

POSITIONING OF A NEW CARRIER IN THE
CORPORATE DATA LINE MARKET

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MBA PROJECT REPORT

Presented to

The Graduate School

In Partial Fulfillment

of the Requirements for the Degree of

MASTER OF BUSINESS ADMINISTRATION

THREE-YEAR MBA PROGRAMME

THE CHINESE UNIVERSITY OF HONG KONG

May 1995





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APPROVAL

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Degree : Master of Business Administration

Title of Project : Positioning of a New Carrier in the Corporate Data
Line Market



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Date Approved : 8 May 1995

ABSTRACT

Following the worldwide liberalization trend in telecommunications, the Office of the Telecommunications Authority has decided to liberalize Hong Kong's fixed line telecommunications market. Licenses will be granted to three new carriers, namely New T&T of the Wharf Group, Hutchison Communications of the Hutchison Group and New World Telephone of the New World Group, challenging Hongkong Telecom after its monopoly franchise expires in July 1995.

To compete effectively with Hongkong Telecom, however, is no easy task. The new carriers must identify and position themselves in market niches that are not adequately addressed by Hongkong Telecom. The new carriers must find out what the market is looking for and assess how well Hongkong Telecom has satisfied these requirements. In particular, this report will focus on the data telecommunications market for major corporations.

To identify the factors that are important to the market in selecting a carrier for data line services, individual in-depth interviews were conducted with six key telecommunications decision makers in major corporations that have huge data line requirements. Ten factors were identified. They were price, geographic coverage, service reliability, maintenance service, sales and pre-sales service,

comprehensiveness of service offerings, single carrier, telephone services, business flexibility, and future direction for advanced services.

To determine the relative importance of the factors and how well Hongkong Telecom was satisfying those factors, a questionnaire survey is conducted. The survey results reveal that service reliability, comprehensiveness of service offerings, geographic coverage, maintenance service, and sales and pre-sales service are the five most important factors. In particular, the banking and finance segment believes service reliability, maintenance service, and sales and pre-sales service are the three most important factors. The public sector segment believes service reliability, geographic coverage and comprehensiveness of service offerings are most important. The miscellaneous segment considers service reliability, geographic coverage and maintenance service as most important.

On the other hand, the survey results show that price, single carrier, telephone service, business flexibility and future direction for advanced services are relatively less important.

The results have some important marketing implications. For example, it indicates that positioning for "price leadership" or as a "total solution provider" could be less effective than expected because price and single vendor ability are relatively unimportant.

In-depth investigation was conducted for the more important factors to determine the technical feasibility in positioning for those factors and the strength of competition expected. It was found that a new carrier can most effectively position itself for service reliability, maintenance service, and sales and pre-sales service. For geographic coverage and comprehensiveness of service offerings, huge efforts are required and the competition is strong. Positioning for these two factors would be less effective.

Since service reliability, maintenance service, and sales and pre-sales service are the three most important factors for the banking and finance segment, it follows that a new carrier could most effectively position itself for the banking and finance segment. The second priority should be the miscellaneous segment, while the last priority should be the public sector segment.

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ACKNOWLEDGMENTS

We are grateful to Dr. Julie Yu, our advisor, for her guidance, support and patience throughout this project. Dr. Yu has been very generous in sharing her wisdom and perspectives on the many issues concerning this study.

We are also grateful to the numerous respondents to our survey. They have been encouraging and supportive towards our study, and their sincerity has truly been a great inspiration for us throughout the project.

Last, but not least, we are much indebted to the people we interviewed. They have generously shared their insights and ideas on the subject matter. Their keenness and interest have been a great source of motivation and encouragement to us.

CHAPTER I

INTRODUCTION

For decades, it was thought that a monopoly market structure was most effective in providing telecommunications services. Telecommunications are utilities that are of paramount importance to the economic well-being of a nation. It is essential that telecommunications services should be widely available to the public at a low cost. On the other hand, telecommunications infrastructure requires huge and very long term investment commitments. Protection by government by granting a monopoly franchise was necessary to facilitate rapid development of the telecommunications infrastructure and to promote economies of scale.

Because of the changing economic and technological factors, the arguments for monopoly are no longer valid especially for developed countries. For these countries, the telecommunications infrastructure has achieved a mature stage, and the telecommunications service provider is making huge profits. It is argued that the lack of competition makes the monopoly inefficient, inflexible, and unresponsive to the market needs. Competition is seen as an effective way to improve efficiency and therefore drive down tariff. At the same time, competition will make telecommunications service providers more market-driven.

The Liberalization Trend

The current worldwide telecommunications liberalization trend is led by what happened in the United States, where the power of the US telecommunications monopoly AT&T was reduced by a series of court rulings.

In the 1950s, a company marketed a rubber coupler to couple the mouth to the telephone. This was to avoid someone nearby from hearing the telephone conversation. AT&T sued the company by arguing that the rubber coupler was part of the voice telecommunications channel and was therefore subject to monopoly rules. The U.S. court, however, had a different opinion and ruled against AT&T.

In the 1970s, the U.S. court ruled that telecommunications services included the telephone wire but not the telephone itself. This effectively liberalized the telephone market. As a result of that ruling, a lot of telephone manufacturers were established, providing a wide variety of telephones, as is seen today.

Another court ruling held that whereas simple data and voice transmission is covered under the telecommunications service franchise, data and voice transmission that requires storage and/or some form of manipulation is not. The result of that ruling is a portfolio of value added network providers providing advanced telecommunications services.

Nothing can be more catastrophic to the monopoly in the landmark case in 1983. The U.S. court ruled in favour of public interest that competition should be introduced in the U.S. domestic long distance telecommunications services market. As a result of that ruling, the telecommunications monopoly AT&T was forced to split into seven Bell Operating Companies, serving seven regions in the United States. Whereas the Bell Operating Companies monopolized the services within their own regions, the inter-region services were liberalized.

Following the liberalization trend, many other services were liberalized later, including the international long distance service, various data services, and mobile services.

Telecommunications Liberalization in Hong Kong

Following the international trend, the Hongkong Telecom market has also become more open since early 1980s.

Liberalization of Customer Premises Equipment in the 1980s

The Customer Premises Equipment¹ market was first liberalized in the early 1980s. Prior to that, the monopoly Hongkong Telecom had absolute control of what types of telephones were allowed to be used. The customers were often forced to

¹ The term "Customer Premises Equipment" (CPE) refers to the telecommunication device located in the customer's premises. This includes telephones, telephone recorders, fax machines, dial-up MODEMS, card readers, and in general, any dial-up devices.

lease or buy telephones from the monopoly. After liberalization, manufacturers can now manufacture a telephone for sale and use in Hong Kong without the prior approval of the local telecommunications monopoly, Hongkong Telecom. The Private Automatic Branch Exchange (PABX or "Internal Telephone System") was also liberalized in the 1980s. PABX is now widely deployed in almost every business in Hong Kong.

Liberalization of Special Telecommunications Services

A competitive paging and mobile telecommunications services market developed in the 1980s. Value added network services were also introduced in the 1980s.

Liberalization of Local Fixed Telecommunications Market

As a continuation of the policy of introducing competition to expand subscriber services and help lower tariffs, the government has decided to liberalized the local fixed telecommunications² market by 1st July 1995, when the existing franchise license expires. The Office of the Telecommunications Authority (OFTA) has decided to grant three more licenses, starting from 1st July 1995. The three new carriers - New T & T, Hutchison Communications, and New World Telephone - will together pour an estimated HK\$ 10 billion into developing three separate, new

² The term "fixed telecommunications" refers to telecommunications where the telephone or the customer premises equipment is on a fixed location. Its counterpart is "mobile telecommunications" where the telephone or user-end equipment can move.

competitive fixed telecommunications networks. Together with the existing franchise, there will be four local carriers available, starting 1st July 1995.

Liberalization of International Telecommunications Market

For international telecommunications services, the government is held to a monopoly franchise agreement that will expire in 2006. The 25-year agreement was signed in 1981 when it was unforeseen that the telecommunications market could be liberalized. It is hard to see how the international telecommunications could be fully liberalized before 2006.

Despite that, the government is trying to introduce competition for international telecommunications access in an attempt to drive down tariffs and widen service offerings. It is held that the international franchise only includes the international portion of the telecommunications circuits, such as the satellite links and the submarine optical fiber cables. For a typical customer to dial an international call, the call somehow has to be forwarded from the customer's location to the "International Gateway" where the satellite dish or submarine cables are located. This call forwarding function is local in nature and therefore is out of the scope of the international franchise. This function should be provided by the local carrier. This is illustrated in Figure 1.

