some even reduce their service fee so as to attract new customers. However, the last option is rarely adopted, since most companies have compromised with one another regarding the amount of service fee to be charged.

1.2.3.2 Service Differentiation Strategy

Another strategy commonly adopted by local paging companies is to differentiate their services so as to appeal to the needs of different customers. These services are described as follows:

1) Personalized Secretarial Services

In recent years, more and more paging companies have emphasized their personal paging services, which encompass such features as unique personalized paging number, user-defined greeting response, call screening service, phone forwarding service, and so on. With these personalized services, paging companies are appealing to the unique tastes, styles, and needs of individual pager users as a means of attracting new business. For the time being, companies that offer such personalized services include Hutchison Paging, Star Paging, ABC Communications, EPRO Paging, New World Paging, and New Telecom.

2) Information Provision

Information provision is another add-in value which paging companies commonly offer to attract pager users. Such information may include financial information such as stock prices, Hang Seng Index, foreign exchange rates and gold prices, gambling information such as Mark Six results and horse racing results, and other general information like traffic reports, typhoon alerts, telephone directory services, daily movie schedules, car towing service information, etc.

3) Cross-Border Paging

The booming China trade greatly promotes the development of this kind of "cross-border" paging service, which commonly involves a paging network encompassing Hong Kong, Guangdong, and Macau. Such a service requires more capital investment and also cooperation with mainland companies or government institutions. At present, only a few paging companies, including ABC Communications, Asia Paging and Hong Kong Telecom CSL Ltd., offer such a service.

4) Operator-Free Paging Services

Contrary to the idea of providing a secretary to handle daily appointments and meetings as in the example of personal secretarial paging service, some paging companies are promoting services which are operator-free, i.e., no operator is required; the entire paging process is totally automatic and computerized. At present, this operator-free paging concept is offered in three forms. One is known as "Direct Paging", which uses a computer recording of the caller's message in his / her own voice. The "voice message" can then be replayed to the pager user by calling into the paging centre. City Paging is the first paging company which makes use of this kind of technology to appeal to the market. However, market response has not been too favorable, with many complaints about "malicious messages" left by unknown parties. Such unfavorable complaints will not only hurt the company's reputation, but also reduce users' confidence and expectations toward this kind of service.

Another paging service which can operate without operators is the "Direct Contact Service" as provided by Hutchison Paging (trademarked as "Meet-Me" service) and Star Paging (trademarked as "Pagephone"). Such a service allows the user to communicate directly with the caller on any available phone nearby. With such direct contact services, complete confidentiality can be retained, as claimed by both paging companies.

Finally, the "JetPage Service" offered by Hutchison Paging enables the caller to make calls through the use of a touch-tone phone number pad directly. The paging centre number, user identification code, and the numeric message or telephone number can be entered directly into the tone phone, and the pager user can be reached instantly.

1.2.3.3 Market Development Strategy

Many companies are looking for new markets; typical examples include the female market, the teenager market, the company or corporation market, and the family market. The paging market is heavily dominated by male users, with a ratio of 9:1. Of the 730,000 to 800,000 pager users, there are roughly 73,000 to 80,000 female users, comprising one-tenth of the local market. So the potential for growth among female pager users is extremely high, given the fact that there are about one million working women in Hong Kong at present[6].

Another market opportunity is the youth market. According to the statistics of paging companies, new pager users falling within the age group of 25 to 28 has shown a significant increase in number over the past few years, indicating a trend that more and more youngsters have started using pagers. To capitalize on this growing segment, various product strategies are being used. Some examples are the "Roadrunner" and "Trump Card" pagers, which are offered by Hutchison Paging

6 *Hong Kong 1991 Population Census Summary Results*, Census Planning Section, Census and Statistics Department, Hong Kong, p. 50.

with a wide selection of colors, and also the "Couple Package", which is targeted at young couples, as promoted by BB Telecom.

The corporation market is another new market segment which paging companies are exploring. Hutchison Paging is only one of the many which try to capitalize on this segment by offering a wide range of paging services like the "Group Call" (which allows the caller to send the same message at the same time to a pre-defined group), "Customer Account Call" (which allows a caller to send the same message to all pre-defined groups or any one group in a company at the same time), and the "Team Call" (which allows the caller to page a whole roster of pagers one by one with a time interval between calls until one of the subscribers answers the page, or the last pager on the list gets paged). When used by a company as a whole, such services allow efficient and effective communications between the company and its staff who have to work outside their facilities.

The final market opportunity is the family market, which is capitalized by BB Telecom exclusively in its promotion of "Family Package". Sharing one "family secretary", the whole family can access a wide range of paging services, including reservation services in restaurants. The advantage is that while one can call the whole family at only one number, each member still retains his / her own independence by receiving and making calls individually.

1.3 Research Objectives

1.3.1 Decision Problems

The decision problems of this study are:

1) To find the usage gap (i.e., the difference between users' needs and the services offered by their existing companies).

2) Identify market segment(s) and formulate effective marketing strategy(ies).

1.3.2 Research Problems

The following are the research problems:

1) Analysis of the needs of existing pager users and determination of whether they are satisfied or not; if not, identification of the underlying reasons.

2) Market segmentation, using four bases: demographic, psychographic, product usage, and benefit.

1.3.3 Research Objectives

The study aimed at achieving the following objectives:

1) To identify various services required by both existing and potential pager users.

2) To identify the paging services currently used by pager subscribers, and compare them with the services that they need, in order to identify any needs (if any) which cannot be satisfied.

3) To identify the demographic profiles of both current and potential pager users.

4) To identify the usage patterns of both current and potential pager users.

5) To identify market segments based on psychographic or lifestyle patterns (using general lifestyle, as well as product specific AIO statements) and characterize the segments' profiles in terms of demographic, product usage, and benefit variables.

6) To identify market segments based on usage patterns and characterize the segments' profiles in terms of demographic, psychographic, and benefit variables.

7) To identify market segments based on benefit patterns, and characterize the segments' profiles in terms of demographic, psychographic, and product usage variables.

CHAPTER 2
LITERATURE REVIEW

2.1 Definition

First introduced by Wendell Smith in 1956, the concept of market segmentation has undergone a history of over three decades with volumes of literature dedicated to it. Based on the presumption that the market is composed of customers with different expectations and /or different buying climates or situations, the idea of market segmentation allows the partitioning of a market into identifiable segments which can then be targeted using specific marketing programmes.

According to Wendell Smith, "segmentation is based upon developments on the demand side of the market and represents a rational and more precise adjustment of product and marketing effort to consumer or user requirements". The key point in this definition is that market segmentation is a concept which focuses on the demand side of the market, i.e., the needs and requirements of customers. With this type of mentality in mind, companies should first identify the needs of customers and then satisfy them by tailoring their product offerings and other marketing components.

2.2 Segmentation Options

In contrast to the strategy of market segmentation, companies may choose to pursue an aggregation strategy, which is virtually equivalent to treating the entire market as one, without any segments identified. The limitation of this strategy is that there are few companies which can minimize their costs and maximize their returns by using such an aggregation, or undifferentiated, strategy.

On the other hand, by pursuing the strategy of market segmentation, companies are open to three options, namely, differentiation, concentration, and atomization, differing in the choice of segments as well as the degree of market breakdown. By using differentiation, companies identify and actively market their products or services to different segments of the market, based on different needs. One should discriminate this strategy from that of product variety, which focuses on producing a large variety of the same product or service and letting the consumers decide which one is more desirable. This shot-gun approach, as opposed to the high-powered rifle approach of market segmentation, is much more supply-side oriented. One should not mistake one for the other.

The second option, concentration, means that companies serve only one of the potential segments of the market. This strategy is less expensive than differentiated marketing, and may be more appropriate for a new business with limited resources.

Finally, the approach of atomization breaks down the market to the finest detail, and often to the individual customer level. Although least used by most companies, this strategy might be an appropriate choice for a manufacturer of costly and specialized equipment.

2.3 Advantages of Market Segmentation

The overall objective of using a market segmentation strategy is to improve a company's competitive position and better serve the needs of its customers by looking at their viewpoints. There are four major benefits:[7]

1) Designing responsive products to meet the needs of the marketplace

   Through researching customer preferences, which is an essential component of segmentation analysis, the company moves toward accomplishing the market concept of achieving customer satisfaction at a profit. The firm places the customer first and designs and refines its product and service mix to satisfy the needs of the market.

2) Determining effective and cost efficient promotional strategies

   As a planning tool, segment identification and analysis is extremely valuable in developing a company's promotion mix. Appropriate advertising campaigns can be designed and targeted to the right media vehicles. This marketing investment can be supplemented by public relations initiatives and sales promotions. In addition to mass promotional thrusts, the personal sales process can be greatly improved by providing sales representatives with background customer research, recommended sales appeals, and ongoing support.

3) Evaluating market competition, in particular, the company's market position

   A segmentation study explores the firm's market position, i.e., how the company is perceived by its customers and potential customers relative to the competition. Segmentation research can provide a competitive intelligence

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7 Weinstein, Art, *Market Segmentation*, Chicago, Illinois, Probus Publishing Company, 1987, pp.10-11.

mechanism to assess how well a company is performing, as compared with industry standards. Additionally, this analysis is useful for detecting trends in changing markets.

4) Providing insight on present marketing strategies

Market segmentation research is useful in exploring new markets (perhaps secondary smaller or fringe markets which might have otherwise been neglected by concentrating on primary markets). Furthermore, effective segmentation provides a systematic approach for controlled market coverage, as opposed to the hit-or-miss effectiveness of mass marketing strategies.

2.4 Prerequisites for a Segmentation Scheme

Though identifying diversified needs and requirements of customers in segmentation is helpful to marketers in formulating their marketing programmes, it is important to ensure an effective segmentation in terms of the usefulness of information uncovered. To be considered as effective, Kolter (1988) suggested that useful segments must possess four characteristics, namely, measurability, substantiality, actionability and accessibility[8].

1) Measurability refers to the degree to which the size, location, and content of a particular segment can be measured. In the present study, the population size of pager users was closely checked by the General Post Office of Hong Kong, and it was estimated by paging companies that there were roughly 730,000 to 800,000 paging subscribers at the end of 1992. They are dispersed over different parts of Hong Kong and can be reached easily.

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8 Kotler, Phillip, *Marketing Management Analysis, Planning, Implementation and Control*, 6th ed., Englewood Cliffs, New Jersey, Prentice-Hall International Editions, 1988, p. 298.

2) The segment must be of substantial size to warrant attention. According to Kotler, "a segment should be the largest possible homogeneous group of buyers that it pays to go after with a specially designed marketing program."[9] Substantiality is the degree to which the segments are large and profitable enough for attention. This depends on both the number of consumers within the segment and the amount they spend on the products. Hong Kong has the highest penetration rate of pagers among all world countries, and the pager market is flourishing with an alarming growth rate. Pager users pay considerable amounts of monthly service charges for using the telecommunications network, which involves low variable costs. The profitability of the industry did attract a number of new entrants in the past few years.

3) Actionability is the degree to which effective marketing programmes can be formulated for attracting and serving the segments. Once the companies have identified their target market segments, specific marketing mixes which include price, promotion, product and place strategies should be formulated to cater to the specific segments. In the case of the local paging industry, paging companies are currently treating pagers as commodities or mass products, and require only an aggregation strategy with no efforts devoted to market differentiation. It is believed that a higher degree of differentiation in the marketing mix can be achieved once the market is segmented.

4) Accessibility refers to the degree to which the segment can be effectively reached and served. Segments should be accessible through some kind of marketing vehicle, so that marketers can communicate their messages to their customers. Hong Kong is a developed city with a strong information and communications

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9 Kotler, Philip, *Principles of Marketing*, Englewood Cliffs, New Jersey, Prentice-Hall, 1980, pp. 308-309.

network and well-established mass media structure. It is therefore not that difficult to reach various segments and to communicate with those pager users there.

2.5 Segmentation Bases

There are different bases for market segmentation. Often several segmentation methods are used to supplement each other. According to Kotler (1980), market segmentation variables are divided into four major areas: geographic, demographic, psychographic, and behavioristic[10].

2.5.1 Geographic Segmentation

Geographic segmentation is the simplest to understand. When a market is segmented geographically, one is presuming that the needs of customers, or the ways to fill those needs, vary geographically, either by region of a country, by population density, or by climate. In the case of Hong Kong, where geographical territory is so limited, it seems that such a base for segmenting the local paging market would not be effective.

2.5.2 Demographic Segmentation

Demographic segmentation can be simply described as the segmentation base which seeks to categorize people by using variables such as age, sex, occupation, family size, stage in life cycle, educational level, income, race, nationality, etc. In cases where higher specificity of segments is required, a combination of the variables will be used. It appears to be the most prevalent form of market segmentation, since the

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[10] Beane, T.P. and Ennis, D.M.,"Market Segmentation: A Review", *European Journal of Marketing*, Vol. 21, No. 5, 1987, pp. 20-42.

data related to customers is fairly straightforward to collect, interpret, and transfer from one study to another.

2.5.3 Psychographic Segmentation

First introduced by Emanuel Demby, the term psychographics has been subject to wide controversy, as to what constitutes psychographics and whether or not it is synonymous with lifestyle research. In its broadest definition, psychographics is any measurement and analysis of the consumer's mind which pinpoints how he or she thinks, feels, reacts, and reflects[11]. Wells called psychographics a quantitative attempt to place consumers on psychological dimensions[12]. Ziff states that attempts to define psychographics narrowly have proved difficult[13]. And Demby himself put forward a three-level definition of psychographics as follows:[14]

1) Generally, psychographics may be viewed as the practical application of the behavioral and social sciences to marketing research.
2) More specifically, psychographics is a quantitative research procedure that is indicated when demographic, socioeconomic, and user/non-user analyses are not sufficient to explain and predict consumer behavior.
3) Most specifically, psychographics seeks to describe the human characteristics of consumers that may have a bearing on their responses to products, packaging, advertising, and public relations efforts. Such variables may span a spectrum from self-concept and lifestyle to attitudes, interests, and opinions, as well as perceptions of product attributes.

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11 Nelson, A., "Psyching Psychographics: A Look at Why People Buy", in King, C. and Tigert, D. (Eds.), *Attitude Research Reaches New Heights*, Chicago, American Marketing Association, 1971, pp. 181-188.

12 Wells, William D., "Psychographics: A Critical Review", *Journal of Marketing Research*, Vol. 12, May 1975, pp. 196-213.

13 Ziff, R., "Psychographics for Market Segmentation", *Journal of Advertising Research*, Vol. 11, No. 2, 1971, pp. 3-9.

14 Demby, Emanuel, "Psychographics and From Whence It Came", in William D. Wells (Ed.), *Lifestyle and Psychographics*, American Marketing Association, 1974, pp. 11-30.

Although the terms psychographics and lifestyle are now used interchangably, Weinstein pointed out that there is a distinction between these two concepts. "Psychographics relates to consumers' personality traits (e.g., their sociability, self-reliance, assertiveness, etc.), while lifestyles, as described by William D. Wells and Douglas J. Tigert, consist primarily of individuals' attitudes, interests, and opinions, or AIOs"[15]. Finally, Weinstein concludes that psychographics is a combination of personality traits and lifestyles, and that the combination of these two factors provides a more meaningful and robust segmentation base.

Plummer suggested in his paper that psychographic segmentation does a better job in describing segments than demographics alone[16]. His justification is that "the basic premise of lifestyle research is that the more you know and understand about your customers, the more effectively you can communicate with them." He views lifestyle segmentation as a combination of demographics and psychographics.

Lying at the heart of survey instruments in psychographic segmentation studies are the AIO (Activities, Interests, Opinions) statements which are the primary means of gathering information. Such AIO statements may either be general and refer to general activities and motivations, or product-specific and identify benefits associated with the product or brand. A good example of how AIO statements can be used for the purpose of psychographic segmentation can be found in an earlier study by Wells and Tigert in their attempt to segment eye make-up users[17].

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15 Weinstein, Art, *Market Segmentation*, Chicago, Illinois, Probus Publishing Company, 1987, p. 109.

16 Plummer, J.T., "The Concept and Application of Life Style Segmentation", *Journal of Marketing*, Vol. 38, January 1974, pp. 33-37.

17 Wells, William D. and Tigert, Douglas J., "Activities, Interests and Opinions", *Journal of Advertising Research*, Vol. 11, No. 4, August 1971, pp. 27-35.

In another paper[18], Wells (1975) critically reviews psychographics research at that time and illustrates five different uses of the research method. The five uses are:

1) A psychographic profile based on general lifestyle dimensions;
2) A product specific psychographic profile;
3) Personality traits as descriptors;
4) A general lifestyle segmentation study;
5) A product specific segmentation.

Psychographic segmentation studies have been conducted in a number of different markets. Some examples of recent studies are Miller and Easterling's attempt to examine the US banking market[19], Bone's study of the mature US market[20], Greco and Paksoy's study of mature fashion-conscious shoppers[21], and Sorce et. al.'s study of the older American market[22]. Increasingly, more companies may want to know more about their consumers in terms of their psychographics. By looking inside consumers, these studies help to provide a new dimension for marketers to understand their customers and to formulate effective marketing programs.

The relevance of psychographics to segmenting the local paging market is bound up to the ability of introducing new dimensions of existing customer information. The use of psychographics may help to discover the particular and unique lifestyle patterns of local paging users and hence give a richer insight into their preferences for various products and services.

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18 Wells, William D., "Psychographics: A Critical Review", *Journal of Marketing Research*, Vol. 12, May 1975, pp. 196-213.
19 Miller, Shirley and Easterling, Debbie, "Banking Segmentation Strategy: A Lifestyle Approach", *Journal of Professional Services Marketing*, Vol. 9, 1991, pp. 177-188.
20 Bone, Paula Fitzgerald, "Identifying Mature Segments", *Journal of Consumer Marketing*, Vol. 8, Fall 1991, pp. 19-32.
21 Greco, Alan J. and Paksoy, Christie H., "Profiling the Mature Fashion-Conscious Shopper", *Akron Business & Economic Review*, Vol. 20, Summer 1989, pp. 7-23.
22 Sorce, Patricia, Tyler, Philip R., and Loomis, Lynette M., "Lifestyles of Older Americans", *Journal of Services Marketing*, Vol. 3, Fall 1989, pp. 37-47.

2.5.4 Behavioristic Segmentation

Kotler's fourth and final group of segmentation variables are behavioristic. By behavioristic segmentation, consumers are segmented based on knowledge of the product, attitude, or response to the product. This includes such areas as purchase occasion, benefits sought, user status, usage rate, degree of loyalty, readiness stage, and marketing factor sensitivity. However, in this section, only benefit and product usage rate segmentation will be discussed.

Benefit segmentation is a method of dividing up a market based on the benefits derived from or desired in a product. Such benefits, as stated by Weinstein[23], "are the sum of product advantages or satisfaction that meet an individual's needs or wants. They extend beyond product features and serve to satisfy physical, emotional, or psychological needs." Benefit segmentation probes into users' buying motives and is linked directly to the marketing discipline of consumer behavior. According to Haley[24], "the belief underlying this segmentation strategy is that the benefits which people are seeking in consuming a given product are the basic reasons for the existence of true market segments." Unlike most other segmentation bases, benefit segments are based on causal factors, rather than descriptive factors, to describe a direct, or cause and effect, relationship which exists between motivations and purchasing patterns. It determines why a person buys a product and, therefore, why similar people might buy the product if the benefit is communicated to them. Once people have been classified into segments in accordance with the benefits they are seeking, each segment is contrasted with all of the other segments in terms of its demographics, its volume of consumption, its brand perceptions, its media habits, its

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23 Weinstein, Art, *Market Segmentation*, Chicago, Illinois, Probus Publishing Company, 1987, p. 124.

24 Haley, Russell I.,"Benefit Segmentation: A Decision-Oriented Research Tool", *Journal of Marketing*, Vol. 32, July 1968, pp. 30-35.

personality and lifestyle, and so on. As such, marketers can obtain a reasonably deep understanding of the people who make up each segment, and hence can design an appropriate marketing mix to capitalize on the opportunities.

Examples of benefit segmentation studies can be found throughout the literature. Some recent studies are Loker and Perdue's study of the US nonresident tourist market[25], Brown's study of the US fitness market[26], Dubow's so-called Wine Study[27], Pilling's study of voter behavior[28], Soutar and McNeil's study of the financial planning market[29], Funk and Phillips' table eggs market study[30], and Wicks' study of the US television news market[31]. Increasingly, benefit segmentation has been used by marketers as a tool in understanding the market and in formulating effective marketing mixes.

