

**IMPLEMENTATION OF COMPUTERIZED PRODUCTION
MANAGEMENT INFORMATION SYSTEM
IN MAINLAND CHINA**

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ABSTRACT

Since the last decade many manufacturing businesses have been shifting from Hong Kong to Mainland China because of its low wages, relative inexpensive capital investment, and some other financial reasons. In return, Hong Kong has to contribute her experiences and skills in production as well as management in running businesses in China. Management levels and executives from Hong Kong are confronted with a great challenge. They are facing an ever changing and competent external environment yet internally filled with lower education level workers with different mentalities, different cultural backgrounds. If they can manage the situation, they will reap the harvest, or they will be out of their businesses very soon.

Setting up a production management information system helps the decision makers in both Hong Kong (usually the headquarters) and the production site better manage the situation by providing them with insight of the production. Particularly, the management will be provided with the most updated information on inventory, work in progress, production scheduling, workers' attendance and overtime, payroll and other invaluable data.

Although setting up a production management information system is a good idea, setting up the said system in mainland China is different from Hong Kong. There are more factors needed to be considered. This paper aims to investigate the difficulties of setting up a production management information

system that will facilitate the Hong Kong - China production. Through the real life case studies we have categorized these difficulties into government regulation, computer software, telecommunication and training & maintenance. Review of existing tools and suggestion in future enhancements are also presented.

In summary, as China becomes more open, the strict regulations regarding the imports and exports of the strategic commodities will be loosen up. The telecommunication including both the telephone system and designated data exchange lines in mainland China will take a long time to convert / improve. There are still rooms for the Chinese computing software to improve and compromise a common standard between Taiwanese' and those developed in mainland China. As China is more open and there are more foreign investors going into China, local Chinese workers / operators will have more chances to be trained. Therefore, the training jobs should be easier. All in all, the existing problems will be resolved as the overall conditions of mainland China are improving, making the gap between Hong Kong and China smaller.

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CHAPTER 1

INTRODUCTION

Since the year 1979 the bamboo curtain of mainland China began opening wider and wider. Business trading between China and Hong Kong as well as China and other countries through Hong Kong increases rapidly. The role of Hong Kong is like a front gate to China and her trading partners. The figures of imports from and re-exports to China have been increased in terms of thousands percents. In this promising environment, Hong Kong's domestic exports to China has increased a lot too (see also Appendices 1 - 4 and Appendices Industry and Trade of [1 - 4]).

Year	Imports From China \$ Million	Re-exports to China \$ Million	Domestic Exports \$ Million
1980	21,948	4,642	22,591
1981	29,510	8,044	29,200
1982	32,935	7,992	31,223
1983	42,821	12,183	43,802
1984	55,753	28,064	61,374
1985	58,963	46,023	57,687
1986	81,633	40,894	64,219
1987	117,357	60,170	72,817
1988	155,364	94,895	72,884
1989	196,676	103,492	72,162
1990	236,134	110,908	66,370
1991	293,356	153,318	62,870

As China becomes more open and stable politically and economically during the last decade, many Hong Kong business men have started investing in China, mainly in the province of Canton due to the geographical factor. Among those investors many are manufacturing factories. To them China is a good place to set up labor intensive manufacturing production lines because of her low wages, sufficient man power resources, low land costs and capital expenses, low tax policy, lack of environmental protection sense and geographical aspect. It is estimated that Hong Kong business investors have employed directly and indirectly about three million local Chinese workers in the Pearl River Delta region. (p. 1 of [5])

The manufacturing factories set up in China usually have one aspect in common - labor intensive. Because of the advantages described, it is better for the investors to shift their product lines from Hong Kong to China. Hence they can employ more workers and occupy larger factories with lower costs there. In order to manage a large manufacturing factories managerial levels have to take into accounts the following inter-related problems : bill of materials (BOM), inventory control, purchasing, work-in-progress control, cost accounting system, workers' attendance and payroll system, sales analyses / sales forecast and planning, scheduling and shipping, etc. Production data and requests will be gathered from all departments to the managerial levels. If they want to solve these problems in the shortest time with the lowest cost, the managerial levels should evaluate the possibility of setting up a computerized information system to assist them in making major decisions as well as daily routines. A management information system is "a system which provides each manager in the organization with the information he needs in order to take decisions, plan and control within his particular area of responsibility." (p. 9 of 6]) The goal of this information system "is to help management make effective decisions about problems in the organization. Because it costs money to create,

maintain, and use the MIS, the system should justify that cost by providing specific, identifiable benefits."(p. 536 of [7])

According to the study done by Thomas G. Gunn(p. 6-9 of [8]), setting up a computerized information system in manufacturing factories will result in great improvements in reducing raw material inventory control, meeting shipping schedules and deadlines, faster response to market and ultimately reducing overall cost of production. Appendices 5 and 6 extracted from the studies of Gunn can illustrate the benefits bought by computerization. Obviously the great contribution in saving costs and time justify setting up such an information. Gunn conducted his study in the early 80's. During the last decade the price of computers have been greatly reduced due to the development of micro-computer IBM PC series, yet the power of computers have been increasing tremendously. Thus the set up cost of an information system in the 90's should be much lower than those days Gunn had presented in his book. As a result, we can reasonably expect an information system is more justified and beneficial today.

Therefore, in regard to the technological level today, asking "*Why*" setting up a computerized information system is out of question. The concern should be "*How*" or "*What*" to do : what factors should be considered before the actual implementation. As mainland China is different from Hong Kong in culture, education level, mentality, political environment, setting up a production management information system in China will encounter all sorts of problems which are not going to be faced in Hong Kong.

Unfortunately, there are very little research works has been done in this topic. China has been opening for just a short period of time since 1979. The investment environment and regulations, the political situation and the

mentalities are always changing. At the same time, history of Chinese computing is very short too. As a result, this is an open topic needs for more researches. Recently a research effort "Hong Kong's Industrial Investment in the Pearl River Delta" conducted by Industry & Research Division, Federation of Hong Kong Industries done in 1991 has depicted the investment situation / trends in China, especially in the Guangdong province. However, the research work has covered many areas but investment in information system / office automation is still left unattended. Therefore, if manufacturers are interested in setting up a production management information system in China, they cannot get much help.

This paper is organized into eight chapters. Chapter one describes the background information and the organization of this paper. Chapter two introduces the methodology of this study. Chapter three presents two case studies to characterize the production management information system set up between Hong Kong and China. Chapter four discusses the government regulations of computers imposed by both Hong Kong and mainland China. Chapter five describes the Chinese computing systems developed by Taiwan and mainland China. Chapter six presents the telecommunication services offered by both Hong Kong Telecom and Chinese Telephone Board. Chapter seven discusses the training difficulties as well as maintenance problems in China. Chapter eight presents the conclusions and recommendations on future works.

CHAPTER 2

METHODOLOGY

The research methodology employed in this paper can be broken into several steps : problem definition, case studies which further characterize the problems, information collection, analysis and conclusion.

Problem Definition

As described in Chapter one, the business relationship between Hong Kong and China is getting closer. In order to get better management and production control, a production management information system is needed. In this paper the term management information system can be interpreted as ". . . an integrated man / machine system for providing information to support the operations, management, and decision-making functions in an organization. The system utilizes computer hardware and software, manual procedure, management and decision models, and a data base."(p. 536 of [7]) "Production Management Systems (P. M. S.) is the function which links the production with the management of the firm and coordinates the various manufacturing functions : process planning, assembly process, robotics, numerical control machine tools, quality control, etc. . ."[9] Ultimately "the mission of a Production Management System is to improve productivity." [10]

However, when setting up such a system in China, there are many challenges. The aim of this paper is to identify those problems and solve them.

Case Study

The two cases are selected because they are typical businesses set up in China by the Hong Kong investors. The problems they encounter can be further generalized into other major manufacturing factories. The problems can be categorized into government regulations, Chinese Computing, Telecommunication and Training & Maintenance. Each area of difficulty will be further elaborated.

Information Collection

Information obtained in this paper is collected through the following ways :

1. Literature review & Product review

Information from text books, manuals, government publications, product catalogues / brochures, newspaper are collected.

2. Interviews & Site visits

The key personnels such as the MIS manager, end users - managers, supervisors and operators are interviewed, and site observations are conducted so as to find out the advantages and disadvantages of implementing an information system, and what kind of problems, either technical or administrative, they are facing.

Analysis

With the information collected, characteristics of the problems encountered when setting up a production management information system can be identified and analyzed. The influences are also evaluated.

Conclusion

Based on the information collected and the analyses conducted, conclusions and recommendations are provided.

CHAPTER 3

Case #1 :

Background

PL is a garment factory specializing in silk products which has been established for more than 25 years. In 1984 PL started shifting their production lines to Shantou, Canton, where is the origin of the director, Mr Chan.

The new factory complex is completed in 1990 with a total factory floor area of 320,000 sq. ft with a fully air-conditioned working environment, including dyeing factory, production department, research department, staff quarters, canteen, sewing workshop and administration office. It employs about 2,000 workers and the monthly production capacity can be up to 300,000 units. The annual sales turnover is more than one billion Hong Kong dollars. The monthly labor turnover is ranged from 50 to 100 workers. The clerical staffs are more stable in comparison.

In 1990 PL started implementing computers in order to help their daily administration works. In Shantou they imported 16 magnetic card readers which were linked to a PC computer to register the daily attendance records of their 2,000 workers and staffs as well.

Export Restriction

At that time they were told / advised by the Trade Department, Hong Kong that they could only apply license for the PC computers with 80286 CPU since it is a 16 bits CPU. If they wanted to import a higher grade computer such as 80386 CPU, the department had to refer their application to London, United Kingdom and the process would take several months. So they decided to get 80286 computers.

Old System

A computer firm provided the computers to PL and two 24 pins dot matrix printers as well. A program was provided by this computer firm to calculate the workers' attendance records, which was linked to a Chinese Computing System so that the workers' names on the computer printouts were Chinese. Moreover, the Chinese Computing System was capable of showing simplified characters on the screens. That was welcome by the local Chinese operators. But the combination of the software package, the Chinese Computing System and the dot matrix printers significantly slowed down the efficiency of the computers. For each worker attendance record it would take one minute to print in Chinese mode. Then for 2,000 workers it would take more than 33 hours (17 hours for each printer) ! Usually at the end of each month, the operators had to work overnight in order to supervise the printing process.