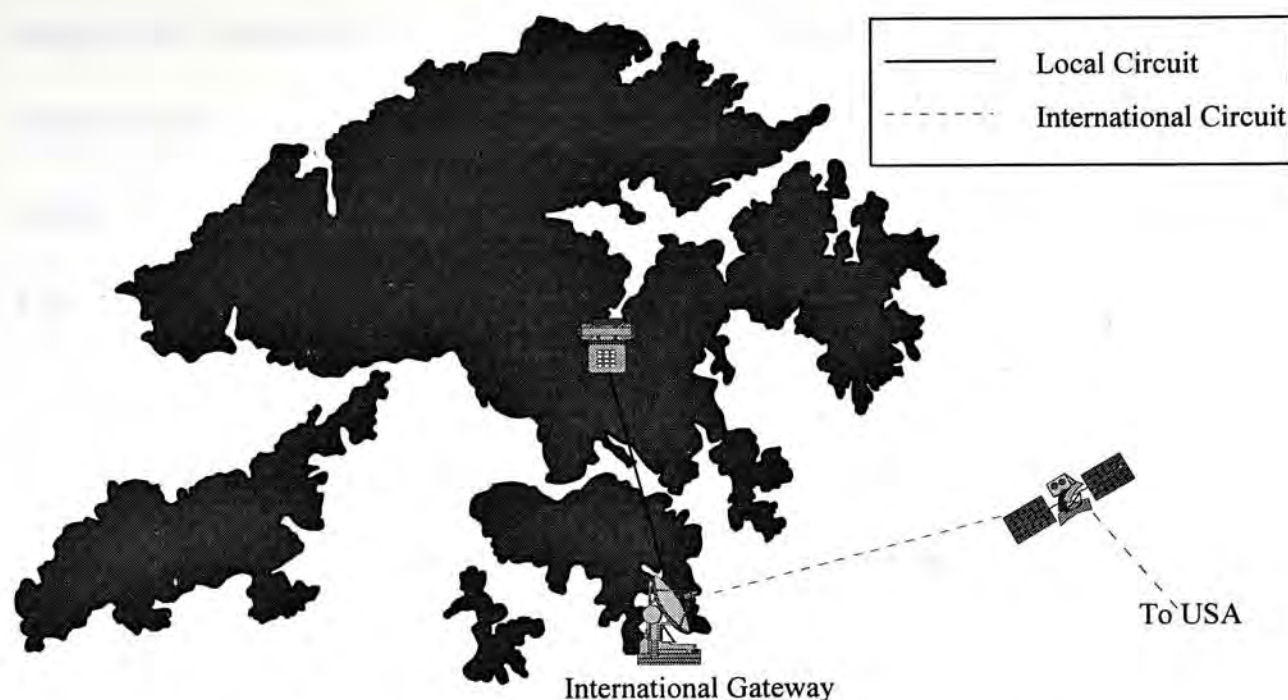


Figure 1 - Splitting of an IDD call into international and local portions

A call from Shatin to the USA consists of two portions. The local portion is the circuit from Shatin to Hong Kong Telecom's International Gateway located at Stanley Bay. The international portion is the satellite circuit (or submarine optical fiber cable) linking Hong Kong and the USA. The international circuit is further split into two parts. The Hong Kong portion of the international circuit is operated by Hong Kong Telecom. The USA portion of the international circuit is operated by one of the USA international carriers such as AT&T, MCI, or Sprint. After the call lands into the USA, there is finally a USA local circuit to link USA's international gateway to the destination of the call. However, from the point of view of a Hong Kong user, anything beyond Hong Kong's international gateway will be handled by Hong Kong Telecom.

Since Hongkong Telecom holds both the international license and the local license, previously both the international and local portions are provided by Hongkong Telecom.

From 1st August 1993 onwards, any local carrier can provide the local portion of the service. This includes the new fixed telecommunications carriers and the mobile telecommunications carriers. The international carrier has to pay a certain "commission" to the local carriers because they provide the local portion of the services and also bill the customers on behalf of the international carrier. For fairness

purpose, the "commission rate" is established by the government to be HK\$ 2.12 per minute for all incoming calls, with the exception of calls from Shenzhen and Macau, which will be charged HK\$ 0.62 per minute. For outgoing calls, the rate will be 8.19% of the IDD charge.

The local carriers can use that commission to provide discounts to the users. As a result, the mobile carriers are already giving 5% to 8% discount to customers for IDD calls.

As will be clear from the discussion that follows, this arrangement is of paramount importance to the survival of the new local carriers.

Liberalization of Telecommunications between Hong Kong and PRC

An area which has not been resolved at the current moment is telecommunications with the PRC, especially after 1997. Is it an "international" service or a "local" service? In U.S. terminology, it is called "domestic long distance" service. It is charged by the second like IDD but nevertheless does not cross national boundaries. It is speculated that this area will be liberalized as well. Similar to the international arrangement, the PRC factor will affect the survival of the new carriers.

Research Objectives

The competitive situation condition after liberalization in 1995 will be that of 3 new carriers challenging a well-established carrier, Hongkong Telecom, which

currently has 100% market share and operates one of the most advanced networks in Asia. Hongkong Telecom claims that it has been providing most of the services that the market requires at very reasonable rates.

Given that tough situation, a new carrier must identify the most effective ways to capture some of Hongkong Telecom's market share. It must find out what the market is looking for and assess how well Hongkong Telecom has satisfied these requirements. This project will identify areas that are not adequately addressed by Hongkong Telecom, and will provide guidelines for a new carrier to position itself in the market.

In more concrete terms, our research aims to identify :

1. What are the factors which the market considers important when selecting a new carrier (e.g., service reliability, business flexibility, price, geographic coverage, comprehensiveness of service offerings, etc.)?
2. What is the relative importance of those factors? What is the difference in market needs among various market segments?
3. How well is Hongkong Telecom satisfying these important factors?

4. What market niches are not adequately addressed by Hongkong Telecom?
What is the most effective way a new carrier could position itself in the market?

The telecommunications market is a very broad and diversified market. Broadly speaking, it can be classified as voice and data telecommunications. For the purpose of our research, we will focus on the data communications area. As the vast majority of data communications service users are corporate commercial users, we will focus on "data communications in the corporate market".

CHAPTER II

METHODOLOGY

Methodology Overview

To accomplish the research objectives, we will use a two-step approach which combines exploratory and descriptive research. First, in-depth interviews with selected telecommunications experts will be used to understand the market and to generate a list of factors that the market might consider to be important. Second, a questionnaire will be designed based on the identified factors to assess the relative importance of the factors in various market segments, and to determine how well Hongkong Telecom has addressed those factors. The results of the questionnaire will be analyzed, and need to make recommendations on the most effective positioning alternatives and their trade-offs for a new carrier.

In-Depth Interview

The objective of the in-depth interview is to generate a list of factors that the market might consider to be important in selecting a carrier for data line services.

Six key telecommunications decision makers from major corporations which are heavy users of data line services will be selected for individual in-depth face-to-face interview. Their title will typically be "Vice President of Telecommunications Department" or "Director of Telecommunications". Judgment sampling will be used to select interviewees who have worked for corporations with heavy data line requirements, and therefore have a lot of experience with data line services.

The interviews will be conducted either in meeting rooms in the interviewees' offices, or in quiet bars or restaurants. There will be two interviewers (the two authors) for each interview. The duration of the interview will be around one to two hours. To ensure that plenty of time will be available and the interviews will not be interrupted, the interviews will be conducted after office hours.

The interview will start with the interviewers clearly explaining the purpose of the interview and the type of information expected. The interviewers will ask the interviewees' opinions with respect to some typical attributes of data line services such as price, reliability, service, geographic coverage, etc. After that, the interview will basically follow a brainstorming style. The interviewee will be asked to freely express the attributes which he/she considers to be important in data line services, the factors that may be used in selecting an alternative carrier, reasons why he/she may or may not consider an alternative carrier, and his/her "wish list" for data line services.

The results from the six interviews will be summarized and compiled into a concise list of important factors for data line services.

Survey

The list of important factors is generated from only six in-depth interviews. The list, though comprehensive, is qualitative in nature. More samples are needed to determine the relative importance of those factors and any differences among market segments. Also, we need to accurately assess how well Hongkong Telecom has satisfied those factors.

To gather more data, a questionnaire based on the list of important factors will be developed. The respondents will be asked to fill in their company profile, the importance of those factors to them in selecting a carrier for data line services, and their ratings of Hongkong Telecom in satisfying those factors.

The questionnaires will be sent by facsimile to around 100 key telecommunications staff in major corporations. To ensure a satisfactory response rate, the questionnaire will be addressed with the staff's name rather than using an anonymous title such as "Telecommunications Manager". This will be followed up by a personal telephone call. It is expected that there will be around 50 responses.

The source of the names of the corporations and their key telecommunications staff will be obtained from the latest release of the "Directory of IT professionals" published annually by the Hong Kong Computer Society. We will limit our sample to corporations that have over 300 staff worldwide, because smaller corporations are unlikely to use any data line. The names of the corporations will be selected

randomly from the “Directory of IT professionals” first, and then the staff with the most appropriate title for our questionnaire will be determined. The title will typically be “Vice President of Telecommunications”, “Telecommunications Manager” or “MIS Director”. Only one staff per corporation will be selected.

As we need to analyze the data by market segments, we need to ensure that there is a sufficient number from each market segment. From our interviews with several new carriers, the general practice in the telecommunications industry is to segment the market based on industry. Considering our expected number of responses, it is difficult to obtain enough samples in each segment if there are more than three segments. After thorough discussion with a new carrier, we decided to divide the market into the following three segments :

1. Banking and Finance

This includes all banks, stock and foreign exchange brokers and dealers, financial information providers such as Reuters and Telerate, as well as the “financial market administrators” such as the Stock Exchange of Hong Kong and the Hong Kong Central Clearing House.

2. Public Sector

This includes the government, public organizations such as the Housing Authority and the Hospital Authority, public utilities such as Hong Kong Electric and Hong Kong Town Gas, and educational institutions such as the various universities.

3. Miscellaneous

This includes everything that is not included in the above two segments such as manufacturing, retailing, transportation and professional institutions.

Based on the judgment of the new carrier whom we interviewed, the above three segments are of approximately the same market size in terms of the revenue generated.

To ensure sufficient sample size for all market segments, in selecting the corporations for the questionnaire, we have to make certain that there will be an equal number of corporations in each segment.

In concrete terms, our sampling procedure will be :

1. We will flip through the "Directory of IT professionals" randomly to arrive at a random page.
2. We will pick a company randomly from that page.
3. If the company has less than 300 staff, it will be discarded. We will go back to step 1 to choose another company.

4. The company is classified in one of the three market segments.
5. If that market segment already has 34 respondents, the company will be discarded. We will go back to step 1 to get another potential respondent.
6. We will select the staff of the company who has the most appropriate title as our respondent.
7. Steps 1 to 6 will be repeated until we get 34 respondents in all three segments.

Data Analysis

For each question, we will calculate the average score and the standard deviation. Based on the average score, we will tabulate and order the important factors based on their relative importance. In the same table, we will also include the performance of Hongkong Telecom in satisfying those factors.

The above tabulation will be repeated for all the responses as a whole as well as for individual market segments.

Interpretation and Strategic Implications

Based on the results of the data analysis, we can determine what factors a new carrier should focus on in order to effectively position itself in each market segment. In addition, we can determine the competitive strength of Hongkong Telecom on each factor and in each market segment, and determine whether there is any market niche left unaddressed. Combined with the information obtained from interviewing the new carriers, we can determine the feasibility and efforts required for various positioning alternatives, the strength of the competition expected, and the likely returns. This will enable us to recommend an optimal strategy to the new carrier.

CHAPTER III

THE HONGKONG TELECOMMUNICATIONS MARKET AND SERVICES

Market Overview

Hong Kong is very much a telecommunications-embracing society. New telecommunications technology is quickly adopted by the society, either to gain a competitive edge in business or to further improve the living standard of the consumers. In general, there is a high level of consumption of telecommunications services, aided by the lack of charges for local phone calls. On the international side, Hong Kong lies at the hub of North Asia's telecommunications infrastructure, with excellent global communications by means of submarine cable and satellite links.

The telecommunications market consists of a wide range of services, including telephone, international direct dialing (IDD), data lines, mobile, paging, electronic data interchange (EDI), and a number of value-added services. Reports from independent consultants put the potential telecommunications market of Hong Kong at the HK\$ 60 billion earmark.

