HONG KONG'S COMPETITIVE POSITION
IN THE ASIA/PACIFIC REGION:
PERSPECTIVE OF MULTI-NATIONAL CORPORATIONS'
TELECOMMUNICATION NEEDS

by

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ABSTRACT

Over the years Hong Kong has established itself as a premier financial, trading, commercial and service center of the Asia/Pacific region. This preeminent position has enabled Hong Kong to play the important role as an economic bridge for China to the rest of the world. Maintaining Hong Kong's competitive advantage as a regional center may well be the key for its future prosperity and stability; it determines whether Hong Kong can preserve its present economic and social system well beyond 1997.

Hong Kong's leadership position is linked to its ability in attracting multi-national corporations ("MNCs"). As of March 1990, 581 multi-national corporations ("MNCs") had set up regional headquarters in Hong Kong, compared with 100 in Singapore. The MNCs collectively represent an important force behind Hong Kong's economic growth.

Hong Kong's success in attracting MNCs is often attributed to its laissez-faire policy, low tax rate, as well as a strong service base and infrastructure, including high quality telecommunications service.

With the trends in business globalization, growth in international trade, and integration of telecommunications into business operations, Hong Kong's telecommunications infrastructure and service is likely to assume higher significance when a MNC plans to introduce or expand its business operations (especially in putting its regional headquarters) in the territory.

During the past decade Hong Kong has emerged as the principal telecommunications center in Asia. Hong Kong's competitive advantage in telecommunications, however, is being eroded by the introduction of Electronic Data Interchange (EDI), Integrated Service Digital Network (ISDN),
international submarine optical fiber link and other advanced communications technology to Singapore, Hong Kong's arch-rival. With their strong and progressive telecommunications infrastructure, Singapore, Sydney and Tokyo have been recognized as viable locations for regional headquarters. At the same time, liberalization in the telecommunications industry worldwide and the possibility of a more restrictive telecommunications environment in post-1997 Hong Kong may trigger MNCs to diversify or relocate their corporate operations within the region.

This MBA project is a study on Hong Kong's competitive position in the Asia/Pacific Region from the perspective of MNCs' telecommunications needs. It covers:

• strategic importance of telecommunications, in particular its role in MNCs' regional headquarters location decision

• MNCs' telecommunications needs: today and in the next 5 years

• assessment of Hong Kong's position in terms of telecommunications strength in comparison with other countries in the region

Another of our key missions is to provide strategic information for telecommunications infrastructure planning.

The study takes the viewpoint of a consultant to the Hong Kong Government and a strategic, marketing orientation. The research approach is exploratory. Besides a literature research, a series of personal interviews were conducted with government officials, experts in the field and selected MNCs.

This paper presents several key findings of our research. First, good telecommunications infrastructure and service are important but not determinant factors in MNCs' regional headquarters decision; moreover, location of business headquarters and location of telecommunications hub are often distinct decisions. Second, while Hong Kong is highly regarded for its flexibility and quality telecommunications service, its leadership status has indeed been eroded with the implementation of advanced telecommunications infrastructures in Singapore. However, Hong Kong's deficiency in
advanced telecommunications services are not critical in the short term as few MNCs are ready to apply those technologies. Third, more competition in the telecommunications industry is desired. Lastly, more updated laws and an efficient, independent regulatory body are required to ensure a healthy market structure and progressive telecommunications development.
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This research was started with a simple belief - maintaining Hong Kong's regional financial and business center position is its only way to secure a prosperous future beyond 1997.

We formulated our study as a bridge that integrates two important study topics, namely "regional centers" and "telecommunications infrastructures". This is the value of our research as few studies conducted in the past had adopted a similar approach. Another value of our research is its timeliness (timely not just because of the 1997 count-down, but also because of the transformation currently underway in the business and telecommunications world). We also think that the methodology we adopted - personal interviews with experts in the field and telecommunications directors of multi-national corporations - had lent good support and credibility to our findings. In fact, this paper is essentially a summary of the primary information we gathered.

Our thesis is:

- Telecommunications infrastructure and services are fundamental to competitiveness as regional center - a definite requirement though not a deciding factor.

- Hong Kong is lagging in the development of strategic telecommunications infrastructures and should work to improve in areas identified in this paper and through strategies and policies recommended by this paper.
Topic Significance and Mission of the Study

Traditionally telecommunications infrastructure has been a secondary factor in the regional center competition. While the strategic variables remain the same, their relative significances are changing. We believe that telecommunications infrastructure and services has become an important playing field for the game.

The 1990's will be the epoch of telecommunications. In the past decade the world, especially the business world, has been transformed by computer technology. The proliferation of computers has significantly stimulated the need for computer-based communication. Economies are linked up on worldwide basis. Business firms are actively globalizing. Many companies are building their competitive strategy on information technology. Telecommunications are rapidly becoming the business lifeline.

These trends are further stimulated by another global trend - the liberalization of telecommunications. This trend has triggered unprecedented competition among public carriers, network operators, and equipment manufacturers on a worldwide scale. The volatility in the telecommunications industry presents a unique opportunity for regional center contenders to speed up their development in telecommunications infrastructure.

The 1990's may also be the era of the Asia-Pacific Region. The maturity, increased sophistication and strong growth in the regional economies will accelerate the need for telecommunications links with the rest of the world. The contention for the "telecommunications hub" position will be fierce because of the lucrative benefits. Moreover, maintaining the regional center status will help a country to fully capitalize on the region's economic growth.

Hong Kong has a strong telecommunications infrastructure. Unfortunately, it does not have a "country strategy". On the other hand, Singapore has strategically positioned itself through pioneering efforts since 1989. Hong Kong may have lost a key competitive advantage.
The mission of our study is to assess the threat and to identify areas and approaches for improvement.

**Research Outcomes**

The bulk of our research effort was undertaken from January through end of March. During this period we had interviewed a total of 12 experts in the telecommunications field and 11 telecommunications directors of multi-national corporations. The findings came as some surprise to us though we had already reviewed a good amount of literature beforehand.

Our first and primary goal - **exposing and qualifying the problem** - was achieved, but the finding is not clear cut. Good telecommunications services is an important factor for MNCs' regional headquarter location decision, but it is not a deciding one. Hong Kong indeed lags behind Singapore in certain aspects; however, few MNCs view Hong Kong as inadequate in fulfilling their telecommunications needs. Most MNCs are not yet ready to apply some of the emerging technologies in the near future. Nevertheless, there is a pressing need for changes in some fundamental aspects such as the regulatory framework.

Our second goal - **identifying the telecommunications needs of the MNCs** - is also satisfied, though not in a vigorous way. The findings are described in qualitative terms in this paper. We hope that they are of value to concerned parties such as players in the telecommunications industry and relevant government agencies.

In fulfilling our last goal (to which we assigned the lowest priority in our research) - **shedding light on the changes required** - we had formulated a number of recommendations to the Hong Kong Government. The recommendations represent both our own opinions and the wishes of most of the experts and MNCs we interviewed.

Our research would also be useful as a source of **strategic information** for telecommunications infrastructure planning.
The Experience - Challenges

Though we had tackled the research problem by assuming the fictitious role of consultants to the Hong Kong Government, we had never meant to "play experts". Rather than aiming at a vigorous, thorough, systematic and conclusive study, we adopted a "common-sense" approach and high-level view. There were no exhaustive examination of issues, in-depth recommendations, quantitative surveys, or application of vigorous analytical tools. After all, we had to be realistic with our time. In spite of having modest goals and a single-minded purpose, completing this project had not been easy for us.

The first challenge is the lack of reference materials directly related to our study. We did, however, locate good literatures addressing each of our two study topics (regional centers and telecommunications infrastructures). This problem was also partially solved because of the primary data we collected through the interviews.

The second challenge has to do with cognitive limits. For sometime we had been overwhelmed by the volume of information collected through literature review. This problem, however, was "forgotten" to "make way" for another source of headache - filtering and organizing the information on our interview scripts. We could not find any systematic yet efficient method for the task, because we had conducted the interviews, which are exploratory in nature, with a set of unstructured, open-ended questions.

Time is a severe constraint for anyone with a demanding full-time job. We did, nevertheless, take heart in the fact that most of our interviewees, in spite of their busy schedules, had been surprisingly accessible for us.

The last difficulty is a direct result of one of our intrinsic limitations - the lack of literary talents. Seldom had we experienced a "spark" strong enough to liberate a stream of thought. For a good period of time we were stuck with the "incubation" stage with no progress in the write-up.
The Experience - The Joy

We are delighted with the completion of a meaningful study - despite the superficial treatise and narrow scope. But the real joy lies in the exchanges of views with experts. Our association with Dr. K.H. Lee, our advisor and a leading scholar in strategic marketing, had been a key source of inspiration. We were also excited to be able to talk to leading figures and people who have a genuine interest in the subject. Many of the conversations had been interesting, stimulating and intriguing. We are positive that our time investment had been worthwhile.

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Our appreciation is also due to Dr. Lee for helping us make the trade-off among vigor, conceptual clarity, and time. With our technical background, we are often tempted to immerse into technical details. He constantly reminded us to stay at the right level.

Last but certainly not the least, we would like to thank the experts and telecommunications directors we had interviewed for their time and interest on our study. Without their input and cooperations, this paper would never have been completed.
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From the Telecommunications Industry:

Mr. Simon Krieger, Managing Director, AT&T Hong Kong Limited, Mr. Andy Mutch, Branch Manager - Private Networks and Data Communications, Hong Kong Telecom, Mr. John H.Y. Lee, Branch Manager - International Sales Support, Hong Kong Telecom International, Mr. Robert Liong, Branch Manager - International Carriers Relation, Hong Kong Telecom, Mr. Andrew Wong, Section Manager - International Carriers Relation, Hong Kong Telecom, Mr. K.B. Chan, Unit Head - International Sales Support, Hong Kong Telecom, Mr. Stephen Dickinson, General Manager, Advanced Communication Services, Hong Kong Telecom CSL, Mr. Griff Griffith, Manager - Business Strategy and Services, Tradelink Electronic Document Services Limited.

From MNCs:

Mr. Sherman Chui, Group Manager, Management Systems Division, Procter & Gamble Hong Kong Limited, Mr. Simon Wong, Internal Computing Services Manager, IBM China/Hong Kong Corporation, Mr. Malcolm Hamar, Vice President, Citicorp, Mr. Alastair Donaldson, Information and Computing Service Manager, Shell, Mr. Cadol Cheung, Manager - Planning and Information Service, Asia Pacific, Intel Semiconductor Ltd, Mr. Richard Sedgwick, Vice President and Director, The Bank of Americia, Mr. C.W. Lau, Network Engineering Manager - Corporate Communications Systems (Asia Pacific), Motorola Asia Ltd., Mr. Peter Saalmans, Telecommunications Manager, The
Standard Chartered Bank, Mr. Eric Ng, Technical Manager - North East Asia, Telerate Financial Information Network (Hong Kong) Limited.

One of our interviewees, a telecommunications director of a major international bank, had chosen to remain anonymous.

Wai-Kit Sin
Jonathan Wong
CHAPTER I
INTRODUCTION

Over the years Hong Kong has developed into a thriving international city and a premier financial, trading, commercial and service center of the Asia/Pacific region.

Hong Kong's strong international foundation and regional center status is important for its continuing prosperity and economic stability. The center position, however, has a even higher importance: strengthening Hong Kong's crucial role as an economic bridge for China to the rest of the world. As China's gateway, Hong Kong has contributed substantially to China's modernization by channeling much of China's needed foreign exchange, trade, and investment, as well as technical and professional expertise.

It is vital that Hong Kong furthers this role and hence the value of "One Country, Two System" concept. Thus Hong Kong's continued competitive advantage as a regional center may well be the key to preserving its present economic and social system beyond 1997. It is where Hong Kong's future lies!

Hong Kong's mission, therefore, is to maintain its regional center position by upholding the confidence the rest of the world has placed on us and improving what we can offer. Here, our key target is MNCs.

Importance of MNCs

Hong Kong's international character and its strong link with the rest of the world are both the basis and result of its competitive advantages.
The extent of international participation in Hong Kong is evident with the strong presence of multi-national corporations (MNCs). As of March 1990, 581 MNCs had set up regional headquarters in Hong Kong, compared with 100 (including 33 with 'operational headquarters status) in Singapore. The number of MNCs had been growing rapidly throughout the eighties and although the growth is slowing, the increase is still high.

The importance of MNCs to Hong Kong cannot be overstated. Historically, MNCs have been and continuing to be a strong propelling force for world economic development. MNCs are the blood vessels and stimulants of international trade. Locally, MNCs are bringing in a large amount of capital and trade; they are also important sources of technology and management expertise.

With the increasing trend of corporate regionalism, enterprising cities are vigorously competing to become the host city of MNCs' regional headquarters. The spillover benefits to the winner is profound. The local business will enjoy ready access to key regional resources and decision makers of MNCs, giving the former tremendous competitive advantage over their rivals. The local government will also be in a better position to influence the MNC's regional strategy in favor of the local economy. The stake is even higher with the "bandwagon effect" - that many MNCs prefer to locate their regional headquarters where other MNCs' headquarters are situated.

With the key role MNCs play in Hong Kong economic growth and continuing regional leadership, Hong Kong must strive to uphold MNCs' confidence and provide them with attractive, stable, well-served and well-placed regional headquarters.

**MNCs' Regional Headquarters Location Decisions**

Hong Kong's preeminent position is linked to its ability in attracting MNCs. This capacity is often attributed to its central geographical location, socio-political stability, laissez-faire policy, a restrained and simple tax system, a sophisticated economic and financial service base, as well as strong infrastructure, including high quality telecommunications services.
In the "Survey Asia" study (Tang, 1991), infrastructural facilities were recognized as a key consideration in the regional headquarters location decision. In Heenan's survey of MNCs (Heenan, 1979), communications was found to be providing medium to high utility among 16 utility dimensions. U.S. MNCs, in particular, placed supporting infrastructure and communications as two of the most important factors (together with political stability, cost, and availability of air transportation). In another of his researches (Heenan, 1977), Hong Kong scored highest among other Asia/Pacific cities on strategic importance, with communications being an element.