Although PL decided to apply for 80286 computers, the secretary in charge of this project had to reapply the export licenses four times because the Trade Department did not satisfy with the information they provided in the

application form. Each cycle took about 1 week to process. Not all the staffs of the Trade Department know computers well. Many of them are familiar with textile only. There is only one team of them knows about computers / strategic commodities.

New Solution

In 1991, the computerization plan was expanded. They tried to get more computers to share the work load. This time they consulted another computer firm because of the poor services provided by the old computer supplier. The old computer firm in Hong Kong usually responded to PL's requests from Shantou very slow. There was once PL had a very serious problem that needed urgent support but the old computer firm did not reply in three weeks' time. As a consequence, PL turned to a new computer consultant with better services.

The new computer consultant redesigned the software package for PL, using worker code instead of Printing Chinese names on the records. Then the whole printout could be printed in English mode. The Chinese Computing system was still employed for word processing. Moreover, a laser printer with the printing speed of 8 pages per minute is employed. Now the printing time had been shortened from more than 33 hours down to 4 hours. The operators would no longer be required to work overnight. They could go to office a little bit earlier on the first day of each month and print out several hundreds of records to "feed" the accounting staffs. While the accounting staffs were busy in calculating and checking the records, the operators could print the rest of records in that morning.

Moreover, PL was successful in applying an export license of a 80386 computer from Hong Kong since the 80386 computers were getting more popular / common in Hong Kong and the Trade Department could make decision themselves instead of referring the case back to London.

In 1992, PL had expanded their business in fashion retailing in mainland China. They had joint venture with other Hong Kong company MX, and set up four retail shops in Beijing and Shanghai. They employed the same computer consultant to design a POS (Point Of Sales) system for them as well as an information system for sales analyses and inventory movement. This time they applied for 80486 computers, laser printer, some bar code readers, some magnetic stripe readers (for reading credit cards), some computer linked cash drawer and some Modems for communicating sales data among retail shops, regional control center and Hong Kong headquarters. The application of export licenses for the 80486 computers were granted because of the popularity of 80486 computers in Hong Kong. This time every thing was ok, except one.

Telecommunication Problem

The implementation of the whole system includes setting up four retail shops, one regional control center and the headquarters located in three cities : Beijing, Shanghai and Hong Kong, they found out that the communication lines were not so reliable. By using the old telephone lines, the regional control center could communicate to nowhere, even the speed of the modem had been set to the lowest rate : 300 BAUD. Then they apply for another separate fax line. This time they could communicate to Hong Kong as well as Beijing with the modem speed set to 2400 BAUD maximum. If they want a higher speed

they have to ask for help from both the CSL Hong Kong and the Mailing and Telephone department in China.

When they imported the computers as well as the modems from Hong Kong, they reported to the local Chinese officials in Shanghai. Then one day in September, 1992, two Chinese officials came to their control center without prior notice, stating that they were there to check the modems to see if they were "fit" / complied with the existing telephone systems. However, they did not bring along any tools (software measurement or any electronic devices) with them. They simply ask the operators to demonstrate the functions of the modems and ask for the related technical manuals of the modems. Unfortunately, the manuals were written in English that they did not understand. They claimed that if they were not satisfied with the demonstration conducted by the operators, then they would take the whole computer set back to their office for an extensive check. This would take about seven days. Anyway PL had persuaded the two Chinese officials to leave by some means.

Future Expansion

In 1993, PL is planing to set up a department store in Suzhou with four to five storeys high. They are now evaluating the feasibility of implementing a PC network with 15 to 20 computers for POS, stock keeping, personnel, pay roll and other administration purposes.

On the other hand, as the local operators are getting more experienced and well trained, they are demanding to use the local mainland China made Chinese software instead of using the Taiwanese software because they are

more familiar with the mainland China one since their secondary / university education.

Case #2 :

Background

KW is a garment factory specializing in producing all kinds of hand bags with different materials : PVC, plastic, cotton, etc. Originally their production base was in Kwun Tong, Hong Kong, occupying almost a whole industrial building. In the 80s the production lines were shifted to Dongguan, Guangdong. Now they have set up three manufacturing factories in that region, employing about 1,200 workers and staffs.

They started their computerization plan in 1986 but was failed because the mini computer they ordered was an out dated model, and the software developer served them badly. In 1989 KW turned to a PC solution. They got their Purchasing Department computerized in three months. That was an English version which was ok for the operators in Hong Kong. They felt satisfied and the plan was extended to the Accounting Department.

Chinese Computing Merges in

In 1992, the management level decided to shift some of their administration works to mainland China. Almost all of the purchasing orders were issued from China since then. Consequently, KW terminated the contract with the PC consultant in Hong Kong. They employed their own programmer

in China and wrote programs in Chinese for them since the operators in China did not know English. Since the programmer was a local Chinese, he chose a local Chinese Computing System which he was most familiar with.

Telecommunication Problem

In 1993 KW encounters one problem. The management in Hong Kong wants to get information from China based factories. They consult the old consultant in Hong Kong to see if they can communicate with factories in China by using modems. After a site visit to China, the result is positive. Again, the maximum sending speed of the modem by using ordinary fax line is 2400 BAUD. This limit is due to the poor quality of the telephone lines installed and the old design and machines installed in China. The quality of telephone lines in Hong Kong is so good that an ordinary telephone line in Hong Kong can transmit up to 14,400 BAUD with confidence. However, now they encounter another problem.

Conflict between Chinese Software

Since the management in Hong Kong does not know the Chinese Character System very well, they have bought some writing boards to help them converting their Chinese hand writings to computer inputs. Then they discover that the writing boards are not matched with the Chinese Computing System developed in mainland China because it is a product developed in Taiwan which is compatible with the Chinese Computing Systems developed in Taiwan only such as ET and KC. Moreover, the operators in Hong Kong are familiar with Chinese Computing Systems developed in Taiwan only. Both the

program and data developed and inputted in China cannot show the original Chinese wordings under ET nor KC because they apply a different coding system.

Now there is not many choices left for the management. They can only choose one Chinese Computing System by forcing either the operators in China or operators in Hong Kong to use another system and learn it all over because the system commands are totally different. Furthermore, the Chinese character input methods are different too.

Summary

From the two real life cases mentioned above, one can see that the difficulties the two companies facing have something in common. As a matter of fact, all manufacturing firms set up in China have faced the similar problems.

In general, usually foreign businesses set up in China face the following difficulties / restrictions :

1. Government regulation

- Since Hong Kong is a colony of United Kingdom which is a member of the COCOM, Hong Kong investors are subject to the export restrictions imposed on the strategic commodities.
- The application of export license is very time consuming
- As mainland China has been opening for only a short period of time, it is still over sensitive to the telecommunication devices. Therefore, any communication devices such as fax machines, modem, computers etc. have to be registered first. Moreover, since these items are tax free if they are imported by the foreign investors. They have to be declared and ready for factory inspection later.

2. Telecommunication

- The quality of telephone lines in China is considered very bad. When using a modem the speed is very slow. Moreover, the transmission is not very stable.
- The availability of phone lines as well as data lines are very limited. There are not many places in China can apply for data line services.
- Long waiting queue / regular procedure of applying phone lines

3. Use of Chinese Computing

- Co-ordinating Chinese computing system and other software are very difficult. Usually the Chinese computing system eats up a lot of memory.
- The choice between Taiwanese's and mainland China's products should be very carefully.

4. Training & Maintenance

- It is hard to find the most updated reference books for the local Chinese operators who do not know English and regular Chinese writing well.
- Technical support from local Chinese cities is limited or it is very expensive to foreign investors.

The following chapters will further investigate the problems.
Conclusions and recommendations are made based on the results.

CHAPTER 4

GOVERNMENT REGULATIONS

Hong Kong Government Regulations

Since Hong Kong is a colony of the United Kingdom which is a member of Co-ordinating Committee for Multilateral Export Controls (COCOM), commodities such as high speed digital computers, erasable optical disks, high resolution (over 1280 x 1024 pixels) graphics displays, high capacity memory integrated circuits, high speed magnetic disk and drum, data-switching equipment, high capacity fibre optics communication systems, etc. are generally classified as strategic commodities. As a result, all import and export of these kinds of strategic commodities are subject to licensing control by Trade Department, Hong Kong. The licensing requirements are under the Import and Export Ordinance (Chapter 60) and the Reserved Commodities Ordinance (Chapter 296) and their subsidiary legislation.

The members of COCOM include¹ :

Australia	Belgium	Canada	Denmark	France
Germany	Greece	Italy	Japan	Luxemburg
Netherlands	Norway	Portugal	Spain	Turkey
U. K.	U.S.A.			

¹Mainly they are members of NATO or Capitalized countries.

Export licence and import licence to Hong Kong for the strategic commodities concerning Hong Kong and other COCOM countries can be obtained easily. Usually it will not take more than three working days. However, Mainland China is not in the list and is classified as non-proscribed because China is a Communist country. In this case "the application will be referred to the United Kingdom for assessment. It normally takes about 1 - 2 months for the assessment to be completed. It may take longer, and occasionally much longer, if additional technical details and/or clarifications are required."^[11] In order to help clarify, catalogues with full technical details, completed HKF5 form (Annex II), a completed questionnaire provided by the Trade Department, and a completed Importer Statement on End-User and End-Use (Annex IV) issued by the Ministry of Foreign Economic Relations and Trade (MOFERT) in Beijing, China (if it is going to export to China) are needed to support the application. Please refer to appendices 7 and 8 for detail.

Most of the members of COCOM are members of North Atlantic Treaty Organization (NATO) too. Originally these regulations are set to pin point those Communist Countries (mainly the Warsaw members and other Communist countries in Asia and Africa) in order to prevent the "high tech" equipment from falling into their hands. In general, the term "high speed computers" refers to those computers (presumably the main frame and mini computers, back to the age when COCOM formed) with 32 bits CPU. In the old days 32 bits CPU is considered the state-of-the-art design. However, no one has ever perceived that in 30 years' time computer has been developed to personal computer level with 32 bits CPU such as 80386, 80486 (PC series), 68030 (Mackintosh), etc. Therefore, even though PC is classified as personal computer, it is still restricted by the regulations of the import and export of strategic commodities.