In the following, we will provide a brief overview of the telecommunications market and services in Hong Kong.

Telephone Services

Hong Kong has 3.6 million telephones or 63 telephones for every 100 people, a penetration level equivalent to that in Europe, and the highest in Southeast Asia. There are a total of 2.7 million exchange lines. On a per head basis, this rate is three times that of the UK, five times that of the US, and 20 times the Japanese rate. Hong Kong is the world largest toll free zone, with all the local telephone service toll free. Hong Kong's telephone network is also one of the most advanced in the world. The telephone service is now 100 percent digital, and it is the first city in the world to have a fully digitized network.

Data Line Services

Whereas telephone services are intended for the transmission of voice, data line services are designed for the transmission of digital data. Although telephone services represent the majority of the telecommunications market today, its growth rate is relatively slow, due to market saturation. Data line service, in contrast, is the fastest growing sector of the telecommunications market. This is attributed to the explosive growth of computer networking in recent years. It is expected that data line services will surpass telephone services in terms of revenue by the end of the century.

Unlike telephone services, which are quite homogeneous, there are a variety of data line services available in Hong Kong to suit the different requirements of various information systems. For instance, the data line requirements of a banking network

are very different from that of an air-ticket reservation system network. Furthermore, due to the rapid advancement of information technology, there will be more and more data line services available, employing state-of-the-art technology and providing capabilities that have not even been imagined before.

This market research report does not attempt to describe the technical details of the different types of data line services. Interested parties may refer to the reference materials listed in the bibliography.

Value-Added Services

Both telephone and data line services are basic transmission services. They basically transmit data or voice from one end to another and do nothing else. Value-added services, on the other hand, utilize the basic transmission capability of the telephone and data line services to provide more advanced services. Examples of value-added services include internet access, electronic mail, video-conferencing, Info-FAX, FAX broadcast, and on-line information services. There are currently 43 companies in Hong Kong providing value-added services.

Electronic Data Interchange

Electronic data interchange (EDI) is a value-added service designed to enable companies to electronically interchange documents and data so as to improve turnaround time and facilitate communication. Companies that have been providing EDI services in Hong Kong include British Telecommunications, General Electric

Information Services, Hutchison-AT&T Network Services, Hongkong Telecom CSL, and IBM.

EDI was initially used mainly by companies in Hong Kong to communicate with buyers in North America. To date, EDI services are used broadly across all industries. With the government's plan to adopt EDI in its internal trade department, EDI services are expected to grow significantly over the next few years as EDI projects in the retail, finance, and transportation sectors move forward.

Video-On-Demand

By exploiting state-of-the-art data telecommunications technologies, high powered computers, fibre optic technology, multimedia technology, and so forth, Hongkong Telecom plans to launch a revolutionary "interactive multimedia service", better known as "video-on-demand" (VOD) service, to both the business sector and households in Hong Kong by mid-96. The video-on-demand network allows a service provider to transmit video to a household TV, while at the same time the household can interact with the service provider through a special remote control unit very similar to a normal TV remote control.

With video-on-demand, a host of value-added services is possible. For example, a subscriber can interact with a movie house computer and watch movies. The movie house computer will provide menus describing the available movies, and the subscriber can navigate through the menus and choose the movie s/he wants to

watch by using the special remote control unit. The subscriber can also control the pace of movie replay as if the movie is played on a video cassette recorder. The VOD service allows the subscriber to watch movies at any time without leaving his/her home, avoiding the inconvenience of having to physically rent video tapes.

Another example of VOD enabled service is that a subscriber can interact with a department store computer to allow him/her to navigate through the computer-simulated store and actually see the merchandise on the TV. The subscriber can then buy the merchandise by simply pushing a button on the special remote control unit. Other examples include connecting to a video game computer to play video games, or connecting to various on-line multimedia information databases. The possibilities enabled by VOD are endless.

Wireless Telecommunications Services

Wireless telecommunications in Hong Kong are inherently difficult, due to the its hilly topology, which tends to block out radio waves. To achieve a reasonable coverage throughout the territory, a large number of transmitters are required. In spite of this, wireless telecommunications services are developing rapidly, facilitated by the licensing of new technologies such as GSM, PCS and CAS.

In contrast to fixed line telecommunications, wireless telecommunications services are provided on a competitive basis. Licenses are issued by the

telecommunications governing body to various interested parties by means of public bidding.

There are three major types of wireless telecommunications - mobile phone, paging, and mobile data.

Mobile Phone Services

Hong Kong's thriving community has taken up mobile phone services with great enthusiasm. Hong Kong is second to Scandinavia in terms of mobile phone penetration. To date, there are four marketers providing mobile phone services in Hong Kong, offering both analog-based and digital-based GSM mobile phone services. They are Hongkong Telecom CSL, Hutchison Telecommunications, Pacific Link Communications and the recently established, but nonetheless extremely aggressive SmarTone consortium. They have spearheaded Hong Kong into the number two position for mobile phones with the total number of users exceeding 500,000.

The other mobile service currently available in Hong Kong is the CT2 or "second generation cordless telephones". CT2 phones typically operate only when they are within 100 meters of a telephone antenna. As a result, their geographic coverage is not as good as a full mobile phone. Typically, CT2 phones can only be used in urban areas where antennas are installed. CT2 phones are capable of only

initiating calls but cannot receive calls, and they can only be used with the user almost standing still. The major advantage of CT2 is its low cost.

Four companies are licensed to compete in the CT2 market. However, currently only three of them actually implement and offer CT2 services to the public. Fewer than 60,000 subscribers are now using CT2.

The Office of the Telecommunications Authority recently invited bids for 6 more mobile phone service licenses based on PCS technologies and 4 more licenses based on CAS technologies. The PCS and CAS services are cheaper than traditional mobile phone services, but they do have some limitations. They are, on the other hand, much more convenient than CT2.

Paging Services

Hong Kong has the highest penetration of paging units in the world with over one million pagers, or one for every six people. Competition is fierce in the paging market, with price cutting as the norm. There are currently over 20 paging operators in Hong Kong.

Broadly speaking, there are two categories of paging services provided in Hong Kong - message paging and information dissemination. Message paging services are generally carrier-assisted. Although direct paging and voice message are provided by a few of the paging companies, the demand for such services has not been

strong. Information services broadcast on paging units include continuous real-time price updates on stock prices, forex quotations, gold prices, news and weather bulletins, Mark Six results, and horse racing odds and results.

There are currently three types of pagers available : the tone pager, the numeric pager and the alpha-numeric pager. The tone pager is most primitive and is almost obsolete. Numeric subscribers currently account for over 90 percent of the pager users today, although there is a growing demand for the more sophisticated full screen alpha-numeric pagers.

Mobile Data

Mobile data refers to the capability of sending and receiving data to and from personal computers equipped with wireless modems. In 1988, Hutchison Mobile Data Ltd. began operating Hong Kong's first public mobile data network, a packet-switched system, allowing many thousands of users to communicate at the same time.

With the advent of digital mobile phones (GSM, PCS and CAS) which can handle data as well, it is expected that the mobile data market will not grow rapidly, but will remain as a niche market in the next few years.

International Services

Many of the telecommunications services in Hong Kong are also available internationally. For example, telephone, data line, mobile phone, and many value-

added services are available across country borders. As Hongkong Telecom currently holds the monopoly license for international telecommunications, all forms of international telecommunications services must use Hongkong Telecom's international facilities. For example, a mobile phone operator must use Hongkong Telecom's satellite dishes or international optical fiber cables to provide international roaming services.

The high value of international telecommunications services, together with its significant growth since the mid 1980s, makes international telecommunications services very profitable. In fact, it is now the major source of profit for Hongkong Telecom. During the early 1990s, Hong Kong's international traffic grew at a rate of 25% per year. A major contributor to this high growth is the rapidly growing number of telephone calls between Hong Kong and the PRC.

As international telecommunications are of strategic importance to Hong Kong, substantial investment has been injected to equip Hong Kong with the best international infrastructure. This includes both investments in international optic fibre cables as well as satellite dishes.

Optical fibre cables have been laid from Hong Kong to cities in China, as well as Singapore, Taiwan, the US, Korea, and Japan. Recently, a new optic fibre was recently laid that connects Hong Kong, Japan, Malaysia, and Singapore. The optical fibre cable will eventually be extended to connect India, the Mediterranean, and France. Also in progress is a fiber optic link to Australia and New Zealand.

Hongkong Telecom has a major earth station at Stanley on the south side of Hong Kong island, with eight dishes. Currently, two of these dishes point at the Intelsat satellite in the Indian Ocean and two point at the Intelsat in the Pacific Ocean. One points almost straight up at Asiasat.

Asiasat is a regional telecommunications and television satellite whose signal covers 38 countries from the Middle East to Japan including Hong Kong, China, India, and much of the Soviet Union. The people living under its footprint number 2.7 billion, half the population of the world.

CHAPTER IV

THE TELECOMMUNICATIONS MARKET PLAYERS

Local Carriers in Hong Kong

On 30 June 1995, Hongkong Telecom's monopoly franchise for the provision of local fixed telecommunications network services expires. The government, through OFTA, will open the local fixed telecommunications market to three newcomers seeking a slice of a HK\$ 7 billion market which is expected to double in real dollar terms within ten years.

The competition for Hongkong Telecom will come from three of the territory's most influential power houses - the Wharf Group, the Hutchison Group, and the New World Group. By 30 June 1995, the four telecommunications players will have four identical licenses, striving to hammer out the technical and commercial agreements enabling their networks to interconnect.

The level of investment proposed by individual new entrants in laying down a fixed telecommunications network is staggering. Wharf has committed HK\$ 6 billion to build a fibre-optic network which will also carry Wharf Cable's pay TV throughout

Hong Kong. Hutchison's investment is thought to be in the range of HK\$ 2-3 billion, while New World will initially pour HK\$ 1 billion into its network.

According to Alexander Arena, Director General of OFTA, the dollar value for the market in existing telecommunications services will quadruple in the next ten years. In real terms, that is almost doubling the existing market. With that sort of growth, Arena estimates that the three new entrants could conceivably reach approximately 30% market share of an expanding pie.

New T&T (Wharf Group)

A cable TV license in 1993 and a fixed telephone network license on July 1, 1995 have provided the Wharf Group with the missing link in its business matrix - telecommunications.