Usage rate segmentation divides consumers into specific consumption categories; an often used method is light users vs. medium users vs. heavy users of a particular good or service. After identifying different usage categories, companies may decide to build a share in any one of them, depending on their marketing goals, as well as the relative strengths of brands within the usage groups. Frequently, heavy users may consume a disproportionately large amount of the total consumption of the product, so they become the targets of companies. However, chances are other companies may also recognize the value of this segment, thus leading to keen competition for the

[25] Loker, Laurie E. and Perdue, Richard R., "A Benefit-Based Segmentation of a Nonresident Summer Travel Market", *Journal of Travel Research,* Vol. 31, Summer 1992, pp. 30-35.

[26] Brown, Joseph D., "Benefit Segmentation of the Fitness Market", *Health Marketing Quarterly*, Vol. 9, 1992, pp. 19-28.

[27] Dubow, Joel S., "Occasion-Based vs. User-Based Benefit Segmentation: A Case Study", *Journal of Advertising Research*, Vol. 32, Mar./Apr. 1992, pp. 11-18.

[28] Pilling, Bruce K., Crosby, Lawrence A., and Scholder, Pam, "Using Benefit Segmentation to Influence Environmental Legislation: A Bottle Bill Application", *Journal of Public Policy & Marketing*, Vol. 10, Fall 1991, pp.28-46.

[29] Soutar, Geoffrey N. and McNeil Margaret M., "A Benefit Segmentation of the Financial Planning Market", *International Journal of Bank Marketing*, Vol. 9, 1991, pp. 25-29.

[30] Funk, Thomas F. and Phillips, Willard, "Segmentation of the Market for Table Eggs in Ontario", *Agribusiness,* Vol. 6, Jul 1990, pp. 309-327.

[31] Wicks, Robert H., "Product Matching in Television News Using Benefit Segmentation", *Journal of Advertising Research*, Vol. 29, Oct./Nov. 1989, pp. 64-71.

heavy users. In addition, all heavy users are not purchasers for the same reasons. Demographic data alone can hardly explain purchase behaviors. Since customers have different needs, additional bases such as psychographics and benefits should be employed for further segmentation within the heavy user category.

CHAPTER 3
RESEARCH METHODOLOGY

3.1 Research Design

This study involved a combination of exploratory and descriptive research. First hand information concerning the current market situation and paging companies' strategies was obtained through telephone and personal interviews with key personnel from the marketing departments of four paging companies (Hutchison Paging Ltd., Asia Paging Co. Ltd., EPRO Paging Services Ltd., and Telecom Service Ltd.). Secondary data, which aimed at clarifying and defining the research objectives, was collected through a search of newspaper articles, published journals, company reports, etc. The information was used to construct a questionnaire for the descriptive sample survey, in which primary data was obtained with respect to pager user characteristics.

3.2 Sampling

Quota sampling was adopted. Interviewees were assigned respective proportions of male and female respondents in accordance with the pager user sex ratio of 9 : 1. The target subjects were those over 15 years of age.

The sample size of 220 is derived from the following formula:

$$N = \frac{Z^2 (p)(1-p)}{H^2}$$

where N = minimum sample size for a representative population of pager users

Z = 1.96 (confidence level at 95%)

p = proportion of pager users in Hong Kong population

= 1,000,000 / 5,800,000

= 0.1724

H = maximum allowance for error between population and sample proportion

= 0.05

therefore,

$$N = \frac{1.96^2(0.1724)(1-0.1724)}{0.05^2}$$

$= 219.26$

$\cong 220$

3.3 Data Collection

A structured questionnaire (Appendix A) was used to tap information about existing and potential pager users' characteristics and usage levels. It was composed of 64 questions and contained four sections, addressing the existing paging services to which respondents subscribed, respondents' psychographics, the benefits which respondents sought, and respondents' demographics. In the section on psychographics, respondents were asked to rate a number of AIO statements (Appendix C) on a 6 - point scale, with 0 representing "strongly disagree" and 5 representing "strongly agree". In the benefits section, respondents rated the importance of each benefit on a 6 - point scale which ranged from 0 to 5; 0 represents "not important at all", whereas 5 represents "extremely important".

Since the target subjects are Chinese, all questions were translated into Chinese and back-translated into English before the pretest. The final version of the questionnaire was administered after several modifications and pretests, which aimed at securing the use of the correct wording to relay equivalent meanings in both English and Chinese, as well as clarity of the sentences.

Since no comprehensive list of pager users or potential pager users existed from which a sample could be drawn, respondents were contacted on-site at selected attractions such as quays, resting places, shopping arcades, etc. Such places were chosen over busy areas, such as MTR stations and the Star Ferry Pier, to increase the response rate (since our questionnaire was quite lengthy). And respondents were invited to complete a self-administered questionnaire. As the response from field work was not satisfactory, only 200 questionnaires were finally completed.

CHAPTER 4
LIMITATIONS

1) Since nonprobability sampling was used, there was difficulty in determining the representativeness of the sample. Without restrictions on the geographic locations where data was collected, geographic dispersion could not be achieved.

2) In order to obtain a realistic profile of existing and potential pager users' psychographics, a long list of questions were added. This lengthened the questionnaire substantially, and subjected it to low response rate. In addition, limited economic resources discouraged the use of incentives to encourage respondents' cooperation. Hence, self-selection bias might have entered into the sample. Those who were willing to complete the questionnaire might possess specific characteristics which were different from those who refused. The nonresponse error might lead to confounding and inadequate results and conclusions.

3) The environment in which the questionnaires were distributed involved a "history" factor, contributed by external stimuli such as people's chatting and walking. Since respondents may have been distracted by such noises, the reliability of their responses may be questionable.

4) In addition, since the questionnaire was quite lengthy, respondents would easily become frustrated and even exhausted when they answered the latter parts of the questionnaires. This "maturation" effect of the respondents might seriously affect the reliability of their responses.

5) With regard to the composition of the sample, there were only 16 potential pager users. Factor and cluster analyses could not be performed with such a small

number of subjects, so they were combined with the pager user group for psychographic and benefit segmentation studies. With the limited number of potential pager users, a separate analysis of their psychographic and benefit profiles could not be made.

6) Since no past research on segmentation of the pager market was found, the researchers had to depend on their intuition and their friends' suggestions in developing product specific AIO statements for psychographic segmentation analysis. Since these questions have never been tested before, their reliability and validity are questionable. And a similar problem was encountered for the benefit items developed for the benefit segmentation analysis. As for those general lifestyle AIO statements, although they have been tested in past research, their selection was also up to the researchers' discretion. As such, there would be bias as to what lifestyle categories were chosen; those categories selected may not be related to the real lifestyle profiles of pager users.

6) With regard to the interpretation and profiling of psychographic and benefit segments, since no official guidelines are available, the interpretations were based on the researchers' observations, subjective judgments, and sometimes creative imagination. As such, the profiles may be subject to researchers' bias and thus may not be reliable.

CHAPTER 5

IDENTIFICATION OF MARKET SEGMENTS FOR PSYCHOGRAPHIC AND BENEFIT SEGMENTATION

5.1 Psychographic Segmentation

5.1.1 Factor Analysis

In order to identify and classify respondents with respect to some predetermined selection criteria so that they can be segregated into separate and identifiable segments, the statistical technique of cluster analysis is adopted. However, before the use of cluster analysis, one important point to be considered is the number of variables used in computing similarity among objects. In our case, there are 39 AIO statements (excluding the 7 statements which are related to the media preferences and product usage patterns of respondents) to be used for segmentation purposes, implying that if all statements are used for cluster analysis, there are totally 39 variables involved. The problem with such a large number of "untreated" variables is that cluster analysis can be drastically affected by the inclusion of only one or two inappropriate or undifferentiated variables, since this will increase the chance that outliers will be created. Since the technique of cluster analysis provides no means of differentiating the relevant from the irrelevant variables, it becomes a critical task for researchers to select those variables which are distinctive and relevant for cluster analysis.

In order to achieve this objective, another statistical technique, factor analysis, was used. The purpose of using factor analysis is to find a way of condensing or summarizing the information contained in a number of original variables into a smaller set of new composite dimensions (factors) with a minimum loss of information[32]. Specifically, the technique of R factor analysis was used so as to identify a set of dimensions that are latent in the set of variables, i.e., 39 AIO statements.

Component analysis was used with the objective of summarizing most of the information or variance in a minimum number of factors for prediction purposes. The rotational approach used was orthogonal and VARIMAX. A rotational approach was used to improve the interpretation by reducing some of the ambiguities that often accompany initial unrotated factor solutions, thereby achieving simpler and theoretically more meaningful factor solutions. In an orthogonal factors solution, factors are extracted in such a way that the factor axes are maintained at 90 degrees, meaning that each factor is independent of all other factors. This technique was preferred over the other factor extraction approach, the oblique model, since our objective was to reduce the original 39 variables to a smaller set of uncorrelated variables for subsequent use in cluster analysis.

As for the choice of orthogonal approaches, there are three techniques available in the SPSS/PC+ package: QUARTIMAX, VARIMAX, and EQUAMAX. However, no specific rules have been developed to guide the selection of a particular orthogonal rotational technique. Nevertheless, the VARIMAX method has proved successful as an analytic approach in obtaining an orthogonal rotation of factors. Even in the case where the results do not meet the analyst's concept of a simple structure, the solution is close enough to reduce the labor of finding a satisfactory rotation[33]. It was therefore chosen for the analysis.

Table 2 contains the information regarding the final results of the factor analysis.

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32 Hair, Joseph F. et. al., *Multivariate Data Analysis*, 3rd edition, New York, NY, Maxwell Macmillan International Editions, 1987, p. 225.

33 Ibid., p. 236.

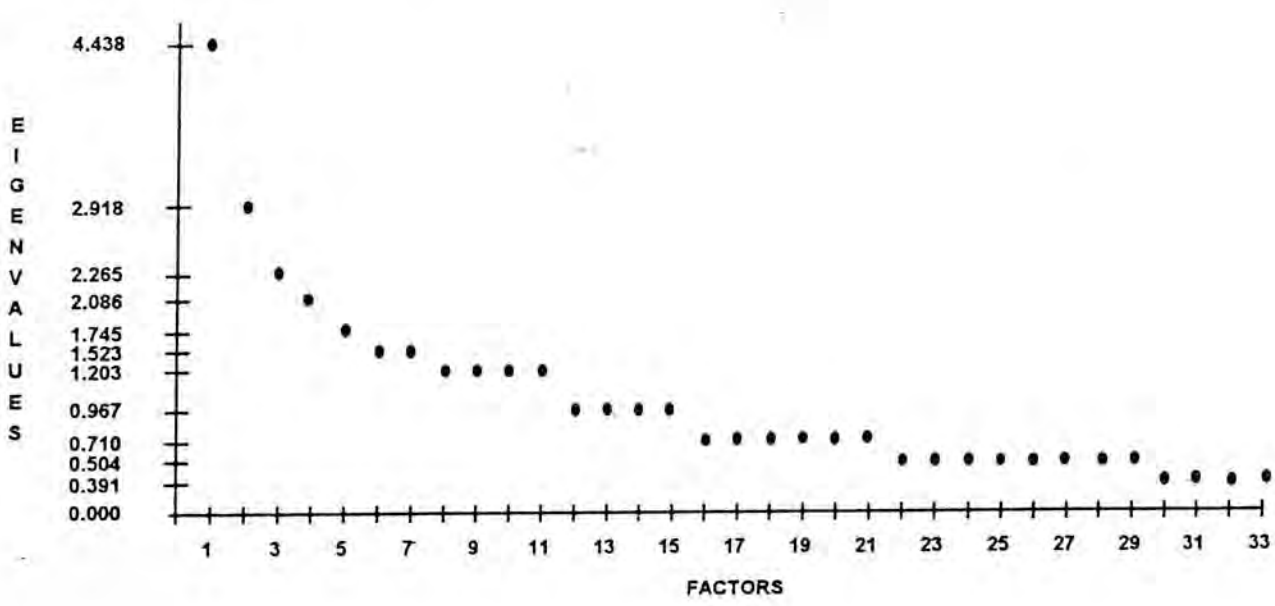
TABLE 2
RESULTS FOR EXTRACTION OF COMPONENTS

Variable	Communality	Factor	Eigenvalue	Pct of Var	Cum Pct
AIO10	.63187	1	4.43830	11.4	11.4
AIO11	.52842	2	2.91817	7.5	18.9
AIO12	.70554	3	2.26473	5.8	24.7
AIO13	.67123	4	2.08606	5.3	30.0
AIO14	.59967	5	1.74517	4.5	34.5
AIO15	.58417	6	1.58500	4.1	38.6
AIO16	.64801	7	1.52320	3.9	42.5
AIO17	.60944	8	1.34062	3.4	45.9
AIO18	.63134	9	1.32744	3.4	49.3
AIO19	.60855	10	1.26476	3.2	52.5
AIO20	.59401	11	1.20299	3.1	55.6
AIO22	.72405	12	1.13114	2.9	58.5
AIO23	.49426	13	1.05570	2.7	61.2
AIO24	.69300	14	1.02697	2.6	63.9
AIO25	.69017				
AIO26	.70076				
AIO27	.55874				
AIO28	.58598				
AIO29	.70411				
AIO30	.64370				
AIO31	.71774				
AIO32	.69658				
AIO33	.60617				
AIO34	.61331				
AIO36	.59401				
AIO37	.58845				
AIO38	.64952				
AIO39	.71344				
AIO40	.79181				
AIO41	.58078				
AIO43	.60229				
AIO44	.61064				
AIO45	.64834				
AIO46	.62429				
AIO47	.59292				
AIO49	.63388				
AIO51	.61492				
AIO53	.73615				
AIO54	.68799				

The "Variable" column represents the AIO statements; for instance, AIO10 refers to the AIO question number 10 in the questionnaire (see Appendix A). The column labelled "Eigenvalue", also referred to as the latent root, represents the amount of variance accounted for by a factor, i.e., the relative explanatory power of a factor. By the use of a latent root criterion, the SPSS/PC+ package automatically retains all factors which have their latent roots (eigenvalues) greater than one, and consider them to be significant; all factors with latent roots less than one are considered insignificant, and are disregarded. Based on the results, it seems that fourteen factors are optimal.

Another criterion for deciding on the number of factors to extract is the Scree tail test approach, which is derived by plotting the latent roots against the number of factors in their order of extraction, and the shape of the resulting curve is used to evaluate the cutoff point (Figure 4). Starting with the first factor, the plot slopes steeply down initially and then straightens out at the sixth factor, indicating that the maximum number of factors to extract is five.

FIGURE 4
SCREE TEST FOR COMPONENT ANALYSIS



Since these two criteria suggest two different numbers of factors to be extracted, it may be desirable to examine the factor matrix carefully before any decision is made. Appendix D shows the rotated factor matrix with the first fourteen factors extracted. Factor loadings with absolute values greater than 0.20 are shown. The larger the absolute value of the factor loading, the more significant the loading is in interpreting the factor matrix.

A summary of AIO statements for the fourteen factors is shown in Table 3. Generally, only those statements with their factor loadings equal to or greater than ± 0.50 are included. However, for factors in which only one statement meets the criterion, the AIO statement with the second highest score is also given as a reference.

Actually, all the first five factors show consistent patterns among their AIO statements. Factor 1 summarizes AIO statements with the characteristics of "centre of attention", "confidence", "independence", and "opinion leader", so it is most appropriate to label it "CONFIDENCE". Factor 2 deals with "consulting others", and it is labeled as "ADVICE". Factor 3 deals with "colorful pager" and it is labeled as "COLOR ". Factor 4 deals with "trying new things", and it is labeled as "INNOVATION". Finally, factor 5 deals with "going to parties", and it is labeled as "PARTY".

However, for the remaining 9 factors extracted by the SPSS/PC+ package, labeling seems to be more difficult. An examination of the AIO statements suggests that consistent patterns are difficult to find, with the exception of factor 9.

TABLE 3
LIST OF AIO STATEMENTS FOR FACTORS 1 TO 14

	AIO statements
Factor 1	I am usually the centre of attention in a group. I often can talk others into doing something. I am more independent than most people. I think I have more self-confidence than most people. I sometimes influence what my friends buy. My friends or neighbors often come to me for advice.
Factor 2	I often seek out the advice of my friends regarding which brand to buy. When I buy / rent a pager, I will consult others.
Factor 3	Pagers in black color look very dull. I prefer colorful pagers.
Factor 4	I like to use pagers with technologically advanced functions. I like to try new and different things. I often buy new brands before my friends and neighbors do.
Factor 5	I like parties where there is lots of music and talk. I would rather spend a quiet evening at home than go out to a party.
Factor 6	I wish I had a lot more money. I buy / rent a pager because most of my friends have one.
Factor 7	Each time I receive a page, I find it annoying to find a phone. Investing in the stock market is too risky. I think that it is disrespectful to consumers when pager operators make mistakes.
Factor 8	I would be afraid of having my secrets disclosed when using a pager. I think that the price of a product is more important than its quality.
Factor 9	Once I find a brand, I like to stick with it. I would not participate in dangerous sports.
Factor 10	The servicing attitude of pager operators of all paging companies is the same. Females should not carry pagers.
Factor 11	Carrying a pager is a fashion. I feel satisfied with my present job.
Factor 12	I like to pay cash for everything I buy. I think that pagers should be as small as possible.
Factor 13	I think that choosing paging companies operated by large corporations is more secure. I think it is disrespectful to consumers when pager operators make mistakes.
Factor 14	I think card pagers fail easily. Investing in the stock market is too risky.

Among the remaining 9 factors, 8 of them show no apparent patterns among the AIO statements. Only factor 9 seems to suggest that there is a factor of "risk aversion". As a result, only factor 9 is retained and is labeled "RISK". Taken together with the previous 5 factors, a total of 6 factors are retained, using both objective evaluation and subjective judgement.

5.1.2 Cluster analysis

After simplifying or summarizing the thirty-nine AIO statements into six dimensions, the next step is to segment the respondents based on these six dimensions by the use of cluster analysis. For each respondent, the average score on each of the six dimensions is calculated by summing the raw scores of the corresponding AIO statements (with factor loadings equal to or greater than 0.5) and then dividing by the number of statements in that dimension. Since AIO54 (I would rather spend a quiet evening at home than go out to a party) shows a negative loading with the factor "PARTY", its score is recoded in reverse prior to calculations. Table 4 summarizes the six dimensions and their corresponding AIO statements.

For cluster analysis, squared Euclidean distances, which measure the sum of differences for each clustering variable, were chosen as the similarity measure. Also, hierarchical agglomerative cluster procedure was selected so that each object or observation will first start out as its own cluster and then finally all objects join together into one single cluster. Ward's method was chosen to ensure that the within-cluster differences were minimized, and to prevent problems with "chaining" of the observations found in linkage methods.

TABLE 4
SUMMARY OF SIX DIMENSIONS FOR CLUSTER ANALYSIS

Factor	Label	AIO Statements (Factor Loadings)
1	CONFIDENCE	AIO47 (.71266) AIO24 (.68169) AIO38 (.67565) AIO45 (.62398) AIO41 (.56975) AIO36 (.56336)
2	ADVICE	AIO30 (.77042) AIO10 (.62296)
3	COLOR	AIO12 (.79622) AIO19 (.71468)
4	INNOVATION	AIO26 (.71033) AIO17 (.70989) AIO15 (.55371)
5	PARTY	AIO25 (.77474) AIO54 (-.60438)
6	RISK	AIO51 (.64071) AIO37 (.64055)

For the problem of selecting the number of clusters, since no standard objective procedures are provided, the distances between clusters at successive steps, as reflected by the agglomeration coefficient, were used as a guideline. The coefficient is the squared Euclidean distance between the two cases or clusters being formed; small coefficients indicate that fairly homogeneous clusters are being merged, whereas a large coefficient represents the joining of two very different clusters. Therefore, by looking for a large increase in the value, one may decide upon the optimum number of clusters to be chosen.

To help identify large relative increases in the cluster homogeneity, the percentage change in the clustering coefficient for fourteen to two clusters[34] was calculated, as shown in Table 5.

TABLE 5
ANALYSIS OF AGGLOMERATION COEFFICIENT FOR HIERARCHICAL CLUSTER ANALYSIS

Number of Clusters	Percentage Change in Agglomeration Coefficient to Next Level
14	4.40% [1]
13	4.55
12	4.55
11	4.35
10	4.68
9	4.87
8	4.94
7	5.99
6	8.33
5	9.75
4	10.76
3	11.47
2	12.93
1	--

[1] The calculation is shown in footnote 35.

[34] In the beginning, 199 clusters were generated by the cluster analysis. At each level, the number of clusters was reduced by one, together with a gradual increase in its agglomeration coefficient. A sudden jump in the agglomeration coefficient indicated that two very different clusters were being merged. To make the identification process easier, the change in agglomeration coefficient from one level to the next was converted into a percentage. In this case, the percentage change in agglomeration coefficient from fourteen to two clusters was shown. The choice of fourteen clusters was arbitrary, and had no relationship to the fourteen factors extracted from the factor analysis.