Until the first quarter of 1991, personal computers with 80386 CPU are still strictly restricted by the regulations set by the Trade Department, Hong Kong. That means all document has to be sent to London, United Kingdom for assessment and it takes a long time to do so. As personal computers become more and more popular in Hong Kong, these regulations are loosened in mid-1991. Computers with 80386 CPU can be assessed by the Trade Department in Hong Kong instead of assessed in London. But by that time computers with 80486 CPU are still assessed in London. In 1992, 80486 computers can be assessed in Hong Kong as well. However, all questions stated in the questionnaire have to be answered clearly and the technical data have to be supplied (data transfer rate, access time, etc.). Otherwise, the application will be rejected by the Trade Department, Hong Kong, and you may have to re-apply again and again. Each application cycle takes about 5 to 7 working days. This process refers to the computer itself only. If the computer system includes high speed harddisk (transfer rate faster than 25 Mega bits / second), erasable optical disks, or high resolution (over 1280 x 1024 pixels) graphic displays, it is another story. The process will take longer or the case will be even referred to London again.

Chinese Government Regulations

So far only the regulations of Hong Kong have been discussed. Since the businesses are set up in mainland China, the Chinese import and export regulations have to be considered also. There are less restrictions for the "high tech" equipment importing to China. The main concern is on the custom / import tax. A 10% to 50% import tax will be imposed on the computer equipment imported to China. On the other hand, if the businesses are set up

by foreign investors, this import tax can be exempted. However, the factory should be prepared for factory inspection by local Chinese officials to see if the imported equipment is for the factory domestic use only. Moreover, tax exemption does not imply no document is needed in China. The business should apply for approval of import from the related local County government in parallel to the application to export from Hong Kong. The declaration procedure is the same as other factory equipment. Hence the local clerk responsible for declaration is capable of doing it.

Since the focus of Chinese Custom Department is not on the technical side but on the taxation, when those kinds of equipment are going to be returned back to Hong Kong for any reasons (e.g. repair), one has to declare to the local Chinese government in order to prevent double taxation on the equipment when it is back from Hong Kong. When the equipment is back from Hong Kong, there is no need to apply another export licence from the Trade Department.

Telecommunication Devices

If the computer equipment includes any telecommunication devices such as modem or fax card, the factory should notify the local Chinese County office because Chinese officials are extremely sensitive to the information communication devices. They want to control information flow tightly in their own hands. Therefore, fax machines imported into China by foreign investors are usually required to register. If a computer is installed with a modem / fax card, you may either notify the related Chinese officials (Department of Custom & Excise, Telephone Department or Foreign business Department) and be prepared to be "checked" by them eventually, as described in the case

#1. Some manufacturing firms may not inform the local county government so as to escape from the administration routines, but it may not be a legal way to do so.

CHAPTER 5

CHINESE COMPUTING SYSTEM

Background

Although people in Hong Kong, Taiwan and mainland China are Chinese, not all of them speak the same language and write the same Chinese characters. In Hong Kong people speak Cantonese and write regular / normal Chinese characters. In Taiwan people speak Mandarin with Chinese pronunciation and write regular Chinese characters, while people in mainland China speak Mandarin with romanization pronunciation and write simplified Chinese characters.

The history of Chinese Computing System is not very long. The first commercially available Chinese Computing System was introduced in mid 80s by the Taiwanese and Hong Kong had adopted the system fully since then. The first commercial packages are 0 & 1, KC (國 喬) and ET (倚 天). Right now the most popular ones are ET and KC.

The first generation of Chinese Computing System occupied only one to two disks (less than one Mega bytes). Now the latest version is about five to seven mega bytes large because it provides different types of fonts to the users : Ming (明), Li (隸 體), Kai (楷 體), Hei (黑 體), etc. Some versions can even

provide simplified Chinese characters which is the national standard in mainland China. Many other fonts are optional and are available in the market.

HISTORY OF ET² [12]

<u>Version</u>	<u>Date</u>	<u>Model</u>
1.45	August, 1986.	
1.60	July, 1986.	
2.0	November, 1990	
2.2	March, 1991.	
3.00	February, 1992.	
3.10	October, 1992.	

Disk vs Card

Besides the disk versions, card versions are also available which store the character sets into the IC called ROM (Read Only Memory). Hence it provides a faster character searching speed and saves a lot of disk space. Moreover, it occupies less main memory, thus more space is left for other program to run or more data can be read into the memory. However, upgrading the card version is not as convenient as upgrading the disk version and the price of the card version is usually much higher than the disk version. As the memory management of the DOS (Disk Operating System) provided is more and more powerful, the 640 KB memory barrier has been broken by the Extended memory, Expanded memory, High / Upper memory. The new versions of Taiwanese made Chinese character packages can put themselves into the High / Upper memory thus save a lot of memory within the 640 KB

²Small booklet included in the ET 3.1 software package. Some of the dates of release of new versions are different from those mentioned in the ET operation manual version 2.2.

region. This technology advance weakens the importance / advantage of the card version significantly.

Character Input Methods

The only major difference of the Chinese systems between Taiwan and Hong Kong is the common practices of the Chinese characters input methods. Since Taiwanese knows Mandarin well, they prefer inputting Chinese characters by the pronunciation method like "Phonetic", while Hong Kong users prefer the structure analyzing method such as "Changjei" or "Simplified" because many of them do not know Mandarin. In spite of that, basically the Chinese Character Systems in both places are the same. Both of them provide a lot of Chinese Character inputting methods :

- Changjei (倉頡)
- Simplified (簡易)
- Phonetic (注音)
- Romanized (羅馬)
- Array (行列)
- 3 Corner (三角)
- Telecode (電報)
- Phase (片語)
- Internal Code (內碼)
- Cantonese (廣東話)

The Cantonese input method is tailor made for the Hong Kong market.

Other Inputting Devices

Since not all of the users like spending times in learning input methods, some hand writing recognition devices have been developed in these recent years. Users are no longer required to learn any Chinese character input methods. Rather, they can simply write Chinese on a writing board. Then the hand writing will be recognized into the computer. The recognition rate is claimed to be more than 90%, and the current version is software dependent. That is, ET has its own writing board while KC has its own. The KC's one has a better performance but with the price almost double the ET's one (KC board : \$3,000 vs ET board : \$1,750)³. The writing board is ideal for management levels who write Chinese letters occasionally and by themselves instead of asking the secretaries to type in order to keep the contents in secret.

Internal Coding System

The other major issue is the internal code systems which actually store the Chinese characters inside the computer. Originally computers are designed for displaying English only, regardless whether it is a main frame, mini or micro (PC) computer. Each alphabet occupies one byte in memory. A standardized set of Chinese characters has 13,053 characters⁴ [13]. Each has to occupy two bytes. Since the history of Chinese Character System is very short, there is not a standard compromised yet. That is, the same Chinese character can be represented by different combinations of two bytes in different software / coding systems.

³ see appendix 10. Up to April, 1993, there are more brands to choose : ET, KC, Genius, Dr. Yeung's, and some others. However, all of them are Taiwanese products. Prices may change.

⁴Chapter 1.6, ET user manual version 2.2. This Chinese Character set is standardized by the Taiwanese government.

Right now some common internal codes used in Chinese Character Systems are⁵ [13] :

- BIG-5 code (大五碼)
- IBM 5550 code
- Wang On code (王安碼)
- General code (通用碼)
- Congress code (公會碼)
- ET code (倚天碼)

and the most popular one (default) in both Taiwan and Hong Kong is the BIG-5 code.

Packages Developed in China

The Chinese Computing System developed in mainland China is a totally different story. The most popular PRC made Chinese computing systems are the CCDOS, UCDOS and PUC (Jing Shan) Chinese system. Historically, the first Chinese computing on PCs is the CCDOS developed by No. 6 Institute of Ministry of Electronics in Beijing in early 80s which formed the base of GB code for Chinese processing[14]. Basically the functions provided are similar to the Taiwanese's, with the exceptions of the character input methods and the internal coding systems. Although people in mainland China speak Mandarin as the Taiwanese, pronunciation input method is not their most favorable method. They prefer an input method called "five strokes input method" / "Wu Bi Zi Xing" (五筆輸入法) most because they learn it since their secondary education. This input method is not included in any Taiwan developed Chinese Computing Systems. Therefore, very few or even no Hong Kong users know this input method. Moreover, the internal

⁵Chapter 1.8, ET user manual version 2.2. KC provides as many choices as ET.

coding system is totally different from the Taiwanese's also. They have their own standard coding system, the "national standard code" / GB code (國標), which is the national standard and is the only system legally allowed to appear on the PC market of the PRC[14]. On the other hand, because of its limited circulation (popular in mainland China only), Hong Kong users are not familiar with the CCDOS. Furthermore, other supporting devices such as hand writing board made in Taiwan are not matched with this PRC Chinese computing system.

The most common characters shown on the screen are simplified Chinese characters which become the standard / official Chinese writing after 1949. However, the earlier versions developed in Taiwan are all designed to show the traditional regular Chinese characters. As the technology becomes more mature and the market is expanded, the Taiwanese made package provides many fonts and simplified characters set is designed to open the mainland China market. Therefore, the competitiveness of the Taiwanese package is strengthened and to non-mainland Chinese it is their obvious choice.

In the light of the facts mentioned above, when one wants to install a Chinese computing system, one should concern about the following questions, or one will come across the problems KW faces in the case #2 :

1. Is it necessary to have a Chinese computing system installed ?
2. What kind of character input method is preferred ?
3. What internal coding system is preferred ?
4. Is there any supporting devices attached ?
5. What kind of character fonts are included ?
6. Do you want to train your Hong Kong staffs to operate the mainland China Chinese system, or ask your mainland China Staffs to learn the Taiwanese Chinese system ?

Printing Chinese Characters

No matter what Chinese Character Systems one chooses, one has to consider another factor : the printing problem. Since Chinese characters are so regular and there are about 13,000 characters per set, they are treated as graphics by computer programs / software. As a result, the processing speed of the CPU and the screen refresh time are slowed down. Moreover, the printing speed will be slowed down significantly even though printing English letters under Chinese mode. This effect is especially obvious when a dot matrix printer is employed.

The obsolete 9 pins dot matrix printer will repeatedly print 2 - 4 times per row (8 x 8 matrix or 16 x 15 matrix) to compose a line of Chinese characters. The most common 24 pins dot matrix printer will print 1 time per row and the printing speed depends on the letter quality. In draft, both English and Chinese printing mode have a faster printing speed, while in Letter Quality Mode (Roman, Sans Serif, etc.) have a slower printing speed. If a large volume of printouts are required each month, printing in Chinese mode under a Chinese Character System is not recommended.