Overall, communications stood out as an important issue, though probably not a deciding factor (i.e. necessary but not sufficient). The world, however, is changing fast. Telecommunications infrastructure and service is likely to assume an even higher importance in light of certain worldwide trends in business, information technology, and the telecommunications industry.

**Business/Technology Trends and Telecommunications**

Certain trends have emerged since the mid-eighties in the business world across the globe: integration of information technology (computer and communications) into business operations, business globalization, link-up of regional financial markets, development of global markets and the integration of regional economies. These trends, and the interplay among them, have changed the relationship between business and telecommunications.

Throughout the business world an increasing struggle for competitive advantage using information technology is witnessed. Many business strategies and processes are increasingly built on top of telecommunications.

Business globalization (Neo, 1991) is motivated by the opportunities to exploit strategic advantages (e.g. strengths in technology, brand name, management and marketing skills), economy
of scale, overseas talents, and low factor costs. It may also allow a firm to enter a local market, reduce risk through geographical diversification (on both sources and markets), and leverage on international presence when dealing with governments.

The control and co-ordination of a globalized operation requires a sophisticated global corporate network. In particular, good telecommunications is indispensable in compressing communication time, overcoming restriction of geographical dispersion, and restructuring relationships among both internal and external organizations.

The link up of key financial markets (e.g. New York, London, Hong Kong and Tokyo) has stimulated the drive for efficient telecommunications. This drive is further accelerated by the development of global and unified regional markets. Trade barriers will be removed along with the economic integration of the European Community, the Americas, and possibly the Asia-Pacific countries. Many business firms have responded by expanding their basis - often through acquisitions or alliances. Some small, national companies have emerged as part of much larger international conglomerates. A likely consequence is a surge in demand for international communications.

One implication of these trends is: in a dynamic world that is "wired-up", responsiveness is often a critical success factor. Business efficiency depends upon communications efficiency; communication of accurate, timely information can mean the difference between success and failure. Telecommunications are rapidly becoming the business lifeline.

While changing business conditions have signaled a new relationship between business operations and telecommunications, the pre-conditions for extensive applications of telecommunications technology have also been established.

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1 According to Neo, global strategies are often formulated with three approaches: global efficiency (for cost leadership) by integrating the value-added activities in each country, responsiveness to local problems (for management effectiveness through better, timely information and parent company support), and exploiting knowledge through worldwide learning and diffusion of innovations (for differentiation). Good communications is key in each of these approaches.
The world has marched boldly into the "information age" during the last decade. The proliferation of computers has significantly stimulated the need for computer-based communications. This, together with advances in telecommunications technology, has triggered the modernization of telecommunications infrastructure across the world. These efforts have significantly increased the capacity and quality, reduced the cost of telecommunications, and made possible certain important new applications.

The advent of new telecommunications technologies will drastically change the way business is done. For example, paperless trading with Electronic Data Interchange (EDI), already available in some countries, has brought about fundamental impact on almost every function of a business organization.

Telecommunications will totally transform the business world the way transportation technology and the telephone have transformed our everyday life. The facsimile machine is perhaps a rudimentary development of this revolution.

**Trends in the Telecommunications Industry**

The global trend in the liberalization of telecommunications has triggered unprecedented competitions among public carriers, value-added network operators, and equipment manufacturers on a worldwide scale. Many national carriers are going private, global and are actively forming strategic alliances. Asia, for them, is one of the prime targets.

The volatility in the telecommunications industry presents a unique opportunity for regional center contenders to speed up their development in telecommunications infrastructure. In anticipation of this movement, some major companies have been shifting away from traditional paper communication with their trading partners to electronic means. There should not be any surprise that some powerful companies, in the future, would require their trading partners to use EDI.
The Asia Pacific Era and Telecommunications

The 1990s may see the rise of the Asia-Pacific Region to world eminence. One expected effect is the increase in the number of MNCs setting up administrative headquarters in the region. Moreover, the maturity, increased sophistication and strong growth in the regional economies will also accelerate the need for telecommunications links with the rest of the world. Indeed, it is almost a consensus that the Asia-Pacific region is the most exciting telecommunications market in the world today.

The contention for the "telecommunications hub" position will be fierce because of the lucrative spillover benefits for the local economy. Moreover, maintaining the regional center status will help a country to fully capitalize on the region's economic growth.

Competition with Telecommunications

During the past decade Hong Kong has emerged as the principal telecommunications center in Asia. Unfortunately, Hong Kong does not have a "country strategy" in telecommunications. At the same time Singapore, Hong Kong's arch-rival, has strategically positioned itself through pioneering efforts since 1989. Following the introduction of Electronic Data Interchange (EDI) and Integrated Service Digital Network (ISDN), Singapore is actively formulating its ambitious "IT2000" (National Information Infrastructure) plan\(^1\) to turn the republic into an "intelligent island" and developing international submarine optical links to other parts of the world. Hong Kong may have (or soon) lost a key competitive advantage.

With their strong and progressive telecommunications infrastructure, Singapore, Sydney and Tokyo have been recognized as viable locations for regional headquarters. At the same time, liberalization in the telecommunications industry worldwide and the possibility of a more restrictive

\(^1\) The IT2000 Project is seen as a government initiative to "enhance the people's potential, improve the quality of life, develop a global hub, and boost the economic engine." See The Strait Times, Singapore, April 2 and 3, 1992.
telecommunications environment in post-1997 Hong Kong may trigger MNCs to diversify or relocate their corporate telecommunications operations within the region. In fact, the trend of moving "backroom" operations to countries such as Singapore has been observed for a few years.

**Research Questions**

There are a lot of questions that come to one's mind immediately when we talk about telecommunications infrastructure planning.

By how much the MNC treasure our telecom infrastructure services? Do they care about it that much? Is it so vital in supporting their regional operations? Will better services attract more of them to come or keep more of them stay?

What do they need after all? What are the things they expect in the next few years? And what are the priorities of these things?

Is Hong Kong comfortably ahead of other competing cities as being the bunny in the race? Or is Hong Kong being pressed to hand over the leadership? Is Hong Kong only the self-proclaimed champion? What is the urgency for effort and spending in future telecom infrastructure development?

What is being done by the Hong Kong Government? What can be done after all? And how should we proceed?

These questions need answers fast.

**Organization of This Paper**

The next chapter, *Methodology*, describes why and how expert opinion and MNCs' input were solicited.
Chapter 3 describes findings from previous researches on MNCs' headquarters location decision, the comparative advantages between Hong Kong and Singapore, as well as MNC's headquarters relocation trend. A key element of this chapter, however, is our own findings on the importance of telecommunications as a factor.

MNCs' telecommunications needs and the role telecommunications play in business processes are covered in Chapter 4. The material is drawn from interviews with MNCs.

Chapter 5, Country Comparison, compares and contrasts the market structure, current state and planned development in telecommunications infrastructures and services, as well as MNCs' assessment on performance of key regional center contenders. Here Hong Kong's strength and weakness in telecommunications would be highlighted. This chapter integrates materials from literature review, expert interviews, and MNC surveys.

Chapter 6 deals with local issues in some detail. This, in conjunction with MNCs' assessment in Chapter 5, will provide the basis for our recommendations.

In Chapter 7, Recommendations, we will summarize the key problems in the market structure and regulatory system. We will also describe briefly a few recommendations. Most of the proposed changes were raised by the experts or MNCs we contacted.
CHAPTER II

METHODOLOGY

Setting the Scene

Telecom is big business today. It is a topic widely discussed and which concerns the interest of many different parties. The amount of literature, and people who would like to express their views, are huge. However, each of these has its own stand-point, disguised interest, as well as bias. To reach an objective finding, a very careful and balanced method must be devised. This chapter outlines the method used, which is thought as best.

The paper has a marketing orientation in that it attempts to contribute to the effort in maintaining and sharpening Hong Kong's competitive edge compared to other regional centers. The authors' concern is in the interest of foreign business entities and investors and the plans and needs of these foreign companies are solicited. It is believed that the eventual beneficiary of the success of Hong Kong is its people.

As outlined in the OMELCO booklet "Strengthening Hong Kong As An International City", the benefits of making Hong Kong to continue to thrive as an international city are in several folds. It is in the interest of Hong Kong, the interest of China, as well as the interest of the rest of the world. To achieve this, we have to build for the future.

Developing the infrastructure, communications and administration of an international city, and promoting more overseas investment and participation in Hong Kong, are two of the most important
tasks. In fact, both of these tasks tie in with each other and each has a complementary effect on the other.

To focus on best tackling the first of the above tasks, i.e., building the infrastructure, and specifically in the area of communications, strategic information is required.

The objective of the paper is to provide strategic information to the government for its reference in future policy planning and setting in the area of telecommunication.

The authors assumed the role of a consultant to the government for research in the field.

The research was conducted with a marketing perspective looking into the coming decade, trying to explore needs perceived by the users, which are the multi-national corporations who come to do business in Hong Kong.

The research is an exploratory one which tries to gather opinion and insight in the telecommunication field. Because the issue of regional competitiveness covers a broad scope, including areas such as background and performance of other regional centers, part of the information is only available in literature. Therefore, the research is designed to be a two-prong one.

Literature Review

A literature research together with a series of personal interviews were conducted. The literature research was performed on several sources including (but not limited to) the following:

- Newspapers and magazines
  - Hong Kong Economic Journal
  - South China Morning Post
  - Communication Asia
The material was obtained from independent sources including the Chinese University Library, the Trade Development Center (HKTDC), the Market Information Library at IBM Corporation, and the Market Research Library at Hong Kong Telephone.

The text book material provided good background information and detailed analysis on specific topics relevant to the issue, as well as thorough historical data on a worldwide basis. Articles on magazines and newspapers supplied the most up-to-date data on local & overseas development, and the latest critics and opinion as expressed by overseas and local academics, professional reporters and consultants.

These literature research further furnished the authors with a better appreciation and understanding of the hottest issues in the subject and make them well-prepared for the discussion to be followed with interviews with key informants.

**Personal Interviews**

The personal interviews were performed in two rounds. The first round of people were selected from a balanced profile of institutes which included the following five categories:

1. Academia
2. Government
3. Telecommunications Services Suppliers
4. Telecommunications User Association
5. Industrial Consortium

Because of the limitation of resources and time, only the most renowned and responsible personnel in each of the category was approached. Because of the convenience derived from the fact that one of the authors works in Hong Kong Telecom, the single most influential supplier of services in Hong Kong, more in-depth interviews with a wider profile of informants were interviewed. Twelve interviews were conducted in the first round. A full list of these people is attached in the Appendix B.

Since the interviews were intended for opinion and insight seeking, the process was highly interactive and extreme sensitivity was paid to the suggestion of particular opinion by each interviewee. Thus a qualitative rather than quantitative approach is adopted. Therefore, no specific questionnaire was used but rather a list of topics to cover was employed. The first round interviews were also intended to help the authors to best visualize various scenarios affecting the subject such that questions could be put forward in the best comprehensible form to interviewees in the second round. Each of the interviewees in turn was asked to provide reference people to be further interviewed.

After the first round interview and the literature research, a clear picture of the telecommunication field in Hong Kong was formed, with insights from respective sources. The authors were equipped with the proper understanding of the scene. A more specific question list was prepared as a result for the second round.

In the second round, MNCs who were the real users, and whose interest was the real target sought by the research were selected and interviewed. These users were selected on a set of criteria as follows:

- Referrals by interviewees in the first round
- Scale of operation worldwide and in Hong Kong
- Multi-national nature of business
Eleven business institutions were selected as the most representative group. They included the most reputable mega companies in the finance, industrial, trading and service field.

The top telecommunications managers in these companies were approached because the authors believed that they would be the most informed and knowledgeable staff on telecommunications in their companies, while at the same time possessing a strategic view on business. Most of these managers were in a position responsible for making or proposing regional telecommunications decisions.

Although a question area list was used this time, the questions are unstructured and in open-ended format, such that input from any direction or viewpoint is welcomed. The question area list used in the second round is included in Appendix C.

The questions were designed to solicit input in the following areas:

1. Importance of telecommunications as a factor in regional headquarters location decision.
2. Needs and plans of these multi-national corporation in the telecommunications area.
3. Assessment of them on the regional competitiveness of various regional centers on telecommunications provision and the projected development.
4. Suggestion for improving the competitiveness of Hong Kong in the telecommunications field.

Again, at the end of each interview, the interviewee was requested to give reference of three people whom he thought would be important source of further information. The twelve interviews
in the first round and the eleven interviews in the second round were all conducted successfully between January and early March 92. The twenty-three interviews were all conducted face-to-face for an average duration of sixty-five minutes. The conversation was taped in most cases with permission from the interviewee to avoid loss of data. Discussions were held between the authors after each interview to review and compare information obtained as perceived by each of them so as to minimize the error of communication.

Finally, an evaluation of the reliability and effectiveness of the personal interview approach is given below. In Michael J. Houston's "The Key Information Technique : Marketing Applications" (1976), the author exemplified the effectiveness of using key informants in conducting marketing exploratory research. William E. Cox, Jr. (1979) explained the rationale in his book:

"Just as demand concentration is a distinguishing feature of industrial markets, information concentration is a vital element to be considered.... It is not uncommon to find that less than 1% of the 'knowledgeable' persons associated with an industrial market possess virtually all of the relevant information about the market. This highly skewed distribution requires that careful attention be given to the selection of knowledgeable persons using judgement samples rather than any random sampling method."

He went on to outline a case where the technique was employed with great success in the convergency of referred informants. In the authors' case, a highly converging pattern was observed in the referral chain showing that indeed the people included in the interviews were the true "experts" representative of the market and the field. A table to illustrate the pattern of convergence is attached in Appendix D.

The information obtained using the above research methodology was used as basis for analysis and presentation in all of the following chapters. The findings in the secondary data from the literature and in the primary data from the interviews supplement and complement each other and are put forward in a consolidated manner. In the case of different opinions on a subject from different sources, the arguments of both sides are highlighted for the reader's information and judgement.
As a result, the opinion expressed in this paper should be considered as the authors' personal opinion and should not be taken as expressed by any particular interviewee.
CHAPTER III

REGIONAL HEADQUARTERS LOCATION DECISION OF MNCS

Within the pocket of the government, there is a limited amount to spend on building the Rose Garden. Telecom deserves only part of it. Is it worth a large effort? Or does it deserve only minor incremental spending or intervention? From our research perspective, this points to the question of how MNCs value this factor. The answer is found below.