[35] The percentage change of agglomeration coefficient from N to (N-1) clusters is calculated by the following formula:

$$\frac{\text{Agglomeration coefficient of}(N-1)\text{ clusters - Agglomeration coefficient of N clusters}}{\text{Agglomeration coefficient of N clusters}} \times 100\%$$

For example, since the agglomeration coefficients for 14 and 13 clusters are 484.115 and 505.420, respectively, the percentage change of agglomeration coefficient from 14 clusters to 13 clusters is:

$$\frac{505.420 - 484.115}{484.115} \times 100\%$$

$$= 4.40\%$$

It can be observed from the table that the percentage change in agglomeration coefficient increases steadily from 14 clusters to 7 clusters, and then there is a more significant jump from 5.99% to 8.33%; afterward, the increase becomes steady again. Since a 8.33% change in agglomeration coefficient occured when 6 clusters were reduced to 5 clusters, the six-cluster solution was finally selected.

5.2 Benefit Segmentation

For benefit segmentation, statistical procedures similar to those previously used for psychographic segmentation were employed. Responses to the seventeen benefits of using pagers (Table 6) were factor analysed to group the benefits into a few categories or dimensions for subsequent use in cluster analysis.

TABLE 6
A LIST OF 17 BENEFITS OF USING PAGERS

Variable	Benefit
BNF01	Save money
BNF02	Make money
BNF03	Save time
BNF04	Save effort
BNF05	Be trendy
BNF06	Build up better social life
BNF07	Obtain social approval
BNF08	Enhance my affection for my friends / family
BNF10	Well-informed
BNF11	Superior
BNF12	Have a sense of novelty
BNF13	Have a sense of security
BNF14	Easily reached by friends / family
BNF15	Infomed of emergencies
BNF16	Feel very important
BNF17	Have better job performance
BNF18	Handle my affairs conveniently

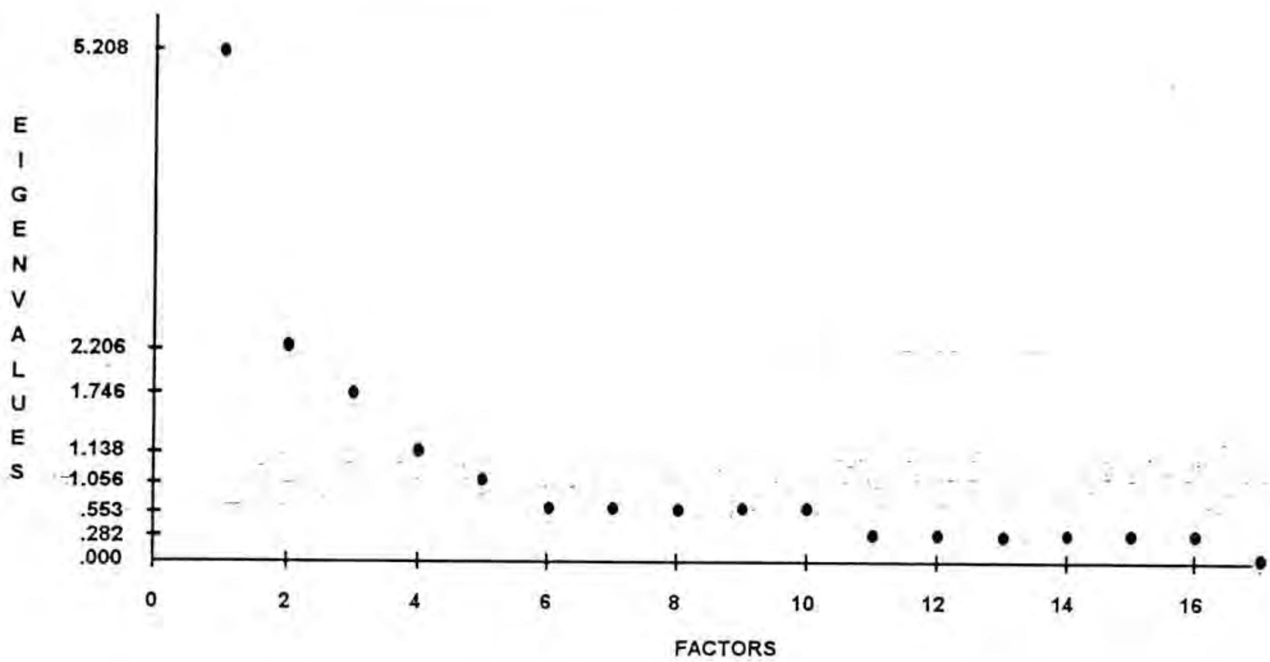
5.2.1 Factor Analysis

A component factor analysis of the seventeen benefits was conducted. The rotational approach was orthogonal, using the VARIMAX solution. A total of five factors, accounting for 66.8% of total variance, was finally extracted by using the latent root criterion (see Table 7). The five-factor solution was confirmed by the Scree test (Figure 5).

TABLE 7
FINAL STATISTICS OF FACTOR ANALYSIS USING SEVENTEEN BENEFITS SOUGHT

Variable	Communality	Factor	Eigenvalue	Pct of Var	Cum Pct
BNF01	.58653	1	5.20819	30.6	30.6
BNF02	.69823	2	2.20600	13.0	43.6
BNF03	.78642	3	1.74642	10.3	53.9
BNF04	.83002	4	1.13823	6.7	60.6
BNF05	.71054	5	1.05646	6.2	66.8
BNF06	.64231				
BNF07	.57971				
BNF08	.71872				
BNF10	.59869				
BNF11	.70492				
BNF12	.71540				
BNF13	.55319				
BNF14	.62720				
BNF15	.66901				
BNF16	.69384				
BNF17	.64257				
BNF18	.59801				

FIGURE 5
SCREE TEST FOR COMPONENT ANALYSIS



An examination of the factor matrix suggests consistent patterns among the five factors. A cut-off point of ± 0.6 was used[36] to select those benefit statements to be retained for subsequent cluster analysis. Table 8 summarizes the five factors extracted and their corresponding factor loadings. Those marked with an asterisk are retained for subsequent analysis.

[36] An examination of the benefit items in each factor suggested that a choice of ±0.6 as the cut-off point would make the interpretations of individual factors most consistent. For example, if the cut-off point of ±0.5 were adopted, BNF07 (obtain social approval) and BNF13 (have a sense of security) in factor 1 would be included as well. However, including these two benefits would make interpretation and labelling of factor 1 more difficult, since these two benefits apparently contradict the other three, which have higher loadings (i.e., have a sense of novelty; superior; be trendy).

TABLE 8
VARIMAX ROTATED COMPONENT ANALYSIS FACTOR MATRIX

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
BNF12	.83231 *				
BNF11	.80326 *				
BNF05	.73432 *	.33580			
BNF07	.55173			.25593	.41515
BNF13	.51328			.46159	.25609
BNF04		.85411 *	.26476		
BNF03		.82449 *	.28481		
BNF01		.65980 *		.31179	
BNF15			.80134 *		
BNF18		.26306	.71497 *		
BNF14			.63070 *		.45436
BNF10	.43419		.56790	.28694	
BNF17			.20730	.72246 *	
BNF02		.54951		.61765 *	
BNF16	.55205			.56377	.25913
BNF08	.27576				.77787 *
BNF06					.75069 *

* Retained for subsequent cluster analysis

Among the five factors extracted, factor 1 accounts for the largest part of the total variance (30.6%) and is characterized by benefits such as "have a sense of novelty", "superior" and "be trendy"; it is labeled "NOVELTY". Factor 2 deals with benefits such as "save effort", "save time", and "save money", and is labeled "SAVE". Factor 3 deals with benefits such as "informed of emergencies", "handle my affairs conveniently", and "easily reached by friends / family", and is labeled "INFORM". Factor 4 deals with "have better job performance" and "make money", so it is labeled "MONEY". Finally, factor 5 deals with "enhance my affection for my friends / family" and "build up better social life", and is labeled "AFFECTION". A summary of these five factors is given in Table 9.

TABLE 9
A SUMMARY OF FIVE BENEFIT FACTORS

Factor	Label	Benefits Statements (Factor Loadings)
1	NOVELTY	BNF12 (.83231) BNF11 (.80326) BNF05 (.73432)
2	SAVE	BNF04 (.85411) BNF03 (.82449) BNF01 (.65980)
3	INFORM	BNF15 (.80134) BNF18 (.71497) BNF14 (.56790)
4	MONEY	BNF17 (.72246) BNF02 (.61765)
5	AFFECTION	BNF08 (.77787) BNF06 (.75069)

5.2.2 Cluster Analysis

The second step was to conduct a cluster analysis using the five dimensions extracted in the factor analysis. As before, the hierarchical clustering technique, with squared Euclidean distances and Ward's method, was adopted for analysis. Agglomeration coefficients which indicate the distances between clusters at successive steps were used as a guideline for determining the number of clusters to be extracted. Table 10 shows the percentage increase in the clustering coefficient for twelve to two clusters[37]. Since the largest increases were seen in going from two to one cluster, the two-cluster solution was finally adopted.

[37] The choice of twelve clusters was arbitrary (see footnote 34 on page 40).

TABLE 10
ANALYSIS OF AGGLOMERATION COEFFICIENT
FOR HIERARCHICAL CLUSTER ANALYSIS

Number of Clusters	Percentage Change in Agglomeration Coefficient to Next Level
12	5.15
11	5.76
10	6.94
9	7.95
8	7.56
7	7.47
6	10.55
5	11.06
4	12.69
3	11.26
2	49.26
1	--

CHAPTER 6
INTERPRETATION AND PROFILING OF MARKET SEGMENTS

6.1 Demographic Segmentation Analysis

Of the 200 subjects in the sample population, 92% (184 subjects) are existing pager users, while the remaining 8% (16 subjects) are potential users who are planning to buy a pager within the next three months. The demographic information for both users and potential users is shown in Table 11.

The user group is heavily dominated by male users, who comprise 71.2% of the sample. Also, a large part of the overall users are within the 20 to 29 age group (73.9%). For education, the percentage of subjects who have received secondary form 1 to form 5 education (41.8%) is roughly the same as those who have received university / tertiary education (41.3%). With respect to occupation, those engaged in the insurance (13.6%) and trading (10.3%) industries constitute the largest groups. Also, relatively high percentages can be found in professional (24.5%) and clerical (23.9%) positions. More than two-thirds (69.6%) of the respondents have personal monthly income within the $5,001 to 15,000 range.

For the potential user group, the sex ratio is 1:1, with 8 males and 8 females. This group is relatively younger than the user group, with 81.3% within the age range of 20 to 29, and 12.5% within the 15 to 19 age range. Over half of the subjects (56.3%) have received university / tertiary education, and a quarter (25.0%) have received only secondary form 1 to form 5 level. As this group is relatively younger, a large part of them are currently students (37.5%) and besides that, a quarter of them are clerks (25.0%). Finally, roughly one-half of those subjects are within the income range of HK$ 5,001 to 10,000 (50.3%).

TABLE 11
DEMOGRAPHIC PROFILE OF USERS AND POTENTIAL USERS

	User (n=184)	Potential User (n=16)
SEX		
Male	71.2%	50.0%
Female	27.7	50.0
AGE		
15-19	3.3	12.5
20-29	73.9	81.3
30-39	20.7	6.3
40-49	1.1	0.0
50-59	0.0	0.0
60 and over	0.0	0.0
EDUCATION		
Primary or below	0.5	0.0
Form 1 to 5	41.8	25.0
Form 6 to 7	15.2	18.8
University /tertiary	41.3	56.3
CAREER		
Construction	5.4	6.3
Wholesale	3.8	0.0
Retailing	4.9	6.3
Trading	10.3	6.3
Restaurants/hotels	1.6	0.0
Communication	2.7	0.0
Insurance	13.6	12.5
Financing	5.4	0.0
Real estate	0.5	0.0
Manufacturing	8.2	0.0
Transport	2.7	0.0
Student	8.2	37.5
Others	31.0	31.1
POSITION		
Manager/executive	15.8	0.0
Professional	24.5	6.3
Clerk	23.9	25.0
Sales representative	16.3	18.8
Blue color	3.8	0.0
Others	12.0	50.0

(to be continued)

TABLE 11 (CONTINUED)
DEMOGRAPHIC PROFILE OF
USERS AND POTENTIAL USERS

	User (n=184)	Potential User (n=16)
MONTHLY INCOME		
$5,000 or below	7.1	31.3
$5,001 - 10,000	40.8	50.3
$10,001 -15,000	28.8	6.3
$15,001 - 20,000	10.9	6.3
$20,001 - 25,000	4.3	6.3
$25,001 - 30,000	2.2	0.0
Over 30,000	3.8	0.0

For the 184 pager users, statistics regarding the types of pagers used, as well as their subscribing companies, are shown in Table 12 and Table 13, respectively. For pager type, the most common is the numeric pager, with an ownership percentage of 60.9%, and the second most common is the alphanumeric pager, with a percentage of 20.1%. For paging companies, a large percentage of subjects are currently subscribing to the Hutchison Paging Co. Ltd. (40.8%), followed by Star Paging Ltd. (17.9%) and Chevalier (Paging Services) Ltd. (9.2%).

TABLE 12
PERCENTAGE OWNERSHIP OF
VARIOUS TYPES OF PAGERS

Type	Percentage
Tone pager	15.8%
Numeric pager	60.9
Alphanumeric pager	20.1
Card pager	0.5
Pen pager	0.5
Others	0.5

TABLE 13
PERCENTAGE DISTRIBUTION
OF SUBSCRIBING COMPANIES

Company	Percentage
ABC Communications Ltd.	7.6%
BB Telecom Ltd.	0.5
Chevalier (Paging Services) Ltd.	9.2
EPRO Paging Services Ltd.	2.7
HK Telecom CSL Ltd.	4.3
Hutchison Paging Co. Ltd.	40.8
Kantone Paging Co. Ltd.	1.1
New Telecom Co. Ltd.	0.5
New World Paging	6.0
Star Paging Ltd.	17.9
Telecom Paging Ltd.	4.3
Others	4.3

The number of calls received by pager users is shown in Table 14. It should be noted that nearly three-quarters (74.6%) of the subjects receive less than 10 calls each day, while one-quarter (24.9%) receive 10 to 20 calls per day. Finally, there is only one subject (0.5%) who receives over 20 calls per day.

TABLE 14
NUMBER OF CALLS RECEIVED EACH DAY

	Percentage
Less than 10	74.6%
10 to 20	24.9
More than 20	0.5

Table 15 shows the services which are needed by both current and potential pager users. The figures inside the parentheses represent the percentages of pager users who still cannot have their needs satisfied. For current users, the three most needed services are secretarial service (42.9%), daily local / world weather report (32.6%), and financial information display / inquiry (31.0%). For potential users, what they need the most are daily local / world news headlines display / inquiry service

(50.0%), financial information display / inquiry service (43.8%), daily local / world weather report display / inquiry service and secretarial service (37.5% in both cases).

Although pager users can report their needs, only a small proportion of them can really have their needs satisfied, which is reflected by the difference between the percentage experiencing the "service needed" and the percentage "still unsatisfied"[38].

TABLE 15
SERVICES NEEDED BY USERS AND POTENTIAL USERS

	User (n=184)		Potential User (n=16)
Secretarial service	42.9%	(23.9%)[1]	37.5%
Direct paging service	24.5	(16.8)	18.8
Call forwarding service	18.5	(14.1)	18.8
Meet-me service	19.0	(18.5)	18.8
International paging service	10.3	(10.3)	18.8
HK / Guangdong / Macau paging service	22.3	(19.0)	18.8
Jetpage service	8.7	(2.2)	0.0
Telephone directory service	22.8	(22.8)	18.8
Daily flight arrival / departure information	5.4	(5.4)	18.8
Daily movie schedule	18.5	(18.5)	31.3
Restaurant reservations	16.8	(16.3)	25.0
Traffic report	23.9	(23.4)	18.8
Horse racing / Mark Six results	18.5	(12.0)	18.8
Financial information	31.0	(27.2)	43.8
Daily local / world weather report	32.6	(22.3)	37.5
Daily local / world news headlines	20.1	(19.0)	50.0

[1] Percentage inside parentheses represents those who still cannot have their needs satisfied.

[38] The percentage "still unsatisfied" was obtained by comparing the subjects' responses to questions 7 and 8 in the questionnaire (see Appendix A). Subjects were considered "still unsatisfied" with a particular service if they checked that service in question 7, but not in question 8.

When examining the reasons why pager users cannot have their needs satisfied (Table 16), the three most commonly cited reasons are "my paging company does not provide such service(s)" (37.5%), "too expensive" (34.2%) and "too lazy to apply" (12.0%).

TABLE 16
REASONS FOR NOT
OBTAINING THE SERVICES DESIRED

Reason	Percentage
My paging company does not provide such service(s)	37.5%
Too expensive	34.2
Too lazy to apply	12.0
No paging company which can provide such service(s)	7.1
Don't know how to apply	7.1
No time for application	6.5
Others	4.3
Application procedures too complicated	1.6

6.2 Usage Segmentation Analysis

6.2.1 Demographic Profile

Of the 184 pager users in the sample, 74.1% (135 subjects) report that they receive less than 10 calls per day, 25.3% (46 subjects) report that they receive 10 to 20 calls per day, and there is only 0.5% (1 subject) who replies that he receives over 20 calls per day[39]. Thus, we divide the overall group of pager users into those who receive less than 10 calls each day (the "light user group", which contains 135 subjects), and those who receive 10 or more calls each day (the "heavy user group", which contains 47 subjects).

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[39] There were two subjects who did not indicate their usage rates.

Both groups of users are quite similar in terms of their sex ratio (Table 17). However, in other demographic categories, distinguishable differences can be found. For the light user group, subjects are likely to be younger (78.5% versus 59.6% within the 20 to 29 age group) and better educated (49.6% versus 19.1% have received tertiary education). Also, they are more likely to be managers / executives or professionals (43.7% versus 31.9%). In addition, more heavy users are involved in trading (17.0% versus 8.1%). However, heavy users are less likely to be students (2.1% versus 10.5%).

For the heavy user group, subjects are likely to be older (34.0% versus 16.3% within the 30 to 39 age group), less educated (51.1% versus 37.8% have received only secondary form 1 to form 5 education), and also more likely to be sales representatives (27.7% versus 11.9%).

TABLE 17
DEMOGRAPHIC PROFILE OF
THE TWO USAGE SEGMENTS

	Segment	
	Light User (n=135)	Heavy User (n=47)
SEX		
Male	71.9%	72.3%
Female	27.4	25.5
AGE		
15-19	3.0	4.3
20-29	78.5	59.6
30-39	16.5	34.0
40-49	1.5	0.0
50-59	0.0	0.0
60 and over	0.0	0.0
EDUCATION		
Primary or below	0.7	0.0
Form 1 to 5	37.8	51.1
Form 6 to 7	11.1	27.7
University /tertiary	49.6	19.1
CAREER		
Construction	4.4	8.5
Wholesale	3.7	4.3
Retailing	5.2	4.3
Trading	8.1	17.0
Restaurants/hotels	0.7	4.3
Communication	3.7	0.0
Insurance	11.9	14.9
Financing	6.7	2.1
Real estate	0.7	0.0
Manufacturing	7.4	10.6
Transport	1.5	6.4
Student	10.5	2.1
Others	34.5	23.4
POSITION		
Manager/executive	16.3	14.9
Professional	27.4	17.0
Clerk	24.4	21.3
Sales representative	11.9	27.7
Blue collar	3.7	4.4
Others	12.6	10.6

(to be continued)

TABLE 17 (CONTINUED)
DEMOGRAPHIC PROFILE OF
THE TWO USAGE SEGMENTS

	Segment	
	Light User (n=135)	Heavy User (n=47)
MONTHLY INCOME		
$5,000 or below	8.9%	2.1%
$5,001 - 10,000	40.7	38.3
$10,001 -15,000	28.9	29.8
$15,001 - 20,000	11.1	10.6
$20,001 - 25,000	3.7	6.4
$25,001 - 30,000	2.2	2.1
Over 30,000	3.0	6.4

6.2.2 Psychographic Profile

The two user groups exhibit no significant differences in their means for any AIO statements at 0.01 significance level (as tested by one-way ANOVA). However, by observing the percentages of subjects in each user group who "agree" or "strongly agree" with the AIO statements, some patterns seem to be evolving (Appendix E).