One alternative is to use a laser printer with a faster printing speed. A laser printer has a lot of good points over dot matrix printer :

	<u><i>Laser Printer</i></u>	<u><i>Dot Matrix Printer</i></u>
<i>Noise Level</i>	low	high
<i>Fonts available</i>	many	few
<i>Letter Quality</i>	excellent	good
		(depend on ribbons)

<i>Graphics Capability</i>	excellent	moderate
<i>Printing Speed</i>	fast	slow
<i>Printer Buffer</i>	large	small
	(in terms of MB)	(in terms of KB)
<i>Price</i>	high	low
<i># of copies per print</i>	1	many

The printing speed and quality of a laser printer are in no doubt. It provides higher printing speed from 4 to 17 pages per minute and excellent printing quality which is compatible to type-setting. However, the running cost is higher than using a dot matrix printer and it usually requires extra RAM installed inside the laser printer. The typical factory setting is only 0.5 MB (= 512 KB) or 1 MB RAM, but it can be upgrading to 4.5 to 5 MB RAM by installing a RAM card inside the printer. It requires extra money and special set up for both software and hardware. The extra RAM serves as a working space / buffer for the laser printer that the user can down load more fonts inside the printer. Hence the laser printer can provide more varieties of fonts and point sizes for users to choose. The more RAM you have installed in the laser printer, the more fonts / characters can be stored in the printer and less character searching time is required (which is especially important to Chinese Character System since it has 13,000 characters per font), thus the printing speed will be boosted up.

The Function of Jetmate

In spite of the known good factors of a laser printer, **it cannot print out Chinese characters directly**, unfortunately. The fonts provided by the

Chinese Character Systems such as ET or KC are for printing Chinese in dot matrix printers only. Using the same control commands / codes provided by the Chinese systems to print Chinese in a laser printer instead of a dot matrix printer will produce unexpected results : either it does not work 100%, or it cannot change the sizes of Chinese characters, or it will print out strange characters (graphics characters of ASCII code with value lager than 128). In this case, another Chinese software driver is needed. A typical software is **Jetmate**, a Taiwanese developed software again. The latest version is version 4 now. Its main function is a "driver" which controls the behaviour of the laser printer which is supposedly controlled by the Chinese Character System, and it has its own set of fonts and characters for laser printer to reference with. Therefore, a Chinese Character System like ET or KC equipped with simplified characters will not produce simplified characters in printout unless the Jetmate is installed with its own simplified characters set (which is not included in the standard Jetmate package).

Up to now, including Jetmate an operator has to know quite a number of software in order to run the daily jobs. The hierarchy is illustrated on next page.

Hierarchy of Software a Computer Operator must know :

Operating System

(DOS)

Network System

(IPX & NETX, and other Novell commands
if Novell network system is installed)

Chinese Character System

(ET, KC, etc.)

Jetmate

(If printing Chinese characters in laser printer)

Application Software

(Data Processing Program, Word Processor)

Printer Control Codes

Memory Management Problem

From the diagram one can imagine how much training an operator should be given in order to handle the computer. On the other hand, the more levels of software reside in the memory of computer, the less resource left for the application software which actually analyze the data, and more difficult to co-ordinate the software without conflict.

For example, sometimes running Windows 3.x after running Chinese software such as ET the computer may be "hanged" and it will require the user to reboot the computer due to the possible reason of conflicting the memory address. Moreover, if the Jetmate and the Chinese Character System occupy too much memory, there will be not enough memory to run the data processing software such as FOX Base, Dbase IV and Clipper (Summer 87 version). In some practical cases, if there are many records in one database file, the Summer 87 version cannot handle the indexing job if there is too little RAM left for it, resulting in hanging the computer. In that case more actions have to taken to solve this problem, resulting in more charges involved.

Suggestions / Recommendations

One of the suggested solution is to use overlay if Clipper 87 is applied. If this still does not work, change to Clipper 5.x since it is "dynamic overlay", which means the execution program itself will determine how much portions of the program will be loaded into memory according to the available memory left.

If it still does not work, try to "push" the Chinese Character System to the Upper Memory area and reduce the number of Chinese characters loaded into memory when the software is called. Usually the number of characters loaded into memory is set to 5,000 characters in default. the operator can adjust this number accordingly. Furthermore, try not to install too many input methods at any given time since each input method occupies quite a number of bytes in memory.

If all these suggestions do not work, try to use a hardware card version of Chinese Character System instead of the disk version, but be careful of conflicting the memory address among the cards installed in the computers. A card version should occupy least memory because most of the Chinese System is stored in the IC in the card.

Lastly, you may wait for another new version to solve the problem for you. It may seem silly but it is true in the PC world because of the keen competition, every 6 to 12 months a new version with more advance features will be pushed to market. Several hours' efforts in the old version may be replaced by one single command in the new version !⁶

A New Solution : Chinese Windows

Conventionally Windows has English version only. Recently a Chinese Windows version has been developed in Taiwan with the help of Microsoft. It provides all Chinese descriptions and messages on screen. Moreover, it provides some Chinese fonts which is in vector form instead of dot matrix

⁶In April, 1993 MS-DOS 6.0 has been introduced in to Hong Kong which provides better memory management environment.

form. Moreover, a lot of optional fonts are available in the market. Thus, it can easily be expanded to a high quality desk top publishing center.

The advantage of using Windows is that it provides a "standard" to all software under its window environment. Therefore, Windows can co-ordinate everything for its users. If Chinese Windows is applied, the memory management problem, the use of Jetmate, the control of printer, the commands of the Chinese Character System, the internal coding problem will no longer bother users any more. Instead, Chinese Windows will co-ordinates all aspects for any users. It does not require any Chinese Character system to be loaded first before running Chinese Windows. Chinese Windows has its own Chinese characters set, which is treated as graphics in Windows (actually everything users see on screen are treated as graphics in Windows. That is why Windows can provide "What You See Is What You Get" function).

Another advantage provided by Chinese Windows is that it integrates the different internal coding systems developed in Taiwan and mainland China into one package. As a result, it can handle any Chinese document / data no matter it is prepared in mainland China under "GB code" or other popular Taiwanese internal codes. Then the problem faced by KW in case #2 can be solved easily.

Drawbacks of Windows

There is some major drawbacks in Chinese Windows. This weakness is also applied in the original English Windows. The first one is the absence in the development of database management software package. Unlike DOS environment supported by Dbase III+, Dbase IV, Foxbase, FoxPro, Clipper Summer 87, Clipper 5.01, Clipper 5.2, Windows has little support in database

management software packages. Apparently Windows is only good in graphics presentation, but not data processing. In order to overcome this weakness, recently Microsoft has introduced ACCESS, which is a relational database management package with an extremely attractive promotional offer for only HK\$700⁷. The strongest point ACCESS possesses is the power of integrating database management with graphics. Experienced users can develop program merging data with pictures / photos together on a single screen. The application is various, including quotations with product pictures, personnel system with employees' photos, etc. However, since ACCESS has only been pushed to market for several months only, there are not so many packages designed to run in this environment yet. The application programmers are still "digesting" the power of ACCESS and it takes time for them to experiment with ACCESS.

Fortunately, since Windows is getting more popular in PSs, many software packages have introduced their Windows versions. For example Foxpro 2.5 for Windows has been released to fit this need. Programmers can easily shift their Foxbase programs into this new Windows environment. However, in this version programmers cannot compile their programs into execution files (.EXE files). That implies the software consultant firms have to release their source codes / programs to their clients. In common practices they are not willing to do so. Therefore, programmers will feel hesitated to shift into the Windows environment unless this problem can be solved in the later versions.

Secondly, software run under Windows, like ACCESS, Excel, MS Words, are very powerful on one hand. On the other hand, it means more training / learning / development time has to be spent so as to master the

⁷This is only a promotional price. The discount offer is over by the time this paper is finished.

software packages well. It seems that Windows can do an excellent job for users instead of good jobs done by DOS. However, it takes much longer time to train an operator to master Windows.

Thirdly, Windows requires more resources than DOS does. To run a data processing oriented program written in Dbase, Fox or Clipper, 640 KB memory is good enough. If Windows is employed, it requires the computer to have at least 4 MB memory on board. Of course, more memory is better (8 MB or 16 MB). The latest version of Windows is Windows NT (NT stands for New Technology) requires 16 MB memory minimum. Moreover, the harddisk of the computer should have larger capacity since the Windows software occupy a lot of disk spaces.

Windows Applications	<u>Disk Space</u> <u>Required</u> <u>(in MB)</u>	Non Windows Applications	<u>Disk Space</u> <u>Required</u> <u>(in MB)</u>
Windows (Chinese / Eng.)	12 / 8	ET 3.1	8
ACCESS 1.0	12	FoxPro	7
Excel 4.0	10	Lotus 123 R2.3	7
Winword 2.0c	15	WordPerfect 5.1	4
Total	49		28⁸

Furthermore, to an experienced user, especially if he can memorize some commands, using a mouse travelling around the screen and playing with pull down menus sometimes is not as convenient as using keyboard by pressing several key strokes.

⁸All these figures are rounded and they are obtained through actual installation in the computer harddisk.

CHAPTER 6

TELECOMMUNICATION

Hong Kong

Since the manufacturing factory is set up in mainland China while the headquarters is located in Hong Kong, communication tools are needed in order to provide information exchange. There are a lot of communication devices available : telephone, fax machine, modem, etc. But all of these machines have one thing in common : they all need a good telephone cable network so as to communicate inter and intra cities anywhere around the world.

The telephone system in Hong Kong is one of the most advance and inexpensive one around the world. There are a lot of services supported by the Hong Kong Telecom including International Direct Dial (IDD) and data lines services. In general, telephone line, fax line and data line / lease line are available and ready for use in almost anywhere in Hong Kong. Of course the monthly charges are different according to the quality (i.e., transmission rate and noise level) of the line. However, the quality of the telephone cable in Hong Kong is so good that an ordinary telephone line can be used to transmit electronic signal up to 14,400 BAUD. Therefore, telecommunication in Hong Kong should not be a problem. The only concern is the charges.