This chapter discusses the variables, including telecommunications, that MNCs consider in selecting a regional headquarters site. Here findings from previous researches will be summarized and augmented with the primary data collected from our own mini-survey on MNCs.

To put the issue into proper perspective, we would also describe the functions of a regional headquarters and the profile of MNCs' regional headquarters in Hong Kong and Singapore. In light of our theme on regional center competition, we have also included a section on the comparative advantages of Hong Kong and Singapore as well as the state and trend of the competition.

Functions of a Regional Headquarters

MNCs' quest in extending their global reach has stimulated the establishment of regional headquarters as fairly autonomous commanding outposts. With the mission of supporting regional business expansion, a regional headquarters is the hub of the MNCs' activities in the region. The
key functions of a regional headquarters is to direct, control and co-ordinate subsidiaries and to liaison with business partners or governments in the region.¹

Profile of MNCs' Regional Headquarters in Hong Kong and Singapore

As of March 1990, there are 572 regional headquarters set up by overseas companies in Hong Kong, compared with 100 in Singapore including 33 firms with "operational headquarters status" (Tang, 1991). The growth in number of regional headquarters in Hong Kong has been sustained for a decade: an increment of 20 and 59 on average per year from 1981 to 1984 and from 1985 to 1989 respectively. And the trend does not appear to change. On Singapore side, more MNCs have established new regional headquarters in 1987-88, but the absolute numbers are still small.

In terms of country of origin, U.S. firms account for the lion's share of regional headquarters in both locations (252 in Hong Kong and 6 in Singapore - out of the 33), with Britain taking the second place (77 in Hong Kong and 5 in Singapore - out of the 33). Japanese MNCs only ranks 6th (with 20 firms) in Hong Kong. Most of the MNCs we interviewed are U.S. concerns.

In terms of industry ("economic sector"), trading firms account for the largest portion of the statistics in both places. Next in the ranking are, in order, wholesale and retail, banking as well as manufacturing in Hong Kong, and manufacturing, wholesale and retail, as well as banking in Singapore.

By geographical area of responsibility, about half (the mode) of the regional headquarters in Hong Kong are supervising business operations in the whole Asia-Pacific region.

¹ According to Tang (1991), "the regional headquarters is primary responsible for regional strategy development and co-ordination, new business generation, country operations management, corporate goals and culture communication, development and maintenance of good relations with governments around the region, and provision of various types of support services to its network of companies in the region ...(including) R&D, planning, training, material sourcing, and financial management."
Hong Kong has lost 29 regional headquarters (with 14 to Singapore) from 1980 to 1991 while claiming 394 in the same period. Relocation of headquarters from Singapore had been minimal.

The detail figures of the above profile of MNCs' regional headquarters in Hong Kong and Singapore are tabulated in Tables 1, 2 and 3 of Appendix G for reference.

**Factors in the Regional Headquarters Location Decision**

In Tang's paper (1991), he had asserted that the key considerations in siting a regional headquarters are: geographical location, socio-political stability, infrastructural facilities, availability of skill labor, operating cost, taxation, foreign exchange control, expatriate lifestyle, and cost of living.

Supporting evidence was provided by Heenan in his 1979 survey of large MNCs with significant international business (60 American and 47 Japanese). Sixteen utility dimensions (factors) were identified as criteria for selecting a regional headquarters site.

Among the 16 factors, a city's communications facilities ranks as the 5th most important factor for U.S. MNCs, following political stability (top importance), supporting infrastructure (excluding communications), and availability of air transportation. Proximity to major countries' markets and cost of maintaining expatriate staff were attached equal importance to communications.

For Japanese MNCs, communications rank 6th in the list, behind economic importance of the local market to the region, supporting services, government attitudes towards headquarters companies, educational and medical facilities, political stability, and a city's international and multi-cultural orientation. Proximity to major countries market also shares the 6th position.

Overall, communications was viewed by the respondents as an important (perhaps necessary) but not a core or determining factor in the headquarters decision. It is noteworthy that

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1 See Appendix F for summary
communications was ranked before 10 or 8 (for U.S. and Japanese MNCs respectively) other identified criteria. Moreover, in terms of the utility scale, good communications was considered to be a medium-to-high utility item for both U.S. and Japanese MNCs.

While most of the MNCs we interviewed had affirmed the importance of telecommunications in their business processes, none viewed telecommunications as a predominant factor. "Selection of a regional headquarters (administrative) is purely a business decision," said Tim Cureton of Hong Kong Bank. And confirmed Paul Saalmans, "The regional headquarters of Standard Chartered Bank is in Hong Kong simply because business is bigger here."

In addition, providing the same level of service (e.g. with advanced communications technology such as ISDN) as the home country of the corporation is generally not a requirement.

A shared view, however, is that "sufficiently good" telecommunications infrastructure and services must be provided by the host city.

Worth mentioning, though, is that few of the MNCs we interviewed had applied any advanced communications technology and applications such as ISDN, EDI, and video-conferencing. "We have no video-conferencing needs at the moment, and no solid plan yet for ISDN here," said Malcolm Hamar of Citicorp.

Furthermore, few interviewees had revealed the capacity to predict the future telecommunications scene in their respective companies. It is unclear whether the roll-out of the new telecommunications offerings (which many experts believe will transform the business and telecommunications world) will change the relative weights of MNCs' evaluation criteria.

"After all, telecommunications decisions are becoming more and more business decisions," said Tim Cureton. And this summarizes the fact that all that matters is how the future services will benefit the business.
Comparative Advantages of Hong Kong and Singapore

Despite Hong Kong's long-standing position as "the" choice for many MNCs in establishing regional headquarters, Singapore, through government initiative, as well as inherent and demonstrated strength, has emerged as a viable alternative for MNCs. Singapore's attractiveness is particularly apparent as the site for regional headquarters for South Asia; at the same time, many MNCs have already relocated some of their backroom operations from Hong Kong to Singapore. Tang (1991) has analyzed the comparative advantages of Hong Kong and Singapore as MNCs' regional headquarter sites in his "Survey Asia" paper. This section provides a highlight of Tang's views (plus our own additions). Singapore and Hong Kong have a lot in common, but each also has its unique strengths and weaknesses.

Common Strengths

In terms of geography, both cities are endowed with a strategic location, making them natural entrepots and telecommunications hubs.

The second strength is that both enjoy a stable socio-political, labor and business environment, with an efficient government, sound legal system, liberal, open, and pragmatic economic policy, simple tax system, and relatively low tax rates.

In terms of supporting services, both provide a modern, efficient, and constantly improving infrastructure (including modern telecommunications facilities) and sophisticated financial services (with Hong Kong particularly strong in stock-broking as well as investment service and Singapore strong in forex dealing).

Moreover, the two cities have also nurtured a dynamic, literate, hardworking and highly productive workforce with rich professional talent, and a lifestyle congenial to expatriates.

While these strengths are appreciable, the weaknesses should not be overlooked.
Common Weaknesses

The first problem is rising operating cost in both cities. The cost picture, however, is different: labor, office rental, and housing are more expensive in Hong Kong, but telecommunications services are cheaper here.

Another common issue is serious labor shortage, labor turnover, and the brain drain. Singapore, however, has less of the brain drain problem.

The third common weakness is a tightening regulatory environment. Again, the trend is less appreciable in Singapore. If the change continues Hong Kong may lose its advantage in this dimension.

The last problem - political uncertainty - is more disturbing for Hong Kong (with the 1997 issue). The lack of a fully representative government and racial harmony, as well as the potential threat of its neighbors are all unstable elements haunting Singapore.

Unique Attractions and Operation Relocation Patterns

A key unique advantage of Hong Kong is its role as gateway to China. Hong Kong is also noted for its flexibility, sophistication in financial innovation, relatively unrestrictive operating environment, abundant investment fund, the relative lack of government bureaucracy, and free flow of information. All these qualities may be particularly attractive to international banks, private banking operations, and international fund management companies.

On Singapore side, manufacturing as well as high-technology research and development remains its stronghold. These, together with its skilled professionals and tax incentives (associated with the "operational headquarters status"), have already lured some MNCs in relocating their regional headquarters to Singapore. Certain MNCs, in an attempt to optimize the allocation of resources between the two places, have transferred some or most of their backroom operations such
as training (e.g. IBM), data processing (e.g. American Express), and foreign exchange operations (e.g. Chemical Bank) to Singapore while maintaining their administrative headquarters in Hong Kong.

There are other motivations for MNCs who have set up regional office in Singapore. Aversion of political risk in Hong Kong under the shadow of the 1997 issue and business diversification in the region (e.g. using Singapore as springboard to South Pacific and the ASEAN) are perhaps the major motives. There may be other reasons as well - for example, facilitating fund-raising in a less "demanding" stock market.

**Administrative Headquarters vs Telecommunications Hub**

A MNC's regional telecommunications hub is a gateway city for MNC subsidiaries in neighboring countries or cities to access the *corporate* network's trunk lines (which constitute the backbone of the *private* long-haul network). A telecommunications hub is a regional traffic switching center for a MNC. Hub placement is a key element of network design.

Because of a hub's high traffic volume and the gateway role, MNCs' key considerations in hub placement are network reliability and quality, capacity, as well as tariff. There is, however, a constraint in the selection process: the geographical layout and topology of existing international trunk lines (which are often made up of submarine cables and satellite links) set up by PTTs. *PTTs'* hubs (i.e. the major nodes of the base international network), in turn, are likely to be located at *geographically strategic* locations with well developed economy, infrastructure, and skill pools. Singapore and Hong Kong were, for PTTs, natural choices for ASEAN and north Asia respectively.

Because of the concentration of international telecommunications traffic and therefore high revenues potentials (plus the potential for lucrative systems integrations, network management, or other value-added services), many national PTTs and country government would actively compete for the telecommunications hub position for MNCs.
A telecommunications headquarters is the office that directs regionwide telecommunications activities, including strategy formulation, operations, and development. It may also include the function of regionwide network management.

In theory, different locations can be assigned to the administrative headquarters, telecommunications hub, telecommunications headquarters, and data processing centers (which usually co-locate with the data processing headquarters). The administrative headquarters, data processing centers, and telecommunications headquarters can locate at any node on the physical corporate network. Because of the roles of administrative headquarters and data center, they will also become centers of telecommunications traffic and therefore prime targets for national PTTs.

There are certain advantages in locating the telecommunications hub, the telecommunications headquarters, and the data processing center in the same city. For example, network design, implementation, management, and negotiations with PTTs will all be facilitated. Naturally, these operations should all be located only at cities with well-developed telecommunications infrastructure, services, and expertise. This is particularly true for MNCs desiring "one-stop shopping". There is, however, little particular benefit in putting these operations in the same location as the administrative headquarters.

According to our MNC survey, the headquarters and operations, in general, are located in distant cities. In fact, availability of sufficiently good telecommunications services in most part of the region is one reason that the administrative headquarters and telecommunications hub can feasibly be at different locations. For many of the MNCs we interviewed, Singapore is their telecommunications hub for ASEAN countries, and Hong Kong is their hub for China and nearby countries. There is a tendency of moving more backroom operations such as regional data processing and telecommunications management to Singapore, as already mentioned in the above section.
Summary

The findings in our mini-survey are consistent with results of previous research - telecommunications is an important but not a core factor in the headquarters location decision. No data, however, is available on how telecommunications affect the primary factors.

The recent pattern of relocation of MNCs' regional operations may have revealed changes in the nature of the regional headquarters location decision. First, there may be dual regional headquarters for MNCs - covering North Asia and South Asia respectively. Second, location decision for each type of regional operations may be made independently, taking into account the comparative advantages of each location candidate pertaining to each type of operation. This explains our findings that the regional telecommunications hub, data center, and administrative headquarters of some of the MNCs we interviewed are located in different countries.

An implication for this latter change is that, to get a complete picture, we must examine how telecommunications affect the decision of each *type* of regional headquarters - the head office of a specific type of business operations for MNCs. This kind of exhaustive study, however, is beyond the scope of our research. (However, it is apparent Hong Kong's prime target should be the administrative headquarters at which the management control of the region is concentrated).

Despite these developments, most MNCs are maintaining their regional headquarters (at least the administrative headquarters) in Hong Kong. In addition, new regional headquarters are continuously being set up, re-affirming Hong Kong's attractiveness to MNCs.

"I think Hong Kong will maintain leadership position both in the telecommunications hub and administrative center competitions in the next five years," said a telecom services director.
CHAPTER IV

TELECOMMUNICATIONS NEEDS OF MNCS

Now that we have an idea on the kind of priority telecom should represent in our future capital investment in Hong Kong, the next question is: What specifically is needed in telecom building? And how do these needs rank in priority? The answer to these questions will help us determine the amount of effort and spending required and the result we can hope to achieve.

This chapter summarizes the various aspects of telecommunications that are important to MNCs. In particular, it describes how telecommunications are related to MNCs' business processes and the nature or characteristics of the telecommunications needs. These needs encompass the usage, applications, and the issues concerning the set up, customization, delivery and management of telecommunication services. Because of the multi-location nature of MNCs, we have focused our description on international telecommunications.

This section is drawn solely from our interview findings with MNCs. The set of needs described here will be the basis for evaluation of country performance in Chapter 5.

General Observations

Most of the MNCs we interviewed have a good global corporate (private) network for internal data communication. Also, most are heavy users of telecommunications. Many are actively expanding the capacity of their lines (e.g. by subscribing high speed digital links). There is a general

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1 A complete specification of needs would include dimensions and qualifiers such as the type, extent, volume, quality, functions, features, facilities, other usage characteristics, as well as customization of service. This section presents only a general statement of the needs.
consensus that telecommunications are important to their business operations (especially business efficiency) while a few have even pointed out that a major network interruption would be a disaster to their business.

The banks we surveyed are all heavy and sophisticated users. The manufacturing companies are also investing heavy in telecommunications. This comes as no surprise because, according to some experts, the manufacturing industry is the sector expected to be most aggressive in expanding their telecommunications capabilities.