For the heavy user group, subjects are likely to be more confident (31.9 % versus 19.3% agree with "I often can talk others into doing something", whereas 46.8% versus 31.1% agree with "I think I have more self-confidence than most people") and independent (55.3% versus 34.8% agree with "I am more independent than most people"). They are likely to be more prudent in selecting which brand to buy and more willing to seek information (23.4% versus 14.8% agree with "I often seek out the advice of my friends regarding which brand to buy"; 17.0% versus 8.9% agree with "choosing a particular brand of pager is time-consuming"). They are also likely to be more risk averse, as 46.8% versus 31.9% agree with "I would not participate in dangerous sports" and 61.7% versus 45.9% agree with "it is troublesome to switch to another paging company". In addition, roughly a quarter of them (25.5% versus

7.4%) are afraid of having their secrets disclosed when using pagers. Financially, they are likely to be more optimistic (46.8% versus 31.1% agree with "I will probably have more money to spend next year than I have now"; 17.0% versus 8.1% agree with "My income is high enough to satisfy nearly all my important desires").

The light user group exhibits the reverse of the above characteristics, and it is also more likely to prefer colorful pagers, as 8.1% versus 2.1% agree with "I prefer colorful pagers" and 14.8% versus 4.3% agree with "pagers in black color look very dull". Finally, it is also more likely to consider carrying pagers as a fashion (15.6% versus 12.8%).

6.2.3 Media Preference and Product Usage Profile

The light user group is likely to be more receptive to advertisements for pagers (31.9% versus 23.4%); also, it is likely to prefer radio (24.4% versus 19.1%) and television (30.4% versus 27.7%) to newspapers (40.0% versus 55.3%). On the other hand, the heavy user group is more likely to prefer magazines and newspapers (55.3% versus 40%), and it is more aware of world affairs (38.3% versus 27.4%).

For product (mobile phone / CT2 and car) ownership, the heavy user group shows higher percentages for both products (27.7% versus 15.6% for mobile phone / CT2; 21.3% versus 17.8% for car).

6.2.4 Benefit Profile

Both user groups exhibit similar rankings in their benefits sought (INFORM, SAVE, AFFECTION, MONEY, NOVELTY), and they attach similar degrees of importance to all benefit categories, with the exception of one - "MONEY" (Table 18). The heavy user group attaches a higher degree of importance to the benefit "MONEY" than does the light user group (16.0% versus 12.4%)[40].

TABLE 18
BENEFIT PROFILES
OF THE TWO USAGE SEGMENTS

	Segment	
	Light User (n=135)	Heavy User (n=47)
NOVELTY		
Sense of novelty	3.1%[1]	3.3%
Superior	2.2	2.9
Be trendy	3.2	2.6
subtotal	8.5	8.8
SAVE		
Save effort	8.7	8.2
Save time	9.8	8.7
Save money	3.8	4.2
subtotal	22.3	21.2
INFORM		
Informed of emergencies	13.0	12.8
Handle my affairs conveniently	12.8	12.2
Easily reached by friends/ family	13.9	12.3
subtotal	39.7	37.3
MONEY		
Have better job performance	6.0	7.8
Make money	6.4	8.2
subtotal	12.4	16.0
AFFECTION		
Enhance my affection for my friends / family	7.3	7.6
Build up better social life	9.9	9.0
subtotal	17.2	16.7
grand total	100%	100%

[1] Percentage represents the degree of importance attached to each benefit item

[40] The percentage, which reflects the degree of importance attached to the benefit, is calculated by the following formula:

$$\frac{\text{Group mean for a particular benefit item(or benefit category)}}{\text{Sum of group means for all benefit items}} \times 100\%$$

6.2.5 Service-Needs Profile

A comparison between the two usage groups in terms of services needed is shown in Table 19. The percentages inside the parentheses represent those who still cannot have their needs satisfied. By looking at the percentages, distinctive differences in terms of services needed can be identified. The light user group exhibits a greater need for the following services: secretarial service (44.4% versus 38.3%), daily movie schedule inquiry (21.5% versus 10.6%), restaurant reservations service (20.0% versus 8.5%), horse racing / Mark Six results (20.0% versus 14.9%), daily local / world weather report display (34.8% versus 25.5%) and daily local / world news headlines display (23.7% versus 10.6%). The heavy user group, on the other hand, has a greater need for call-forwarding service (25.5% versus 15.6%), Hong Kong / Guangdong / Macau paging service (42.6% versus 14.8%), direct paging service (31.9% versus 21.5%), and finally, telephone directory service (31.9% versus 20.0%). The pattern seems to reflect that light users are more likely to have a greater demand for services which relate to entertainment (e.g., restaurant reservations, horse racing results, daily movie schedule, etc.), while heavy users require services which relate to business (e.g., call forwarding, cross-border paging service). This may be consistent with what has been mentioned above: heavy users are using pagers primarily for business (money-earning) purposes, which are reflected in the services needed.

Although subjects in both usage groups can articulate the services they need, only a minor portion of them actually have their needs satisfied. This is reflected by gaps between the percentages of "service needs" and the percentages of "unsatisfied needs" for most of the benefit items.

TABLE 19
SERVICE-NEEDS PROFILE OF THE TWO USAGE SEGMENTS

	Segment			
	Light User (n=135)		Heavy User (n=47)	
Secretarial service	44.4%[1]	(25.2%)[2]	38.3%	(21.3%)
Direct paging service	21.5	(14.1)	31.9	(23.4)
Call forwarding service	15.6	(11.9)	25.5	(21.3)
Meet-me service	20.0	(20.0)	17.0	(14.9)
International paging service	9.6	(9.6)	12.8	(12.8)
HK / Guangdong / Macau paging service	14.8	(11.9)	42.6	(38.3)
Jetpage service	9.6	(1.5)	4.3	(4.3)
Telephone directory service	20.0	(20.0)	31.9	(31.9)
Daily flight arrival / departure information	5.2	(5.2)	6.4	(6.4)
Daily movie schedule	21.5	(21.5)	10.6	(10.6)
Restaurant reservations	20.0	(19.3)	8.5	(8.5)
Traffic report	23.0	(22.2)	27.7	(27.7)
Horse racing / Mark Six results	20.0	(13.3)	14.9	(8.5)
Financial information	31.1	(28.1)	31.9	(25.5)
Daily local / world weather report	34.8	(23.7)	25.5	(17.0)
Daily local / world news headlines	23.7	(23.0)	10.6	(8.5)

[1] Percentage of subjects who need the service.
[2] Percentage of subjects who still cannot have their needs satisfied (see footnote 38 on page 51).

To analyze the reasons why the subjects cannot have their needs satisfied, the first three reasons for each segment are provided (Table 20). It is noted that for light users, the reason "too expensive" ranked first with a high percentage (37.0%), while for heavy users, this reason only takes second place, with a much lower percentage (27.7%). This is quite consistent with the discussion above that heavy users are likely to be more financially optimistic than light users. Also, 34.8% of the light users and 42.6% of the heavy users reported that their paging companies do not provide the services that they need. The large percentages may indicate that current users are not well informed of the services provided by their companies.

TABLE 20
TOP THREE REASONS FOR NOT OBTAINING
THE SERVICES DESIRED BY THE TWO USAGE SEGMENTS

Segment	Reason	Percentage
Light User (n=135)	Too expensive	37.0%
	My paging company does not provide such service(s)	34.8
	Too lazy to apply	11.1
Heavy User (n=47)	My paging company does not provide such service(s)	42.6
	Too expensive	27.7
	Too lazy to apply	14.9

Finally, a summary of the characteristics of the two usage groups is provided in Table 21.

TABLE 21
A SUMMARY DESCRIPTION OF THE TWO USAGE SEGMENTS

	Segment	Characteristics
1	Light User (74.2%)	A large fraction of the sample. Receive less than 10 calls each day. More likely to be younger (78.5% versus 58.2% within the 20 to 29 age group) and better educated. There is a higher percentage of managers/ executives and professionals. More likely to prefer colorful pagers and consider carrying pagers as a fashion. More likely to prefer radio and television to newspapers and magazines. Greater need for services related to entertainment, such as restaurant reservations, horse racing, daily movie schedule inquiry, etc.
2	Heavy User (25.8%)	A smaller fraction of the sample. Receive more than 10 calls each day. More likely to be older (34.0% versus 16.3% within the 30 to 39 age group) and less educated. Also likely to be more confident, independent, risk adverse, financially optimistic, and willing to seek information. More likely to be aware of world affairs, and prefer magazines and newspapers to radio and television. Have a higher ownership of mobile phones / CT2 and cars. More emphasis on the benefit "MONEY" and in need of services related to business, such as call forwarding, cross-border paging service, etc.

6.3 Psychographic Segmentation Analysis

6.3.1 Interpretation of Segments

Information concerning the comparison of group means (centroids) of the six clusters along the six AIO variables are provided in Table 22. By looking at the level of significance for the six variables, it is noted that all of them exhibit significantly different patterns among the six clusters.

TABLE 22
GROUP MEANS AND SIGNIFICANCE
LEVELS FOR THE SIX CLUSTERS

	Segment							
Variables	1	2	3	4	5	6	*F* ratio	Significance
Confidence	2.26	2.61	2.98	2.36	3.27	3.17	11.698	0.000
Advice	3.00	3.04	2.03	1.42	3.29	4.03	26.215	0.000
Color	1.39	2.29	1.06	1.22	0.77	3.18	35.776	0.000
Innovation	1.90	3.09	3.11	2.76	2.43	2.98	16.958	0.000
Party	1.51	2.63	1.81	2.89	3.61	2.13	29.072	0.000
Risk	2.60	2.55	3.43	1.14	2.89	3.90	28.140	0.000

Another way of analyzing the AIO information is to break down the variables into their original AIO statements and observe any underlying patterns. Appendix F summarizes the percentage of respondents in each segment who "agree" or "strongly agree" with the corresponding AIO statements. To help interpret and profile the segments, a demographic profile for each segment is also summarized in Appendix G for reference.

After considering the AIO percentages (of those who "agree" or "strongly agree" with the AIO statements), and the demographic profiles of the six segments, the following descriptions for each of the six segments are derived.

Segment 1 - "Dependents"

This segment, which consists of 46 individuals, constitutes 23.1% of the sample population. Individuals in this segment exhibit the lowest level of self-confidence (only 15.2% agree with "I think I have more self-confidence than most people") and are the most dependent (only 19.6% agree with "I am more independent than most people") among all subjects. They are the "homebodies" and are likely to be the least sociable (only 2.2 % agree with "I like parties where there is lots of music and talk"). They are also most likely to be the "late majority" or even "laggards" in trying new brands, since they often buy new brands only after their friends or neighbors do (15.2% and 2.2% agree with "I like to try new and different things" and "I often buy new brands before my friends and neighbors do", respectively). Since they are not innovators, they tend to occasionally seek advice from their friends regarding what brands to buy, and 63.0% say that they consult others before they consider buying or renting pagers.

An examination of this segment reveals that the subjects are mostly within the age range of 20 to 29 (78.3%), and over half of them have attended tertiary institutions (52.2%). Also, a large percentage are holding clerical (28.3%) or professional (23.9%) positions. With respect to monthly income, over half (54.3%) have personal monthly income within the range of HK$5,001 to 10,000, and one-quarter (26.1%) are within the HK$10,001 to 15,000 income range.

Segment 2 - the "Innovators"

This segment, which consists of 54 subjects, constitutes 27.1% of the sample population. Individuals in this segment report the highest percentages of "agree" or "strongly agree" with AIO statements such as "I like to use pagers with technologically advanced functions" (72.2%) and "I like to try new and different things" (53.7%), indicating that they are innovators who are eager to try new products. However, they still seek information or advice from their friends before making their purchasing decisions. This is especially true when they consider buying or renting their pagers, and 59.3% agree with "When I buy / rent a pager, I will consult others".

An examination of the demographic data suggests that a large percentage of individuals in this segment are within the 20 to 29 age group (72.2%), and over half of them have received secondary school form 1 to form 5 education (53.7%), as compared to tertiary education (25.9%). As a whole, individuals in this segment have received lower education than those in segment 1. The relatively lower education level of this segment may account for the relatively higher percentage of clerical and blue collar workers (37.0% and 9.3%, respectively) and comparatively smaller percentage of managers / executives and professionals (13.0 % and 16.7%, respectively), as compared with other segments. Individuals in this segment are likely to have the lowest income, as 61.2% of them earn less than HK$10,000 per month.

Segment 3 - the "Matured"

This segment, which is composed of 34 subjects, represents 17.1% of the sample population. Individuals in this segment exhibit close resemblance with those in segment 2 in terms of their willingness to try new things, as reflected in their similar group means (3.11 versus 3.09 for segments 3 and 2, respectively). However, the difference between these two segments is that those in segment 3 tend to be less active and sociable than those in segment 2. This is reflected in the percentage agreeing with statements such as "I would rather spend a quiet evening at home than go out to a party (reverse coded)" (5.9% versus 13.0%) and "I like parties where there is lots of music and talk" (8.8% versus 24.1%). Also, when compared with segment 2, individuals in segment 3 are less willing to seek information from their friends before making their purchasing decisions (2.9% versus 16.7% agree with "I often seek out the advice of my friends regarding which brand to buy") , suggesting that they are less socially active.

On the other hand, individuals in this segment are likely to be more independent (55.9% versus 25.9% agree with "I am more independent than most people"), more self-confident (47.1% versus 22.2% agree with "I think I have more self-confidence than most people") and more risk averse (70.6% versus 24.1% agree with "I would not participate in dangerous sports"; 35.3% versus 9.3% agree with "Once I find a brand, I like to stick with it") when compared with those in segment 2.

Putting all these observations together, it can be concluded that individuals in this segment are likely to be less sociable, more self-confident, less willing to seek information or advice, and more risk averse, as compared to those in segment 2. In a word, they are likely to be more mature mentally. Although they are willing to try new brands, they tend to be more brand loyal than others. This may imply that they seek new brands when they become dissatisfied with the ones which they are presently using. Actually, a large percentage agree with "It is worth it to pay more for prestigious brand products" (41.2% agree with this statement, with the highest group mean of 3.21), and virtually none of them "agree" or "strongly agree" with the statement "I think that the price of a product is more important than its quality". This shows that this group of people is more likely to believe in prestigious brands than others.

An examination of the demographic data suggests that individuals in this segment are likely to be older and better off financially. They exhibit the highest percentage of individuals within the 30 to 39 age group (29.4%). When compared with segment 2, individuals in this segment receive a higher level of education (47.1% have received tertiary education while 32.4% have received secondary form 1 to form 5 education). Also, this segment shows a distinctively higher percentage of managers / executives and professionals than other segments (a combined 52.9%), and a generally higher level of income (8.8% with monthly income greater than HK$30,000), suggesting that they are more affluent and mature. This may provide a partial explanation as to why this group of individuals is more independent and self-confident, and can afford to pay for prestigious brands.

Segment 4 - "Adventurers"

This segment consists of 18 subjects and it represents 9.0% of the sample population. A review of the group means suggests that individuals in this segment are the least likely to seek information (overall lowest score of 1.42 for the variable "ADVICE") and are risk-takers (lowest score of 1.14 for the variable "RISK"). An examination of the AIO statements provides further hints which support this preliminary conclusion. Indeed, no individuals in this segment "agree" or "strongly agree" with either one of the two statements under the variable "ADVICE": "I often seek out the advice of my friends regarding which brand to buy" and "When I buy / rent a pager, I will consult others". Nor do any subjects agree with "Once I find a brand, I like to stick with it" or "I would not participate in dangerous sports", implying that this group of individuals are undoubtedly risk-takers and also the least brand loyal. They are also innovators who like to try new and different things (50% and 16.7% agree with the statements "I like to try new and different things" and "I often buy new brands before my friends and neighbors do", respectively). They try new brands just because they like to take risk and enjoy the sense of "newness" or novelty, and not necessarily because of dissatisfaction or other reasons. Another interesting finding is that this group of individuals does not "agree" or "strongly agree" with the statements concerning the variable of "COLOR" ("Pagers in black color look very dull" and "I prefer colorful pagers"), implying that they prefer the traditional black color of pagers rather than colorful ones. This is quite inconsistent with the adventurous behaviors exhibited by these people.

Additional insights may be obtained from the remaining AIO statements as well. Individuals in this segment report the highest group mean (3.44) for the statement "I seldom read / watch advertisements for pagers", with 66.7% answering "agree" or "strongly agree" to it, confirming the fact that they dislike seeking information from outside sources. Also, none of them agree or strongly agree with "Choosing a particular brand of pager is time-consuming", and they actually report the lowest group mean (1.17) for this statement. This group of subjects may consider a pager as an extremely low involvement product which requires the least amount of effort in selecting which brand to purchase.

An examination of the demographic data indicates that they are overwhelmingly within the 20 to 29 age range (77.8%), and have received a relatively lower level of education (27.8% have received tertiary education and 50% Form 1 to Form 5). Roughly one-third (33.3%) are sales representatives, and approximately one-quarter (27.8%) are professionals, with personal monthly incomes primarily (44.4%) within the HK$5,001 to 10,000 income range.

Segment 5 - "Outgoing"

Composed of 28 subjects, this segment constitutes another 14.1% of the sample population. Individuals in this segment exhibit the highest level of self-confidence (60.7% agree with "I think I have more self-confidence than most people") and independence (60.7% think that "I am more independent than most people") among all sample subjects. They are the influencers (46.4% agree with "I sometimes influence what my friends buy") who "often can talk others into doing something" (53.6% agree or agree strongly). When making purchase decisions, they actively seek out information from their friends or other sources, which is reflected in the high percentages of those who "agree" or "strongly agree" with the following statements: "I often seek out the advice of my friends regarding which brand to buy" (28.6%), "When I buy / rent a pager, I will consult others" (75.0%), and, "I seldom read / watch advertisements for pagers (reverse coded)" (35.7%). Also, they are more likely to be active and outgoing, as reflected by the highest percentage of subjects who agree with "I like parties where there is lots of music and talk" (64.3%) and "I would rather spend a quiet evening at home than go out to a party (reverse coded)" (42.9%).

An examination of the individuals' demographic information suggests that a large percentage are within the 20 to 29 age range (75.0%). When compared with segments 2 and 4, individuals in this segment have a relatively higher level of education (53.6% have received tertiary education). Similar to segment 4, a large percentage are professionals (28.6%) and sales representatives (32.1%). They also exhibit the highest monthly income among all segments (46.4% within the HK$10,001 to 15,000 income range, and over 70% over HK$10,000).

Segment 6 - "Smart Buyers"

The last segment, which consists of 19 subjects, constitutes the final 9.5% of the sample population. Individuals in this segment exhibit the strongest tendency to seek information and advice from friends regarding which brand to buy, which is reflected by the highest percentage of subjects who agree / strongly agree with "I often seek out the advice of my friends regarding which brand to buy" (57.9%) and "When I buy / rent a pager, I will consult others" (94.7%). Since they ask for their friends' opinions and make careful comparisons, roughly one-third of them (31.6%) agree with "Choosing a particular brand of pager is time-consuming". Also, they are more likely to be opinion leaders, since a large percentage (36.8%) of them agree / strongly agree with the statement "My friends or neighbors often come to me for advice". They are quite conscious of prices, as roughly one-fourth (26.3%) of them agree with "I think that the price of a product is more important than its quality", and this percentage is the highest among all segments.

Contrary to the case in segment 4, individuals in this segment show a high degree of preference toward colorful pagers, as indicated by the highest percentages of "agree" or "strongly agree" with the statements "Pagers in black color look very dull" and "I prefer colorful pagers" (both with 52.6%). And over half of them (57.9%), the highest among all segments, agree with "The beeping sound of a pager is very annoying". Finally, they are the most risk averse and brand loyal subjects among all segments, since a large percentage (78.9% in both cases) agree with "I would not participate in dangerous sports" and "Once I find a brand, I like to stick with it".

An examination of the demographic information indicates that individuals in this segment are primarily within the 20 to 29 age group (78.9%), and with the highest percentage of females (57.9%). As a whole, they are also the group with the highest education level (over two-thirds with education level above Form 5). The segment contains 42.1% managers / executives or professionals who have relatively high income (31.6% within the HK$10,001 to 15,000 income range). However, roughly one-third of the subjects in this segment are students (31.6%) who have lower incomes, and they account for the portion of the subjects (26.3%) who earn less than HK$5,000 per month.