In March, 1993 a Chinese newspaper reporter in Hong Kong has discovered that if a transmission to overseas is interrupted when using a fax line, the user is not responsible for paying that charge by notifying the telephone company. But this practice has never been promoted / mentioned by the related telephone company. Therefore, users should be aware of not over paying the charges claimed by the telephone company. Besides this issue concerning charges, communication services provided in Hong Kong are highly reliable.

China

Then the potential problem area lies in the mainland China side. First of all, Chinese government is very sensitive to the communication networks because the Chinese officials view that as national security issue. Therefore, when dealing with communication issue they are very careful or sometimes over concern about it. As mainland China becomes more open, the need of communication becomes greater. However, the telephone systems installed in the major cities are mostly out dated. However, it is very difficult to change to a new system in big city such as Beijing and Shanghai. Rather, some coastal small cities, especially those are near to Hong Kong, are able to buy a brand new telephone system because they are financially capable and the influences to local citizens are smaller in comparison with the large cities. Consequently, those smaller cities in Canton where Hong Kong investors are concentrated in have a better telephone system over the large cities. The ordinary fax line can be used as modem communication with the transmission speed set to 1200 / 2400 BAUD. Also, the communication policies in the southern provinces are looser than those in the northern ones because the local officials are more business oriented and open for opportunities.

In the northern provinces the regulations are strictly executed and yet, the quality of their telephone services are not as good as those provided in the southern provinces. Officials may come to check the computer equipment as described in the case #2.

Nevertheless, in either southern or northern provinces you may have to wait 3 to 6 months for a telephone line with IDD functions to be considered if you go through the normal application procedure. However, the same phone line can be installed a lot faster (say 4 weeks) with proper connections with local county high officials.

INTERNATIONAL PRIVATE LEASED CIRCUIT

If the transmission speed of 2400 BAUD is not satisfactory, and you want to escape from the long waiting queue, a new service offered by Hong Kong Telecom called International Private Leased Circuit (IPLC) is recommended. In 1992, Hong Kong Telecom had an agreement with Chinese related departments⁹ that if any business investors want to establish a lease / data line between Hong Kong and China, they can apply to Hong Kong Telecom only and Hong Kong Telecom will do the rest of application to the Chinese local government on behalf of the business investors. In two to three months' time the line should be established. It will save much of the investors' time in dealing with the Chinese officials.

Right now IPLC can connect to the large cities like Beijing, Tianjin, Shanghai (Pu Tung area), Dongguan, Guangzhou, Shenzhen, Shekou,

⁹The arrangement is named "Single Service Agreement" ()

Huizhou, of which many are located in the Guangdong province. Qingdao and Heilungjing are still in negotiation. In the near future Hong Kong Telecom is going to expand IPLC to connect more cities in China.

The data transmission speed of the IPLC is from 9,600, 19,200 or 56,000 BAUD and up, which is much faster than the ordinary modem. It is because signals are transmitted through fibre optic network, digital microwave radio systems or satellite earth stations. There are four categories of private leased services available now :

- Telegraph circuit
- Voice only circuit
- Voice grade circuit
- digital data service

There are various charge plans available to suit different needs of customers. It provides monthly plan, short term plan and occasion plan. Please refer to appendix 11 for the charging rates as well as other IPLC related information.

If anyone is interested in using the services provided by IPLC, one can contact the sales representatives from the team of IPLC, Hong Kong Telecom. On the other hand, the team is trying to establish good connections with the computer firms in order to widen their potential market. It is because there are more people setting up businesses in China and they usually invite Hong Kong computer consultant firms to design programs for them and send back the sales information from China. If the sales team of IPLC is well connected with these consultants, it is beneficial to all parties (the investors, the computer consultant and the sales team) since IPLC helps the Hong Kong computer consultants complete the projects in the data communication part, thus the consultants and /

or the investors do not need to deal with the Chinese officials and go through a lot of "time consuming" administration procedures.

Video Conferencing

Besides IPLC, another service called video conferencing is a good tool for calling on a meeting without managers leaving their duties and travel to the same place. If this technique is applied in China Trade, the communications between buyers and manufacturers, headquarters in Hong Kong and managerial levels somewhere in China can be greatly improved. Once installed, it is as simple as dialling a telephone call to others.

Hong Kong CSL had first introduced "Videolink" in 1989. Afterwards, a service called "Videonet" was introduced in February, 1992. In April, 1993, another service called "Studio Videonet" is introduced. Originally the target market is those international "big" businesses who may usually call for conferences among different cities. Therefore, the charging rate is not considered "low" or economical to those median and small firms. But it is still cheaper than paying the round trip airline tickets plus hotel accommodation, meals and travelling allowance. More importantly the managers do not need to leave their regular duties for the meeting. Users can rent any three conference rooms from CSL. Two are located in Exchange Square and one in Taikoo Shing. There is another located in Central Plaza which is going to be in service at the end of April, 1993.

A video conference usually lasts one to two hours. Depending on the region connected, a charge rate of HK\$5,000 to \$7,000 per hour will be applied if the transmit rate is from 112 - 128 K BAUD. If 1.5 - 2 M BAUD speed is

employed, the charge rate will be HK\$9,000 and up. Besides renting the equipment, Hong Kong CSL also sell those equipment. A typical desktop video link equipment is from HK\$80,000, conference room video link for multi-users is from HK\$300,000 to HK\$800,000. For a really large scale installation, the cost would go more than one million Hong Kong dollars.

This method of communication should have a great potential in connecting back to China provided that the charging rates can be lowered and data lines services offered by China are improving so as to establish a two way communication successfully. Right now the noise level of the telephone system in China is still high. It is recommended to apply this service together with IPLC that provides excellent transmission quality.

Video Telephone

This is a brand new service provided by Hong Kong CSL. The first announcement is posted in newspaper in April, 1993¹⁰. Since the qualities of the telephone lines in Hong Kong are so well, they are "fast" enough to transmit not only audio signal but also video signal as well. User needs not to reinstall a new telephone line but using the same old line is good enough. As a matter of fact, using this service is just the same as other ordinary telephone services except that a new designed video telephone is employed which has a screen to show the image and a small camera built in the telephone. This service can be treated as a "mini" video conference for two parties only but the charges are much lower because no special data line is needed. Since it is a totally new service, its great potential is waited to be exploded. Again, the

¹⁰Appendix 12.

possibility of applying this service in communicating with China depends on the quality of the telephone installed in China.

CHAPTER 7

TRAINING & MAINTENANCE

As mentioned in previous chapters, an operator may need to have some knowledge in the operating system (i.e., DOS), the network system (ex. Novell, UNIX, Microsoft LAN Manager, etc.), the Chinese Computing System such as ET, KC or CCDOS, printer commands or Jetmate. Many of them are new to the operators. In order to run the information system smoothly, intensive training is required to educate / upgrade the system operators.

In recent years, there are many local computer training centers set up in China. The target market is those young people who want to equip themselves and those who want to work in the foreign companies. However, the level is not so in depth as required to run an information system, or the versions are not so updated as those provided from Hong Kong. Moreover, the training qualities in different centers vary and are not guaranteed. Therefore, a continuous in-house training program is recommended since it is under control of the manufacturing firm itself. The most updated information / software can be included in the training program through the Hong Kong sources.

A tailor-make operation manual includes simple fundamental computer concepts, elementary DOS commands, basic routine of up and down the network, daily maintenance of computer hardware such as cleaning of monitors

and changing ribbons of printers, etc. In any case, the following checklist may be found useful in training local Chinese to be a computer operator :

- Fundamental computer concepts
- Introduction to DOS
- Network layout
- Up and Down a network
- Computer virus scanning
- Network commands
 - console
 - workstations
 - supervisor
- Daily maintenance of computer hardware
 - cleaning of monitors
 - changing ribbons of dot matrix printer
 - changing toner cartridges of laser printer
 - cleaning floppy disk drives
- Basic wiring of cables
- Periodic data backup
- Log books
 - computer accessories / inventory
 - daily routine
- Chinese Computing System
 - system commands
 - character input methods
 - internal coding system
 - use of Jetmate
 - printing Chinese in laser printer
 - other supporting devices
- Simple word processing
 - English - Chinese
- Bar code system (if bar code is applied)
 - bar code scanner
 - use of bar code generation software

Language Barrier

If the information system is planned to set up in mainland China, obviously operators are expected to be local Chinese who are perceived with lower education level and do not know much English. Language Barrier is the most vital issue in training area. It is because a lot of software packages are written for English speaking users. The DOS commands are using simple English words; messages appeared on the screen explaining what is going on are in English; the most up-to-date manuals and reference books are written in English also. If the operator knows moderate English, he can go through a self learning process by reading the related manuals and receive instructions / feedbacks from the screen / programs. Otherwise, operators will not know how to react if something goes wrong.

Besides reference books written in English, some Chinese computer books should be bought for future references. However, many of them are translated books with a lot of terms badly translated (hard to grasp the meaning). Moreover, usually they are published in regular Chinese characters in either Taiwan or Hong Kong. Then the Chinese operators grown up in mainland may not understand fully or they would prefer manuals written in simplified form. Furthermore, no matter the Chinese books are written in regular Chinese characters, or in simplified Chinese characters, they share a common drawback - the Chinese computer books are not as updated as the computer books written in English. As a consequence, operators cannot get the most up-to-date information from books. Therefore, tailor-make training materials either prepared by contracted consultant or in house programmer can be considered a good solution.

Cooperation from Management

So far only the roles of the operators have been discussed. A coin has two sides. The other one is the management level. Operators training is at the execution level. It is fatally important for the management level to know their roles and how they are important in running the management information system. Management information system is providing information for managerial level ! Therefore, they should know their roles well too otherwise the information system is meaningless.

Since the businesses set up in China are mainly production oriented. Therefore, many experienced technical supervisors and factory managers have been sent from Hong Kong to China in order to ensure the products are in good quality. Their daily jobs are to monitor the production process. Mainly what they concern is quality and meeting deadlines. Usually the education level of them are not very high. Instead they gain their expertises through their long working experiences. As a result, they may not know anything about computers at all. To them, they have been doing their jobs without computers for a long time, yet they can still "survive". Therefore, in their minds they may not value the information system so high, or they are not willing to learn computers, or they are too busy in concentrating in the production process. It is important to educate them / to let them know the benefits of a computerized information system. If this group of technical people do not co-operate with the planned information system, the effectiveness of the system will be much reduced. Efforts should be made in order to ensure that they do not have a negative feelings towards computers. As a matter of fact the attitudes of this group of middle-managements "determine" whether the information system is successful or not.