None of the MNCs operate their own long-haul transmissions equipment - they all build their network, at least within the region, using leased line or public "packet-switching" networks (i.e. no by-pass of the PTTs, unlike big corporations in the U.S.). As most have well-developed computer systems, the use of external value-added services are limited to information (database) services and special-purpose networks such as SWIFT (for international electronic fund transfer) for banks.

While the single most important use of the corporate network is internal communications (e.g. e-mail, access of internal applications), some MNCs have extended network access to business partners or even customers. Some companies such as IBM and Telerate are valued-added network service providers themselves.

The next sections describe the function or enduser-oriented needs of MNCs. As will be clear later, service (i.e. customer service and support, not telecommunications service per se) quality and scope are - as viewed by MNCs - the real differentiators among PTTs of different countries. These service needs will be presented in the section on Telecommunications Planning, Implementation, and Management. This latter section would be issue-oriented.
Role of Telecommunications

In general, the major roles of telecommunications for the surveyed MNCs are: business co-ordination, direct support of main-line business operations, technical support, and sharing of corporate data resources.

The MNCs are organizations with a number of geographically-dispersed business units that may include country sales offices, manufacturing sites, technical support centers, research and development laboratories, and headquarters. Co-ordination of activities in sales, production, inventory management, and delivery would naturally require telecommunications services. Many MNCs have revealed that they frequently use electronic mail, interactive computer applications, or the telephone to submit business plans, provide up-to-date market information, or collaborate with counterparts in remote locations to resolve critical marketing or technical situations (some may call for turn-around time in seconds or minutes, not hours). Some of these co-ordination work are automated using computer applications.

A glimpse of the scale of this role is shown by Malcolm Hamar remark that "there are about two hundred thousand users of Citimail in Citicorp." Citimail is used by many of the Bank's executives on day-to-day basis.

The second role of telecommunications is to support "bread-and-butter" business processes. This is the most basic form of the integration of information technology into "mission-critical" business processes. Transaction processing involving network of computers in different countries are required for most international banks. For example, some of our subject MNCs allow corporate customers to submit, electronically, banking transactions from (almost) anywhere in the world. Another example is Telerate, whose core business is value-added telecommunications service per se.

Telecommunications' role in critical business processes cannot be overstated. "Service outage can cause instant loss of revenue - by stopping our cardmembers from making payments with our cards," said a financial services firm's telecommunications director.
Provision of remote technical support through telecommunications lines is particularly important to firms selling high-technology products. One example is Motorola. Here electronic circuit design data are routinely transmitted from the local design center to the central support center where sophisticated (and expensive) computers will verify or refine the design. "For example, the profile of landscape in Hong Kong was sent to US where a simulation is done to locate the best site for mobile phone transmitters," said C.W. Lau of Motorola.

Another important function of telecommunications for the MNCs is the sharing of global corporate database, which may include extensive product specifications, competitive information, trade statistics, as well as marketing aids. For example, marketing representatives and systems engineers at IBM (Hong Kong) frequently access the internal databases and tools at a Toronto host computer to retrieve technical information and to configure complex computer systems.

Some MNCs have also linked up with their business partners (e.g. dealers, value-added resellers, or suppliers) or even their customers using electronic communication. Improved customer support and liaison is a key motivation of this latter development; this is a strategic use of information technology (i.e. computer and telecommunications) and the way some of the MNCs such as IBM are using to build up competitive advantage.

"Customer direct connection will allow collection of requirements and comments, order making, problem reporting, software updating, provision of technical support, and access to event schedules," said Simon Wong of IBM.

Applications and Use of Telecommunications Services

For our MNC samples, the most important use of telecommunications is data communications, i.e. "telecomputing" or computer-based communications. Such uses usually take two forms: on-line applications and file or document transfer.
On-line or interactive applications include the "traditional data processing applications" (e.g. sales analysis, order entry, inventory control), office automation applications (e.g. electronic mail or messaging, document filing, and spreadsheet), and database retrieval. Interactive applications require instantaneous or near instantaneous response, thus high speed communications lines are often used.

Database retrieval include the searching of central corporate databases or external, commercial databases ("information services"). A form of information service used frequently by the MNCs, especially the banks, is one-way "datafeeds".

*International voice communications and fax* are also used, though they are viewed as "complementary" to data communications (the world has changed !) in some MNCs. Some of the corporate networks carry voice conversations (i.e. digital voice) in addition to data (and even video). Most of the MNCs, however, use IDD or operator-assisted calls routinely. Telex and telegraph, however, are used minimally.

In terms of more advanced applications and services, most MNCs are still staying in "wait-and-see" mode.

The MNCs have mixed views regarding ISDN. Some MNCs are using ISDN elsewhere in the world (e.g. U.S.), but apparently there are no case of production use within this region, including Singapore. A few MNCs maintain that as the traffic volume increases, they have to use ISDN; one MNC is "anxiously" waiting for ISDN in dial-up mode, and is dissatisfied with the lack of full-function ISDN in Hong Kong (as is available in Singapore).\(^1\) Other MNCs, on the other hand, are not ready to take advantage of ISDN, particularly because of the lack of cost-effective terminal equipments ("customer-premise equipments"), and multi-media applications to take full advantage of the technology. After all, the "bandwidth" (i.e. capacity) advantage of ISDN can also be provided by other developing offerings with "band-width on demand".\(^2\) Extensive deployment of ISDN-based

\(^1\) There are three major components of ISDN : digital exchanges, "common channel C7 signalling", and digital access from customer premises. While the first two components are available, only partial provision has been made for the third due to a lack of a single common standard and appropriate terminal equipment. Singapore, however, has selected the standard adopted by Japan and has officially launched a full-function ISDN.

\(^2\) This will be elaborated in the next section.
telecommunications in MNCs will depend on worldwide trend and availability of "success stories" - the "bandwagon" effect.

**Video-conferencing** has the potential advantage of saving time (on travel) and money (on flights and accommodation), allowing ad-hoc, round-the-clock meetings, encouraging the pooling of talents without the constraint of geography, and allowing quick decisions or actions. However, only recently does this technology become cost-effective with the availability of in-expensive high-speed lines, effective signal-compression techniques, and terminal equipment at "acceptable price".

Video-based applications such as video-phone or video-conferencing has never taken off in the MNCs. Some MNCs are using video-conferencing infrequently, a few expect to expand its usage, and most have never used it in the region.

A few MNCs have started using or are planning to use EDI in small scale. Extensive application of EDI, however, is unlikely until a "critical mass" is achieved. This would in turn depend on the convergence of the two major international standards on EDI, availability of applications, linking up of existing EDI networks, development of local community-wide EDI networks, and various issues relating to security, the law, and cost.

In summary, the major needs of MNCs on telecommunications services are efficient base services, with the provision of low-cost, high speed international links. Provision of "value-added" services and ISDN apparently are less important for MNCs. One reason is that most MNCs already have a well-developed internal communications infrastructure with comprehensive in-house applications. However, as experts have pointed out, worldwide movements in EDI, growing needs on inter-company communications as spurred by removal of trade barriers,\(^1\) as well as wide-spread implementation of advanced telecommunications infrastructures may change the outlook of the MNCs.

\(^1\) This in turn would stimulate formation of international alliances and conglomerates.
Issues in Telecom Planning, Implementation, and Management

While the availability (offering) of the right type of telecommunications services are certainly important to the MNCs, our respondents had invariably stressed the importance of service quality both in the delivery of telecommunications services and in customer service.

Quality in Delivery of Telecommunications Services

A consensus of our MNC subjects is that quality in delivery of telecommunications service must be the PTT's top priority. Here "quality" includes the following elements:

- network availability (i.e. minimum "down" time, quick repair)
- network reliability (i.e. trouble-free, minimum service interruptions)
- efficiency of network implementation

The issue of availability will be discussed further below.

Quality in Customer Service

The key in this issue, according to the MNCs, is customer-orientation in sales and support. The first aspect is the flexibility in dealing - developing an optimal solution (encompassing both technical and business aspects) tailored to the need of individual MNCs. The second aspect - also an opportunity for "value-add" - is the provision of "total solution", including a full-range of professional or technical services such as consultancy and "managed services" (e.g. network management). These two aspects, however, must be built on top of professionalism, good service attitude, as well as the willingness and capacity to understand the customer's needs. The two aspects will be elaborated below.

The next few paragraphs describe the various issues raised by MNCs.
Basic Needs

Below are the basic requirements of MNCs' in terms of transmission services:

- transmission quality (i.e. "call" quality - free of noise, interference or corruption)
- efficiency of service set-up (i.e. fast call set-up and switching)
- diversity and variety of telecommunications services and customer-premise equipments
- connectivity and compatibility: between the PTT's network and foreign PTTs' networks, and between MNC's computer or terminal equipment to the PTT's network
- reachability of PTT's network to MNC's site

The last attribute is important for customer premises located in suburb area where accessibility to certain advanced telecommunications facilities may be restricted. This issue is faced more frequently by manufacturing firms than other industry sectors.

Provision of Value-Added Professional Services

Professional services interested by MNCs (especially smaller MNCs or MNCs having a small telecommunications operation) include consultancy, development of turnkey systems, systems and network integration, project management, facility management, and network management.

Among these services, network management is most frequently mentioned by the MNCs, small or large alike. Network management includes the monitoring, operation, maintenance and recovery of the MNC's network by the PTT. Consolidated billing, "customer charge-back", as well as statistics reporting are other elements of network management. Most MNCs view good network management as fundamental to both network availability and the efficiency of their telecommunications network. To the PTTs, network management also provides a large scope for value-add, good opportunity for differentiation, and attractive revenue potential.
One-Stop Shopping and Support

This is the concept of "single supplier contact" - to have the local PTT negotiate, on the MNC's behalf, with the PTT's counterparts in other parts of the region. These negotiations may include the arrangement of telecommunications links, "end-to-end" availability (see below), and tariff. Some MNCs placed high value on the one-stop shopping service.

Flexibility

Flexibility and network availability are viewed by MNCs as the qualities that set Hong Kong Telecom and Hong Kong Telecom International apart from their foreign counterparts. Flexibility in routing, capacity change, selection of terminal equipments, as well as terms and conditions (e.g. "service level agreement" - see below) are getting more and more important for MNCs.

Availability

As mentioned above, availability is the single most important quality for MNCs. Setting up of back-up lines by the MNC itself or making a "service level agreement" are two common instruments to address this issue. The terms of these agreements include, for example, a specification of "guaranteed up-time", "mean-time-for-repair", and a penalty schedule for non-compliance. Some form of service level agreement is built into enhanced services such as EIPLC (see Appendix A on Telecommunications Services). An interesting issue is 'end-to-end' availability. No PTT currently is able to provide such coverage because the other end of the network is beyond the control of the local PTT. One MNC had indicated, however, that it is willing to pay a premium for this end-to-end guarantee.

1 One MNC we surveyed had made a partial end-to-end agreement with HKTI and a PTT in Australia.
Capacity

Large capacity at low cost is the common wish of most MNCs, although tariff itself is not a critical issue to the our interviewees. "Band-width-on-demand" was identified as a key requirement. The flexibility in dynamically changing the capacity of the line (requesting the capacity at call set-up time rather than at service subscription time) allows a MNC to obtain extra capacity when needed while preventing the waste of paid but unused capacity (as is often the case of an ordinary fixed capacity leased line). This is a common requirement since the traffic volume on the line often change with the time of day or the day of the month. "Band-width-on-demand" can be provided by advanced technologies such as "Switch-Band" (see Appendix H).

Other Issues

There are issues raised by only one or two of the MNCs surveyed. One MNC which is not a value-added service provider would like to resell its excess line capacity. Another MNC is interested in an effective "single point of contact" on the PTT side for all its telecommunications needs. Another issue raised is security; however, it is generally recognized that end-to-end encryption and message authentication with the MNC's computers at both ends is the best approach for communications security.

Summary

To the MNCs, the most important issues are network availability, flexibility, and scope of customer service.

Flexibility in dealing builds on a willingness to negotiate and tailor services to suit individual customer needs.

1 This is currently prohibited in Hong Kong, unless for approved value-added service operator.
A broad scope of professional service, including network management, provides the PTT the basis for differentiation.¹

Moreover, most MNCs had expressed serious interest on one-stop shopping and bandwidth-on-demand.

¹ A MNC’s telecommunications needs cover four areas, namely application, network planning, design, and implementation, network operations, as well as transmission. For a PTT aspiring for regional eminence, professional services for networks (the second and third area) would offer good opportunity for value-add and differentiation. Transmission service is too difficult to differentiate.
CHAPTER V

TELECOMMUNICATIONS INFRASTRUCTURES/DEVELOPMENTS

Country Status Review

How does Hong Kong stand compared to other competing cities in telecommunications? Are we ahead by a margin that allow us to sit back and relax? Or are we just running shoulder to shoulder with others? Finding this out will tell us the urgency of action in this field.

The development of the telecommunications infrastructure and business in each country in the Asian region had been enormous for the past years. Together with the growth of the economy and trade in these countries, Hong Kong, Japan, Singapore, and Australia have been the most accomplished and advanced in terms of telecommunications provisions in the region for international business organizations.

The telecommunications structure in each of these countries is different, partly because of different history of establishment in each country, and partly because of the different policies adopted by the government in each country. The telecommunications policies differ in terms of degree of government control on the telecommunications operators, the extent and scope of liberalization or monopolization of different telecommunications services.

The following pages will give a brief review on the existing situation and plans on the market structure and policies of some of the regional countries, as background for a more thorough discussion on the latest situation faced by Hong Kong.
Japan

Japan has been the fore-runner in the liberalization of its telecommunications market. It began to open up its telecommunications market in 1985, with the passage of the Telecom Business Law. Competitors were introduced to the domestic long distance market with rates lower generally by 20% than NTT. The price level was reduced by almost 30% by competition, however, demand was proved elastic and revenue of NTT sustained.

International direct dialed telephone market showed a much more dramatic effect as a result of competition. KDD, the original monopoly carrier, despite lost 35% of the market shared and reducing 20% of tariff, maintained a modest 4% increase in revenue because of elastic demand. Japan's regulators have argued for the breaking-up of NTT into local and long distance companies. The attempt, however, was in vain. Failed in the divestiture, the regulators intend to follow the US example and implement an equal access program, forcing NTT into creating separate local and long distance divisions (thus ending the distant-to-local subsidy). The situation is still developing at the time of writing.