Under traditional classification, Cable TV is a broadcasting business, not a telecommunications business. However, the rapid advancement of technologies is causing the two businesses to converge. For instance, Hongkong Telecom is planning to use its telecommunications network to provide interactive multimedia services, or better known as video-on-demand services (please refer to Chapter III for more details). Wharf, on the other hand, is using the opposite strategy by building its telecommunications network based on its cable TV infrastructure.

Wharf's cable TV business started in June 1993 when the Government granted a three year exclusive subscription (pay) TV license to Wharf Cable. Even though the general trend is encouraging competition in the telecommunications industry, exclusivity is nevertheless needed for the case of cable TV. Otherwise, no company would be willing to invest such huge sums of money to build up the cable TV infrastructure.

As of today, Wharf Cable has hooked up 700,000 of the 1.5 million homes, which will be able to receive its cable programming.

The cable TV experience gives Wharf a head start in the telecommunications battleground. For one thing, the cable TV infrastructure can also be used for telecommunications. So Wharf's telecommunications business will start on July 1995 with an infrastructure already in place. In contrast, the other two new carriers have to build their infrastructure from the ground up.

With Wharf's cable TV business already up and running, its current focus is the group's telecommunications business. Wharf, unlike the other two new licensees, plans to cover all of Hongkong with its system. To get things started, Wharf brought in Nynex (the New York New England Telephone Company) as a strategic partner who plays a crucial role in developing the venture's overall business plan and helps to identify and evaluate the technology options.

New T&T is the Wharf's subsidiary, created to take care of the group's telecommunications business. According to Wharf's Managing Director, New T&T will be a service-oriented company and will not own much technology capability. Instead, it will have a small but very efficient technical team. New T&T will rely very much on outsourcing the technology parts of its business, either through independent contractors or through suppliers.

Since Wharf's investment in telecommunications includes both cable TV and fixed line telecommunications services, it is somewhat bigger than the other two new carriers. Wharf is expected to invest HK\$ 6 billion into its cable TV and telecommunications business.

New World Telephone (New World Group)

New World Telephone is created by the New World Group, which is one of the biggest paging carriers and also one of the biggest property companies.

According to Mr. Richard Chow, Director of New World Telephone, the company will be more than a traditional telecommunications utility company. It will be building the infrastructure for multimedia convergence, that is, the integration of voice, data, and video on the same network. Since multimedia networks are based on an advanced data network, New World Telephone's strategy is very data-oriented.

Another direction for convergence for New World Telephone is the one between wireless and wireline technologies, so that the fixed line network is going to be the anchor point for a wireless network as well.

New World Telephone plans to pour over HK\$ 1 billion into its network. However, as of today, New World Telephone is still waiting for the British-Chinese Joint Liaison Group to formally approve its fixed line telecommunications license before committing substantial investment. New World Telephone is also applying for other telecommunications licenses such as the mobile PCS and CAS licenses.

Hutchison Communications (Hutchison Group)

Hutchison Communications is created by the Hutchison Group of Companies, which in turn is held by the Cheung Kong Ltd. The Hutchison Group is one of the biggest mobile telecommunications operators, as well as one of the biggest paging operators in Hong Kong. Cheung Kong Ltd. is one of the biggest property developers in Hong Kong. Hutchison Communications' investment on the local fixed line network is estimated to be HK\$ 2-3 billion.

Essentially, Hutchison's Communications will build its infrastructure along with its existing wireless structure. By combining fixed line telecommunications with mobile and paging services, synergy will be generated. For example, one type of network architecture called "intelligent networks" could be employed. This will allow flexible allocation of telephone numbers that make many services possible. For

example, intelligent networks allows a customer to use the same number for his/her mobile phone, home telephone, office telephone, and pager, thereby eliminating the need to remember multiple numbers. The call will automatically be routed to the correct device, depending on some pre-determined criteria such as time of day.

Another synergy is that Hutchison Communications can offer premium voice and data services (e.g., intelligent building services) to the tenants of the properties owned by its mother company, Cheung Kong, thereby raising the value of the properties. This means that Hutchison is justified to offer these premium services at a lower cost than its competitors.

The Incumbent - Hongkong Telecom

Hongkong Telecom was formed in 1925, consolidating the China and Japan Telephone and the Hong Kong Electric companies. It has been awarded sole licensee for domestic fixed line service until 30 June 1995 and for international service until the year 2006.

Hongkong Telecom provides a full range of telecommunications services which include basic local telephone services, data line services, international services, CPE (customer premise equipment), value-added services, multimedia, paging, and cellular services. Its annual profit is well over HK\$ 7 billion. With the foreseeable changes in the telecommunications market in Hong Kong, the company has adjusted its strategies both in Hong Kong as well as in the region.

Hongkong Telecom has developed two vision statements with regard to its domestic and international business and would like to achieve both of them by the year 2000:

- To be the leading telecommunications provider, supplying a full range of integrated broadband/multimedia and advanced differentiated products (full service network - combining voice, data and video) to customers whenever and wherever they want in Hong Kong;

- In China and selected regional countries, Hongkong Telecom will be a key player in providing services from POTS (plain old telephone service) to multimedia products, via both wireline and wireless, so as to improve communication infrastructure and customer choice.

CHAPTER V

FINDINGS - EXPLORATORY RESEARCH

FACTORS FOR SELECTING A TELECOMMUNICATIONS CARRIER

Based on the in-depth interview, we identified a number of factors which major corporations may consider when selecting a telecommunications carrier. In the followings, we shall explain the factors in detail and why the interviewees considered the factors to be important.

Price

It is claimed by Hongkong Telecom that the price of local telephone lines is very low in Hong Kong. After all, it is only HK\$ 62 per line per month for home users and HK\$ 90 for business users. However, our findings show that for local data lines, price is not necessarily perceived to be "low" by the telecommunications managers in major corporations. Some telecommunications managers think that price is low and not important. Others think that the price charged by Hongkong Telecom is too expensive and will be a major consideration in choosing an alternative carrier.

For industries with a lot of data communications requirements, the cost of data line services can be very significant. From the responses of our interviewees, the cost of local data line services for a medium-sized bank with 40 branches can easily reach HK\$ 2,000,000 per year. Similarly, the cost of local data line services for a major transportation company is around HKD 1,200,000 per year. The Stock Exchange of Hong Kong, which employs approximately 2000 lines to connect its 1000 members to the Stock Exchange computer system, will have to pay a tariff of around HK\$18,000,000 per year.

Geographic Coverage

Geographic coverage refers to the ability of a carrier to provide services to all locations which need data communications services in Hong Kong.

To cover a geographic location, it is necessary that the carrier has laid the necessary cables to that location. Building a cabling infrastructure to reach all locations in Hong Kong is a huge job that may take many years to complete. It is expected the new carriers may not be able to cover all the locations during the first few years of operations. Even New T&T, which already has a head start with its cable TV infrastructure, currently only covers 700,000 of the 1,500,000 households. Initially, only the business districts will be covered adequately. This will then extend to other urban areas and then to rural areas.

In contrast, Hongkong Telecom has built an extensive infrastructure covering almost everywhere in Hong Kong.

For companies that operate basically only in the business areas, the coverage problem may not be a major concern. However, for companies that have branches all over Hong Kong, the coverage problem could be a serious consideration. For these companies, that means they either have to stick entirely with Hongkong Telecom or use a new carrier for business areas and Hongkong Telecom for remote locations.

Service Reliability

From the responses of our interviewees, reliability of data line services is generally an important consideration for data communication services. For many industries, the reliability of data line services is of utmost importance to the business. A failed data line for a bank could mean that the bank branches can no longer carry out any transactions. A failed data line to a stock broker could be disastrous due to loss of critical financial information. It is not surprising to see that for these industries, there are generally provision for backup data lines to guard against primary line failures.

For other industries such as manufacturing and transportation, a failed data line could mean loss of communications to the central computer, and the business has to fall back to manual operations. Although the result is not as catastrophic as that of the financial industry, it is nevertheless detrimental to the business.

Although it is generally agreed that the voice services provided by Hongkong Telecom are quite reliable, the perception of data services reliability varies greatly, according to the various interviewees. Some of them believed the reliability was reasonable, while others thought that the reliability was very poor.

Maintenance Service

It is generally agreed that no single circuit can be 100% reliable. In fact, compared to computer hardware and software, data telecommunications circuits are inherently more unreliable. In many cases, data circuits are the most unreliable part of a computer system. Sometimes even weather could affect the quality of a data circuit.

From the in-depth interviews, the interviewees all agree that good maintenance service is very important for fixing faulty data circuits. Several criteria are used by the interviewees to judge the “goodness” of the maintenance service, including :

On-site response time : The time for sending a maintenance engineer on-site after placing a maintenance service call. Ideally, the time should be around 2 to 4 hours, which is typical for computer maintenance services.

Hours of coverage : The telecommunications carrier should offer maintenance services with different hours of coverage (e.g., 9 a.m. to 5 p.m., or 24 hours) to cater for the different needs of various businesses.

Technical skills of the maintenance engineer : The maintenance engineer should be skillful not only in trouble-shooting data line circuits, but must also have some understanding of the computer systems which the data line circuits are connected to.

Willingness of the maintenance engineer to work with the end-user's in-house engineer to solve a system problem : In many cases, it is difficult to pin-point the problem in a complicated computer network. The problem may be due to the data line circuits or other third-party equipment. The maintenance engineer should be willing to work with the end-user's in-house engineer or other third-party engineer to identify and solve the problem.

Reliability of the repair : Two of the interviewees complained that the repair provided by the maintenance engineer was often not reliable, as the same problem appeared several days later. They suggested that instead of "fixing" a repetitive problem, the carrier should simply exchange the faulty data line for a brand new one.

The right to know : Some of the interviewees believe that they should have the right to know the reason of the fault. The maintenance engineer has the responsibility to give a satisfactory explanation to the end-users.

Attitude of the maintenance engineer : The maintenance engineer should follow the “customer care” concept. He should know how to work with angry customers complaining of poor services.

Sales and Pre-sales Service

Data line services used to be very simple and straightforward. In recent years, however, a lot of new data line services utilizing various technologies have appeared. Advanced services like ATM, frame relay, ISDN, VOD, video conferencing, etc., offer a lot of opportunities for businesses to improve their operations. However, it is also becoming more difficult for MIS managers to understand these services.

Most of the interviewees believed that we had entered a stage of rapid telecommunications revolution. To fully exploit the opportunities, the carriers should provide good sales and pre-sales technical services to help the customers understand how these advanced technologies could be applied in their information systems. This includes explanation of the data line services, giving technical advice, and frequent updates on new service offerings and promotional programs.