User-friendliness

In this section we are not comparing the differences of Novell vs UNIX nor micro vs mini computers. We are merely discuss from the point of view of training effort. Any other technical comparisons are not in our context.

Since the local Chinese operators have to deal with a lot of commands from different software and there is a language barrier, the choice / design of the software used is very critical. If the software package is designed in a way that it is very user friendly, then it will relief a great burden from the operators. It is one of the reasons why micro computers such as PC and Apple is preferred over mini or main frame computers in this case because they are more user-friendly. Moreover, Novell network system is preferred because Novell is very much alike DOS environment, which is familiar to common users, but UNIX is not, which is well known by its "programmer environment". That means it is designed for those who are very good in computer but not for those new comers. Therefore, less training is needed if a user friendly program is employed.

Maintenance

Maintenance works and procedure are crucial because the components supply and the availability of technicians in China are rare and expensive. Therefore, periodic maintenance works of both data and hardware should be applied. Data should be periodically updated (ideally everyday). Any software stored in harddisk should have a copy in floppy disks, preferably an installation version instead of a backup version because when you change some setting some new drivers may be needed.

A backup computer is recommended for data intensive, and / or time sensitive environment. If there is any problem running the computer, the standby computer can be ready to serve and the broken computer can be fixed by either sending back to Hong Kong or seeking for local support. This method is recommended for those computer cities where computer supply is not so good, or the factory has a lot of traffic between Hong Kong and China that the computer can be sent back to Hong Kong quickly. But remember to declare to the local Chinese custom department. Otherwise when the repaired computer is sent back to China, it may create some troubles.

Moreover, some inventory of computer accessories / consumable should be kept in China. Toner Cartridges for laser printers, printer ribbons for dot matrix printers, ink cartridges for inkjet printers, floppy disks, computer forms, are either not common or expensive in China. It is better to plan ahead instead of faxing back to Hong Kong to ask for help. A computer consultant who does not mind occasionally go to China for site visit is highly welcome.

In order to provide better software support, a modem connection between the production site and the computer consultant, or in-house programmer in Hong Kong headquarters is highly recommended, provided that a telecommunication can be established. It saves a lot of travelling time and the software problem can be solved right away.

CHAPTER 8

CONCLUSIONS & RECOMMENDATIONS

Conclusion

The relationship between Hong Kong and mainland China is getting closer in both economical and political senses. There are more manufacturing factories shifted from Hong Kong to China. The importance of setting up a production management information system is in no doubt. It provides more information and control to the management levels in both Hong Kong and China. However, when setting up such a system between Hong Kong and China the investors faces many challenges. This paper identify those challenges through real life case studies. The challenges can be catagorized into :

1. Government Regulations

The main concern of the Hong Kong government is whether the classified "high tech" equipment speared into the non-proscribed communist countries such as mainland China.

Chinese government focuses on the custom & taxation factors when importing computers from outside. Moreover, Chinese government is sensitive to the telecommunication devices as they consider such devices a national security issue.

2. Chinese Computing System

Chinese computing system is necessary because not many local Chinese operators know English well. Both Taiwan and mainland China have developed their own Chinese computing systems. They are different in character input methods and internal coding systems. They are not compatible with each other.

Hong Kong has adopted the Taiwanese Chinese computing system and is not familiar with the PRC developed system, yet in reverse the local Chinese operators know PRC Chinese system well. They do not prefer the Taiwanese system and more training time is needed.

The co-ordination between Chinese computing system and other software packages is difficult, especially when printing in laser printer and conflicting in memory management.

3. Telecommunication

The telephone system installed in Hong Kong is good. There is no problem except that some charging rates of leased line services are quite expensive in the eyes of those manufacturing firms.

In contrast, the telephone system installed in China is old with poor quality. Moreover, the availability of both local phone lines as well as long distance lines are limited.

The IPLC services and video conferencing are very helpful to the Hong Kong China businesses. However, there are not many cities support these services.

The applications of telephone line and leased data line are complicated in China and usually it takes a long time to process. Normally a telephone line with long distance function will take at least three to six months to install.

4. Training & Maintenance

Training is important as the operators are new to computers. In order to run the information system smoothly, operators need to know a lot of procedures and routines. In the learning process they encounter a language problem since the operating system and other most updated manuals / references are written in English. This will make their learning process longer.

Co-operation from management levels is essential for the information system running successfully. Many of them focus on production and do not fully understand the advantages of the information system.

Technical support and availability of repair parts in China are limited and are more expensive.

Software support highly depends on the telecommunication establishment, which is already identified as a fatal weakness of China.

Conclusion

Based on the analyses, recommendations to alleviate the above challenges are as follow :

1. Government Regulations

As PS is more popular in Hong Kong, Trade Department of Hong Kong has been loosening its control and restriction in exporting computers to mainland China. It is expected that application for export license for those strategic commodities will be easier in future because Hong Kong can determine its own cases now, instead of referring the applications to London. On the other hand, if applicant has completely prepared the technical specification of the computers, the application process will be faster.

Chinese government is also getting more open. It is expected the government is no longer so sensitive to the communication devices. It is especially in the southern provinces as they are more open economically.

2. Chinese Computing System

New versions of Chinese computing systems provide better memory management. Moreover, a laser printer driver is included in the package. Although the effect is not as good as Jetmate, it is reasonably to expect it will continue to improve in later versions.

Chinese Windows seems to be a good solution. It can solve many problems and joint the works done by both Taiwanese and PRC

Chinese systems together. Although the database management power of Windows is not as strong as its other functions, the situation is improving since there are more software vendors shifting from DOS environment into Windows environment.

3. Telecommunication

The minimum requirement of establishing a telecommunication is a reliable phone line which can be worked with modem. If this is not possible, the only thing we can do is storing data in floppy disks and send them between Hong Kong and China.

If the location is right and a data line with faster transmission speed is desired, manufacturers can ask for help from Hong Kong Telecom by utilizing the "single service agreement" compromised between Hong Kong Telecom and the Chinese government. Once the IPLC data line is employed, it can transmit data or use the video conferencing service. In the near future, there are more cities joining the IPLC networks and thus the charging rates are expected to be lower.

Since the application of telephone line is complicated and normally takes a very long time, it is recommended to plan ahead carefully. The installation process will be a lot faster if proper connection with high officials is established or the manufacturer is willing to pay a much higher installation fees.

4. Training & Maintenance

Continuous training program is required to train the local operators. As computer is more popular in China, operators will accumulate their experiences.

Effort should be put to let the management levels know the information system is helpful in their daily production plans and scheduling as well. Their support will great enhance the efficiency of the information system.

A periodic data backup plan should be implemented to protect the data. A standby computer should be ready to take over the jobs if the running computer is down.

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INTERVIEWS

Mr Cheung, Peter, Chairman Assistant, Kam Lung Textiles (Holding) Limited.

Mr Tao, Ping Hei, Administration Manager, Kevin Wong Holding Limited.

Miss Ma, Frandy, Senior Account Manager, Trading & Manufacturing Sector (Asia Pacific), Corporate & Major Accounts Group, Business Sales Branch, Hong Kong Telecom.

Mr Kwan Danny S. K., Product Manager, Local Service Development, Hong Kong Telecom.

Mr Tsang, Gordon, MIS manager, Rototech Electrical Components Inc.

Mr Wong, Edmond Y. M., Corporate Development Manager, Kitty & Kettie Supermarket Limited.

SITE VISITS

Goodyear's Handbags Development (China) Limited

Dongguan Handbag Factory, Guantai Road, Dongguan City, China.

Kevin Wong Holding Limited

Kevin Wong Development Building, 8 - 12 Fl., 11 Tai Yip Street, Kwun Tong, Kowloon, Hong Kong.

Kam Lung Textiles (Holdings) Limited

36 Mok Cheong Street, 4/F., To Kwa Wan, Kowloon, Hong Kong.

Kam Lung Textile (China) Limited

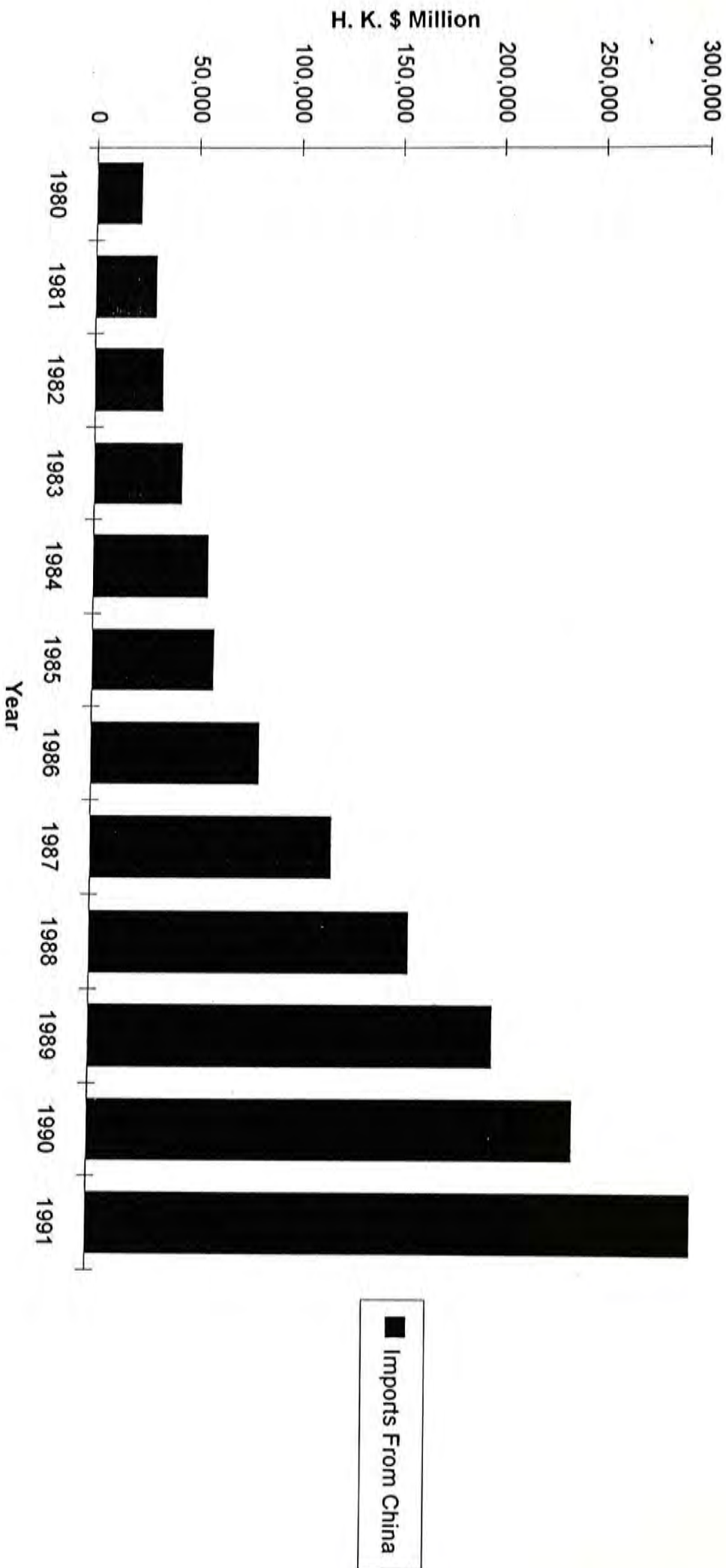
Kam Lung Centre, Zhuxing Industrial District, Shantou, SEZ, Guangdong, China.