Australia

Australia also introduced deregulation and a second inland operator. The stated-owned domestic and international networks, Telecom Australia and OTC, were merged to form Telecom Australia/OTC, which will remain fully government owned. Optus Communications, made up of three Australia firms, Bell South and Cable & Wireless, bid for the Aussat - the privatized, loss-making satellite company - to become the second operator. Telecom aims at losing only 10% of its market share if possible and had already taken action to reduce cost, cut price and increase efficiency to meet the competition. Optus is likely to target the mobile telephone market first, before building the costly infrastructure to serve the large-volume trunk and international callers outside the larger corporations which were neglected by Telecom Australia, as a second move. The performance of the duopoly industry has yet to be proved.
South Korea

Until now, the communications services of South Korea have been operated by government-controlled monopoly organizations, Korea Telecom, the Data Communications Corporation of Korea (DACOM) and the Korea Mobile Telecommunications Corporation (KMTC). The market has been closely regulated and structured. Competition is now figured as the mechanism to develop areas where South Korea has not shown extensive development, especially mobile communications and value-added services. Korea Telecom will soon be losing its monopoly on voice service. DACOM, by 1991, will start to connect first on international and then local level. However, Korea Telecom will in return be allowed to compete in DACOM's business and provide Valued-Added Network Services (VANS). KMTC will also see competition in 1992 from a new licensed mobile operator, interesting probably with foreign interest in addition to Korea's chaebols.

Singapore

Singapore Telecom will be privatized in a matter of months and stop being a statutory corporation. It has enjoyed high growth and good reputation as a monopoly, and has provided low tariff and good service to the city state despite lack of competition. It has invested aggressively at S$1.8 billion for the past 5 years, and also has been pursuing globalization through the formation of strategic partnerships and the provision of consultancy services abroad. Indeed, the privatization has been a step to enable Singapore Telecom to form alliances and joint venture with overseas partners, invest and maneuver funds in these business ventures, and also to finance and operate as a business entity abroad instead of a government organization.

Although Singapore's telephone network will only be fully digitized by 1994, a year after Hong Kong Telephone, it is already ahead in areas such as Electronic Data Interchange (EDI) - paperless trading, and Integrated Services Digital Network (ISDN). It is investing US$320 million on an ASEAN optical fiber network to be completed in 1995. The telephone rental and IDD rates are slightly higher in Singapore than in Hong Kong as shown in Table 6 of Appendix G.
Hong Kong

Hong Kong has one of the most advanced local network in the world. The whole telecommunications business is under private hands and the government has been maintaining tight control over the basic local landline service and international telecommunications services. The exclusive franchise to operate and provide these respective services are granted to Hong Kong Telecom Ltd's subsidiaries, Hong Kong Telephone (HKT) and Hong Kong Telecom International (HKTI).

On other telecommunications services, the government has been quite liberal. The majority of these other services, such as mobile telephone, paging, trunk radio, CT2 (second generation cordless telephone), VADS (Value-Added Data Services), etc., are flourishing as a result of a well-controlled amount of competition. Players like Hutchison Telecom and the First Pacific Group are aggressively seeking to penetrate the telecommunications market.

However, in the midst of a worldwide trend of liberalization of the telecommunications market in most advanced nations, the Hong Kong regulator is under pressure to review the monopoly situation. The dilemma is that the monopoly has been investing huge amount of money in building and modernizing the existing network, and has been providing a high standard of service at comparatively low tariffs.

Regardless of the telecommunications policy adopted by the regulator, it is the performance of the infrastructure and industry as a whole that ultimately counts.

In the following, we will first examine the performance of Hong Kong in terms of satisfaction of the MNC users, and the regional competitiveness of Hong Kong as perceived by these users. Then we will look at the various strategic issues surrounding the industry and the opinion of the experts and users.
Country Performance as Assessed by MNCs

The performance of the telecom industry in Hong Kong is generally considered to be good and this is supported by facts and figures. To quote the Postmaster General, Dominic Wong, in his recent speech¹ in the Pacific Telecommunications Conference in Honolulu:

"We have 3.4 million telephone, 2.6 million exchange lines and 130000 facsimile lines. Over 90% of these lines are digitalized. These figures represent a high penetration rate of 59 telephone sets, 45 exchange lines and 2 facsimile lines per 100 population.... International telephone traffic reached 1375 million minutes in the year ending March 1991, representing four hours for each person in Hong Kong and an increase of about 23% over the previous year.... Services were widely available at relatively low prices.... we have licensed four cellular telephone systems.... the number of cellular phone users stands at 180000, representing a penetration rate of 3% population. I am told that Hong Kong has the highest population of hand held portable phones in any sizable cellular phone market in the world.... a very competitive radio paging market with over 30 operating companies. There are over 860000 users, representing a penetration rate of 15% of population. Again this is the highest in the world."

Of all the MNCs we interviewed, in fact, a majority of them are satisfied with the quality services Hong Kong Telecom provides. As commented by an anonymous interviewee who is the Director of Worldwide Telecom of an international company, "Hong Kong is providing good service and that is the result of development over the years... Hong Kong is small and it can capitalize on technology easily."

Sherman Chui of P & G also said, "...services and network in Hong Kong is very good already ....; incremental improvement might not help much in attracting more MNCs."

In the area of regional competitiveness, it also turned out that the majority of them conceded that Hong Kong out-performs Singapore in terms of flexibility in providing service to meet customer's needs. Malcolm Hamar of Citicorp remarked, "Hong Kong has better flexibility than Singapore." Similar remarks were also made by Tim Cureton of Hong Kong Bank and Paul Saalmans of Standard Chartered Bank. In fact, John Lee of Hong Kong Telecom said, "... we are well aware of our company strength in this area."

Hong Kong might have maintained this advantage because Singapore Telecom has been a government organization up to now; the situation might start to change when privatization happens in few months time.

While the tariffs of both countries are similar with Hong Kong claiming a slight edge, Singapore has suffered minor glitches in disruption of international service to over 50% more than a few times in the past 5 years compared to none in Hong Kong. Nevertheless, the overall service performance of Singapore is commendable. "Singapore has a very competitive attitude, good service performance, although being a bit inflexible," said Tim Cureton.

On the other hand, Singapore has been showing a very competitive posture as felt by our interviewees through its pioneering offerings in EDI ("Tradenet") and ISDN services in recent years. Although its ISDN service has not quite taken off, Singapore has positioned itself as an advanced telecom services provider, and has gained good international image and publicity, possibly at a cost to the overall government budget.

"Hong Kong is not selling itself as Singapore does. There is no coherent government strategy like Singapore. Singapore seems always to have a clean record and the capacity to do things right," commented a telecommunications director.

However, as John Lee and Andrew Wong mentioned, "Singapore has been criticized for its lack of international fiber-optics connection, though it is working hard on it."
The cost of telecom service from Hong Kong Telecom, albeit already very competitive worldwide (often quoted as second cheapest in the region), are deemed to be on the high side by most interviewees. The general feeling of these users was that the reduction in cost resulting from technological advances had not been adequately passed on to the users.

Tim Cureton, the President of the Hong Kong Telecom User Group, also commented, "telecommunications services charges in Hong Kong are not that cheap". This view is shared by another telecom director of a major bank, who maintained that "telecom tariffs in Hong Kong are still too high."

Of course, there are satisfied people too, like Cadol Cheung of Intel. Cheung was "...not particularly concerned on pricing but rather on other more critical issues like reliability."

Hong Kong, nevertheless, by maintaining the center position in the region and being the gateway to China, still enjoys a unique position.

After all, Malcolm Hamar, with all his experience flying in between the Citicorp hub of Singapore and administration operation in Hong Kong, believed that, "Hong Kong should slightly improve in both quality and cost."

For the other regional centers, Tokyo offers an established telecom gateway, with a modern network and established international connectivity from a choice of carriers. It has its own market as regional center and the high price on telecom services does not appear to be a key issue.

Sydney is down south and located on the edge - both geographically and culturally - from what is traditionally acknowledged as Asia. The telecom network is not as advanced (it has no international fiber optics connections), but the cost of service is competitive. This is reflected in John Lee's comment that "Australia is using a low cost strategy but the technology is not that advanced."

Japan and Australia are countries with their own sizable domestic markets which attract foreign investment, therefore they are usually not a direct competitor to Hong Kong.
On the other hand, although it is often emphasized recently that Hong Kong and Singapore can cooperate more for regional development because of their different industry strengths and geographical location, the two cities are still basically fierce competitors to each other for regional center position.

In the case that a MNC would consider the co-existence of two regional centers, then Hong Kong will logically serve as the center for the northern Asia and Singapore as the center for the southern Asia, i.e., the ASEAN countries. This dual-center arrangement is in fact proved to be quite popular among the companies we interviewed.
CHAPTER VI
LOCAL INFRASTRUCTURE ISSUES

We have presented the MNCs' assessment on the performance, value and comparative positions of Hong Kong and Singapore as regional center in the previous chapters. Granted that we have established the level of importance and priority of the subject, what are the things that we can or should do in our telecom infrastructure planning? And what is being done? What is the likely scenario if we proceed with certain changes?

We will find out by looking into the local issues in Hong Kong and the suggestions that some of the MNCs have on how the future telecom infrastructure should be planned. The aim is to recommend a future country strategy for Hong Kong.

Time of Changes

As discussed in the previous chapter, the major countries in the region including Japan, Australia, Korea are all reviewing the monopoly situation which is left in the basic local and international services, covering the plain old telephone service (POTS), land-based and satellite data communications.

On the other service areas like radio communication which includes cellular phone and paging, development had been relatively recent. Usually competition was introduced at the same time when these services were brought into existence. In the case of Hong Kong, these other services have been operating in a free market environment and the introduction of innovation and leading edge services has been satisfactory.
The Deputy Postmaster General, Tong Wong, sounded extremely positive in this aspect, pointing out that "The government is providing the right soil for the private sector firms to farm."

Stephen Dickinson of Hong Kong Telecom CSL is also "...happy with the growth of value-added services in Hong Kong."

**Historical Background**

Traditionally, the basic network services were believed to be natural monopolies and economy of scale was needed for a provider of the service to be successful. They are protected by the government by allowing a monopoly franchise to be conferred to a single player to develop the infrastructure which typically requires heavy investment commitment.

Over the past decades, the infrastructure development by these monopolies was therefore allowed to happen under a stable, protected environment and most of them have achieved a mature stage. The price paid to this kind of arrangement is the occasional high tariffs set by monopolies; another "price" is the monopoly supplier power which sometimes could make them inflexible and not oriented towards customers.

The monopoly operators in different countries could also collude and form cartels in the provision of international services resulting in high profit margins. Very often, the differentiation of cartel or leadership pricing and pricing by a perfect competition can only be made by accountants investigating deeply into the accounts of the company, as highlighted by John Ure, economist at the Hong Kong University Center of Asian Studies. It is a general phenomenon that international revenue is used to subsidize local service.
**Liberalization Trend**

Starting in the eighties in the US, there has been a wave of changes which liberalizes the basic telecom industry by introducing competition into the US market, with forced divestiture of the monopoly.

Competition is seen as an effective means to drive down tariff and also make the service providers more responsive to customer demand, in other words, more customer-oriented. In some countries, deregulation has been quite successful in bringing down the price of services while maintaining a healthy profile of competitors, but this hinges on an elastic demand of services.

The mere availability of choices for customers brought about by liberalization, and the elastic demand of telecom services, will bring about a further booming telecom market, according to comments often made by AT & T officials outside US.

**HKTI Franchise**

In the face of this trend, the government is confronted with pressure to apply the same formula to Hong Kong. However, the fact is that this whole liberalization trend was not foreseen ten years ago when the government struck a deal with the then Cable & Wireless Hong Kong for an exclusive 25-year franchise to provide international service up to 2006.

Although the government can revoke the agreement if it is deemed to be in the best interest of the consumers, the long term desirabilities of liberalization is questionable. Furthermore, the government has a confidence liability in the agreement, "as a deal is a deal", according to Jonathan McKinley, Assistant Secretary of the Economic Services Branch. The Economic Services Secretary, Mrs. Anson Chan, has commented that there were no plans to end the monopoly and that the international service monopoly would only be dissolved under "very compelling and overriding factors in favor of the consumer."
External Pressure

In fact, the pressure on the government has been coming in continually from the following dimensions. The liberalization trend has generated much interest in critics. The growing importance of the telecom sector also attracts attention.

A report released by US Telecom researcher Dr. Milton Mueller claims that HKTI's net profit margin on international service is 60 to 70%, overcharging HK$1.5 to 2 billion per year, and making telecom usage a heavier burden for business entities. Moreover, part of the international revenue is used to subsidize the local service, making competition from other contenders impossible even if the local monopoly does not exist.

Numerous expression of opinion was observed both from overseas and from within the colony. Different viewpoints were held and the resulted desirabilities of a more liberalized market for basic service were discussed.

The government has learned a hard lesson in its Cable Television policy from Hong Kong Cable Communication in trying to tie the Cable Television business to the second local network, without defining clear cut business arena between Cable Television and Satellite Television. It is now taking extreme caution in handling the Pay Television issue. General telecom policy has a even much more profound impact on Hong Kong's future, thus, the pressure on the government not to make any mistake is paramount.

Our interviewees in the first round who are experts and some being professionals with interest affected have strong views on the issue. The MNC users interviewed also expressed their views on the subject. These are together presented later.
Newcomers

A result of the liberalization is that established carriers are under attack in their home market, and thus look overseas for future revenue. AT&T has 15% of its total revenue of US$37.3 billion came from abroad in 1990, and they are thinking of 50% in the long term. This fits in with the general globalization trend of the business world and takes particular advantage of the liberalization trend of the telecom industry.

Overseas operators who have come to Hong Kong include AT&T, British Telecom, MCI, Sprint, etc. The local giant, Hutchison Telecom, is making strong appeal to the local community in its lobbying for public and councillors' support for more liberalization. In fact, the public media has been extensively used as a warfare. Nevertheless, these players are likely to become part of our future infrastructure if liberalization has its way.