6.3.2 Media Preference and Product Usage Profile

An examination of the media preference profile of the six segments (Appendix F) provides some general insights concerning the media usage preference of subjects in these six segments. Firstly, with the exception of AIO21 (I am always attracted by the advertising boards at MTR or KCR stations), the group means of all other AIO statements concerned with media preference show no significant differences at the 0.01 significance level (as tested by one-way ANOVA). As for AIO21, subjects in segment 2 indicate the highest (37.0%) percentages of "agree" or "strongly agree", while those in segment 1 show the lowest (19.6%). The group means between these two segments are also significantly different at the 0.01 significance level (as tested by one-way ANOVA). As discussed in the previous section, segment 4 (the "Adventurers") represents the group which is likely to be the least brand loyal and the most thoughtless in making purchasing decisions. As it generally dislikes seeking information from outside sources, it is not at all strange to find that these individuals pay little attention to advertising boards at MTR or KCR stations.

Secondly, for segments 1, 3 and 6, individuals generally prefer newspapers over radio (47.8% versus 30.4% for segment 1, 50.0% versus 38.2% for segment 3, and 42.1% versus 36.8% for segment 6). On the other hand, for segments 2 and 4, the reverse is true (38.9% versus 44.4% for segment 2 and 44.4% versus 50.0% for segment 4). For segment 5, both media are equally favoured (42.9%).

Thirdly, subjects as a whole generally do not consider watching television to be more interesting than reading magazines. For segments 1 to 4 , only about one-fourth of the subjects agree or strongly agree with "Watching television is more interesting than reading magazines", while the percentage is higher for segments 5 and 6 (35.7% and 42.1%, respectively).

A similar pattern is observed for AIO52. For segments 1 to 4, about one-fourth of subjects agree or strongly agree with "I keep myself abreast of world affairs", and higher percentages are observed for segments 5 and 6 (46.4% and 36.8%, respectively). This may imply that subjects in segment 5 and 6 are likely to be more mature.

Information related to product usage (mobile phone / CT2 and car ownership) patterns is summarized in Table 23.

TABLE 23
PRODUCT OWNERSHIP PATTERNS AMONG THE SIX SEGMENTS

	Segment					
	1	2	3	4	5	6
Mobile phone / CT2 owner	19.6%	13.0%	23.5%	5.6%	14.3%	31.6%
Car owner	13.0	11.1	29.4	27.8	7.1	31.6

Segment 6 shows the highest percentages of ownership of both mobile phones /CT2 and cars (31.6% for both cases), whereas segment 5 indicates much lower percentages (14.3% and 7.1% for mobile phones / CT2 and cars, respectively). This seems inconsistent with the previous discussion, since segment 5 contains individuals with the highest overall monthly income (71.4% earn more than HK$10,000 each month). As for segment 2, it shows a low ownership of mobile phones /CT2 and cars (13.0% and 11.1%, respectively), which is quite consistent with the fact that individuals in this segment generally earn lower incomes (61.2% earn less than HK$ 10,000 per month). For segment 3, a consistent pattern can be observed again, since over half of the subjects in this segment are either managers / executives or professionals (52.9% in total) with higher incomes (61.8% with incomes greater than HK$10,000), so they are also more likely to be able to afford cars (29.4%).

Actually, by looking at the demographic data alone, it is difficult to discriminate between segments 1, 4, 5, and 6, since they exhibit similar patterns in terms of age, career, position and monthly income. The information about pager usage patterns cannot help either, since all six segments demonstrate indistinguishable patterns (see Table 24). Only through the use of psychographic information can one obtain some insights in order to distinguish between subjects in various segments.

TABLE 24
NUMBER OF CALLS RECEIVED
EACH DAY BY THE SIX SEGMENTS

	Segment					
	1	2	3	4	5	6
Less than 10	69.6%	66.7%	70.6%	72.2%	60.7%	63.2%
10-20	19.6	24.1	23.5	16.7	35.7	15.8
More than 20	0.0	0.0	0.0	0.0	0.0	5.3

6.3.3 Benefit Profile

The benefits sought by individuals in the six segments show no distinguishable patterns (Table 25). Actually, all six segments except segment 6 attach the same order of importance to the five major benefit categories, that is, INFORM (easily reached by friends /family, informed of emergencies, handle my affairs conveniently), AFFECTION (build up better social life, enhance my affection for my friends / family), SAVE (save time, save effort, save money), MONEY (make money, have better job performance) and lastly, NOVELTY (be trendy, sense of novelty, superior). For segment 6, the order is a bit different: MONEY is rated higher than SAVE. It implies that subjects in this segment emphasize this benefit more than their counterparts in other segments.

TABLE 25
BENEFIT PROFILE OF THE SIX SEGMENTS

	Segment							
	1	2	3	4	5	6	*F* ratio	Significance
INFORM	4.22	4.16	4.04	3.94	4.36	4.42	1.20	0.31
SAVE	2.28	2.60	2.12	1.98	2.57	2.12	1.18	0.32
AFFECTION	2.48	2.71	2.61	2.67	3.20	3.34	2.08	0.07
MONEY	1.83	2.45	2.06	1.67	2.24	2.61	1.74	0.13
NOVELTY	0.73	1.17	0.73	0.72	0.95	1.26	1.84	0.11

6.3.4 Service-Needs Profile

To make it simple, the three most important services needed by subjects in the six segments are shown in Table 26. The percentages of those who still cannot have their needs satisfied are also listed alongside for comparison. It is found that secretarial service and financial service are the two services most desired by subjects in the six segments. Also, it can be observed that there is a large percentage of subjects in each segment who still cannot have their needs satisfied, which is indicated by the small differences between the percentages of "service needs" and the percentages of "still unsatisfied".

TABLE 26
COMPARISON OF SERVICES
NEEDED BY THE SIX SEGMENTS

Segment	Service	"In Need" Percentage	"Unsatisfied" Percentage
1	Secretarial service	47.8%	28.3%
	Direct paging service	26.1	19.6
	Telephone directory service	26.1	26.1
2	Financial information	38.9	31.5
	Secretarial service	33.3	24.1
	Daily local / world weather report	29.6	18.5
3	Secretarial service	44.1	20.6
	Traffic report	26.5	26.5
	Financial information	26.5	26.5
4	Traffic report	38.9	38.9
	Direct paging service	33.3	22.2
	Financial information	27.8	27.8
5	Secretarial service	57.1	35.7
	Financial information	39.3	35.7
	Daily local / world weather report	35.7	32.1
6	Secretarial service	57.9	31.6
	Daily local / world weather report	42.1	42.1
	Daily local / world news headlines	36.8	36.8

The first three reasons why the subjects in each segment cannot obtain the services that they want are shown in Table 27. It should be noted that the reason "my paging company does not provide such service(s)" is ranked first by segments 1, 3, 5, and 6, and is ranked second by segments 2 and 4. The second most common reason which appears in the top three list for every segment is "too expensive", which is ranked first by segments 2 and 4.

TABLE 27
REASONS FOR NOT OBTAINING THE
DESIRED SERVICES FOR THE SIX SEGMENTS

Segment	Reason	Percentage
1	My paging company does not provide such service(s)	34.8%
	Too expensive	26.1
	No paging company which can provide such service(s)	6.5
2	Too expensive	40.7
	My paging company does not provide such service(s)	31.5
	No time for application	7.4
3	My paging company does not provide such service(s)	38.2
	Too expensive	20.6
	No paging company which can provide such service(s)	11.8
4	Too expensive	38.9
	My paging company does not provide such service(s)	27.8
	Too lazy to apply	27.8
5	My paging company does not provide such service(s)	35.7
	Too expensive	32.1
	Too lazy to apply	25.0
6	My paging company does not provide such service(s)	42.1
	Too expensive	26.3
	Too lazy to apply	10.5

Finally, a summary of the characteristics of the six segments is provided in Table 28.

TABLE 28
A SUMMARY OF SIX PSYCHOGRAPHIC SEGMENTS

	Label	Description	Demographic Characteristics
1	"Dependents" (23.1%)	Lack of self-confidence, heavy dependent on others, reluctant to try new things, likely to be "home-body" and not socially active.	52.2% have received tertiary educational level, 54.3% with income within the HK$ 5,001 to 10,000 range. Hard to distinguish from segments 4, 5, and 6.
2	"Innovators" (27.1%)	Very eager to try new things, willing to seek information, low degree of brand loyalty.	Lower educational level (53.7% with form 1 to 5 standard), high percentage of clerks and blue collars (46.3%) with lower monthly income.
3	"Matured" (17.1%)	Self-confident, independent, willing to try new things, not eager to seek advice or information, not socially active, risk averse.	High percentage of managers/ executives and professionals (52.9%) with higher income.
4	"Adventurers" (9.0%)	Frequent brand-switcher, loves to take risk, eager to try new things, dislikes seeking advice and information from friends or other outside sources.	Lower educational level (50.0% with form 1 to form 5 standard), hard to distinguish from segments 1, 5, and 6.
5	"Outgoing" (14.1%)	Highly confident and independent, active, outgoing, and sociable.	Higher income (71.4% with monthly income more than HK$10,000), hard to distinguish from segments 1,4, and 6.
6	"Smart Buyers" (9.5%)	Strong tendency to seek advice or information, opinion leader and influencer, conscious of price, very brand loyal, highly risk averse.	High percentage (57.9%) of females, 31.6% students who are likely gaining tertiary education, hard to distinguish from segments 1,4, and 5. Likely to have the highest ownership of mobile phones /CT2 and / or cars.

6.4 Benefit Segmentation Analysis

6.4.1 Interpretation of Segments

As mentioned in Section 5.2.1, the seventeen benefits of using pagers were reduced to five factors (NOVELTY, SAVE, INFORM, MONEY, and AFFECTION) by use of factor analysis. A cluster anlaysis of the 200 subjects was then conducted, using the five factors mentioned above. After the cluster analysis, two clusters or segments were finally identified. Their group means for the five benefit categories are significantly different from each other (Table 29).

TABLE 29
COMPARISON OF GROUP MEANS AND SIGNIFICANCE LEVELS FOR THE TWO SEGMENTS IDENTIFIED

	Segment (total number of subjects = 196)[1]			
	1 (n=117)	2 (n=79)	*F* ratio	Significance
NOVELTY	1.35	0.30	68.430	0.000
SAVE	3.09	1.23	194.424	0.000
INFORM	4.37	3.91	18.061	0.000
MONEY	2.96	0.94	167.361	0.000
AFFECTION	3.12	2.24	25.412	0.000

[1] Due to missing values, 4 subjects were excluded from the cluster analysis.

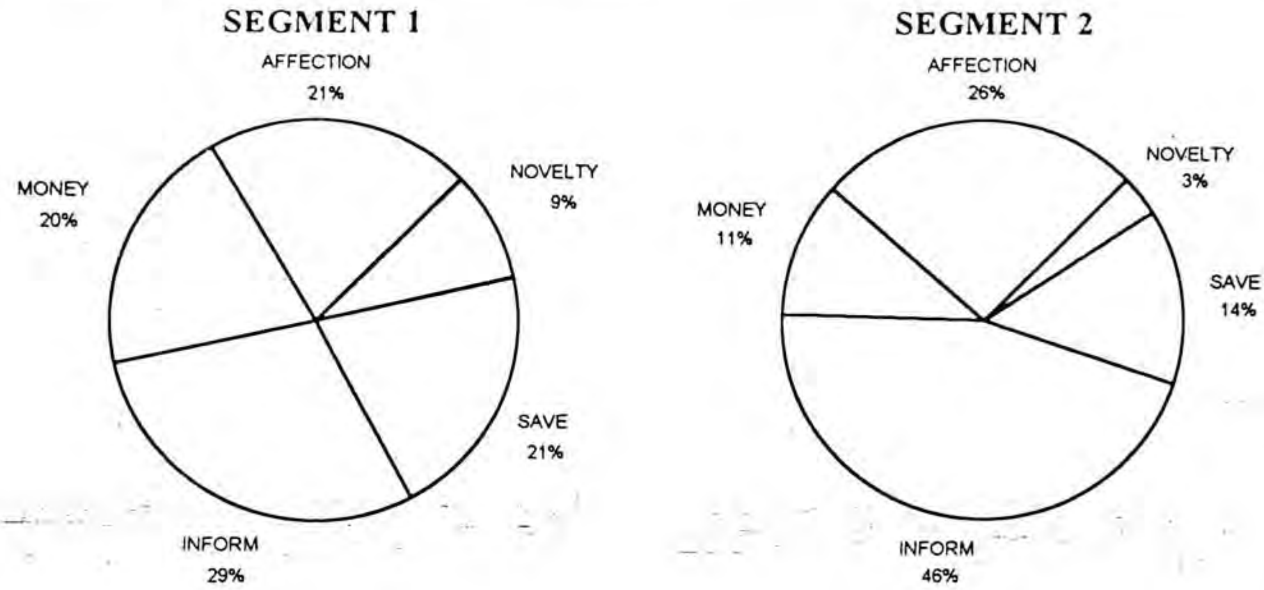
To help interpret and profile the two benefit segments, the five benefit categories are further broken down into their specific components (Table 30).

TABLE 30
COMPARISON OF GROUP MEANS FOR
DIFFERENT BENEFITS SOUGHT

	Segment	
	1 (n=117)	2 (n=79)
NOVELTY		
Sense of novelty	1.47	0.35
Superior	1.18	0.18
Be trendy	1.40	0.38
SAVE		
Save effort	3.61	1.44
Save time	3.82	1.92
Save money	1.84	0.32
INFORM		
Informed of emergencies	4.36	3.89
Handle my affairs conveniently	4.36	3.63
Easily reached by friends/ family	4.40	4.20
MONEY		
Have better job performance	2.87	0.87
Make money	3.04	1.01
AFFECTION		
Enhance my affection for my friends / family	2.77	1.68
Build up better social life	3.47	2.62

It should be noted that all the means for segment 2 are lower than those for segment 1, so it is difficult to conclude that members of the two segments are seeking different benefits. Indeed, the pattern becomes clearer when the means are converted into their relative percentages. It is found that the subjects of the two segments are attaching different degrees of importance to each of the five benefit categories. Figure 6 provides such a graphical illustration, and Table 31 shows the breakdown of the benefit items.

FIGURE 6
IMPORTANCE ATTACHED TO EACH OF THE
BENEFIT CATEGORIES BY THE TWO BENEFIT SEGMENTS



Some conclusions can be drawn by observing the figure above. Firstly, members of both segments attach the greatest importance to the benefit "INFORM" (29% and 46% for segments 1 and 2, respectively), implying that they all perceive this as the most important benefit of using pagers. Secondly, although subjects in both segments rank the five benefit categories more or less in the same order, they attach different degrees of importance to them. Subjects in segment 1 place the greatest weight on the benefit "INFORM" (29%), and equal weights on the benefits "AFFECTION"(21%), "SAVE" (21%), and "MONEY" (20%). Individuals in segment 2, however, place the most importance on the benefits "INFORM" (46%) and "AFFECTION"(26%), and comparatively less on others.

TABLE 31
BENEFIT PROFILE OF THE TWO SEGMENTS

	Segment 1 (n=117)	Segment 2 (n=79)
NOVELTY		
Sense of novelty	3.8%	1.6%
Superior	3.1	0.8
Be trendy	3.6	1.7
SAVE		
Save effort	9.4	6.4
Save time	9.9	8.5
Save money	4.8	1.4
INFORM		
Informed of emergencies	11.3	17.3
Handle my affairs conveniently	11.3	16.1
Easily reached by friends/ family	11.4	18.7
MONEY		
Have better job performance	7.4	3.9
Make money	7.9	4.5
AFFECTION		
Enhance my affection for my friends / family	7.2	7.5
Build up better social life	9.0	11.6
	100.0%	100.0%

In order to further understand the segments, their demographic profiles are summarized in Appendix H. The profiles of the two benefit segments are described as follows:

Segment 1 - "Businessmen"

Composed of 117 subjects, this segment represents 59.7% of the sample population. Subjects of this segment show a higher percentage of males (70.1%), implying that this segment is more male-dominated. And the difference between the two segments in terms of age is only minor. There is a higher percentage of students (12.8% versus 7.6%) and sales representatives (20.5% versus 10.1%) in this segment. In addition, a significantly higher percentage of subjects engaging in retailing (6.8% versus 2.5%), financing (6.0% versus 2.5%) and insurance (16.2% versus 10.1%) industries is also observed. For education and income level, the difference between the two segments is minor.

As for the benefits sought, subjects in this segment place the greatest weight on the benefit "INFORM" (29%), and similar weights are placed on the benefits "AFFECTION" (21%), "SAVE" (21%) and "MONEY" (20%). An examination of the benefit components (Table 31) shows that when compared with those in segment 2, subjects in this segment put greater emphasis on the benefits "save money" (4.8% versus 1.4%), "save effort"(9.4% versus 6.4%), "have better job performance"(7.4% versus 3.9%), and "make money" (7.9% versus 4.5%). This suggests that subjects in this segment are more "money oriented"; they use pagers primarily because pagers can bring business opportunities and / or enhance their work performance.

Segment 2 - "Sociables"

This segment consists of 79 subjects and represents the other 40.3% of the sample population. This segment has a higher percentage of females (32.9%), and there is also a higher percentage of subjects engaging in the wholesale (6.3% versus 1.7%) industry. As for positions, it is observed that there is a higher percentage of managers / executives (19.0% versus 12.8%) and professionals (24.1% versus 23.9%), although the difference with respect to professionals is not significant.

As for benefits sought, subjects in this segment attach greater weights to the benefits INFORM (46%) and AFFECTION (26%), as compared to their counterparts in segment 1. For other benefits, much lower weights are attached. A further analysis of the benefit components reveals that subjects in this segment, when compared with those in segment 1, put a greater emphasis on benefits such as "informed of emergencies" (17.3% versus 11.3%), "handle my affairs conveniently" (16.1% versus 11.3%), "easily reached by friends / family" (18.7% versus 11.4%), and "build up better social life" (11.6% versus 9.0%). It is also noted that under the "NOVELTY" category, all three component benefits are rated significantly lower that those of segment 1 (for "sense of novelty", 1.6% versus 3.8%; "superior", 0.8% versus 3.1%; "be trendy", 1.7% versus 3.6%). Taking all these observations together, they suggest that subjects in this segment are likely to use pagers primarily because they can make them more sociable, i.e., more easily reached by their friends, and hence build up a better social life. This major benefit is distinctively different from the money earning benefit primarily sought by subjects in segment 1.

6.4.2 Psychographic Profile

A comparison of the two segments with respect to the forty-eight AIO statements is provided in Appendix I. When comparing the group means for the statements, it is found that only AIO22 is significantly different at the 0.01 significance level (as tested by one-way ANOVA). Also, for most of the AIO statements, the percentages of those who "agree" or "strongly agree" in each of the two segments are quite close to each other. Thus, it seems that the psychographic profiles of both segments are very similar.

For those AIO statements which exhibit a larger difference in their percentages (of those who agree or strongly agree with the statements), it is observed that subjects in segment 1 are likely to be more financially optimistic, since 41.9% versus 27.8% agree with "I will probably have more money to spend next year than I have now", and also another 12.8% versus 8.9% agree with "My income is high enough to satisfy nearly all my important desires". With regard to pagers, subjects in segment 2 are more likely to agree with "Pagers should be as small as possible" (54.7% versus

64.6% for segments 1 and 2, respectively) and "The beeping sound of a pager is very annoying" (23.9% versus 34.2%). However, subjects in segment 1 are likely to have a biased image toward card pagers, since 35.0% versus 22.8% agree with "Card pagers fail easily".

6.4.3 Media Preference and Product Usage Profile

For media preference, some conclusions can be drawn after an examination of their comparative percentages. Firstly, newspapers are the most popular media for subjects in both segments (46.2% and 43.0% for segments 1 and 2, respectively). Secondly, subjects in segment 1 are distinctively more receptive to advertising boards at MTR and KCR stations than those in segment 2 (34.2% versus 17.7%). Finally, television is more popular among subjects in segment 1 (33.3% versus 26.6%), whereas the reverse is true for radio (37.6% versus 43.0%). However, the differences between the two segments for these two media is not as significant as that for advertising boards at MTR or KCR stations.

For product usage, subjects in segment 1 report a significantly higher percentage of mobile phone / CT2 ownership than those in segment 2 (21.4% versus 12.7%). However, for car ownership, both segments show similar percentages of ownership (17.1% versus 17.7%).

Finally, an examination of the pager usage patterns of both segments (Table 32) suggests that subjects in segment 1 are more likely to be frequent users with a higher percentage of those who receive 10 to 20 calls per day (25.6% versus 17.7%).

TABLE 32
NUMBER OF CALLS RECEIVED
PER DAY BY THE TWO SEGMENTS

	Segment	
	1 (n=117)	2 (n=79)
Less than 10	64.1%	73.4%
10 to 20	25.6	17.7
More than 20	0.0	1.3

6.4.4 Service-Needs Profile

Table 33 summarizes the percentage of subjects who are in need of a particular paging service. Figures inside the parentheses indicate the percentages of those who still cannot have their needs satisfied.