Comprehensiveness of Service Offerings

Given the wide variety of data line services, there are two ways a new carrier can launch its services. The new carrier can either launch all the services as quickly as possible, or it can focus on basic services only. As explained in the previous sections, the more advanced services can be thought of as additional value-added

services layered on top of the basic services. It is probable that all the commercial networks can be built based on some basic services only. If the customer ever requires additional functionality, they can buy additional equipment themselves.

From the results of the in-depth interviews, almost all of the interviewees used basic services only. For the interviewee who did use other services, only the basic services were considered important, and the interviewee agreed that he could always buy additional equipment himself if he needed advanced services.

However, even though the interviewees did not consider advanced services to be important to their current network, they thought that it was always nice to have more choices. Given the fast pace of technological movements, it is hard to predict what their future networks will look like. With more choices, the telecommunications managers will have greater flexibility in designing their networks, and have greater freedom in optimizing the cost/performance ratio.

Single Carrier

As evident from the previous sections, because of various issues such as geographic coverage and comprehensiveness of service offerings, a new carrier may not be able to offer all the services which a corporate customer may need. In this case, the new carrier may have to persuade the customer to buy those services that it cannot provide from Hongkong Telecom. It is therefore absolutely essential from the

marketing point of view to study customers' reaction to having to deal with multiple carriers.

As revealed in the in-depth interviews, some telecommunications managers believed that a single telecommunications service vendor was very important, and a multiple vendor scenario would be a management nightmare. Others believed that it is acceptable to have multiple carriers. For example, one of the interviewees, who was the telecommunications manager of a bank, said that it was acceptable to have some branches serviced by the new carrier and other branches serviced by Hongkong Telecom.

Telephone Service

As regarding the single carrier issue, some of the interviewees went further and said that it was essential that the same carrier should provide both telephone and data services. However, other interviewees held the opposite view that telephone service and data service were entirely different things, so there was no preference as to whether they were to be provided by a single carrier or by different carriers.

Business Flexibility

Some interviewees believe that Hongkong Telecom is very inflexible, as is typical of many large utilities. They found it very difficult to negotiate with Hongkong Telecom for special services and arrangements. They would like to work with a carrier that is flexible like a small company.

Future Direction for Advanced Services

When selecting a telecommunications carrier, some of the interviewees are concerned about the carriers' approach in future services. For example, what types of multi-media or video services will be offered in the future? When will asynchronous transfer mode networks be offered? Other interviewees believe that future services are too remote to be an important concern. Also, it is always possible to switch carriers or use multiple carriers should they need those services in the future.

CHAPTER VI

FINDINGS - DESCRIPTIVE RESEARCH

Questionnaire Design

Based on the results of the in-depth interviews, the questionnaire shown in Appendix 1 is designed. The questionnaire asked the respondents about the importance of the various factors to them in selecting a carrier for their data line requirements. It also asked the respondents the performance of Hong Kong Telecom in satisfying those factors.

For all the questions regarding importance or performance, a scale of 1 to 9 is used, in which 1 is the most positive response and 9 is the most negative response.

To make sure the respondents interpreted the factors correctly, each factor is explained in detail, and then two questions, one regarding importance of the factor and one regarding performance of Hong Kong Telecom for that factor are asked immediately. In addition, to make sure the respondents interpret the scale of 1 to 9 correctly, a simple explanation is put above the numbers 1 and 9 to clarify what these two extremes mean.

Questionnaire Responses

The questionnaire was sent by facsimile to key MIS or telecommunications staff in 102 major corporations. This was followed up by a telephone call. The response rate was quite satisfactory. Fifty responses were received, representing a response rate of 48%. Of the 50 responses, 20 belong to the "banking and finance" segment, 14 belong to the "public sector" segment and 16 belong to the "miscellaneous" segment.

General Observations

For the purpose of this research report, the average importance ratings and average performance scores of Hong Kong Telecom broken down by market segments are required. They are summarized in Table 1 to Table 5.

In terms of absolute importance score, all the factors except "telephone service" are rated with importance score of less than 5 overall and in all market segments. For "telephone service", it is rated from 4.31 to 6.00, depending on market segments. Since "1" represents the highest importance and "9" the least importance, the overall distribution of importance scores is skewed to the "important side". This confirms that the factors identified in the in-depth interview are mostly important to the market.

The results of the survey show some expected as well as unexpected results. From our interview with the new carriers prior to the survey, it is expected that price, geographic coverage, service reliability, maintenance service, single carrier, and possibly sales and pre-sales service would be relatively more important, with different market segments ranking the factors differently. It is because their effects on day-to-day operations are more visible. However, it is expected that comprehensiveness of service offerings, business flexibility, telephone service, and future direction for advanced services would be relatively less important, because their effects on day-to-day operations are less visible.

The survey result does confirm that service reliability, geographic coverage, maintenance service, and sales and pre-sales service are relatively more important. These four factors occupied the four of the top five positions in overall ranking, and they occupied the top three positions in at least one market segment.

On the other hand, our survey results show that price and single carrier are among the least important factors. This is contrary to expectations of the new carrier we talked to. Both of them are consistently ranked as the eighth and the ninth positions out of a total of ten factors in all market segments.

For the other factors, our survey results confirm that business flexibility, future direction for advanced services, and telephone service are relatively less important. For comprehensiveness of service offerings, our survey gives the

surprising result that it is in fact important. Comprehensiveness of service offerings is the second most important factor overall, just behind service reliability.

Table 1 - Survey Results for the Whole Market

Factor	Average Importance	Average HKT Performance
Service reliability	2.02	4.24
Comprehensiveness of service offerings	2.72	4.52
Geographic coverage	2.82	3.2
Maintenance service	2.82	5.04
Sales and pre-sales service	2.94	5.48
Business flexibility	3.36	5.7
Future direction for advanced services	3.44	4.6
Price	4.32	5.38
Single carrier	4.44	N/A
Telephone service	5.34	N/A

Table 2 - Survey Results for the Banking and Finance Segment

Factor	Average Importance	Average HKT Performance
Reliability	2.30	4.50
Maintenance service	2.30	5.60
Sales and pre-sales service	2.40	5.20
Comprehensiveness of service offerings	3.20	4.10
Future direction for advanced services	3.30	5.10
Business flexibility	3.40	6.00
Geographic coverage	3.70	2.90
Price	4.60	5.00
Single carrier	4.80	N/A
Telephone service	6.00	N/A

Table 3 - Survey Results for the Public Sector Segment

Factor	Average Importance	Average HKT Performance
Reliability	2.06	4.00
Geographic coverage	2.19	3.50
Comprehensiveness of service offerings	2.38	3.25
Sales and pre-sales service	3.19	5.38
Future direction for advanced services	3.88	3.75
Business flexibility	3.88	5.19
Maintenance service	3.94	4.50
Price	4.13	5.31
Single carrier	4.13	N/A
Telephone service	4.31	N/A

Table 4 - Survey Results for the Miscellaneous Segment

Factor	Average Importance	Average HKT Performance
Reliability	1.57	4.14
Geographic coverage	2.29	3.29
Maintenance service	2.29	4.86
Comprehensiveness of service offerings	2.43	6.57
Business flexibility	2.71	5.86
Future direction for advanced service	3.14	4.86
Sales and pre-sales service	3.43	6.00
Price	4.14	6.00
Single carrier	4.29	N/A
Telephone service	5.57	N/A

Table 5 - Importance Ranking of Factors

Factor	Overall Ranking	Ranking by Banking and Finance Segment	Ranking by Public Sector Segment	Ranking by Misc. Segment
Reliability	1	1	1	1
Comprehensiveness of service offerings	2	4	3	4
Geographic coverage	3	7	2	2
Maintenance service	4	2	7	3
Sales and pre-sales service	5	3	4	7
Business flexibility	6	6	6	5
Future direction for advanced service	7	5	5	6
Price	8	8	8	8
Single carrier	9	9	9	9
Telephone service	10	10	10	10

CHAPTER VII

STRATEGIC IMPLICATIONS

Implications for Market Positioning

The survey results have important implications for market positioning. For example, based on the survey result, we found that positioning for “price leadership” or “total solution provider” would be less appealing than expected, given that many other factors are actually more important than price and single carrier. Also, ignoring the comprehensiveness of service offerings could cost a new carrier dearly, as the survey results show that comprehensiveness of service offerings is relatively important.

Positioning Alternatives

We will explore market positioning of a new carrier in two dimensions. First, we will investigate the effectiveness, feasibility, and trade-offs in the market positioning for specific factors. An example is to position as a “price leader”. Based on the results of factor positioning, we will look into the market positioning for specific market segments.

Positioning for Specific Factors

We will focus on the factors that are considered most important. In particular, we will explore in detail the three most important factors for the three market segments under consideration. Since some factors appear to be important in several market segments, we end up with the five factors shown below :

- (i) Service reliability
- (ii) Maintenance service
- (iii) Sales and pre-sales service
- (iv) Geographic coverage
- (v) Comprehensiveness of service offerings

Specifically, attributes (i), (ii) and (iii) are most effective in positioning for the “banking and finance” segment. Attributes (i), (iv) and (v) are most effective in positioning for the “public sector” segment, while attributes (i), (ii) and (iv) are most effective for the “miscellaneous” segment. A new carrier could position itself for all market segments or it could position itself for a particular market segment.

In the following sections, we will discuss the market positioning for the five major factors in more detail.

Positioning for Service Reliability

From the survey result, service reliability is of utmost importance for all market segments. The average importance score for service reliability is 2.04 for all market segments, and varies from 1.57 to 2.3 for individual market segments. Furthermore, the score of Hongkong Telecom for service reliability is only 4.24 for all market segments, and varies from 4 to 4.5 for individual market segments. This means the service reliability of Hong Kong Telecom's data line services is just acceptable, and there is still plenty of room for improvement.

It follows that a new carrier can gain significant competitive advantage over Hongkong Telecom if it positions itself as a high service reliability data line provider. However, it is certainly not enough to simply "claim" a higher service reliability in promotional campaigns. For service reliability to be an effective competitive tool, it must be guaranteed or assured to the customers.

One of the ways of assuring service reliability is by to guarantee "availability" with "penalties". This method has been used by some carriers operating in other countries and by some international carriers, and is proven to be technically and commercially feasible.

In layman's language, the "availability" of a data line is the percentage of time that it can be used. An unreliable line will have a low availability because the data line cannot be used when it fails or is being repaired. To guarantee high availability, a

necessary condition is that the data line must be very reliable. However, being reliable alone is not enough. If the data line does fail, it must be repaired within a short period. Thus “availability” measures not only the “reliability”³ of the data line, but also the “timeliness”⁴ of the maintenance service⁵.