Political Issue

The US Department of Commerce's Foreign Commercial Service unit has listed telecom as one of the top potential markets for American business in the territory. This kind of interest from overseas governments has further raised the issue to a political level.

To complicate the matter, Hong Kong has a 1997 concern. Hong Kong Telecom, having sold 20% of ownership to CITIC, the investment arm of the Chinese government in Hong Kong to buy political insurance for 1997, has put China into the picture. Having an interest in the monopoly, the Chinese would not like to see much change happen to the existing business.

Furthermore, Hong Kong Telecom is having a very favorable accounting rate arrangement with the Telecom operators in China for historical reason. Almost 40% of IDD traffic to or from Hong Kong is now destined to China. The large amount of international settlement to China represents forex income for China. The money is reinvested into building the infrastructure, which in turn may have a very positive effect on the future economy of Hong Kong, being the gateway to China. A better
telecom infrastructure in China benefits our target MNCs and also the value of Hong Kong as a regional center.

Andrew Mutch explained, "the transfer of switching equipment from Hong Kong to China in the region of 400000 circuits had been a helping hand to China in its infrastructure development." The resulting facilitation in cross-border trade and economic development in China is not measurable.

Therefore, all of the above-mentioned issues have to be considered for the planning of the future telecom infrastructure in Hong Kong in the interest of the MNCs.

The complexity of the subject provides challenges to the administration. It must be viewed as an opportunity to review our whole telecom policy at a time never more suitable. The government is in fact doing this at the moment with the appointment of the UK consultant Booz Allen Hamilton. While the government will be judging alternative proposals based on their economic, social or even political impact, the authors are only interested in the impact on MNCs.

**Interview Input**

Our findings from the MNCs is that most of them believe that competition may bring along lower tariff and a wider choice of suppliers. They believe that more innovative solutions will be available. The suppliers will become more willing to listen to the needs of the customers; service level and quality, at the same time, may also be improved.

After all, they didn't seem to share any concern on the long term worthiness of liberalization, nor any concern on whether and how, in fact, can any market change be engineered to produce the often-claimed benefits.
**Second Physical Network**

On the laying of a second physical land-based network, the general feeling among the interviewees is that it may be a waste of economic resources. This view is shared by many users including Malcolm Hamar, Sherman Chui, Griff Griffth, as well as suppliers like Robert Liong and Andrew Mutch.

In fact, the views for the laying of a second network that have been expressed thus far are mainly from the potential second network contenders, who claim that a highly advanced fiber optic network extending to individual building in the territory should be built for the provision of future services.

These applications will be Broadband ISDN, multimedia data transmission, etc. However, both the technology and generalized market for these applications are not matured yet. Moreover, the kind of astronomical investment required for this plan is quite forbidding to any company given the uncertainty of payback.

**Deregulated Scenario**

Through the interviews, a scenario which will result if the government discontinues the local network franchise, and legalize simple resale of voice and data services on HKT international circuits, is constructed. The scenario is presented to serve as advice for the regulator before any direction is actually taken. But it should not be taken as the prediction of any particular interviewee.

Since the profits of the potential new entrants are in the international services, it is pointless to enter into local network services without the government liberalizing the international service, not to mention the fact that local telephone usage are chargeless. Thus, the assumed direction seems logical.

Unjustified to build a territory wide land-based network, the new entrants will seek connection to Hong Kong Telecom's network to provide lucrative international service. Hong Kong Telecom
will be forced to slash price as a result of the competition as it happened for overseas precedents. The new entrant will also need to maintain the price differential with HKT to remain attractive. This will just make life tough for these newcomers.

The reduced international tariff will lessen the cost of operation of MNCs and might in this aspect make Hong Kong more attractive as a regional center. The feasibility of reselling extra capacity of international capacity to third parties will encourage bypass of the operator by MNCs to reduce cost, and even offer telecom services to generate wealth of its own accord. These will be the most relevant effects on the subjects of our study, the MNCs.

However, Hong Kong Telecom would want to reduce or even eliminate the local-to-international subsidy because, firstly, its international revenue is probably decreased or barely maintained by an elastic demand, and secondly, it would be unfair to subsidize any competitor.

If the government does not allow the raise in charge for local telephone rental or even introduction of local usage charge, the reduction on international usage charges will be lowered, and the point to build second local physical networks even more slim.

If the government allows local charge increase, it will be the general public in Hong Kong that will be paying for the cost of lowering international tariff. In other words, the consequence of this confining competition in the scope of international communications would be a redistribution of Hong Kong's telephone resources from the local business and residential subscribers to the big international organizations.

The case of Mercury Communications Ltd. in UK grasping only 2% of the residential market but a significant percentage of the business market is a good instance. But MCL is only in a duopoly situation. In US and Japan, the third and fourth operators are fighting a hard life to earn profit. The overall economic resources might just be slightly better utilized in view of this fact.

Hong Kong Telecom might reduce its long term investment into further building the infrastructure in Hong Kong because of its reduced profit margin. The service quality and attitude,
and the efficiency of all the operators might turn for the better, and more innovation might happen, only if a healthy industry indeed results. The fuel for the building of telecom infrastructure in China from Hong Kong traffic settlement will probably continue and so no negative impact will occur on the gateway factor of Hong Kong.

The new entrants are only likely to provide radio link or optical land-based network service in central financial business areas sharing the most profitable bit of business.

The new choices of suppliers will benefit the MNCs, but the social cost to the general public also needs to be discounted.

**Scheme of Control**

Those interviewees who expressed their idea on this subject all support the proposal of Hong Kong Telecom's proposal to the government of tying tariff increase to inflation, i.e., the Relative Price Index (RPI).

They all agreed that the expired Scheme of Control which tied tariffs to the profit margin of HKT is only good for the past decade when a stable guaranteed profit operation is needed for the development of the infrastructure. Now that the network is stable, efficiency control through price control is more suitable.

Tim Cureton and Andrew Mutch, in particular, explicitly agreed with the above.

The interviewees from HKT also expressed that since the intention of the government to review the local network service franchise was revealed in the 1988 BAH report, the company has been preparing for operating in a competitive environment. Reorganization to new team management structure, delayering management, changing the reward system, emphasizing long term strategy and vision, and improving employee training, are programs that are designed and conducted to get the company ready for competition.
"Tying the tariff to the price index will make HKT work harder on the above items to strive for cost leadership and efficiency," said both Andrew Mutch and Tim Cureton.

**Regulatory Framework**

An area which has gathered wide-spread support from the interviewees is the need for reform on the regulatory mechanism of the telecom service in Hong Kong. The present system is a two department system where the Telecom Branch of the Post Office will take care of the technical areas while the Economic Services Department takes care of accessing the economic impacts.

Any new service to be launched by Hong Kong Telecom has to be reviewed by both departments and be passed to the Legislative Council for approval before the Telecom Ordinance can be amended. The need for the amendment of the ordinance every time a new service is launched means that the approval cycle gets delayed.

On average, a new service approval takes twelve months. Andrew Mutch proclaimed, "I could readily quote examples of services applying for the Post Office approval got delayed in their launches." The system is out-dated and inappropriate.

There is also not a central body which maps out the telecom policies for the government and the Post Office is required to take up evaluation work which can not be efficiently performed under the more complicated Post Office structure.

Therefore, an independent regulatory body similar to the OfTel in UK was recommended to be set up. Overall policy drafting for better telecom planning, more transparency to the regulatory process, and speedier approval are expected to result.
CHAPTER VII

RECOMMENDATIONS

Given all the information we have acquired and discussed in the previous chapters, what do we suggest the government to do? What do all the above findings lead to?

Hong Kong Telecom and Hong Kong Telecom International

While HKTI and HKT are highly regarded by the MNCs in terms of flexibility and network quality, there remains rooms for improvement and opportunities to exploit. For example, the PTTs should be more aggressive in rolling out new products and services as well as keeping pace with technological developments. They should, moreover, establish more lines into China, as well as more digital gateways to European cities such as London. The PTTs should also exploit the market potential on professional services and position as "total solution" vendor for MNCs. HKT and HKTI must realize that, with the privatization of Singapore Telecom this year, they will face even greater challenge than before. In fact, Singapore Telecom had announced on April 14, 1992 a price cut of up to 60% on private international leased lines (with extra discounts for MNCs using Singapore as their telecommunications hub), a move that would be appealing to the corporate customers.

Policy: Market Review, Transparency and Government Initiative

With the massive and fundamental changes in the telecommunications industry and market worldwide, Hong Kong, as a key contender for regional center position, is bound to surf the tide in order not to get drown. By reviewing the market and weighing the cost and benefits of alternative
scenarios, Hong Kong's development in telecommunications would likely be accelerated. The benefits of telecommunications services users, including the MNCs and consumers, should be taken as the first priority in the consultation and evaluation process. The current PTTs' and any other possible players' incentives for investment and expected return must also be considered for any workable change to take place, instead of just following the trend blindly.

Hong Kong's success in any structural market changes deemed desirable would set a good role model for other countries in the region, thereby enhancing Hong Kong's leadership image. Thus market review should also be viewed as a strategic move promoting Hong Kong's position as a regional center. But, by the same token, any implementation failure can make Hong Kong's image worse off. The regulator's seat is a hot one.

Some experts have argued that extensive competition would be counter-productive to efficiency in resource utilization and therefore a monopoly under an aggressive regulatory body would be the best approach. Some other experts are concerned about the uncertainty of China's position in the deregulation issue, given CITIC's business interest in Hong Kong Telecom. However, Dominic Wong, the Postmaster General, has pointed out in his recent address in COMMTEL Asia '92, deregulation would be one of the key developments in this region. What remains uncertain is the degree of competition allowed or materialized.

Besides market review, another recommendation is to improve the transparency of the government's decision-making process. A "gentlemen's club" - a description provided by one of our interviewees, is perhaps a good imagery of the current state.

Our last policy recommendation is government initiative in formulating clear "country strategies", shaping a desirable market structure, and in spearheading capital projects such as a community EDI network.

Some of our interviewees are annoyed by the government's apparently reactive mode in the issues, the lack of "realism" as well as the lack of clear, communicated strategies and objectives. The government, they argue, should take an aggressive, leadership role in spearheading projects of
long-term significance. For example, the government should reference Singapore's success in EDI and fund the local EDI project as a "national" investment, in light of the difficulty in achieving a "critical mass" of users without government intervention.

Thus the government should put aside its long-standing policy of "positive non-intervention" in favor of an active, leadership role. While the obvious reason may come from Japan's or Singapore's success in stimulating high-technology research and development, a more subtle reason is that positive non-intervention may work only in countries where the tie between business and politics (for Hong Kong, this includes China's interest in Hong Kong Telecom) is not strong and where the industry players' power are not highly out of balance. Moral suasion, in these circumstances, may not be an sufficient and effective means of directing industry development.

**Regulatory Bodies**

Today's world is a complex environment. Both telecommunications technology and the telecommunications industry as a whole have undergone tremendous transformation unforeseeable even a decade ago. Business condition has likewise been changed, leading to substantial integration of business and telecommunications. At the same time, the line between industries has blurred. One example is ATC offering of credit cards, another example is the provision of financial services by Sears and Roebuck in the U.S. through its country-wide department store and telecommunications network. The implication of these trends is that the traditional approach of regulating the PTT as an *utility* company has become completely out of place.

Another problem is that the Legco has often been the bottleneck on PTT's introduction of new services (as these would require Legco review on proposed tariffs). Some of our interviewees had also pointed out the lack of expertise on the part of the legislators. As our research has verified, few people in Hong Kong have a complete grasp and a full perspective of the intricacies of the issues concerning the telecommunications industry.
Our recommendation is to set up an independent regulatory body with prominent intellectuals, industry experts (without any potential conflict of interest), plus knowledgeable individuals from the existing Hong Kong Telecommunications Authority and the Economic Services Branch. Such body should not only play a monitoring role, but also formulate long-term strategies, policies and implementation plans on Hong Kong's telecommunications development.
CHAPTER VIII

CONCLUSION

This research topic is significant for two reasons. First, maintaining the role as regional center is important to Hong Kong's future (political stability and economic prosperity). Second, a strong telecommunications infrastructure is necessary for maintaining Hong Kong's competitive advantage as regional center.

The timing of this study is particularly appropriate as the many transformations in the environment are still unfolding.

Across the world the trend in business globalization, economic integration of countries, liberalization of the telecommunications industry, as well as the advent of advanced telecommunications technologies are accelerating the integration of telecommunications into business operations. The "information-based society" has emerged.

In the Asia-Pacific Region the "era of Asia-Pacific" is emerging, along with the trend in relocation of MNCs' backroom operations away from Hong Kong. Privatization and massive investment in telecommunications are underway.

Locally the telecommunications scene has changed toward greater competition, liberalization, and increased market sophistication. Hong Kong Telecom's franchise is at threat, and a decision is expected within months. Meanwhile the EDI plan appears to go nowhere. The long-standing policy of positive non-intervention is forced to be modified in high-technology research and the real estate market. The government has also embarked on building Hong Kong's future with massive infrastructural development such as the airport and port project. Local scholars and experts,
especially the academe, have begun to develop "technology roadmaps" for Hong Kong. 1997, by the way, seems to be already over the horizon.

All these developments have raised a lot of questions regarding where Hong Kong would go and be ranked in telecommunications infrastructure. A most important question, of course, is whether Hong Kong would maintain its regional center position. While the intricacies of these issues would defy a simple conclusion - especially through our simplistic study - our findings do shed some light on these questions.

Our conclusions are:

- Telecommunications infrastructure is fundamental to competitiveness as a regional center - a definite requirement though not a deciding factor;

- Hong Kong is lagging in the development of strategic telecommunications infrastructures and, though no significant impact is evident, Hong Kong must maintain leading-edge telecommunications facilities and services for long-term competitiveness.

The importance of telecommunications in headquarters location decision was hypothesized with common sense reasoning by examining business and technology trends and was supported by expert opinions and a survey on MNCs.