K K Supermarket, head office, Fotan, N. T., Hong Kong.

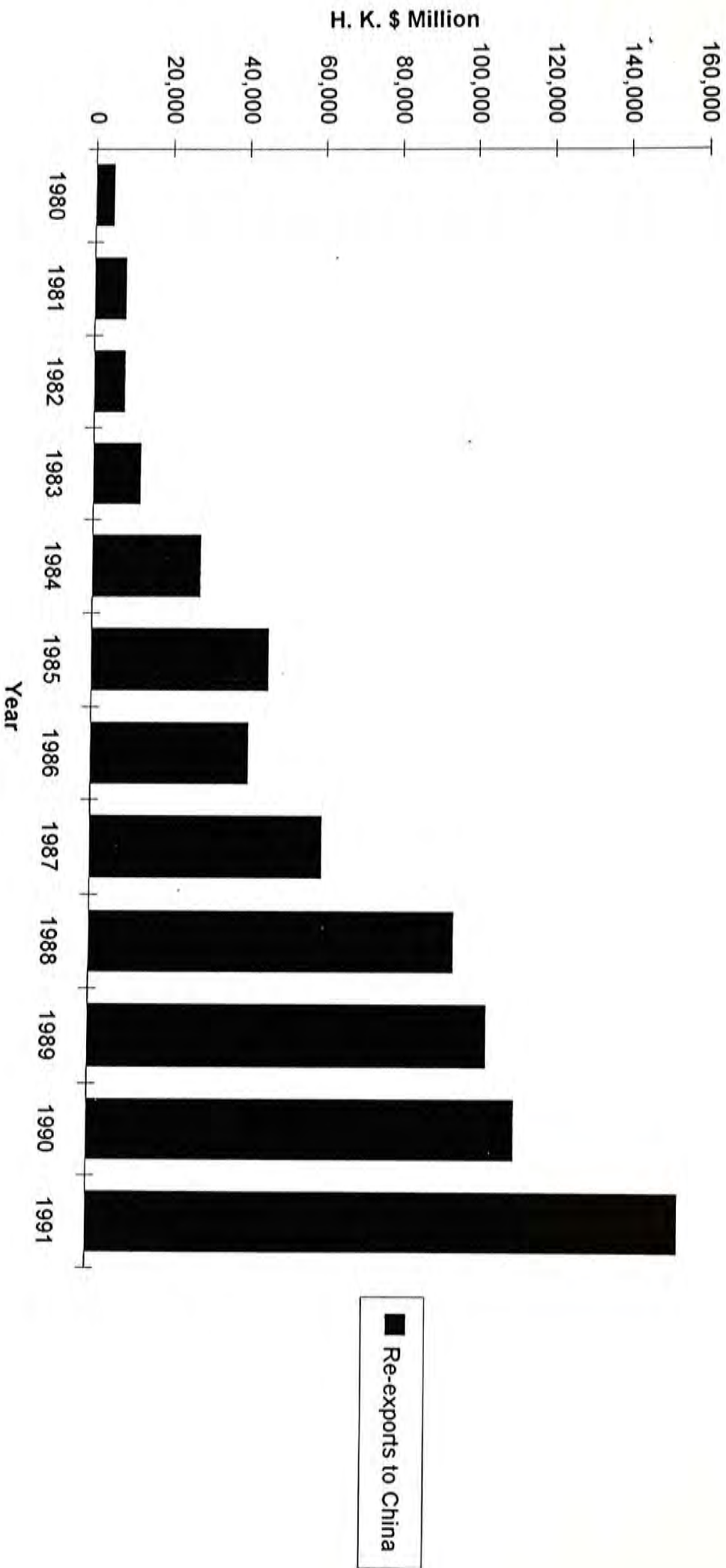
Rototech Electrical Components Inc.

31 - 39, Wo Tong Tsui Stret, Kwai Chung, N. T. Hong Kong.