TABLE 33
SERVICE-NEEDS PROFILE OF THE TWO SEGMENTS

	Segment	
	1 (n=117)	2 (n=79)
Secretarial service	49.6%[1] (29.9)[2]	32.9% (19.0)
Direct paging service	22.2 (15.4)	26.6 (20.3)
Call forwarding service	20.5 (14.5)	15.2 (13.9)
Meet-me service	17.9 (17.1)	20.3 (20.3)
International paging service	11.1 (11.1)	10.1 (10.1)
HK / Guangdong / Macau paging service	22.2 (20.5)	21.5 (16.5)
Jetpage service	9.4 (2.6)	6.3 (1.3)
Telephone directory service	25.6 (25.6)	19.0 (19.0)
Daily flight arrival / departure information	11.1 (11.1)	0.0 (0.0)
Daily movie schedule	17.9 (17.9)	20.3 (20.3)
Restaurant reservations	17.9 (17.1)	16.5 (16.5)
Traffic report	24.8 (23.9)	21.5 (21.5)
Horse racing / Mark Six results	18.8 (12.8)	16.5 (10.1)
Financial information	35.9 (32.5)	26.6 (22.8)
Daily local / world weather report	35.0 (28.2)	29.1 (16.5)
Daily local / world news headlines	23.9 (23.1)	21.5 (20.3)

1 Percentage of those who need a particular paging service.
2 Percentage of those who still cannot have their needs satisfied.

An examination of the table reveals several key points. Firstly, secretarial service is most desired by subjects in both segments (49.6% versus 32.9% for segments 1 and 2, respectively); subjects in segment 1 generally have a greater demand for this service than those in segment 2, as reflected by the difference between the two percentages. Although some of them have already been satisfied, there is still quite a high percentage of subjects who cannot have their needs satisfied (29.9% versus 19.0%).

Secondly, subjects in segment 1 have a distinctively greater need than those in segment 2 for the following two services: daily flight arrival/ departure information inquiry (11.1% versus 0.0%) and financial information inquiry (35.9% versus 26.6%). Actually, a large percentage of subjects still do not have their needs satisfied (11.1% versus 0.0% for the former and 32.5% versus 22.8% for the latter).

The three most commonly cited reasons why subjects in both segments cannot have their needs satisfied are presented in Table 34. Actually, the top three reasons for both segments are the same, and there are only small differences between their relative percentages.

TABLE 34
REASONS FOR NOT OBTAINING THE NEEDED SERVICES

Segment	Reason	Percentage
1	My paging company does not provide such service(s)	35.9%
	Too expensive	31.6
	Too lazy to apply	12.8
2	Too expensive	32.9
	My paging company does not provide such service(s)	31.6
	Too lazy to apply	8.9

Finally, the characteristics of the two benefit segments are summarized in the following table.

TABLE 35
A SUMMARY DESCRIPTION OF THE TWO BENEFIT SEGMENTS

	Label	Descriptions	Characteristics
1	"Businessmen" (59.7%)	Money-oriented users; they use pagers primarily because pagers can bring them business opportunities, can help them to save money / effort, to make money, and to enhance their job performance.	There are more students (12.8% versus 7.6%) and sales representatives (20.5% versus 10.1%) than in segment 2. Likely to use pagers more frequently than those in segment 2. More receptive to ad boards at MTR or KCR stations. Likely to prefer newspapers and TV to radio. Higher percentage of mobile phone /CT2 ownership (21.4%). Likely to be more financially optimistic. Greater demand for secretarial service, financial information and daily flight arrival / departure information.
2	"Sociables" (40.3%)	Socially-oriented users; they use pagers primarily because pagers can make them more informed and more easily reached by their friends / family, thus building up better social life and enhancing their social relationships with others.	Higher percentage of females (32.9%). Higher percentage of managers or executives (19.0% versus 12.8%). Use pagers less frequently than those of segment 1. Likely to prefer newspapers and radio to TV. Greater demand for meet-me service, direct paging service and daily movie schedule inquiry service.

CHAPTER 7
IMPLICATIONS FOR MARKETING STRATEGIES

7.1 Discussion

This study aims to provide information about the characteristics of pager users and the services they need. Such information would be useful to all paging companies for the sake of formulating appropriate marketing strategies. However, selection of a particular target segment will not be recommended. It is suggested that individual companies which would like to explore any one of the target segments mentioned should consider their company objectives and market positions.

7.1.1 General Demographics of Pager Users

The findings are not very different from general expectations about typical pager users. The paging market is still dominated by male customers. Obviously, the majority of the pager users are the young workforce who are within the 20 to 39 age range. They are actively engaged in industries such as trading, insurance, manufacturing, financing, retailing, etc.

7.1.2 Services Needed by Pager Users

Overall speaking, these people have demand for the services shown in Table 36.

TABLE 36
SERVICES DEMANDED BY PAGER USERS

Paging Services	Percentage (n=184)
Secretarial service	42.9%
Weather report	32.6
Financial information	31.0
Direct paging	24.5
Traffic report	23.9
Telephone directory	22.8
Cross-border paging	22.3

However, about 37.5% of the users cannot obtain the services because they are not provided by their paging companies. More than one-third (34.2%) of the people feel that the services are too expensive, while 12% of them are too lazy to apply for the services. This indicates the trends of paging companies which provide diversified services and emphasize low charges. Since secretarial service is highly demanded, it is often included in the subscription package as a special benefit offered by most of the paging companies.

7.1.3 An Evaluation of the Four Segmentation Bases Used in the Study

In this section, the usefulness of demographics, psychographics, product usage, and benefits as bases for segmenting the paging market in Hong Kong is evaluated, using Kotler's four criteria (as discussed in Section 2.4): measurability, substantiality, actionability and accessibility[41].

1. Measurability

   Measurability refers to the degree to which the size, location, and purchasing power of all segments can be measured. The study has identified certain market segments by using the bases of product usage ("Light Users" and "Heavy Users"), psychographics ("Dependents", "Innovators", "Matured", Adventurers", "Outgoing", and "Smart Buyers"), and benefits ("Businessmen" and "Sociables"). However, it is still impossible to determine the size, location, and purchasing power of these segments, since there are no reliable and regular sources which can provide such information. On the other hand, it may be possible to measure the sizes of the segments uncovered through demographic segmentation, since data such as sex, age, educational level, career, position, and monthly income can be readily obtained from publications of the Hong Kong Census and Statistics Department.

2. Substantiality

   A market segment's substantiality depends on both the number of consumers within it and the volume of their purchases. With regard to demographic segmentation, the census of 1991 showed that, in 1990, there were about 1,069,200 (18.7%) and 1,102,900 (19.3 %) people within the 20-29 and 30-39

[41] Kotler, Phillip, *Marketing Management Analysis, Planning, Implementation and Control*, 6th ed., Englewood Cliffs, New Jersey, Prentice-Hall International Editions, 1988, p. 298.

age ranges, respectively[42]. About one-third (34.5%) of them are current pager users. This indicates the opportunities for increasing sales and profits by the paging companies.

3. Actionability

Actionability refers to the degree to which effective programs can be formulated for attracting and serving the segments. Though the size, location, and characteristics of the segments identified through product usage, psychographic, and benefit segmentation are difficult to determine, the information obtained from these segmentation bases can be incorporated with the users' demographics to generate more detailed descriptions and profiles of the segments. In the study, segments identified through product usage segmentation exhibit distinctive differences in their demographic profiles; however, for those identified through psychographic and benefit segmentation, profiling in terms of their demographics is found to be much more difficult. Demographics, in isolation, are not as useful as their combination with psychological and behavioral measures in profiling the users, since demographics have very low correlation with behaviors.

4. Accessibility

Accessibility refers to the degree to which the segment can be effectively reached and served. In the study, it appears that newspapers, radio, and TV are the three most popular types of media for both existing and potential pager users. However, differentiation between segments in terms of their media preferences is difficult, since the percentages are quite close to one another. This will make the work of targeting a specific segment more difficult.

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42 *Hong Kong Annual Digest of Statistics*, 1991 ed., Census and Statistics Department, Hong Kong, p. 17.

On the whole, no one single segmentation criterion renders useful segments which fulfil the four measures mentioned by Kotler. Indeed, more useful segments can be identified by integrating the information generated from demographic, product usage, psychographic, and benefit segmentation.

7.1.4 Similar Segments Identified by Both Usage and Benefit Segmentation

It is interesting to note that the average number of calls per day is below ten. Hence those who have more than ten calls per day are considered to be heavy users. The light users and the heavy users differ along several dimensions: demographics, psychographics, benefits sought, and services demanded. Besides, the light users share common characteristics with the "Sociables" segment, whereas the heavy users resemble the "Businessmen" identified through benefit segmentation (Tables 21 and 35)[43]. The light users are relatively younger and have higher educational level. They consist of a large number of students and young professionals. On the other hand, the heavy users are older, i.e., over 30, and not many of them have tertiary education. Most of them are sales representatives or executives in trading, insurance, or transport industries. Risk taking and not seeking for information are the characteristics of the light / "Sociables" users. They prefer colorful pagers to the dull black ones. Though the heavy users or "Businessmen" are very confident of themselves, they are prone to get advice from others and are risk averse. The conventional type of pager suits them best.

These results suggest that there are two distinctive types of pager users, who have different reasons for using pagers. It is observed that the "Sociables" users treasure the benefits of reachability and trendiness brought on by pagers. They need to build

43 Though there are more students in the "Businessmen" than in the "Sociables" segment, it does not mean that the students are heavy users. This classification may be due to the students' (mostly tertiary) career orientation, which in turn gives rise to demand for the benefits similar to those desired by "Businessmen".

up better social relations with their friends and families. Thus, the pager becomes a close intermediate link between them and their companions. The "Businessmen", on the other hand, depend on pagers to bring them business and money. They seek the benefits of better job performance, superiority, getting informed in case of emergencies, and establishing affection with their relations. Consistently, the "Sociables" users express great demand for services like daily movie schedule, restaurant reservations, weather report, and news headlines display / inquiry, whereas the "Businessmen" demand international paging, Hong Kong / Guangdong / Macau paging, direct paging, call forwarding and financial information.

From the above findings, it can be generalized that the usage patterns and benefits sought are relevant and useful criteria for segmenting the paging market. Though demographic criteria facilitate measurement and access to the targets, they provide little information about the behavioral aspects of the targets. This is always the pitfall of using demographics to segment the market. In this case, without the behavioral data, it is difficult to know what types of pagers and services the people within the 20 to 29 age range demand.

On the other hand, psychographics help to portray the characteristics of pager users which bear some relationship to explicit behavior. Unfortunately, the psychographic segments which have been identified pose difficulties with respect to measurement and accessibility. Clear and distinctive demographic profiles for the six segments are difficult to generate.

Integration of the data collected by using the four segmentation bases generates a more comprehensive picture of pager users than the use of any one basis of segmentation alone. This project's results have several implications for marketing strategy, and are presented in the following section.

7.2 Implications for Marketing Strategy

7.2.1 Target Market

There will be two major target segments. One is the "job-oriented" segment, and the other is the "social-oriented" segment. The relevant age range for these segments will be 20 to 39. Within the "social-oriented" segment, students will be an important sub-group. However, marketers should closely monitor these clients, because the students are also potential businessmen after graduation, whose needs may have differed by that time. The "social-oriented" people are the less frequent users who want to keep close contact with their companions and widen their social circles. These people may or may not be actively employed. Housewives, students, clerical staff, professionals (e.g., lawyers, doctors, accountants, etc.), and executives / managers comprise this segment. For the "job-oriented" category, people working in trading and distribution, insurance, transport, and construction are the major targets. Besides, corporate clients in these industries should also be targeted. People in this category emphasize the importance of making money and outstanding job performance.

7.2.2 Product Strategy

Limited by the small number of product suppliers, there are not many choices for the color and shape of pagers. However, product differentiation can help to attract more customers, especially those who are "sociable" users. Since there is an interesting trend of students using pagers, and many young people treasure close communication with their peers, it may be the appropriate time to introduce colorful and fancy pagers. As the results suggest that these people seek the benefit of being trendy, pagers can be projected as a kind of accessory. Instead of wearing them around their waists, they can be hung on school bags or handbags as decorations. Thus the designs must be attractive. An example would be pagers which are embedded into the popular items dangling from their bags.

For the "Businessmen", reliability of the pager is more important than the design. They are more satisfied with the conventional design and color. Therefore, reliability and a variety of services will be emphasized for this segment. Over 60% of the people in this segment feel that it is troublesome to switch to another paging company. This implies that they will be loyal customers once they are satisfied with the services provided. Moreover, these people are more likely to be mobile phone/ CT2 or car owners. It would be very attractive to these people if the pagers could be packaged with the mobile phones or car phones.

7.2.3 Price Strategy

As mentioned in the previous section, the "Businessmen" strive for outstanding job performance, which in turn leads to greater money earning capacity. They should be more willing to pay a higher price for better services, so premium pricing can be adopted for this segment. On the other hand, the "Sociable" users are usually students and low income earners who do not need as many services as the "Businessmen" do. Lower prices can be charged in this segment. Actually, the students in this group usually have tertiary education, and they are potential "Businessmen" in a few years' time. So it will be advantageous to establish their brand loyalty to the company by providing well designed pagers and high quality services at a lower price.

7.2.4 Promotional Strategy

From the findings, the "Businessmen" always seek advice from their friends, especially when they want to buy a pager. Hence, word-of-mouth is very important for this segment. In order to encourage positive word-of-mouth, the company should maintain an efficient customer service team and well-qualified operators. The "Businessmen" may be attracted by the billboards at the MTR or KCR stations, and they like to read newspapers and magazines. As a result, advertisements through these media channels will be very effective in reaching these targets. Listening to radio and watching television are popular hobbies of young adults; paging advertisements on the radio and television can be easily received by the "Sociables" users. Furthermore, a pager as a gift can be emphasized for the "Sociables" segment. In the advertisements directed toward "Businessmen", better job performance associated with the use of a pager should be emphasized, whereas for "Sociables" users, the advertisements must emphasize the happy social life and harmonious peer relationships which result from the use of a pager.

7.2.5 Distribution Strategy

A comprehensive marketing strategy should include an aspect related to physical distribution issues. However, since the survey instrument did not include any questions relating to distribution, these issues will not be addressed in detail. It is suggested that paging companies could cooperate with food or clothing chain stores which are heavily visited by students and the young adults in distributing their products (for example, they may set up counters in these stores to promote their pagers).

CHAPTER 8
CONCLUSION

The paging market in Hong Kong has long been considered by local paging companies to be a mass market, and few efforts have been made to differentiate their marketing mixes in order to appeal to different market segments. By providing various kinds of products or services, they are practicing only the strategy of product differentiation, but not true market segmentation. For the strategy of market segmentation to be feasible, the first step is to segment the market and identify any profitable and actionable segments. Without a clear target in mind, companies would easily lose their direction, thus leading to a waste of efforts and resources. Our research has successfully demonstrated that the local paging market, although long regarded as a mass and undifferentiated one, can actually be separated into distinguishable and identifiable segments using various bases such as demographics, psychographics, product usage and benefits. By using product usage and benefit segmentation, it appears that two groups of users exist in the market: the "job-oriented" segment, and the "social-oriented" segment. These two groups of customers seek distinguishable benefits, and have clear usage and demographic profiles. The implication of this finding is that although the pager seems to be a mass and undifferentiated product, marketing differentiation, particularly with respect to advertising, could be adopted. Paging companies can refine and tailor their marketing efforts to appeal to these two distinguishable segments, so as to grasp larger market shares of these segments.

This project is only an exploratory study of the potential segments which may exist in the paging industry. Further studies should be conducted to obtain a more comprehensive and clearer profile of these two benefit segments in terms of their demographics, product usage, and psychographics in order to provide better support for the formulation of marketing strategies.

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Mr. James Leung, Hutchison Paging Co. Ltd., Telephone Interview.

Mr. H. C. Chan, Assistant Controller, Telecommunications, Hong Kong Post Office, Personal interview.

APPENDIX A
QUESTIONNAIRE (ENGLISH VERSION)

We are a group of graduate students from The Chinese University of Hong Kong. We are now conducting research on the paging industry; can you spare a few minutes to complete this questionnaire?

SECTION I

1. Do you have a pager now?
   1 ____ yes (go to Q.3)
   2 ____ no 1____

2. Do you plan to buy / rent a pager within the next three months?
   1 ____ yes
   2 ____ no (end of questionnaire) 2____

3. Are you over fifteen?
   1 ____ yes (if the respondent has no pager, go to Q.7)
   2 ____ no (end of questionnaire) 3____

4. What type of pager do you use? (you may choose only one item)
   1 ____ tone pager
   2 ____ numeric pager
   3 ____ alphanumeric pager
   4 ____ card pager
   5 ____ pen pager
   6 ____ others (please specify ________) 4____

5. To which paging company are you now subscribing?
   1 ____ ABC Communications Ltd.
   2 ____ BB Telecom Ltd.
   3 ____ Chevalier (Paging Services) Ltd.
   4 ____ EPRO Paging Services Ltd.
   5 ____ HK Telecom CSL Ltd.
   6 ____ Hutchison Paging Co. Ltd.
   7 ____ Kantone Paging Co. Ltd.
   8 ____ New Telecom Co. Ltd. Ltd.
   9 ____ New World Paging
   10 ____ Star Paging Ltd.
   11 ____ Telecom Paging Ltd.
   12 ____ others (please specify________) 5____

6. How many calls do you receive each day?
   1 ___ less than 10
   2 ___ 10 to 20
   3 ___ more than 20 6____

7. Which of the following services do you need? (you may choose more than one item)

1 ____ secretarial service 7____
2 ____ direct paging service (computer recording) 8____
3 ____ call forwarding service 9____
4 ____ meet-me service 10____
5 ____ international paging service 11____
6 ____ Hong Kong / Guangdong / Macau paging service 12____
7 ____ Jetpage service (offered exclusively by Hutchison) 13____
8 ____ information inquiry / display service 14____
9 ____ telephone directory service 15____
10 ____ daily flight arrival / departure information 16____
11 ____ daily movie schedule 17____
12 ____ restaurant reservations 18____
13 ____ traffic report 19____
14 ____ horse racing / Mark Six results 20____
15 ____ financial information (gold prices / Hang Seng Index / forex rates, etc.) 21____
16 ____ daily local / world weather report 22____
17 ____ daily local / world news headlines 23____
18 ____ others (please specify ________________) 24____

(If you have no pager, go to Section II)

8. What service(s) is / are provided by your pager now? (you may choose more than one item)

1 ____ secretarial service 25____
2 ____ direct paging service (computer recording) 26____
3 ____ call forwarding service 27____
4 ____ meet-me service 28____
5 ____ international paging service 29____
6 ____ Hong Kong / Guangdong / Macau paging service 30____
7 ____ Jetpage service (offered exclusively by Hutchison) 31____
8 ____ information inquiry / display service 32____
9 ____ telephone directory service 33____
10 ____ daily flight arrival / departure information 34____
11 ____ daily movie schedule 35____
12 ____ restaurant reservations 36____
13 ____ traffic report 37____
14 ____ horse racing / Mark Six results 38____
15 ____ financial information (gold prices / Hang Seng Index / forex rates, etc.) 39____
16 ____ daily local / world weather report 40____
17 ____ daily local / world news headlines 41____
18 ____ others (please specify ________________) 42____

(If you have no need or if all your need(s) is /are satisfied, go to Section II)

9. What is / are your reason(s) for not obtaining the service(s) that you want?
(you may choose more than one item)

1 ____ too expensive 43 ____
2 ____ my paging company does not provide such service(s) 44 ____
3 ____ there is no paging company which can provide such service(s) 45 ____
4 ____ no time for application 46 ____
5 ____ application procedures too complicated 47 ____
6 ____ too lazy to apply 48 ____
7 ____ don't know how to apply 49 ____
8 ____ others (please specify __________________) 50 ____

SECTION II

Read the following statements and then give your opinion on each statement, using a six-point scale. Point 0 represents **Strongly Disagree,** while point 5 represents **Strongly Agree.**

Strongly Disagree	**Disagree**	**Slightly Disagree**	**Slightly Agree**	**Agree**	**Strongly Agree**
0	1	2	3	4	5

10. ___ When I buy / rent a pager, I will consult others. 51 ____
11. ___ Different brands of pagers appeal to people of different personalities. 52 ____
12 ___ Pagers in black color look very dull. 53 ____
13. ___ I seldom read / watch advertisements for pagers. 54 ____
14. ___ Each time I receive a page, I find it annoying to find a phone. 55 ____
15. ___ I often buy new brands before my friends and neighbors do. 56 ____
16. ___ I would be afraid of having my secrets disclosed when using a pager. 57 ____
17. ___ I like to try new and different things. 58 ____
18. ___ Investing in the stock market is too risky. 59 ____
19. ___ I prefer colorful pagers. 60 ____
20. ___ The servicing attitude of pager operators of all paging companies is the same. 61 ____
21. ___ I am always attracted by the advertising boards at MTR or KCR stations. 62 ____
22. ___ I think card pagers fail easily. 63 ____
23. ___ I think that the price of a product is more important than its quality. 64 ____
24. ___ I often can talk others into doing something. 65 ____
25. ___ I like parties where there is lots of music and talk. 66 ____
26. ___ I like to use pagers with technologically advanced functions. 67 ____
27. ___ My income is high enough to satisfy nearly all my important desires. 68 ____
28. ___ I will probably have more money to spend next year than I have now. 69 ____
29. ___ I think that pagers should be as small as possible. 70 ____
30. ___ I often seek out the advice of my friends regarding which brand to buy. 71 ____
31. ___ I think that it is disrespectful to consumers when pager operators make mistakes. 72 ____
32. ___ I buy / rent a pager because most of my friends have one. 73 ____
33. ___ Choosing a particular brand of pager is time-consuming. 74 ____
34. ___ I think that choosing paging companies operated by large corporations is more secure. 75 ____
35. ___ I seldom listen to the radio. 76 ____
36. ___ My friends or neighbors often come to me for advice. 77 ____
37. ___ I would not participate in dangerous sports. 78 ____
38. ___ I am more independent than most people. 79 ____
39. ___ Females should not carry pagers. 80 ____

40. ___ I like to pay cash for everything I buy. 81___
41. ___ I sometimes influence what my friends buy. 82___
42. ___ I am a mobile phone / CT2 user. 83___
43. ___ The beeping sound of a pager is very annoying. 84___
44. ___ It is worth it to pay more for prestigious brand products. 85___
45. ___ I think I have more self-confidence than most people. 86___
46. ___ I wish I had a lot more money. 87___
47. ___ I am usually the centre of attention in a group. 88___
48. ___ I like reading the newspaper. 89___
49. ___ I feel satisfied with my present job. 90___
50. ___ Watching television is more interesting than reading magazines. 91___
51. ___ Once I find a brand, I like to stick with it. 92___
52. ___ I keep myself abreast of world affairs. 93___
53. ___ Carrying a pager is a fashion. 94___
54. ___ I would rather spend a quiet evening at home than go out to a party. 95___
55. ___ I have a car. 96___

(If you have no pager, go to Section III)

56. ___ I feel very satisfied with the products and services of my paging company. 97___
57. ___ It is troublesome to switch to another paging company. 98___

SECTION III

58. The following are the benefits of using pagers; how important are these benefits to you? Show the importance by using a six-point scale. Point 0 represents **Not Important At All**, while point 5 represents **Extremely Important**.