A “typical” data line would have an availability of 99% or even lower. This means that every year there will be a total of 3.65 days of outage for every line. Looking at it from another angle, a 99% availability means that at any one time, there will be an average of one line inoperative for every 100 lines used. This is certainly unacceptable to many industries such as banks. For example, for Hongkong Bank, which has more than 200 branches in Hong Kong, a 99% availability means that everyday there will be two branches inoperative for the whole day (or four branches inoperative for half a day each) because of failed data lines. This explains why most banks lease multiple data lines for backup purposes.

The above example shows that there is great demand for data line services with high availability. While it is not possible to achieve 100% availability, the

³ In mathematical terms, “Reliability” is measured using “Mean Time Between Failure” (MTBF). MTBF is the time elapsed between two failures. A data line that fails very often will have a low MTBF, while one that seldom fails will have a high MTBF.

⁴ In mathematical terms, “Timeliness” of Maintenance Service is measured using “Mean Time To Repair” (MTTR). MTTR is defined as the time required to fix a failed data line.

⁵ In mathematical terms, availability, reliability (MTBF) and timeliness (MTTR) of maintenance service is given by :

$$\text{Availability} = 1 - \text{MTTR} / \text{MTBF}.$$

experience from carriers operating in other countries shows that it is technically and commercially feasible to achieve 99.999% (so called five-nines) or even higher availability.

To “guarantee” availability, a new carrier can offer some sort of “penalties” if it cannot meet the committed availability. The penalty may be to waive the data line service charge for a certain period, or to actually pay the customer back at a pre-determined rate.

It is nice to have 99.999% availability, but the high availability does come at a cost. A 99.999% availability data line is certainly more expensive to produce than one with 99.9% availability. Also, different customers may have different availability requirements. Some customers may definitely need 99.999% while others may think that 99% is already very satisfactory. Even the same customer may need lines with different availability for different usages.

The different availability requirements of customers point out the need to offer a range of data line services with different levels of guaranteed availability and different prices, rather than the same availability for all services. Similarly, various types of penalties can be offered at different prices.

Finally, whereas it is out of the scope of this report to discuss the technical details of achieving high availability, it is definitely useful to explain to the customer how the high availability is achieved. For example, the customers’ confidence in the

data line services will be increased by knowing that “fault-tolerant” equipment or “hot-standby” systems are used to achieve 99.999% availability.

In summary, it is feasible and fruitful to position as a high reliability data line provider. To do this, the new carriers should incorporate reliability assurance into their data line services. One proven way to do this is to offer “Guaranteed Availability with Penalties”. To cater for the different needs of different customers, a range of availabilities can be offered at different price levels. Finally, the customers’ confidence levels can be increased by simply explaining to them how the high availability is achieved.

Positioning for Good Maintenance Service

Maintenance service, with an importance score of 2.84, is ranked number four for the whole sample. Unlike reliability, the importance of maintenance service is found to be widely different for different market segments. For the “banking and finance” segment and for the “miscellaneous” segment, maintenance service is ranked second (just under “service reliability”) in importance with importance scores of 2.30 and 2.29 respectively. However, for the “public sector” segment, even though “service reliability” is considered to be of utmost importance, maintenance service is ranked only seventh, with an importance score of 4.

Hong Kong Telecom’s score in maintenance service is 5.04 for the whole sample, and ranges from 4.5 to 5.6 for individual market segments. This means that

the quality of Hong Kong Telecom's maintenance service is from just acceptable to slightly unacceptable.

As maintenance service is so important to "banking and finance" and "miscellaneous" segments, it follows that a new carrier can gain significant competitive advantage in these two market segments by positioning itself as a good maintenance service provider.

According to the in-depth interview in Chapter V, good maintenance service consists of several factors such as on-site response time, hours of coverage, technical skills of the maintenance engineer, willingness of the maintenance engineer to work with the end-user's in-house engineer to solve a systems problem, reliability of the repair, the right to know, and the attitude of the maintenance engineer

Maintenance services can only be provided when there is a real fault. For a new carrier that has no installation base, the only way it can show good maintenance service is to guarantee its ability and commitment of providing good maintenance service. Factors that are measurable, such as on-site response time and hours of coverage, can be incorporated into the data line "product." This does not mean that intangible factors are unimportant. Intangible factors can be used in promotional materials to generate a positive image for the carrier.

Following are some suggestions for incorporating measurable factors into the data line "product."

Guaranteeing On-Site Response Time

Similar to guaranteeing availability, a new carrier can also guarantee the on-site response time and/or mean time to repair. The new carrier can also impose penalty terms to itself should it fail to achieve its commitment.

According to the experience of many computer vendors which guarantee on-site response time to their customers, the bottleneck in providing fast on-site service is traveling time. Given the traffic conditions in Hong Kong, two hours on-site response time is the minimum that can be achieved for most locations within Hong Kong.

To guarantee a response time of two hours, a necessary condition is sufficient man-power so that someone is always immediately available when a fault arises. It follows that a fast response time does come with a cost to the carrier, and therefore a premium to the customer.

Given that not all customers need two hour response time, it makes sense to offer several types of response time guarantees. For example, two types of response time guarantees can be offered in which "priority service" guarantees service within two hours and "normal service" guarantees service within four hours.

Providing Comprehensive Hours of Coverage

Similar to on-site response time guarantees, various hours of coverage could be offered to the customers to cater for their different needs. For example, three types of coverage may be offered, e.g., “normal” coverage covers 9 a.m. to 5 p.m., “extended” coverage covers 7:00 a.m. to 12:00 p.m. and “24-hour” coverage provides round-the-clock service.

For intangible factors such as a high level of technical expertise and good attitude, although nothing can be “guaranteed”, the maintenance engineers nevertheless should be properly trained to make sure they can fulfill whatever has been promised. For example, in-depth technical training as well as human relationship training should be provided to the maintenance engineers to provide high quality maintenance service. Similarly, a good management system should be set up to allow the maintenance engineers to work with the customers’ in-house staff to solve systems problems, and to allow the customers to get written reports of the faults.

In summary, it is feasible as well as effective to position a new carrier as a good maintenance service provider. To do this, a new carrier should incorporate maintenance service terms into its data line offerings such as guaranteeing on-site response time and providing comprehensive hours of coverage. In addition, the new carrier should provide proper training to its maintenance engineers, and an appropriate management system should be set up to deliver what the customers consider to be good maintenance service.

Positioning for Good Sales and Pre-Sales Service

According to the survey results, sales and pre-sales service rank fifth in importance for the whole sample, with an importance score of 2.92. However, for the “banking and finance” segment, sales and pre-sales service are relatively more important, with an importance ranking of 3 and an importance score of 2.4. For the “public sector” segment, sales and pre-sales service is ranked fourth with an importance score of 3.125. Sales and pre-sales service is relatively unimportant in the “miscellaneous” segment, with an importance ranking of only 7 and an importance score of 3.43.

Hong Kong Telecom’s score in sales and pre-sales service is 5.48 for the whole sample, and ranges from 4.2 to 6.0 for individual market segments. This means the quality of Hong Kong Telecom’s maintenance service ranges from just acceptable to slightly unacceptable, and there is plenty of room for improvement. A new carrier can gain significant competitive advantage in the “banking and finance” segment and some competitive advantage in the “public sector” segment by positioning itself for good sales and pre-sales service.

How could a new carrier position itself for good sales and pre-sales service ?

According to the in-depth interview, good sales and pre-sales service includes giving technical advice and consultancy on the data line products, as well as frequent updates on new service offerings and promotional programs. To achieve this, it is necessary

to have sufficient sales staff and technical consultancy staff who have proper experience and training. In addition, a good management system focusing on customers' needs is of paramount importance in providing good sales and pre-sales service.

Whereas it is possible to incorporate reliability and maintenance into the data line offerings in the form of guaranteeing availability and response time, it is much more difficult to incorporate sales and pre-sales service into the data line offerings. Except for really in-depth technical consultancy, the customers expect sales and pre-sales service for free. Furthermore, the customers expect no obligation to subsequently use a new carrier's data lines even though they are provided with good sales and pre-sales services. Nevertheless, as evident by the survey results, good sales and pre-sales service does have some significant influences on customers' decisions in some market segments.

Given the customers' expectations, the best strategy is to provide good sales and pre-sales service for free. On the other hand, good sales and pre-sales service requires a lot of high quality human resources, and is therefore expensive to produce. So it may be necessary to direct the resources and tune the services towards a particular market segment rather than to all market segments in general.

According to the survey results, sales and pre-sales service have the greatest effect on the "banking and finance" segment. Therefore more resources and effort should be placed on the "banking and finance" segment. For example, sufficient sales

and technical consultancy staff with good banking and finance data network backgrounds should be recruited. Also, training on banking and finance data networks and frequent updates on new banking and finance data network technology and trends should be provided to sales and technical consultancy staff.

Similarly, according to the survey result, the “public sector” segment considers sales and pre-sales service to be of medium importance only. So a medium amount of effort should be put into the “public sector”. Finally, the “miscellaneous” segment considers sales and pre-sales service to be of little importance. Consequently, the least amount of effort should be put into specially recruiting sales or pre-sales staff for the “miscellaneous” segment.

In summary, it is effective to position a new carrier for good sales and pre-sales service, especially in the “banking and finance” and “public sector” segments. To do this, a new carrier should recruit the appropriate staff and provide them with proper training, not to mention the importance of a good management system that focuses on customers’ needs. Whereas good sales and pre-sales service is expensive to produce, the customers expect them for free. So a new carrier should be careful in deploying its resources in this area. For instance, a new carrier can target the “banking and finance” segment as the highest priority and the “public sector” segment as a second priority, while the “miscellaneous” segment should be of the lowest priority.

Positioning for Comprehensive Geographic Coverage

Survey results show that the importance of geographic coverage is rated at 2.8 for the whole sample. Breaking down by market segments, geographic coverage is rated quite importantly by the “public sector” segment and the “miscellaneous” segment, scoring 2.13 and 2.29, respectively. In contrast, for the “banking and finance” segment, geographic coverage is rated significantly less importantly with a score of 3.7.

In relative terms, geographic coverage is ranked third in importance for the whole sample. It is ranked first for the “public sector” segment (same as service reliability) and second for the “miscellaneous” segment. For the “banking and finance” segment, geographic coverage is ranked seventh, reflecting its relative unimportance for that segment.