The Hong Kong telecommunications service suppliers out-perform their counterparts in other cities within the region in service quality and flexibility in the mind of MNCs. Hong Kong's slow progress in EDI and ISDN is not generally recognized as serious deficiencies as only a small number of MNCs are ready to take advantage of these offerings. Some (but not all) experts, however, believe that EDI and ISDN will drastically change the telecommunications scene of the world, and a regional center contender without these facilities will have severe disadvantage in the competition. Besides, difficulties in predicting the development and impact of new technologies might have caused the MNCs to understate their future needs (the computer is a case in point).
In order to achieve long-term competitiveness, Hong Kong should accelerate her telecommunications investment as well as further the development in the market structure and regulatory framework.

To quote the OMELCO: "Our future prosperity and stability depend on maintaining and promoting our regional center and international city status. In the process we must constantly improve what we can offer to the world." Hong Kong's mission, then, is to provide international companies with an attractive, stable, well-served and well-placed regional headquarters. A key focus is telecommunications.

Further research on the following issues is required in order to develop a workable strategic plan:

- strategies to market HK's telecommunications strength,
- detailed plans for making HK's telecom the best, and
- the way telecommunications affect other factors in headquarters location decision

Moreover, the validity of findings may likely be improved by including more MNCs with a full range of attributes such as size, country of origin, international business interest, industry type, and existence of regional headquarters.
APPENDIX A. TELECOMMUNICATIONS INFRASTRUCTURES AND SERVICES

Below are our definition of telecommunications infrastructure and our classification scheme for telecommunications services.

**Telecommunications Infrastructure**

- satellite links (satellites, earth stations)
- submarine cables (copper wire or optical fibre)
- microwave links and relays
- network of exchanges, trunk-lines, and subscriber loops/circuits (with cable or wireless connections, digital or analog)
- public telephone switched network (PSTN)
- cable TV network
- packet switching networks

**Telecommunications Services**

**Base Services**

- centrex or private branch exchange
- local phone (voice, dial-up) service
- long-distance phone service
- cellular/mobile phone and radio service, CT2, "Personal Communications Network (PCN)"
- private (leased) lines for data communication (local/international), e.g. IPLC
- fax lines

"Higher-Order" Services

- "Integrated Service Digital Network (ISDN)" (integration of media including voice, data/text, image, and graphics)
Value-Added Services

Application/Function-Related

- information (database retrieval) services, "mobile data" services, "data feeds" (e.g. "Videotext", "Viewdata", "TDCLink", "Hutchison Mobile Data", "SHK Financial Information Service", "Telerate Financial Information Service", "Reuters", "Dialog", "CompuServe")
- voice messaging/mail and paging
- electronic mail (e.g. "AT&T Mail, Sprint Mail")
- interactive applications on remote host (computer)
- store-and-forward or broadcast fax
- packet switching
- message switching
- electronic bulletin board
- video-conferencing
- EDI, document interchange
- electronic fund transfer, home banking, "electronic banking"
- personal phone services (e.g. call waiting/forwarding, conference calls)

Capacity-Related ("Enhanced" Services)

- "Enhanced International Private Leased Circuits (EIPLC)" (guaranteed availability and delivery, single supplier, one price and currency, monthly reporting, full range of speed)
- frame relay (packet-switching for interconnection of local area networks, high speed/capacity, good for bulk file transfer, dynamic routing, provision for customer-premise equipment, single point of contact)
- "SwitchBand" (bandwidth-on-demand, international circuit switching, dial-up, large bandwidth, fast call set-up, single supplier contact, mostly variable pricing)

Consultancy, Customer Services, and Special Arrangements

- call accounting, consolidated billing, consumer "charge-back"
- network management, facility management, technical support, inventory/asset management
- "virtual" (managed) networks
- consultancy and special projects (e.g. for network design, planning and implementation, systems integration, network integration, "out-sourcing")
- "one-stop shopping"
- arrangements such as "bandwidth-on-demand" (e.g. through SwitchBand) or "service level agreements" (e.g. with EIPLC)

Other Provisions

- connections to international public or specialized networks (e.g. SWIFT, BitNet, Infonet, Telenet, MailNet, Internet)
- satellite TV and direct-broadcast TV
- customer-premise and end-user equipments (with features such as voice recognition)
## APPENDIX B. LIST OF INTERVIEW SUBJECTS

### First Round Interviews

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Interview Date</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Academics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mr John Ure</td>
<td>Research Associate&lt;br&gt;Telecommunications&lt;br&gt;Centre of Asian Studies&lt;br&gt;Hong Kong University</td>
<td>7 Jan 92</td>
</tr>
<tr>
<td><strong>Government</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mr Tony Wong</td>
<td>Deputy Postmaster General&lt;br&gt;Telecom Branch&lt;br&gt;Post Office</td>
<td>21 Jan 92</td>
</tr>
<tr>
<td>Mr Jonathan McKinley</td>
<td>Assistant Secretary&lt;br&gt;Economic Services Branch&lt;br&gt;Government Secretariat</td>
<td>15 Jan 92</td>
</tr>
</tbody>
</table>
### Telecommunications Service Suppliers

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Company</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr Andy Mutch</td>
<td>Branch Manager</td>
<td>Private Network/Datacom</td>
<td>27 Jan 92</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hong Kong Telecom Ltd.</td>
<td></td>
</tr>
<tr>
<td>Mr Robert Liong</td>
<td>Branch Manager</td>
<td>International Carriers Relation</td>
<td>27 Jan 92</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hong Kong Telecom Ltd.</td>
<td></td>
</tr>
<tr>
<td>Mr John Lee</td>
<td>Branch Manager</td>
<td>International Sales Support</td>
<td>3 Jan 92</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hong Kong Telecom Ltd.</td>
<td></td>
</tr>
<tr>
<td>Mr Andrew Wong</td>
<td>Section Manager</td>
<td>International Carriers Relation</td>
<td>10 Jan 92</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hong Kong Telecom Ltd.</td>
<td></td>
</tr>
<tr>
<td>Mr Chan King Bor</td>
<td>Unit Head</td>
<td>International Sales Support</td>
<td>11 Jan 92</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hong Kong Telecom Ltd.</td>
<td></td>
</tr>
<tr>
<td>Mr Simon Krieger</td>
<td>Managing Director</td>
<td>AT &amp; T Hong Kong</td>
<td>14 Feb 92</td>
</tr>
<tr>
<td>Mr Stephen Dickinson</td>
<td>Deputy Director</td>
<td>Advanced Communication Services</td>
<td>23 Jan 92</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hong Kong Telecom CSL</td>
<td></td>
</tr>
</tbody>
</table>

### User Association

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Company</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr Tim Cureton</td>
<td>President</td>
<td>Hong Kong Telecom User Group</td>
<td>15 Feb 92</td>
</tr>
</tbody>
</table>

### Industrial Consortium

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Company</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr Griff Griffith</td>
<td>Manager</td>
<td>Business Strategy &amp; Services</td>
<td>18 Jan 92</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tradelink Electronic Document Services Ltd.</td>
<td></td>
</tr>
</tbody>
</table>
# Second Round Interviews

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Interview Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr Malcolm Hamar</td>
<td>Vice President, Citicorp</td>
<td>24 Feb 92</td>
</tr>
<tr>
<td>Mr Richard Sedgwick</td>
<td>VP &amp; Director, Bank of America</td>
<td>4 Mar 92</td>
</tr>
<tr>
<td>Mr Paul Saalmans</td>
<td>Telecommunications Manager, Information Technology Division, Standard Chartered Bank</td>
<td>24 Feb 92</td>
</tr>
<tr>
<td>Mr Tim Cureton</td>
<td>Manager - Group Telecommunications, The HK and Shanghai Banking Corp Ltd.</td>
<td>15 Feb 92</td>
</tr>
<tr>
<td>Anonymous</td>
<td>Director, Planning &amp; Account Services, APA World Wide Telecommunications, A renowned financial &amp; travel services company</td>
<td>2 Mar 92</td>
</tr>
<tr>
<td>Mr Simon Wong</td>
<td>Manager - Internal Computing Services, IBM China/HK Corporation</td>
<td>25 Feb 92</td>
</tr>
<tr>
<td>Mr Eric Ng</td>
<td>Technical Manager, North East Asia, Telerate Financial Information Network (HK) Ltd</td>
<td>26 Feb 92</td>
</tr>
<tr>
<td>Mr C W Lau</td>
<td>Network Engineering Manager, Corporate Communications Systems, Asia Pacific, Motorola Asia Ltd</td>
<td>28 Feb 92</td>
</tr>
<tr>
<td>Mr Alastair Donaldson</td>
<td>Information &amp; Computing Service Mgr, Shell Hong Kong Limited</td>
<td>4 Mar 92</td>
</tr>
<tr>
<td>Mr Cadol G Cheung</td>
<td>Manager, Planning &amp; Information Service, Intel Semiconductor Ltd, Asia Pacific</td>
<td>27 Feb 92</td>
</tr>
<tr>
<td>Mr Sherman Chui</td>
<td>Group Manager, Management Systems Division, Procter &amp; Gamble HK Ltd</td>
<td>25 Feb 92</td>
</tr>
</tbody>
</table>
APPENDIX C. QUESTION AREAS FOR MNC INTERVIEWS

Regional Headquarters Status/Plans

- A/P operations - countries with operations
- current regional HQ location (where and since)
- current telecommunications hub
- plans for moves (where and when)

Telecom as a Factor in HQ Location Decision

- factor importance
  - < necessary?>
  - < sufficient?>
  - < key?>
  - < secondary?>
  - how and why (in brief)?

Telecom Needs and Issues (Scenario, 3-5 Years)

- focus areas
  - role of telecom (and needs/issues specified) in business process
  - telecom plans (1-3 years and 3-5 years)
- utilization of telecom service
  - < forerunner?>
  - < heavily dependent?>
  - < central to business operation?>
  - < requires basic service only?>
- services required (currently using and envisioned)
  - basic telecom services and value added services
    e.g. voice, data, fax, telex, telegraph
    e.g. ISDN, EDI, E-Mail, Store-&-Forward Fax, Teleconferencing, Info-Service, EFT
    e.g. (general) PSTN, ISDN, Packet Switching, Message Switching
  - local and international
  - personal and computer networks
  - intra-company and inter-company
  - international private line
  - end-user equipment
    e.g. ISDN terminal, voice recognition
- issues
- telecom service quality (transmission quality, availability/reliability)
  e.g. digital lines/exchange, fibre optics, network management
- telecom service technology & scope
  e.g. bandwidth on demand
- customer service/support quality
  e.g. service responsiveness, regional support
- service flexibility and convenience
  e.g. special deals, one-stop shopping, out-sourcing
- cost
  e.g. competitive tariff, regional/hub tariff

**HK's Position in Telecom Service**

- general assessment
  - service comprehensiveness
  - standing in relation to issues mentioned
- HK in comparison with other countries
  - Singapore
  - Australia
  - Japan
- summary
  - <telecom provides regional competitive advantage for HK in relation to the MMC’s HQ location decision?>

**Recommendation to HK**

- question areas: what, when, and why
- improvements needed
  - service offerings
  - issues-related
- changes in government policy and regulatory framework
  e.g. competition adequacy, regulatory mechanism
APPENDIX D. CONVERGENCE PATTERN OF INTERVIEWEE REFERRALS

<table>
<thead>
<tr>
<th>Interviewee</th>
<th>Referrals by Interviewee Showing Convergence</th>
<th>Other Referrals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experts (lower case letters)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>b,j,M,N,O</td>
<td>--</td>
</tr>
<tr>
<td>b</td>
<td>a,j,M</td>
<td>--</td>
</tr>
<tr>
<td>c</td>
<td>k,M</td>
<td>Hutchison, DEC</td>
</tr>
<tr>
<td>d</td>
<td>f,N,O</td>
<td>British Telecom</td>
</tr>
<tr>
<td>e</td>
<td>f,M,N</td>
<td>Hutchison</td>
</tr>
<tr>
<td>f</td>
<td>M,N</td>
<td>British Telecom</td>
</tr>
<tr>
<td>g</td>
<td>h,k,M,N</td>
<td>HK Telecom</td>
</tr>
<tr>
<td>h</td>
<td>i,j,k</td>
<td>--</td>
</tr>
<tr>
<td>i</td>
<td>k</td>
<td>HK Telecom</td>
</tr>
<tr>
<td>j</td>
<td>b</td>
<td>--</td>
</tr>
<tr>
<td>k</td>
<td>h</td>
<td>--</td>
</tr>
<tr>
<td>l</td>
<td>Nil</td>
<td>--</td>
</tr>
</tbody>
</table>

MNCs (upper case letters)

<table>
<thead>
<tr>
<th>M</th>
<th>f,N,O</th>
<th>British Telecom</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>M,P</td>
<td>Reuters, Cathay Pacific</td>
</tr>
<tr>
<td>O</td>
<td>M,N,T</td>
<td>--</td>
</tr>
<tr>
<td>P</td>
<td>M,N</td>
<td>Cathay Pacific, DHL</td>
</tr>
<tr>
<td>Q</td>
<td>e</td>
<td>Cathay Pacific</td>
</tr>
<tr>
<td>R</td>
<td>M,N</td>
<td>Hong Kong Telecom</td>
</tr>
<tr>
<td>S</td>
<td>T</td>
<td>--</td>
</tr>
<tr>
<td>T</td>
<td>M,O,P</td>
<td>Cathay Pacific</td>
</tr>
<tr>
<td>U</td>
<td>b,f</td>
<td>--</td>
</tr>
<tr>
<td>V</td>
<td>Nil</td>
<td>--</td>
</tr>
<tr>
<td>W</td>
<td>Nil</td>
<td>--</td>
</tr>
</tbody>
</table>
APPENDIX E. COVER LETTER FOR INTERVIEW REQUEST

MBA Programs CUHK

Mr. XXX
Telecommunications Manager
YYY Limited
Fax: 88888888

Request for Interview

Dear Mr. XXX:

We are part-time MBA students of the Chinese University of Hong Kong. We are undertaking a research project under the direction of Dr. K. H. Lee, Director of the MBA Program, on Hong Kong’s Competitive Position in the Asia/Pacific Region: Perspective of Multinational Firms’ Telecommunication Needs.

As part of the field work we are conducting a series of interviews with major multinational corporations having significant operations in the Region.