Not Important At All					**Extremely Important**
0	1	2	3	4	5

A pager helps me to:

____save money 99___
____make money 100___
____save time 101___
____save effort 102___
____be trendy 103___
____build up better social life 104___
____obtain social approval 105___
____enhance my affection for my friends / family 106___
____others (please specify ________________) 107___

A pager makes me:

____well-informed 108___
____superior 109___
____have a sense of novelty 110___
____have a sense of security 111___
____easily reached by friends / family 112___
____informed of emergencies 113___
____feel very important 114___
____have better job performance 115___
____handle my affairs conveniently 116___
____others (please specify ________________) 117___

SECTION IV

59. Your sex:
1 ___ male
2 ___ female 118____

60. Your age:
1 ___ 15-19
2 ___ 20-29
3 ___ 30-39
4 ___ 40-49
5 ___ 50-59
6 ___ 60 and over 119____

61. Your educational level:
1 ___ primary or below
2 ___ form 1 to 5
3 ___ form 6 to 7
4 ___ university / tertiary 120____

62. Your career:
1 ____ construction
2 ____ wholesale
3 ____ retailing
4 ____ trading
5 ____ restaurants and hotels
6 ____ communication
7 ____ insurance
8 ____ financing
9 ____ real estate
10 ____ manufacturing
11 ____ transport
12 ____ student (go to Q.64)
13 ____ others (please specify ________________) 121____

63. Your position:
1 ____ manager / executive
2 ____ professional
3 ____ clerk
4 ____ sales representative
5 ____ blue collar
6 ____ others (please specify ________________) 122____

64. Your personal monthly income:
1 ____ $5,000 or below
2 ____ $5,001 - 10,000
3 ____ $10,001 - 15,000
4 ____ $15,001 - 20,000
5 ____ $20,001 - 25,000
6 ____ $25,001 - 30,000
7 ____ over 30,000 123____

< End of Questionnaire >

APPENDIX B
QUESTIONNAIRE (CHINESE VERSION)

香港傳呼機市場研究

我哋係一班中文大學的研究生，現在正進行一個有關傳呼機市場的研究。請問你可否用幾分鐘時間同我哋做一份問卷呢？

此欄不用填寫

第一部份

1.你現在有沒有傳呼機？
1____有（跳至第 3 題）
2____沒有 1______

2.你有否計劃在未來三個月內購買／租用一部傳呼機呢？
1____有
2____沒有（問卷完畢） 2______

3.請問你是否大過15歲呢？
1____是（如被訪者沒有傳呼機，跳至第 7 題）
2____否（問卷完畢） 3______

4.你的傳呼機屬於那一類型？（只可選擇一項）
1____聲响機
2____數字機
3____中文／英文顯字機
4____咭片型傳呼機
5____筆型傳呼機
6____其他（請註明______________________________） 4______

5.你現在用那一間傳呼公司的服務？
1____ＡＢＣ佳訊
2____必備通訊
3____其士電訊
4____易寶傳訊
5____香港電訊ＣＳＬ
6____和記傳訊
7____看通傳呼
8____新系電訊
9____新世界傳訊
10____星光傳呼
11____電訊傳呼
12____其他（請註明____________） 5______

此欄不用填寫

6.你每天收到多少個傳呼？

1 ____少個10個

2 ____10個至20個

3 ____多過20個 6 ____

7.你需要以下甚麼服務？（可選擇多過一項）

1 ____秘書服務 7 ____

2 ____直接傳呼（電腦錄音）服務 8 ____

3 ____預先通知轉駁電話服務 9 ____

4 ____即時對話服務 (聯線通／王者之Phone) 10 ____

5 ____國際傳呼服務 11 ____

6 ____香港、廣東、澳門傳呼服務 12 ____

7 ____Jetpage 特快線傳呼服務 13 ____

8 ____各樣資料查詢／顯示服務 14 ____

9 ____各大機構電話號碼查詢 15 ____

10 ____每日飛機抵港及離港資料 16 ____

11 ____電影上映地點指南 17 ____

12 ____餐廳及酒樓訂位服務 18 ____

13 ____交通報告 19 ____

14 ____賽馬／六合彩結果 20 ____

15 ____財經消息（黃金價／恆生指數／外匯兌換率等） 21 ____

16 ____每日本地／世界天氣報告 22 ____

17 ____每日本地／世界新聞頭條 23 ____

18 ____其他（請註明________________________________） 24 ____

(若你沒有傳呼機,跳至第二部份)

此欄不用填寫

8.你現在的傳呼機可提供甚麼服務？ (可選擇多過一項)

1 ____秘書服務 25 ____
2 ____直接傳呼（電腦錄音）服務 26 ____
3 ____預先通知轉駁電話服務 27 ____
4 ____即時對話服務 (聯線通／王者之Phone) 28 ____
5 ____國際傳呼服務 29 ____
6 ____香港、廣東、澳門傳呼服務 30 ____
7 ____Jetpage 特快線傳呼服務（適用於和記用戶） 31 ____
8 ____各樣資料查詢／顯示服務 32 ____
9 ____各大機構電話號碼查詢 33 ____
10 ____每日飛機抵港及離港資料 34 ____
11 ____電影上映地點指南 35 ____
12 ____餐廳及酒樓訂位服務 36 ____
13 ____交通報告 37 ____
14 ____賽馬／六合彩結果 38 ____
15 ____財經消息（黃金價／恆生指數／外匯兌換率等） 39 ____
16 ____每日本地／世界天氣報告 40 ____
17 ____每日本地／世界新聞頭條 41 ____
18 ____其他（請註明________________________） 42 ____

(若你不需要以上服務，或你需要的服務已由現公司提供，跳至第二部份)

9.甚麼原因令你未能獲得你需要的服務呢？ (可選擇多過一項)

1 ____收費太貴 43 ____
2 ____自己傳呼公司未能提供 44 ____
3 ____現在沒有傳呼公司提供 45 ____
4 ____沒有時間申請 46 ____
5 ____申請煩複 47 ____
6 ____懶得申請 48 ____
7 ____不知道怎樣申請 49 ____
8 ____其他（請註明________________________） 50 ____

第二部份

請閱讀下面句字，然後用0至5分表示你對每句句子的意見。0分代表完全不同意，而5分代表完全同意。

完全不同意	不同意	頗不同意	頗同意	同意	完全同意
0	1	2	3	4	5

此欄不用填寫

10. ____當我買／租用一部傳呼機，我會請教別人。 51 ____
11. ____不同牌子的傳呼機吸引不同性格的人。 52 ____
12. ____黑色的傳呼機看來很沉悶。 53 ____
13. ____我甚少閱讀／收看傳呼機的廣告。 54 ____
14. ____我覺得每次找電話覆機是很麻煩的事。 55 ____
15. ____我時常比朋友和鄰居快一步購買新牌子的產品。 56 ____
16. ____當我用傳呼機時，我會害怕自己的秘密被揭露。 57 ____
17. ____我喜歡嘗試新穎和不同的東西。 58 ____
18. ____投資在股票市場的風險太大。 59 ____
19. ____我較喜歡色彩繽紛的傳呼機。 60 ____
20. ____所有傳呼公司傳呼員的服務態度都是差不多。 61 ____
21. ____我時常被地鐵站或火車站的廣告板所吸引。 62 ____
22. ____我覺得咭片型的傳呼機很容易壞。 63 ____
23. ____我覺得一件貨品的價錢重要過它的品質。 64 ____
24. ____我時常能說服別人做某些事。 65 ____
25. ____我喜歡參加熱鬧的派對。 66 ____
26. ____我喜歡使用功能先進的傳呼機。 67 ____
27. ____我的收入足以滿足幾乎我所有重要的慾望。 68 ____
28. ____比起今年，明年我很可能會有更多錢用。 69 ____
29. ____我認爲傳呼機應該愈細愈好。 70 ____
30. ____我時常詢問朋友關於購買那一種牌子的意見。 71 ____
31. ____我覺得傳呼員落錯“call”是對顧客不尊重。 72 ____
32. ____因爲我大多數朋友都擁有傳呼機，所以我也購買／租用一部。 73 ____

此欄不用填

33. ____選擇傳呼機的牌子是需要長時間的。 74 ______
34. ____我覺得選擇大集團經營的傳呼公司比較有保障。 75 ______
35. ____我很少聽收音機。 76 ______
36. ____我的朋友和鄰居時常向我詢問意見。 77 ______
37. ____我不會參與危險的運動。 78 ______
38. ____我比大多數人更獨立。 79 ______
39. ____女性不應攜帶傳呼機。 80 ______
40. ____我喜歡用現金買任何東西。 81 ______
41. ____我有時會影響到朋友買東西的決定。 82 ______
42. ____我是第一代／第二代手提無線電話的用戶。 83 ______
43. ____傳呼機的"BB"聲很令人討厭。 84 ______
44. ____付出多些金錢購買名牌子產品是值得的。 85 ______
45. ____我認為我比大多數人有更多自信。 86 ______
46. ____我希望我有更多金錢。 87 ______
47. ____我通常是一群人裡最引人注目的一個。 88 ______
48. ____我喜歡閱讀報紙。 89 ______
49. ____我對現時的工作感到滿意。 90 ______
50. ____看電視比閱讀雜誌更有趣。 91 ______
51. ____一旦我找到自己喜歡的牌子，我便以後都會選用它。 92 ______
52. ____我每日都留意世界大事。 93 ______
53. ____攜帶傳呼機是一種潮流。 94 ______
54. ____我寧願在家中過一個寧靜的晚上而不去派對。 95 ______
55. ____我擁有一部汽車。 96 ______

(若你沒有傳呼機,跳至第三部份)

56. ____我對自己傳呼公司的產品和服務感到滿意。 97 ______
57. ____更換另一間傳呼公司是一件非常麻煩的事。 98 ______

第三部份

58. 以下是使用傳呼機帶來的好處，你覺得它們對你的重要性有幾大？請將重要性用0至5分表示出來。0分代表完全不重要。5分代表極爲重要。

完全不重要 極爲重要

0 1 2 3 4 5

此欄不用填寫

傳呼機幫我：

____慳錢 99 ______
____賺錢 100 ______
____慳時間 101 ______
____慳功夫 102 ______
____追上潮流 103 ______
____建立更好的社交生活 104 ______
____得到朋友認同 105 ______
____增進和朋友／家人感情 106 ______
____其他（請註明______________） 107 ______

傳呼機令我：

____消息靈通 108 ______
____高人一等 109 ______
____有新鮮感 110 ______
____有安全感 111 ______
____容易被朋友／親戚聯絡 112 ______
____知道緊急事情 113 ______
____覺得自己很重要 114 ______
____有更好工作表現 115 ______
____感到方便 116 ______
____其他（請註明______________） 117 ______

第四部份

59. 你的性別：

1____男
2____女 118____

60. 你的年齡

1____15-19
2____20-29
3____30-39
4____40-49
5____50-59
6____60或以上 119____

61. 你的教育程度：

1____小學或以下
2____中一至中五
3____中六至中七
4____大學／專上學院 120____

62. 你的職業：

1____建築
2____批發
3____零售
4____出入口貿易
5____酒樓／酒店
6____通訊
7____保險
8____金融
9____地產
10____製造
11____運輸
12____學生（跳至第64題）
13____其他（請註明________） 121____

63. 你的職位：

1____經理／行政人員
2____專業人士
3____文員
4____營業代表
5____藍領
6____其他（請註明________） 122____

64. 你個人每月收入：

1____$5,000或以下
2____$5,001-10,000
3____$10,001-15,000
4____$15,001-20,000
5____$20,001-25,000
6____$25,001-30,000
7____$30,000以上 123____

《問卷完畢》

APPENDIX C
LIST OF AIO QUESTIONS

1) Product Specific Questions

AIO10. When I buy / rent a pager , I will consult others.
AIO11. Different brands of pagers appeal to people of different personalities.
AIO12. Pagers in black color look very dull.
AIO13. I seldom read / watch advertisements for pagers.
AIO14. Each time I receive a page, I find it annoying to find a phone.
AIO16. I would be afraid of having my secrets disclosed when using a pager.
AIO19. I prefer colorful pagers.
AIO20. The servicing attitude of pager operators of all paging companies is the same.
AIO22. I think card pagers fail easily.
AIO26. I like to use pagers with technologically advanced functions.
AIO29. I think that pagers should be as small as possible.
AIO31. I think that it is disrespectful to customers when pager operators make the wrong call.
AIO32. I buy / rent a pager because most of my friends have one.
AIO33. Choosing a particular brand of pager is time-consuming.
AIO34. I think that choosing paging companies operated by large corporations is more secure.
AIO39. Females should not carry pagers.
AIO43. The beeping sound of a pager is very annoying.
AIO53. Carrying a pager is a fashion.
AIO56. I feel very satisfied with the products and services of my paging company.
AIO57. It is troublesome to switch to another paging company.

2) General Lifestyle Questions

Price Conscious
AIO23. I think that the price of a product is more important than its quality.

Homebody
AIO25. I like parties where there is lots of music and talk.
AIO54. I would rather spend a quiet evening at home than go out to a party.

Self-Confidence
AIO38. I am more independent than most people.
AIO45. I think I have more self-confidence than most people.

Self-Designated Opinion Leader
AIO36. My friends or neighbors often come to me for advice.
AIO41. I sometimes influence what my friends buy.

Information Seeker

AIO30. I often seek out the advice of my friends regarding which brand to buy.

New Brand Tryer

AIO15. I often buy new brands before my friends and neighbors do.
AIO17. I like to try new and different things.

Satisfied with Finances

AIO27. My income is high enough to satisfy nearly all my important desires.
AIO46. I wish I had a lot more money.

Financial Optimist

AIO28. I will probably have more money to spend next year than I have now.

Risk Averse

AIO18. Investing in the stock market is too risky.
AIO37. I would not participate in dangerous sports.

Credit User

AIO40. I like to pay cash for everything I buy.

Personality Expressive

AIO24. I often can talk others into doing something.
AIO47. I am usually the centre of attention in a group.

Functionalist

AIO44. It is worth it to pay more for prestigious brand products.

Satisfaction with Present Job

AIO49. I feel satisfied with my present job.

Brand Switcher

AIO51. Once I find a brand, I like to stick with it.

Media Preference

AIO21. I am always attracted by the advertising boards at MTR or KCR stations.
AIO35. I seldom listen to the radio.
AIO48. I like reading the newspaper.
AIO50. Watching television is more interesting than reading magazines.
AIO52. I keep myself abreast of world affairs.

Users of Other Products

AIO42. I am a mobile phone / CT2 user.
AIO55. I have a car.

APPENDIX D
VARIMAX ROTATED COMPONENT ANALYSIS FACTOR MATRIX

AIO Statements	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9	Factor 10	Factor 11	Factor 12	Factor 13	Factor 14
AIO47	.71266 *													
AIO24	.68169 *				.27730	-.23493								
AIO38	.67565 *		-.30021											
AIO45	.62398 *			.23897								.25668		.21231
AIO41	.56975 *	.25625				-.28231								
AIO36	.56336 *	.27489										-.25448		
AIO44	.49239	-.21872					.22509	-.36602		.25174				
AIO27	.44820		.20300	.24246		.35922						.21837		
AIO30		.77042 *												
AIO10		.62296 *					.26169					-.21443		
AIO12			.79622 *											
AIO19			.71468 *											
AIO26				.71033 *	.24850	-.22727							.22448	
AIO17				.70989 *										
AIO15				.55371 *		.37643				.20633				
AIO25					.77474 *									
AIO54					-.60438 *		.21212		.27594	.22618		.22443		
AIO11			.35512		.47597								.25033	
AIO46						-.72159								
AIO32	-.24872	.24743			.33338	.47251				.30587	.21540			

* Loadings with absolute values greater than 0.5.

(to be continued)

APPENDIX D (CONTINUED)
VARIMAX ROTATED COMPONENT ANALYSIS FACTOR MATRIX

AIO Statements	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9	Factor 10	Factor 11	Factor 12	Factor 13	Factor 14
AIO29		.32075		.26444	-.23656	-.33539			-.32398		.29076	-.31462		
AIO14							.69772							-.20286
AIO18							.54672			-.21619				.29474
AIO31							.52803				-.23047		.50186	.25832
AIO16								.70069	.26423					
AIO23								.56338						
AIO28	.41128	.32869						-.45484						
AIO33		.23423	.33010	-.22676				.40350			.33252		.20695	
AIO51	.25795	.20202							.64071 *				.21361	
AIO37									.64055 *		.26248			
AIO13		-.43173	.30747				.21594		-.45521					
AIO20										.74304				
AIO39	.27502	.20589				.35376		.25721		.50075				
AIO53					.21716						.78390			
AIO49				.33626	-.26976					-.42287	.45155			
AIO40												.85985		
AIO34													.75521	
AIO43	.25623						.32949					-.25803	-.40618	.22321
AIO22														.81417

* Loadings with absolute values greater than 0.5.

APPENDIX E
PSYCHOGRAPHIC PROFILE OF THE TWO USAGE SEGMENTS

	AIO Statement	Segment	
		Light user (n=135)	Heavy user (n=47)
CONFIDENCE			
AIO24	I often can talk others into doing something.	19.3% [1]	31.9%
AIO36	My friends or neighbors often come to me for advice.	10.4	23.4
AIO38	I am more independent than most people.	34.8	55.3
AIO41	I sometimes influence what my friends buy.	29.6	27.7
AIO45	I think I have more self-confidence than most people.	31.1	46.8
AIO47	I am usually the centre of attention in a group.	14.8	17.0
ADVICE			
AIO10	When I buy / rent a pager, I will consult others.	52.6	57.4
AIO30	I often seek out the advice of my friends regarding which brand to buy.	14.8	23.4
COLOR			
AIO12	Pagers in black color look very dull.	14.8	4.3
AIO19	I prefer colorful pagers.	8.1	2.1
INNOVATION			
AIO15	I often buy new brands before my friends and neighbors do.	9.6	14.9
AIO17	I like to try new and different things.	33.3	48.9
AIO26	I like to use pagers with technologically advanced functions.	54.8	53.2
PARTY			
AIO25	I like parties where there is lots of music and talk.	25.2	21.3
AIO54	I would rather spend a quiet evening at home than go out to a party (reverse coded).	14.1	14.9

[1] Percentage of subjects who agree or strongly agree with the AIO statement.