The performance of Hong Kong Telecom’s geographic coverage is 3.2 for all samples. Breaking down by market segments, the score ranges from 2.8 to 3.5 for different segments. In addition, Hongkong Telecom consistently achieves the highest score overall in geographic coverage for all individual market segments, except for the Public Sector segment, in which geographic coverage gets the second highest score. This reflects that Hong Kong Telecom’s geographic coverage is already quite comprehensive.

In absolute terms, a score of 2.8 to 3.5 means that there is still some room for improvement. This is a surprising result, given the fact that telephone service is virtually “perfect” in terms of geographic coverage. According to the interviewees, the major reason is that many of Hong Kong Telecom’s “really sophisticated” data line services are only available in business districts only. To provide really sophisticated data line services, it may be necessary to lay optical fibers to the buildings. At the current moment, only some buildings in the business areas have optical fiber access. Consequently, sophisticated data line services are not available in many industrial, urban, or rural areas.

Nevertheless, apart from the “really sophisticated” data line services, Hong Kong Telecom’s geographic coverage for most other data line services is quite good.

Although geographic coverage is quite important in both absolute and relative terms for some market segments, it is not easy to provide good geographic coverage in a short time. To distribute telecommunications services everywhere in Hong Kong, it is necessary to lay underground cables to every building in Hong Kong. Unlike other businesses where a distribution network can be set up quickly, it may take years to lay a comprehensive cabling infrastructure.

Most likely, the new carriers can only cover business districts and some urban areas in the initial stage. It will then grow steadily to cover the whole Hong Kong.

Given that it may take a long time for the new carriers to built a comparable cabling infrastructure, and the fact that Hongkong Telecom has quite good geographic coverage already, it is not wise or feasible to compete based on geographic coverage. In contrast, the new carriers must be aware that they are at a competitive disadvantage with respect to geographic coverage.

The best strategy that the new carriers can adopt at the moment is a flanking strategy. The new carriers should not mention geographic coverage at all in their advertisements or promotional campaigns. For customers that operate only in business districts, the lack of total geographic coverage may not be a concern at all. However, for some customers such as utilities which have branches everywhere, they may express concerns about the new carrier's geographic coverage. A "shield" must therefore be provided to the sales and marketing staff so that they know how to respond to customers. For example, a "direction statement" about geographic coverage which mentions the new carrier's commitment to provide comprehensive geographic coverage in the near future should be developed. A plan or schedule can also be provided to demonstrate the new carrier's commitment. The message to the customers is that they need not switch the data line supplier for all their sites overnight. Instead, it is better for them to progressively switch their sites from Hongkong Telecom to the new carrier, and this can be made to fit with the new carrier's schedule.

Another point worth mentioned is that "single carrier" is not an important factor to many customers. From the survey results, the average importance score for "

single carrier” is 4.44 for the whole sample, and ranges from 4.1 to 4.8 for the various market segments. It must be noted that the interpretation of the importance score for the “single carrier” factor is slightly different from the other factors. For the “single carrier” factor, a score of 1 means that “single carrier” is most preferred, while a score of 9 means that “multiple carriers” is most preferred. A score of 5 means that the respondent is indifferent between a single carrier and a multiple carrier approach.

The “single carrier” score of 4.44 means that a significant portion of the customers can accept or even prefer a multi-carrier policy. Applying this result to the geographic coverage strategy, it confirms that the strategy of asking customers to progressively switch to a new carrier rather than to do it overnight may work for many customers.

In summary, given the technical difficulties in providing comprehensive geographic coverage quickly, and the fact that Hongkong Telecom has undisputed strength in geographic coverage, it is not wise or feasible to compete head-on with Hongkong Telecom in terms of geographic coverage. In other words, a new carrier should build up its geographic coverage steadily, but should not position itself for comprehensive geographic coverage at the moment. A new carrier should remain low profile in geographic coverage. When under attacked by its competitors, it could show to the customer its future commitment in providing comprehensive geographic coverage and to ask the customers to progressively switch their sites to the new carrier rather than all at once.

Positioning for Comprehensive Service Offerings

From the survey result, the importance score for “comprehensiveness of service offerings” is 2.72 for the whole market. Breaking down by individual market segments, it is 3.2 for the “banking and finance” segment, 2.375 for the “public sector” segment and 2.429 for the “miscellaneous” segment.

In terms of ranking, “comprehensiveness of service offerings” is ranked second for the whole market, just under “service reliability”. Peculiarly, the ranking of “comprehensiveness of service offerings” is lower for all market segments. It is ranked third for the “public sector” segment, and is ranked fourth for both the “banking and finance” segment and the “miscellaneous” segment.

The strange result is due to the consistent evaluation of “comprehensiveness of service offerings” in all segments. For some other factors such as “geographic coverage”, their importance varies a lot among market segments. For instance, “geographic coverage” is ranked very high by the “public sector” segment but very low by the “banking and finance” segment. In contrast, “comprehensiveness of service offerings” is considered to be of medium importance for all segments. As a result, “geographic coverage” is below “comprehensiveness of service offerings” in ranking for the whole market.

The usefulness of “comprehensiveness of service offerings” as a competitive tool depends on the marketing strategy of the new carrier. If an undifferentiated

strategy is used, that is, treating the whole market as one segment and applying the same strategy, “comprehensiveness of service offerings” could be effective. On the other hand, if different strategies are used for different market segments, “comprehensiveness of service offerings” would be moderately effective in the “public sector” segment, but less effective in the “banking and finance” and “miscellaneous” segments.

According to the survey results, there is sufficient differentiation among market segments. In this case, niche strategies for various market segments would be more effective than a single generic strategy, though the former may be more expensive to implement. For a new carrier, the major marketing objective is to capture market share. Thus we recommend that the niche strategy approach be adopted.

If “comprehensiveness of service offerings” is effective as a competitive tool for a particular market segment, the next step is to ask what additional data line services the market segment is seeking. The questionnaire is designed with a special question to ask just that. Our findings are shown in Table 6.

Table 6 - Future Service Requirements

New Service	Overall	Banking and Finance Segment	Public Sector Segment	Misc. Segment
ATM	68%	60%	88%	57%
Multimedia networking	52%	30%	63%	71%
Frame relay	32%	30%	25%	43%
Primary rate ISDN	32%	20%	13%	71%
Video-on-demand	24%	30%	13%	29%
Video conferencing	20%	10%	0%	57%

Of the whole sample, 68% believe that the availability of ATM service is important to them in the next two years, while 52% believe multimedia networking is important to them in the next two years. For the other services, less than 1/3 of the sample believe they are important in the next two years.

There are, however, significant variations among the market segments. The “banking and finance” segment is only interested in ATM, with 60% of respondents requiring this service. It does not seem to be too enthusiastic about other new services, with 30% or less interested in these services. The “public sector” segment, on the other hand, is very interested in ATM (88%) and somewhat interested in multimedia networking (63%), though it does not pay much attention to other new

services (below 25%). The “miscellaneous” segment has a wide range of interests, including multimedia networking and primary rate ISDN (both 71%), and also ATM (57%), video conferencing (57%) and frame relay (43%).

From the above results, ATM should be the most important service to introduce. First, the “public sector” segment shows very high interest in ATM, scoring 88%. Given that the “public sector” segment considers “comprehensiveness of service offerings” as the third most important factor in choosing a new carrier, providing ATM services will be an effective selling point. Besides, the other two segments are also interested in ATM, though to a lesser degree. Finally, considering all the segments as a whole, ATM attracted the most interest on average.

Following ATM, the second most important service to introduce would be multimedia networking. Similar to ATM, the “public sector” segment shows interest in multimedia networking, and the results of the questionnaire show that the “public sector” segment considers “comprehensiveness of service offerings” to be third in importance in evaluating a carrier. In addition to the “public sector” segment, the “miscellaneous” segment also shows some interest in multimedia networking. Finally, multimedia networking is the service which generate the second most amount of interest when considering all the segments as a whole.

Without ATM and multimedia networking, what is Hong Kong Telecom’s performance score in “comprehensiveness of service offerings” ? According to the survey results, the average performance score for all market segments is 4.52, which

is not particularly impressive. However, when broken down by market segments, Hong Kong Telecom's score is 4.1 for the "banking and finance" segment, 3.2 for the "public sector" segment, and 6.57 for the "miscellaneous" segment. Thus although the "public sector" segment regards "comprehensiveness of service offerings" as the third most important factor, competing with Hongkong Telecom on "comprehensiveness of service offerings" would be tough, given Hong Kong Telecom's high score of 3.2 in this segment.

So far, we have focused on the benefit side of introducing a wider range of services. On the other side of the equation, however, is cost. To introduce a new service, a carrier needs to acquire new equipment, employ more staff, provide additional training to staff, and furnish additional marketing and management overhead. For some services such as frame relay or video conferencing, the technology is relatively mature, and the incremental cost of providing such services is not too high. However, for ATM and multimedia networking, the technology is state-of-the-art, and the capital investment required in providing such services is likely to be very high.

In summary, the survey results show that :

1. "comprehensiveness of service offerings" is only third in importance for the "public sector" and is fourth in importance for the "banking and finance" and "miscellaneous" segments, even though when averaged for all the segments, it is the second in importance.

2. the new services that are most wanted by the “public sector” segment, and to a large extent by the “banking and finance” and “miscellaneous” segments, are ATM and multimedia networking.
3. ATM and multimedia networking are state-of-the-art technologies and are very expensive to implement at the moment.
4. Hongkong Telecom is performing quite well in terms of “comprehensiveness of service offerings” in the “public sector” segment.

Based on the above results, positioning for “comprehensive service offerings” is only of medium effectiveness (third and fourth in importance ranking), is very expensive to implement (ATM and multimedia networks are needed), and head-on competition with Hongkong Telecom is tough (HKT’s score is good). Thus we do not recommend a new carrier to position itself for “comprehensive service offerings”.

Summary of Positioning for Specific Factors

Whereas the survey results identified the five most important factors, we found that it is only effective for a new carrier to position itself for “service reliability”, “good maintenance service” and “good sales and pre-sales service”. It is relatively difficult for a new carrier to position itself for “geographic coverage” and “comprehensive service offerings” so as to be competitive with Hongkong Telecom.

The huge effort required, combined with the limited return means that positioning for “geographic coverage” and “comprehensive service offerings” are not justified.

Positioning for Specific Market Segments

We can infer the opportunities, effectiveness, and trade-offs for a new carrier to position in various market segments by examining how well a new carrier can satisfy the important factors that the market segments are seeking. This is shown in the following table. Factors in the white cells are those factors that a new carrier can effectively position itself for, while factors in the shaded cells are those factors that a new carrier will have difficulty in achieving good results.