We hope you would support our effort by granting us an interview at a time convenient to you. The interview, which would take about an hour, would cover the following aspects:

1. importance of telecommunication as a factor in headquarters/hub location decision
2. telecommunication needs and issues (present to next 10 years)
   • role of telecommunication in the business process (both internal and external to the company)
   • needs on telecommunication services, e.g. voice, data, ISDN, EDI, electronic mail, teleconferencing
   • major issues in the provision of telecommunication services, e.g. telecom service quality and flexibility, customer service, network availability, one-stop shopping, and tariffs
3. assessment of telecommunication infrastructure and services in Asia-Pacific countries
4. suggested improvements for Hong Kong, including investment and policies issues.

We will call you by phone for a reply. Thank you very much.

Wai-Kit Sin
Fax: 8770760
Phone: 8256189

Jonathan Wong
Fax: 8240299
Phone: 8833305
APPENDIX F. HEENAN'S 16 DIMENSIONS IN THE MNC SURVEY

Sixteen dimensions in selecting regional headquarter site were identified in the first-round (through open-end questionnaires and interview techniques). Utility score of each dimension was computed after submitting the second-round (actual survey) survey data to conjoint analysis. The utility scores reflect the relative importance of each dimension (factor) to the respondents.

The 16 dimensions are:

1. Proximity to corporate headquarters
2. Proximity to major countries' markets
3. Air transportation
4. Communications
5. Economic importance of local market to region
6. Cost of living
7. Cost of Maintaining expatriate staff
8. Tax and related incentives
9. Housing
10. Educational and medical facilities
11. Political stability
12. International and multi-cultural orientation
13. Government attitudes toward headquarters companies
14. Office space
15. Office personnel
16. Supportive Services
APPENDIX G. TABLES
Table 1

Regional headquarters of overseas companies in Hong Kong and Singapore by country of incorporation of parent companies as of March 1990.

<table>
<thead>
<tr>
<th>Country of incorporation of parent companies</th>
<th>Number of regional headquarters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hong Kong</td>
</tr>
<tr>
<td>United States</td>
<td>252</td>
</tr>
<tr>
<td>Britain</td>
<td>77</td>
</tr>
<tr>
<td>Switzerland</td>
<td>34</td>
</tr>
<tr>
<td>Netherlands</td>
<td>31</td>
</tr>
<tr>
<td>France</td>
<td>29</td>
</tr>
<tr>
<td>Japan</td>
<td>20</td>
</tr>
<tr>
<td>Sweden</td>
<td>16</td>
</tr>
<tr>
<td>Denmark</td>
<td>14</td>
</tr>
<tr>
<td>Italy</td>
<td>14</td>
</tr>
<tr>
<td>Germany</td>
<td>13</td>
</tr>
<tr>
<td>Australia</td>
<td>11</td>
</tr>
<tr>
<td>Others</td>
<td>70</td>
</tr>
<tr>
<td>Total</td>
<td>581*</td>
</tr>
</tbody>
</table>

* This figure is greater than the cumulative total 572 because some regional headquarters are joint ventures between two or more overseas companies.

Table 2

Regional headquarters of overseas companies in Hong Kong and Singapore by economic sector as of March 1990

<table>
<thead>
<tr>
<th>Economic sector</th>
<th>Number of regional headquarters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hong Kong</td>
</tr>
<tr>
<td>Trading</td>
<td>289</td>
</tr>
<tr>
<td>Wholesale/retail</td>
<td>83</td>
</tr>
<tr>
<td>Banking</td>
<td>43</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>39</td>
</tr>
<tr>
<td>Finance</td>
<td>29</td>
</tr>
<tr>
<td>Shipping</td>
<td>29</td>
</tr>
<tr>
<td>Engineering</td>
<td>20</td>
</tr>
<tr>
<td>Insurance</td>
<td>17</td>
</tr>
<tr>
<td>Transportation</td>
<td>15</td>
</tr>
<tr>
<td>Publishing</td>
<td>13</td>
</tr>
<tr>
<td>Others</td>
<td>58</td>
</tr>
<tr>
<td>Total</td>
<td>635**</td>
</tr>
</tbody>
</table>

* This means estimated figure only.

** This figure is greater than the cumulative total 572 because some regional headquarters' business falls under more than one economic sector.

### Table 3

Regional headquarters of overseas companies in Hong Kong by geographic area of responsibility as of March 1990

<table>
<thead>
<tr>
<th>Geographic area of responsibility</th>
<th>Number of regional headquarters</th>
</tr>
</thead>
<tbody>
<tr>
<td>China, Taiwan &amp; Hong Kong (a)</td>
<td>47</td>
</tr>
<tr>
<td>Southeast Asia (b)</td>
<td>114</td>
</tr>
<tr>
<td>East Asia (c)</td>
<td>160</td>
</tr>
<tr>
<td>Asia Pacific</td>
<td>251</td>
</tr>
<tr>
<td>Total</td>
<td>572</td>
</tr>
</tbody>
</table>

**Note:** Southeast Asia refers to (a) plus the Philippines, Indonesia, Thailand, Malaysia and Singapore; East Asia refers to (b) plus Japan and Korea; and Asia Pacific refers to (c) plus Australia, New Zealand, India and Pakistan.

Table 4

Investment Estimates for the Telecommunications Field

<table>
<thead>
<tr>
<th>Company/Service</th>
<th>Note</th>
<th>Imbedded Investment HK$M</th>
<th>New Investment (Estimated) HK$M</th>
<th>Time Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hong Kong Telecom</td>
<td>Digital equipment and submarine fiber cables</td>
<td>3000</td>
<td>6000</td>
<td>FY 1990</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10000</td>
<td>Next 2 years</td>
</tr>
<tr>
<td>Cellular Phone</td>
<td>Digitization of 4 networks</td>
<td>500</td>
<td></td>
<td>Next 2 years</td>
</tr>
<tr>
<td>CT2</td>
<td>3 or 4 new networks</td>
<td>1200</td>
<td></td>
<td>Next 2 years</td>
</tr>
<tr>
<td>Trunked Radio</td>
<td>Extrapolated from one operator</td>
<td>500</td>
<td></td>
<td>Next 2 years</td>
</tr>
<tr>
<td>Communication</td>
<td>AsiaSat 1</td>
<td>1000</td>
<td></td>
<td>NA</td>
</tr>
<tr>
<td>Cable Network</td>
<td></td>
<td></td>
<td>7000</td>
<td>Next 4 years</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td>11700</td>
<td>Next 2 years</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>19200</td>
<td>Next 4 years</td>
</tr>
</tbody>
</table>

Source: Charles K. Kao & Kenneth Yeung, Technology Road Maps for Hong Kong
Table 5
How Asia’s Telephone Systems Compare

<table>
<thead>
<tr>
<th>Country</th>
<th>Phone lines per 1000 population</th>
<th>Regulatory regime</th>
<th>Mobile phone networks</th>
<th>Equipment market 1991 (US$ billion)</th>
<th>Business Opportunity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>435</td>
<td>Government monopoly</td>
<td>2 + 1 to come</td>
<td>1.0</td>
<td>State-owned Aussat will be privatised and reconstituted as second telecom network. Existing network to remain in govt hands</td>
</tr>
<tr>
<td>China</td>
<td>7</td>
<td>Government monopoly</td>
<td>In major cities</td>
<td>2.0</td>
<td>Telephone exchange capacity to be boosted to 24 million by 2000. Major contracts to be let for exchange and switches</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>424</td>
<td>Private Monopoly</td>
<td>4</td>
<td>1.2</td>
<td>Mobile services such as CT-2 and digital cellular. Govt to decide on second wireline network by year-end</td>
</tr>
<tr>
<td>India</td>
<td>6</td>
<td>Government monopoly</td>
<td>None</td>
<td>2.0</td>
<td>Mobile network, fibre optic networks, exchange equipment, digital switches</td>
</tr>
<tr>
<td>Indonesia</td>
<td>8</td>
<td>Government monopoly</td>
<td>1</td>
<td>1.0</td>
<td>Mobile services, transmission systems, consultancy. ‘Corporatisation’ of state telecom company Perumtel under discussion</td>
</tr>
<tr>
<td>Japan</td>
<td>444</td>
<td>Private Companies</td>
<td>3 + 1 to come</td>
<td>5.64</td>
<td>Mobile technologies</td>
</tr>
<tr>
<td>Malaysia</td>
<td>140</td>
<td>Privatised monopoly</td>
<td>2 + 1 to come</td>
<td>1.0</td>
<td>Mobile services, consultancy. Bids now in for 1.5 million new lines, to be installed in coming five years</td>
</tr>
<tr>
<td>Philippines</td>
<td>13</td>
<td>Private monopolies</td>
<td>2 in Manila</td>
<td>1.5</td>
<td>Mobile technologies for rural areas. Bids to be invited next year for 750,000 new lines</td>
</tr>
<tr>
<td>Singapore</td>
<td>370</td>
<td>Government monopoly</td>
<td>2</td>
<td>0.5</td>
<td>Singapore Telecom to be privatised in 1992. Mobile technologies, value-added services</td>
</tr>
<tr>
<td>South Korea</td>
<td>304</td>
<td>International competition</td>
<td>1</td>
<td>1.6</td>
<td>Value-added services, consultancy, electronic data interchange (EDI)</td>
</tr>
<tr>
<td>Taiwan</td>
<td>375</td>
<td>Government monopoly</td>
<td>1 + 1 to come</td>
<td>1.5</td>
<td>Mobile technology, value-added networks, EDI</td>
</tr>
<tr>
<td>Thailand</td>
<td>25</td>
<td>Government monopolies</td>
<td>2 + 1 to come</td>
<td>2.0</td>
<td>Mobile and satellite communications, fibre optic network. One million rural lines to go to tender</td>
</tr>
</tbody>
</table>

Source: Asian Business Nov 1991
### Table 6

**Telephone Charges for Hong Kong and Singapore**

<table>
<thead>
<tr>
<th>Line capacity (Kbit/sec)</th>
<th>Singapore Monthly Charges</th>
<th>Hong Kong Monthly Charges</th>
</tr>
</thead>
<tbody>
<tr>
<td>56-64</td>
<td>5282</td>
<td>5120</td>
</tr>
<tr>
<td>128-129</td>
<td>8463</td>
<td>7936</td>
</tr>
<tr>
<td>512</td>
<td>20959</td>
<td>19840</td>
</tr>
<tr>
<td>2048</td>
<td>49927</td>
<td>48000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Domestic (per circuit, 10km radius) monthly rental (US$)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>9.6</td>
<td>62.50</td>
</tr>
<tr>
<td>19.2</td>
<td>90.90</td>
</tr>
<tr>
<td>64</td>
<td>170.40</td>
</tr>
<tr>
<td>2084</td>
<td>738.40</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ANNUAL TELEPHONE LINE RENTAL CHARGES (US$)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Singapore</td>
<td>164.70</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>119.80</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Residential (US$)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Business</td>
<td>107.92</td>
</tr>
<tr>
<td>Residential</td>
<td>86.01</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHARGES FOR STANDARD 3-MINUTE IDD CALL (US$)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>From Hong Kong</td>
<td>From Singapore</td>
</tr>
<tr>
<td>To:</td>
<td>From Hong Kong</td>
</tr>
<tr>
<td>Australia</td>
<td>4.72</td>
</tr>
<tr>
<td>Britain</td>
<td>4.03</td>
</tr>
<tr>
<td>Canada</td>
<td>4.49</td>
</tr>
<tr>
<td>Germany</td>
<td>6.07</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>3.03</td>
</tr>
<tr>
<td>Japan</td>
<td>3.03</td>
</tr>
<tr>
<td>Philippines</td>
<td>2.69</td>
</tr>
<tr>
<td>Singapore</td>
<td>3.03</td>
</tr>
<tr>
<td>S Korea</td>
<td>3.03</td>
</tr>
<tr>
<td>Taiwan</td>
<td>3.03</td>
</tr>
<tr>
<td>US</td>
<td>4.72</td>
</tr>
</tbody>
</table>

Source: Asian Business, Jun 1991
Some of the definitions below are extracted from published sources\(^1\) and modified for clarity.

**Public Telephone and Telecommunication Company (PTT).** Synonymous with "the telephone company" or "public carrier". A PTT, however, can offer a large array of base services (e.g. telephone, facsimile, and data lines) and value-added services (e.g. voice mail and "information services").

**Integrated Services Digital Network (ISDN).** An integrated digital network in which the same switches and transmission paths are used to establish a simultaneous interface for a variety of services, including voice (telephone), data, and image (video, graphics, and facsimile).

**Public Switched Telephone Network (PSTN).** The traditional telephone network operated by PTTs. Primary use is to carry conversations, though can be used to carry data through certain signal encoding techniques (i.e. modulations). Dialing is required to establish an end-to-end connection. Older PSTNs are analog rather than digital networks.

**Packet-Switched Data Network.** An efficient data transmission system whereby messages are broken down into smaller units ("packets") which are then individually addressed and routed to users on the network. This method improves resource (network lines) utilization since the lines are not tied up for no data is being transmitted. Packet-switching services can be provided by the PTTs or setup by corporations as private networks.

**Private Networks.** A network operated by a private organization such as a business entity. Private networks can be set-up by leasing lines from the public carrier or by installing and operating own telecommunication equipment (thus by-passing the PTTs). In practice, few corporation will by-pass the PTTs all together especially for long-haul networks (e.g. international wide-area networks).

**Leased Circuits/Lines.** A dedicated (private) circuit made available at bulk rate to users requiring exclusive or continuous capacity. Synonymous with "non-switched" lines. Contrast with dial-up (switched) circuits of ordinary telephone lines of PSTNs. Leased circuits are often used to form private networks (e.g. corporate internal networks) and provide for high-speed transmissions.

**Value-Added Network (VAN).** Generally based on packet-switching technology, VAN networks provide services such as electronic mail, voice mail, information retrieval, store-and-forward facsimile, and packet switching. In general, data processing functions must be added on top of the underlying basic transmission.

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**Interviews**

*see Appendix B - List of Interview Subjects*

**Secondary**

**Periodicals**


**Supplementary**

**Books**


**Periodicals**


**Other Materials**

END OF DOCUMENT