(to be continued)

APPENDIX E (CONTINUED)
PSYCHOGRAPHIC PROFILE OF THE TWO USAGE SEGMENTS

	AIO Statement	Segment: Light user (n=135)	Segment: Heavy user (n=47)
RISK			
AIO37	I would not participate in dangerous sports.	31.9%[1]	46.8%
AIO51	Once I find a brand, I like to stick with it.	23.7	23.4
MEDIA			
AIO21	I am always attracted by the advertising bonds at MTR or KCR stations.	25.2	29.8
AIO35	I seldom listen to radio (reverse coded).	24.4	19.1
AIO48	I like reading the newspaper.	40.0	55.3
AIO50	Watching television is more interesting than reading magazines.	30.4	27.7
AIO52	I keep myself abreast of world affairs.	27.4	38.3
PRODUCTS [2]			
AIO42	I am a mobile phone / CT2 user.	15.6	27.7
AIO55	I have a car.	17.8	21.3
OTHERS			
AIO11	Different brands of pagers appeal to people of different personalities.	39.3	31.9
AIO13	I seldom read / watch advertisements for pagers (reverse coded).	31.9	23.4
AIO14	Each time I receive a page, I find it annoying to find a phone.	57.8	66.0
AIO16	I would be afraid of having my secrets disclosed when using a pager.	7.4	25.5
AIO18	Investing in the stock market is too risky.	30.4	34.0
AIO20	The servicing attitude of pager operators of all paging companies is the same.	10.4	14.9
AIO22	I think card pagers fail easily.	30.4	31.9

[1] Percentage of subjects who agree or strongly agree with the AIO statement.
[2] For this category "Product", the percentages represent ownership of mobile phones / CT2 or cars.

(to be continued)

APPENDIX E (CONTINUED)
PSYCHOGRAPHIC PROFILE OF THE TWO USAGE SEGMENTS

	AIO Statement	Segment	
		Light user (n=135)	Heavy user (n=47)
OTHERS			
AIO23	I think that the price of a product is more important than its quality.	4.4%[1]	8.5%
AIO27	My income is high enough to satisfy nearly all my important desires.	8.1	17.0
AIO28	I will probably have more money to spend next year than I have now.	31.1	46.8
AIO29	I think that pagers should be as small as possible.	57.0	55.3
AIO31	I think that it is disrespectful to consumers when pager operators make mistakes.	40.7	38.3
AIO32	I buy / rent a pager because most of my friends have one.	6.7	8.5
AIO33	Choosing a particular brand of pager is time-consuming.	8.9	17.0
AIO34	I think that choosing paging companies operated by large corporations is more secure.	54.1	55.3
AIO39	Females should not carry pagers.	5.2	2.1
AIO40	I like to pay cash for everything I buy.	27.4	31.9
AIO43	The beeping sound of a pager is very annoying.	25.9	27.7
AIO44	It is worth it to pay more for prestigious brand products.	26.7	34.0
AIO46	I wish I had a lot more money.	82.2	83.0
AIO49	I feel satisfied with my present job.	31.1	27.7
AIO53	Carrying a pager is a fashion.	15.6	12.8
AIO56	I feel very satisfied with the products and services of my paging company.	28.9	34.0
AIO57	It is troublesome to switch to another paging company.	45.9	61.0

[1] Percentage of subjects who agree or strongly agree with the AIO statement.

APPENDIX F
PSYCHOGRAPHIC PROFILE OF THE SIX PSYCHOGRAPHIC SEGMENTS

	Segment (total number of subjects = 199)[2]					
	1 (n=46)	2 (n=54)	3 (n=34)	4 (n=18)	5 (n=28)	6 (n=19)
CONFIDENCE						
AIO47 I am usually the centre of attention in a group.	6.5%[1]	5.6%	17.6%	16.7%	21.4%	47.4%
AIO24 I often can talk others into doing something.	6.5	13.0	26.5	16.7	53.6	36.8
AIO38 I am more independent than most people.	19.6	25.9	55.9	50.0	60.7	52.6
AIO45 I think I have more self-confidence than most people.	15.2	22.2	47.1	27.8	60.7	47.4
AIO41 I sometimes influence what my friends buy.	19.6	22.2	29.4	27.8	46.4	42.1
AIO36 My friends or neighbors often come to me for advice.	8.7	9.3	20.6	0.0	21.4	36.8
ADVICE						
AIO30 I often seek out the advice of my friends regarding which brand to buy.	17.4	16.7	2.9	0.0	28.6	57.9
AIO10 When I buy / rent a pager, I will consult others.	63.0	59.3	29.4	0.0	75.0	94.7

[1] Percentage of subjects who agree or strongly agree with the AIO statement.
[2] Due to missing values, one subject was excluded from the analysis.

(to be continued)

APPENDIX F (CONTINUED)
PSYCHOGRAPHIC PROFILE OF THE SIX PSYCHOGRAPHIC SEGMENTS

		Segment (total number of subjects = 199)[2]					
		1 (n=46)	2 (n=54)	3 (n=34)	4 (n=18)	5 (n=28)	6 (n=19)
COLOR							
AIO12	Pagers in black color look very dull.	2.2%	18.5%	5.9%	0.0%	0.0%	52.6%
AIO19	I prefer colorful pagers.	2.2	5.6	2.9	0:0	0.0	52.6
INNOVATION							
AIO26	I like to use pagers with technologically advanced functions.	32.6	72.2	67.6	50.0	39.3	68.4
AIO17	I like to try new and different things.	15.2	53.7	44.1	50.0	21.4	36.8
AIO15	I often buy new brands before my friends and neighbors do.	2.2	16.7	11.8	16.7	7.1	21.1
PARTY							
AIO25	I like parties where there is lots of music and talk.	2.2	24.1	8.8	38.9	64.3	31.6
AIO54	I would rather spend a quiet evening at home than go out to a party. (reverse coded)	4.3	13.0	5.9	22.2	42.9	5.3
RISK							
AIO51	Once I find a brand, I like to stick with it.	15.2	9.3	35.3	0.0	35.7	78.9
AIO37	I would not participate in dangerous sports.	30.4	24.1	70.6	0.0	28.6	78.9

[1] Percentage of subjects who agree or strongly agree with the AIO statement.
[2] Due to missing values, one subject was excluded from the analysis.

(to be continued)

APPENDIX F (CONTINUED)
PSYCHOGRAPHIC PROFILE OF THE SIX PSYCHOGRAPHIC SEGMENTS

		Segment (total number of subjects = 199)[2]					
		1 (n=46)	2 (n=54)	3 (n=34)	4 (n=18)	5 (n=28)	6 (n=19)
MEDIA							
AIO21	I am always attracted by the advertising boards at MTR or KCR stations.	19.6% [1]	37.0%	20.6%	22.2%	35.7%	21.1%
AIO35	I seldom listen to radio (reverse coded).	30.4	44.4	38.2	50.0	42.9	36.8
AIO48	I like reading the newspaper.	47.8	38.9	50.0	44.4	42.9	42.1
AIO50	Watching television is more interesting than reading magazines.	26.1	29.6	23.5	27.8	35.7	42.1
AIO52	I keep myself abreast of world affairs.	28.3	24.1	26.5	27.8	46.4	36.8
OTHERS							
AIO11	Different brands of pagers appeal to people of different personalities.	32.6	40.7	32.4	38.9	39.3	42.1
AIO13	I seldom read / watch advertisements for pagers (reverse coded).	23.9	24.1	32.4	16.7	35.7	26.3
AIO14	Each time I receive a page, I find it annoying to find a phone.	52.2	57.4	61.8	55.6	53.6	73.7
AIO16	I would be afraid of having my secrets disclosed when using a pager.	8.7	11.1	14.7	5.6	14.3	26.3

[1] Percentage of subjects who agree or strongly agree with the AIO statement.
[2] Due to missing values, one subject was excluded from the analysis.

(to be continued)

APPENDIX F (CONTINUED)
PSYCHOGRAPHIC PROFILE OF THE SIX PSYCHOGRAPHIC SEGMENTS

		Segment (total number of subjects = 199)[2]					
		1 (n=46)	2 (n=54)	3 (n=34)	4 (n=18)	5 (n=28)	6 (n=19)
OTHERS							
AIO18	Investing in the stock market is too risky.	30.4% [1]	33.3%	32.4%	33.3%	17.9%	42.1%
AIO20	The servicing attitude of pager operators of all paging companies is the same.	8.7	13.0	17.6	5.6	14.3	5.3
AIO22	I think card pagers fail easily.	17.4	40.7	29.4	27.8	28.6	36.8
AIO23	I think that the price of a product is more important than its quality.	0.0	7.4	0.0	0.0	3.6	26.3
AIO27	My income is high enough to satisfy nearly all my important desires.	6.5	3.7	5.9	22.2	21.4	26.3
AIO28	I will probably have more money to spend next year than I have now.	21.7	37.0	41.2	16.7	50.0	57.9
AIO29	I think that pagers should be as small as possible.	50.0	59.3	64.7	38.9	60.7	68.4
AIO31	I think that it is disrespectful to consumers when pager operators make mistakes.	37.0	37.0	44.1	38.9	39.3	63.2
AIO32	I buy / rent a pager because most of my friends have one.	4.3	3.7	8.8	16.7	10.7	15.8
AIO33	Choosing a particular brand of pager is time-consuming.	10.9	11.1	11.8	0.0	10.7	31.6
AIO34	I think that choosing paging companies operated by large corporations is more secure.	47.8	57.4	67.6	55.6	60.7	57.9

[1] Percentage of subjects who agree or strongly agree with the AIO statement.
[2] Due to missing values, one subject was excluded from the analysis.

(to be continued)

APPENDIX F (CONTINUED)
PSYCHOGRAPHIC PROFILE OF THE SIX PSYCHOGRAPHIC SEGMENTS

		Segment (total number of subjects = 199)[2]					
		1 (n=46)	2 (n=54)	3 (n=34)	4 (n=18)	5 (n=28)	6 (n=19)
OTHERS							
AIO39	Females should not carry pagers.	0.0%[1]	5.6%	5.9%	0.0%	0.0%	15.8%
AIO40	I like to pay cash for everything I buy.	32.6	24.1	23.5	50.0	21.4	26.3
AIO43	The beeping sound of a pager is very annoying.	19.6	20.4	35.3	22.2	25.0	57.9
AIO44	It is worth it to pay more for prestigious brand products.	13.0	18.5	41.2	33.3	42.9	42.1
AIO46	I wish I had a lot more money.	82.6	83.3	82.4	66.7	92.9	84.2
AIO49	I feel satisfied with my present job.	32.6	22.2	32.4	27.8	35.7	31.6
AIO53	Carrying a pager is a fashion.	15.2	16.7	17.6	5.6	14.3	15.8
AIO56	I feel very satisfied with the products and services of my paging company.	30.4	22.2	32.4	33.3	7.1	63.2
AIO57	It is troublesome to switch to another paging company.	39.1	37.0	55.9	38.9	57.1	63.2

[1] Percentage of subjects who agree or strongly agree with the AIO statement.
[2] Due to missing values, one subject was excluded from the analysis.

APPENDIX G
DEMOGRAPHIC PROFILE OF THE SIX PSYCHOGRAPHIC SEGMENTS

	Segment					
	1	2	3	4	5	6
SEX						
Male	67.4%	77.8%	73.5%	77.8%	64.3%	42.1%
Female	30.4	22.2	23.5	22.2	35.7	57.9
AGE						
15-19	0.0	9.3	0.0	11.1	3.6	0.0
20-29	78.3	72.2	67.6	77.8	75.0	78.9
30-39	17.4	16.7	29.4	11.1	21.4	21.1
40-49	2.2	1.9	0.0	0.0	0.0	0.0
50-59	0.0	0.0	0.0	0.0	0.0	0.0
60 and over	0.0	0.0	0.0	0.0	0.0	0.0
EDUCATION						
Primary or below	0.0	1.9	0.0	0.0	0.0	0.0
Form 1 to 5	32.6	53.7	32.4	50.0	39.3	31.6
Form 6 to 7	13.0	18.5	17.6	22.2	7.1	15.8
University /tertiary	52.2	25.9	47.1	27.8	53.6	52.6
CAREER						
Construction	2.2	7.4	8.8	0.0	7.1	5.3
Wholesale	6.5	1.9	2.9	11.1	0.0	0.0
Retailing	8.7	0.0	2.9	5.6	14.3	0.0
Trading	6.5	11.1	11.8	16.7	7.1	10.5
Restaurants/hotels	2.2	1.9	0.0	0.0	0.0	0.0
Communication	0.0	3.7	2.9	5.6	3.6	0.0
Insurance	15.2	14.8	11.8	16.7	10.7	10.5
Financing	4.3	7.4	5.9	5.6	3.6	0.0
Real estate	0.0	0.0	0.0	0.0	0.0	5.3
Manufacturing	2.2	9.3	14.7	5.6	3.6	5.3
Transport	2.2	3.7	0.0	5.6	0.0	5.3
Student	10.9	5.6	8.8	5.6	10.7	31.6
Others	37.0	31.5	26.5	22.2	39.3	21.1
POSITION						
Manager/executive	10.9	13.0	29.4	11.1	14.3	15.8
Professional	23.9	16.7	23.5	27.8	28.6	26.3
Clerk	28.3	37.0	17.6	11.1	10.7	26.3
Sales representative	15.2	9.3	14.7	33.3	32.1	10.5
Blue collar	0.0	9.3	2.9	5.6	0.0	5.3
Others	17.4	14.8	2.9	5.6	10.7	15.8
MONTHLY INCOME						
$5,000 or below	2.2	5.6	8.8	11.1	14.3	26.3
$5,001 - 10,000	54.3	55.6	29.4	44.4	14.3	26.3
$10,001 -15,000	26.1	20.4	20.6	27.8	46.4	31.6
$15,001 - 20,000	6.5	9.3	14.7	11.1	17.9	5.3
$20,001 - 25,000	2.2	3.7	8.8	0.0	3.6	5.3
$25,001 - 30,000	4.3	1.9	2.9	0.0	3.6	0.0
Over 30,000	0.0	3.7	8.8	5.6	0.0	5.3

APPENDIX H
DEMOGRAPHIC PROFILE OF THE TWO BENEFIT SEGMENTS

	Segment	
	1 (n=117)	2 (n=79)
SEX		
Male	70.1%	67.1%
Female	28.2	32.9
AGE		
15-19	5.1	2.5
20-29	72.6	78.5
30-39	18.8	19.0
40-49	1.7	0.0
50-59	0.0	0.0
60 and over	0.0	0.0
EDUCATION		
Primary or below	0.0	1.3
Form 1 to 5	39.3	41.8
Form 6 to 7	17.1	12.7
University /tertiary	41.9	44.3
CAREER		
Construction	4.3	6.3
Wholesale	1.7	6.3
Retailing	6.8	2.5
Trading	9.4	11.4
Restaurants/hotels	1.7	1.3
Communication	2.6	2.5
Insurance	16.2	10.1
Financing	6.0	2.5
Real estate	0.0	1.3
Manufacturing	6.8	8.9
Transport	2.6	1.3
Student	12.8	7.6
Others	26.5	38.0
POSITION		
Manager/executive	12.8	19.0
Professional	23.9	24.1
Clerk	23.1	27.8
Sales representative	20.5	10.1
Blue color	3.4	3.8
Others	12.0	12.7
MONTHLY INCOME		
$5,000 or below	10.3	7.6
$5,001 - 10,000	41.0	43.0
$10,001 -15,000	28.2	25.3
$15,001 - 20,000	9.4	12.7
$20,001 - 25,000	5.1	1.3
$25,001 - 30,000	1.7	3.8
Over 30,000	2.6	5.1

APPENDIX I
PSYCHOGRAPHIC PROFILE OF THE TWO BENEFIT SEGMENTS

	AIO Statement	Segment 1 (n=117)	Segment 2 (n=79)
CONFIDENCE			
AIO24	I often can talk others into doing something.	21.4%[1]	22.8%
AIO36	My friends or neighbors often come to me for advice.	15.4	13.9
AIO38	I am more independent than most people.	41.0	39.2
AIO41	I sometimes influence what my friends buy.	29.1	30.4
AIO45	I think I have more self-confidence than most people.	30.8	27.8
AIO47	I am usually the centre of attention in a group.	14.5	16.5
ADVICE			
AIO10	When I buy / rent a pager, I will consult others.	58.1	51.9
AIO30	I often seek out the advice of my friends regarding which brand to buy.	19.7	17.7
COLOR			
AIO12	Pagers in black color look very dull.	12.0	12.7
AIO19	I prefer colorful pagers.	7.7	7.6
INNOVATION			
AIO15	I often buy new brands before my friends and neighbors do.	15.4	6.3
AIO17	I like to try new and different things.	34.2	39.2
AIO26	I like to use pagers with technologically advanced functions.	59.8	50.6
PARTY			
AIO25	I like parties where there is lots of music and talk.	26.5	21.5
AIO54	I would rather spend a quiet evening at home than go out to a party (reverse coded).	12.0	15.2

[1] Percentage of subjects who agree or strongly agree with the AIO statement.

(to be continued)

APPENDIX I (CONTINUED)
PSYCHOGRAPHIC PROFILE OF THE TWO BENEFIT SEGMENTS

	AIO Statement	Segment 1 (n=117)	Segment 2 (n=79)
RISK			
AIO37	I would not participate in dangerous sports.	34.2%[1]	41.8%
AIO51	Once I find a brand, I like to stick with it.	23.1	27.8
MEDIA			
AIO21	I am always attracted by the advertising boards at MTR or KCR stations.	34.2	17.7
AIO35	I seldom listen to radio (reverse coded).	37.6	43.0
AIO48	I like reading the newspaper.	46.2	43.0
AIO50	Watching television is more interesting than reading magazines.	33.3	26.6
AIO52	I keep myself abreast of world affairs.	29.9	30.4
PRODUCTS[2]			
AIO42	I am a mobile phone / CT2 user.	21.4	12.7
AIO55	I have a car.	17.1	17.7
OTHERS			
AIO11	Different brands of pagers appeal to people of different personalities.	39.3	32.9
AIO13	I seldom read / watch advertisements for pagers (reverse coded).	29.1	22.8
AIO14	Each time I receive a page, I find it annoying to find a phone.	59.8	57.0
AIO16	I would be afraid of having my secrets disclosed when using a pager.	12.0	13.9
AIO18	Investing in the stock market is too risky.	34.2	29.1
AIO20	The servicing attitude of pager operators of all paging companies is the same.	10.3	12.7
AIO22	I think card pagers fail easily.	35.0	22.8

[1] Percentage of subjects who agree or strongly agree with the AIO statement.
[2] For this category "Product", the percentages represent ownership of mobile phones / CT2 or cars.

(to be continued)

APPENDIX I (CONTINUED)
PSYCHOGRAPHIC PROFILE OF THE TWO BENEFIT SEGMENTS

	AIO Statement	Segment 1 (n=117)	Segment 2 (n=79)
OTHERS			
AIO23	I think that the price of a product is more important than its quality.	5.1%[1]	5.1%
AIO27	My income is high enough to satisfy nearly all my important desires.	12.8	8.9
AIO28	I will probably have more money to spend next year than I have now.	41.9	27.8
AIO29	I think that pagers should be as small as possible.	54.7	64.6
AIO31	I think that it is disrespectful to consumers when pager operators make mistakes.	45.3	36.7
AIO32	I buy / rent a pager because most of my friends have one.	10.3	5.1
AIO33	Choosing a particular brand of pager is time-consuming.	12.8	11.4
AIO34	I think that choosing paging companies operated by large corporations is more secure.	59.8	54.4
AIO39	Females should not carry pagers.	3.4	5.1
AIO40	I like to pay cash for everything I buy.	27.4	29.1
AIO43	The beeping sound of a pager is very annoying.	23.9	34.2
AIO44	It is worth it to pay more for prestigious brand products.	31.6	25.3
AIO46	I wish I had a lot more money.	84.6	82.3
AIO49	I feel satisfied with my present job.	31.6	26.6
AIO53	Carrying a pager is a fashion.	17.1	12.7
AIO56	I feel very satisfied with the products and services of my paging company.	31.6	24.1
AIO57	It is troublesome to switch to another paging company.	47.0	46.8

[1] Percentage of subjects who agree or strongly agree with the AIO statement.