Market Segment	First Most Important Factor	Second Most Important Factor	Third Most Important Factor
Banking and Finance	Service reliability	Maintenance service	Sales and pre-sales service
Public Sector	Service reliability	Geographic coverage	Comprehensiveness of service offering
Miscellaneous	Service reliability	Geographic coverage	Maintenance service

From the table, it is seen that a new carrier can most effectively position itself for the “banking and finance” segment by positioning itself for “service reliability”, “maintenance service” and “sales and pre-sales service”. It is more difficult for a new carrier to position itself for the “miscellaneous” segment since it is very difficult for

the new carrier to beat its competition Hongkong Telecom in “geographic coverage”. It is most difficult for a new carrier to position itself for the “public sector” segment. To excel in the “public sector” segment, a new carrier has to beat Hongkong Telecom in “geographic coverage” and “comprehensiveness of service offerings”, which are both very difficult for the new carrier.

In summary, we found that it is most effective and efficient for a new carrier to position itself for the “banking and finance” segment. The second priority should be the “miscellaneous” segment, while the last priority should be the “public sector” segment.

CHAPTER VIII

LIMITATIONS

There are some precautions that must be noted when using our survey results and recommendations in formulating marketing strategies.

First, our research is based on segmenting the market into three segments, namely “banking and finance”, “public sector” and “miscellaneous”, with each segment representing around 1/3 of the telecommunications market. This is because the number of respondents used cannot support finer segmentation, otherwise there will be too few respondents in each segment. In applying our findings, it must be noted that the size of each segment is quite large, and there could be some heterogeneity within a segment. This is particularly true for the “miscellaneous” segment, which contains a lot of very different industries.

Second, in applying the research results, the ranking results of the factors must be used with care. For example, it is safe to conclude that “service reliability”, which ranks first in importance, is more important than “price”, which ranks eighth in importance. On the other hand, it is unsafe to conclude that “comprehensiveness of service offerings”, which ranks second in importance, is more important than

“geographic coverage”, which ranks third in importance. For the latter case, the importance scores are 2.72 and 2.82, respectively. With such a small difference it is only safe to conclude that both factors are important.

Finally, our research and recommendations are based on the current technology levels and current market conditions. Telecommunications technology is advancing rapidly and the telecommunications market is evolving at a fast pace. The benefits and types of services that the market seeks are likely to change quickly. A technically infeasible strategy, such as providing “comprehensive geographic coverage” in a short time, may become feasible with new technologies, such as the emerging “wireless subscriber loop” technology. It is expected that the findings of our report will only be applicable for the next 12 months.

Appendix 1 - Questionnaire

Questionnaire

Data Line Services of New Carriers

Following the Worldwide Trend, the Telecommunication Industry in Hong Kong is liberalizing. The Office of Telecommunication Authority has decided to introduce competition into the Local Fixed Telecommunication Market after Hong Kong Telecom's Monopoly Franchise expired in July 95. As a result, starting from July 95, there will be four carriers - Hong Kong Telecom, Hutchison Communications, New T & T and New World Telecom, operating in Hong Kong providing telephone and data line services.

How should the new carriers provide better services to you? This questionnaire is designed to ask your opinion in various areas such as price, reliability, sales service, maintenance service, breadth of service offerings, geographic coverage, etc.. This questionnaire is specifically focused on **data line services**.

Please kindly complete this questionnaire and fax back to Sarah Ling at 2877-0760. Your response will enable the new carriers to offer the best services to you.

This questionnaire is part of an MBA project of the Chinese University of Hong Kong for an anonymous carrier.

Company Profile

Your name : _____

Your title : _____

Your Company's Name :

Headquarters Country : _____

No. of staff in Hong Kong : _____

No. of sites in Hong Kong : _____

No of staff Worldwide : _____

Yearly Expenditure on Local Data Line Services :

Yearly Expenditure on International Data Line Services :

What business are your company in ?

- Banking and Finance
- Government
- Utilities

- Manufacturing
- Trading
- Transportation
- Retail
- Conglomerate
- Others _____

What type of local data line services are you using ?

- Leased Line at or below 64 Kbps (Point-to-point, Multipoint, Mainline / Branchline)
- Leased Line 128 Kbps to 512 Kbps inclusive
- Leased Line higher than 512 Kbps
- Broadcast Line
- X.25
- Basic Rate ISDN
- LAN Line
- Others _____

What additional local data line service may be important to you in the next two years ?

- ATM (Asynchronous Transfer Mode)
- Frame Relay
- Primary Rate ISDN
- Video-on-Demand
- Video Conferencing
- Multi-media Networking or Video Transmission
- Others _____

Price

1. Generally speaking, do you think the tariff structure of Hong Kong Telecom's data line service is expensive or cheap ?

Very Cheap									Very Expensive
1	2	3	4	5	6	7	8	9	

2. Do you think tariff is an important factor when evaluating a new carrier ?

Yes. I will always go for the one with lowest tariff.								No. Tariff is not a concern at all. Other factors are more important.
1	2	3	4	5	6	7	8	9

Geographic Coverage

To provide services, a new carrier needs to lay cables to every building in Hong Kong. This may take years of time. Consequent, a new carrier may not be able to cover the whole Hong Kong initially. In contrast, Hong Kong Telecom claims that it has extensive geographic coverage for most of its services.

3. Do you think Hong Kong Telecom has good geographic coverage for its data line services ?

Yes. Hong Kong Telecom has perfect geographic coverage.								No. The coverage is poor for data line services.
1	2	3	4	5	6	7	8	9

4. If a new carrier cannot cover all of your sites, is this an important concern for you ?

Yes. I will not consider the new carrier if it cannot cover all my sites.								No. I can still consider the new carrier for some of my sites.
1	2	3	4	5	6	7	8	9

Service Reliability

5. As according to your experience, how would you describe the reliability of Hong Kong Telecom's data line services ?

It is perfectly reliable.								It is not reliable at all.
1	2	3	4	5	6	7	8	9

6. If a new carrier offers you a data line services that have superior reliability (eg. with guaranteed reliability, or by using fault tolerate equipment with redundant lines), is it an important factor for you to consider when considering that new carrier ?

Yes. Reliability is of utmost importance.								No. My existing line is reliable enough.
1	2	3	4	5	6	7	8	9

Maintenance Service

7. What is your opinion on the quality of Hong Kong Telecom's maintenance services for your data lines ? If you no experience on Hong Kong Telecom's maintenance services, you may still answer this question based on your perception.

It is excellent.								It is very poor.
1	2	3	4	5	6	7	8	9

8. If a new carrier claims it can offer you very good maintenance services (eg. guaranteed recovery time with penalty terms, detail fault reports with follow up actions), is it an important factor for you to consider that carrier ?

Yes. Maintenance Service is of utmost importance.

1 2 3 4 5 6 7 8

No. Maintenance is not important. Reliability is more important.

9

Sales and Pre-sales Service

Sales Service are services provided by the salesmen inclusive of pre-sales technical support. This includes explanation of various service offerings, giving technical advice, giving update on new service offerings and promotion programmes, and various follow up activities.

9. What is your opinion on Hong Kong Telecom's Sales and Pre-sales services ?

It is excellent.

1 2 3 4 5 6 7 8

The sales and pre-sales services are very poor, if not non-existent.

9

10. If a new carrier approaches you with good sales and pre-sales services (eg. frequent visit, giving in-depth technical advice), is it an important factor when you consider that carrier ?

Yes. Good Sales and Pre-sales services will have great influence on my decision.

1 2 3 4 5 6 7 8

No. I do not need such services.
OR

No. Sales and Presales services are free. I have no obligation to favour that new carrier.

9

Service Offerings

Hong Kong Telecom offers a range of data line services like point-to-point leased line, multidrop lines, X.25, ISDN, LANLine, etc.. A new carrier, depending on its marketing strategy, may offer a wider range of services or may simply focus on a few common services.

11. Do you consider Hong Kong Telecom's service offerings comprehensive enough ?

Yes. HKT's is already very comprehensive.

1 2 3 4 5 6 7 8

No. There are a lot of services that HKT does not offer.

9

12. If a new carrier offers you a wider range of services such as Virtual Private Network, Outsourcing, Asynchronous Transfer Mode (ATM), Multi-media Networking, Video Conferencing, Primary ISDN, Video-on-Demand, etc., at a reasonable price, is it an important factor for you to when consider the new carrier ?

Yes. I absolutely need more choice.

1 2 3 4 5 6 7 8

No. I just need basic services.

9

13. On the other hand, if a new carrier choose to focus on a few "common" data line services at the moment but nevertheless can provide whatever data line services you are using now, is it an important concern for you that the new carrier's services are not as comprehensive as Hong Kong Telecom ?

Yes. I want to have a lot of choices even I may not use them at the moment

1 2 3 4 5 6 7 8

No. As long as it can provide what I am using now, why should I have any concern ?

9

14. How about if the new carrier can only meet the majority of your needs but not all of your needs ? Will it be an important concern ?

Yes. I will only consider a carrier who can provide all the services I need.

1 2 3 4 5 6 7 8

No. I will consider to use the new carrier for majority of my needs and HKT for the remaining.

9

Single Vendor

15. For your data line services, do you prefer to stick to a single vendor or multiple vendors ?

I prefer a single vendor for ease of management

1 2 3 4 5 6 7 8

I have no preference.

I prefer multiple vendors. Competition is always good, and there is "vendor redundancy".

9

16. Is it important that the same vendor should provide both telephone line and data line services to you ?

Yes, I prefer a single vendor for ease of management

1 2 3 4 5 6 7 8

No. Telephone and Data are entirely different things.

9

Future Direction

In a highly competitive market, vendors may sell based on future products and services.

17. As a general feeling, what is your opinion on Hong Kong Telecom's "future direction" ?

Very good.

1 2 3 4 5 6 7 8

Very bad.

9

18. If a new carrier reviews to you its future direction, and you feel that its direction is excellent, is it an important factor for you to consider that carrier ?

Yes. Future planning is very important.

1 2 3 4 5 6 7 8

No. What is important is today, not the future.

9

Business Flexibility

19. As a general feeling, what is your opinion on Hong Kong Telecom's business flexibility" ?

Very flexible.

1 2 3 4 5 6 7 8

Not flexible at all.

9

20. Do you consider "business flexibility" as an important factor when selecting a carrier ?

Very important.

1 2 3 4 5 6 7 8

Not important at all.

9

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