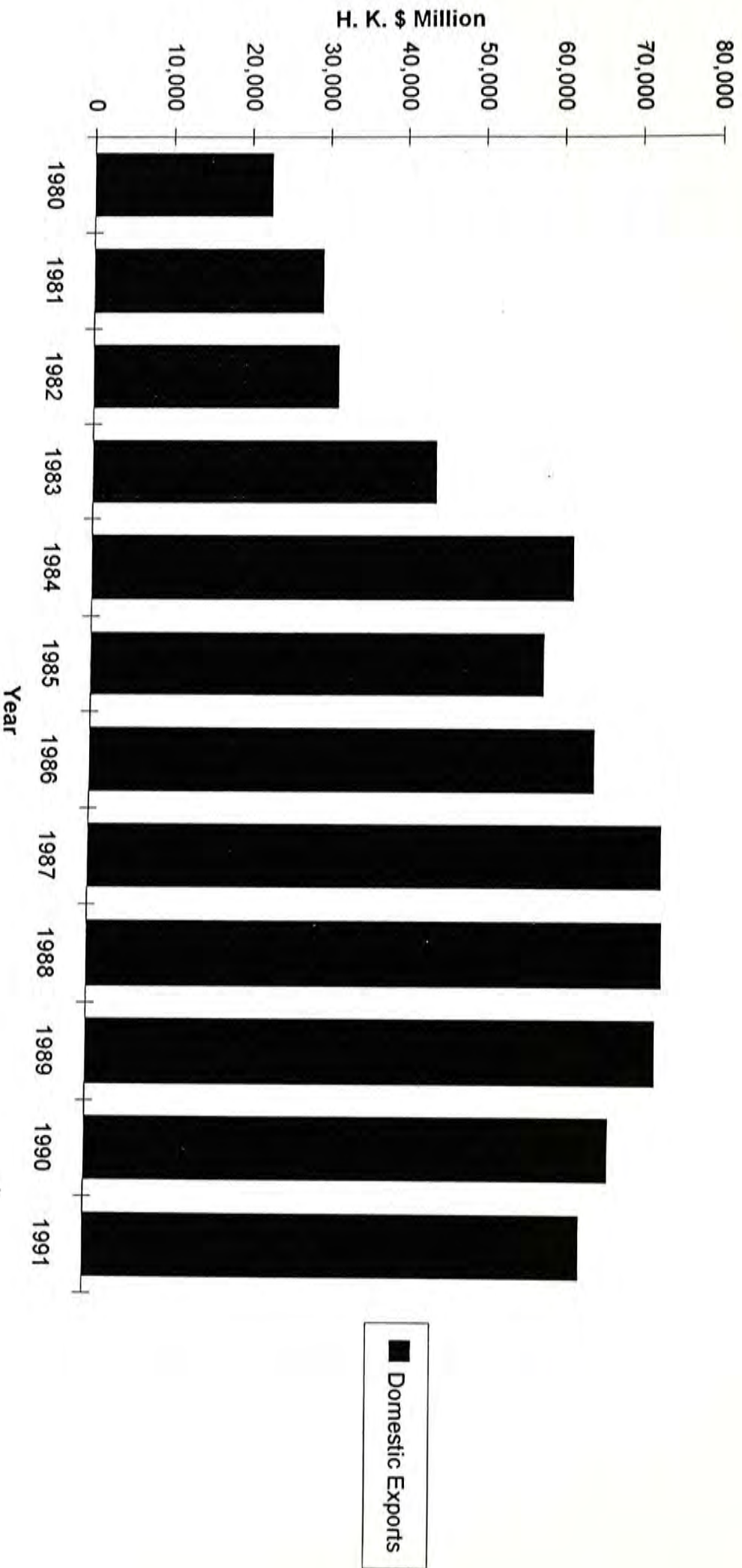
Imports From China



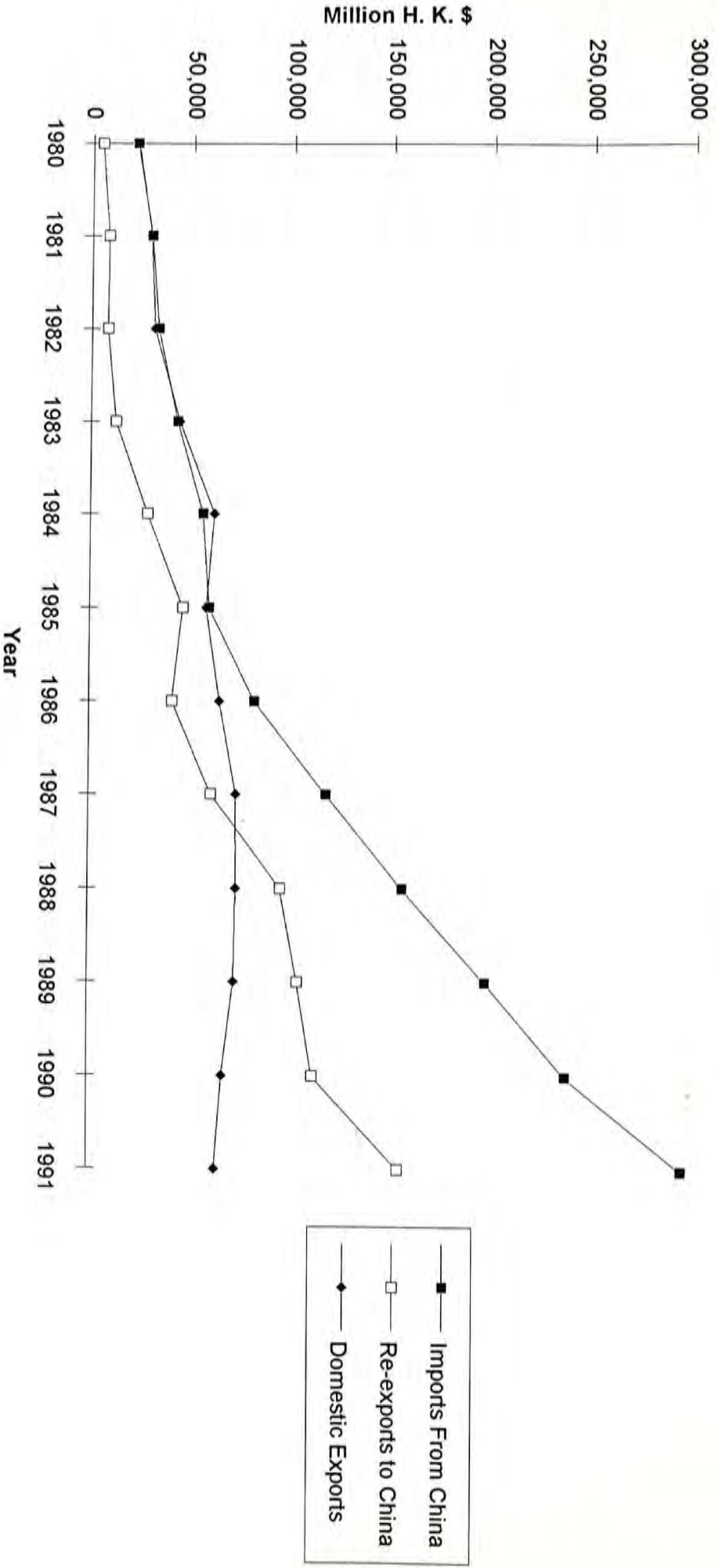
Re-exports to China



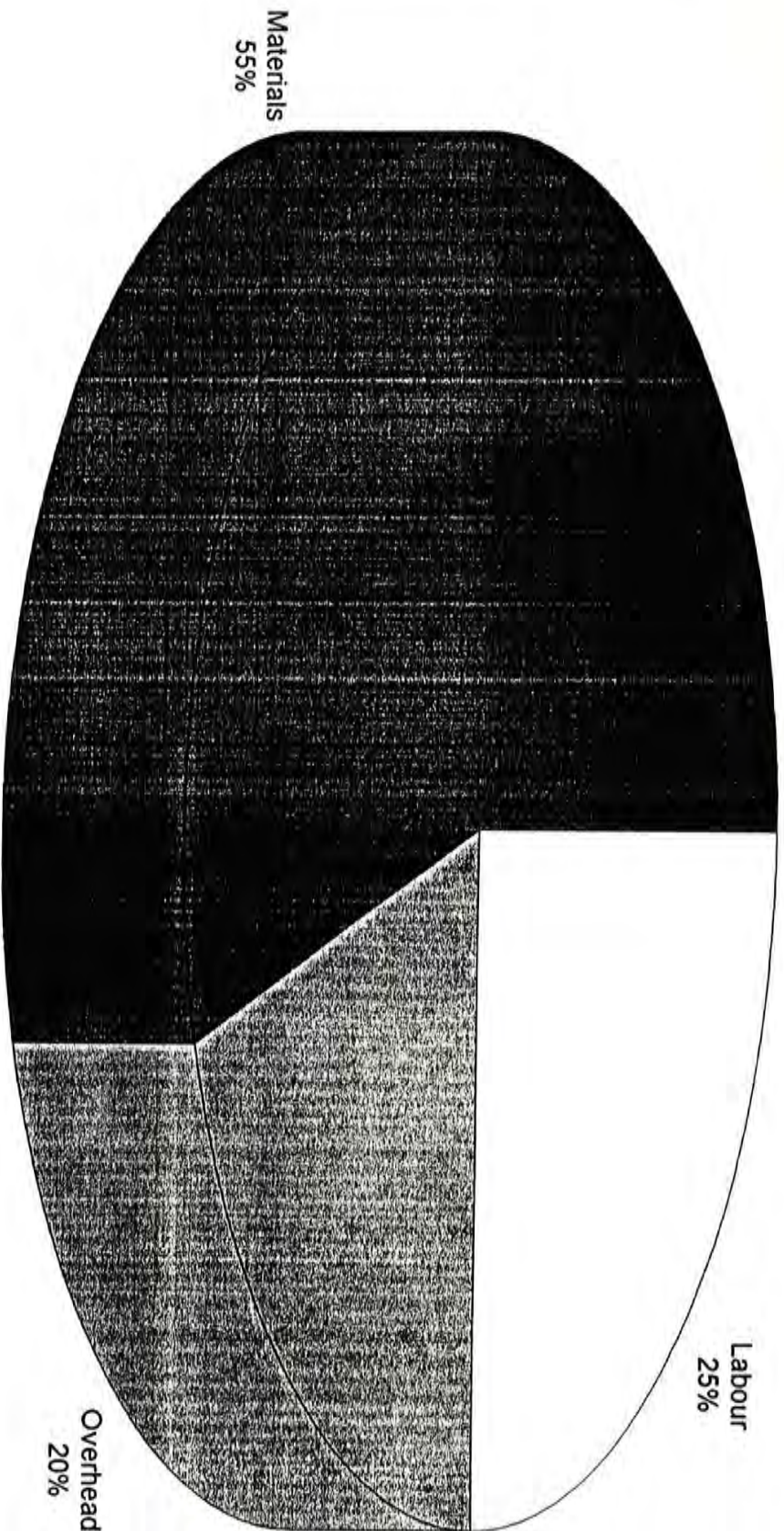
Domestic Exports to China



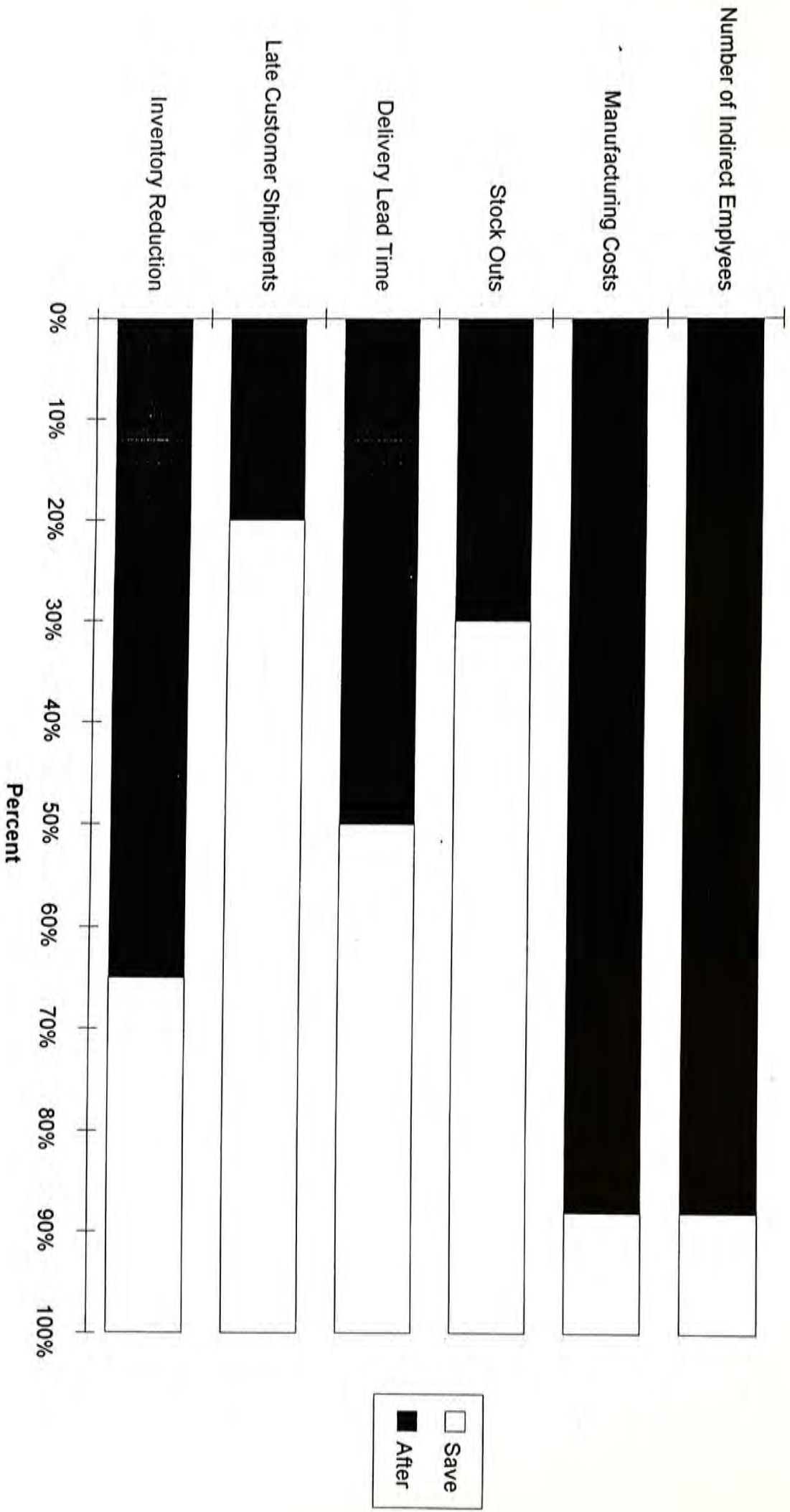
Hong Kong's External Trade To China 1980 - 1991



Average Manufactured-product Cost Breakdown



Typical Rewards of Computer Applications in Manufacturing



Appendix 7

TL 202

TRADE DEPARTMENT

GUIDE TO IMPORT AND EXPORT

LICENSING REQUIREMENTS

TRADE DEPARTMENTGUIDE TO IMPORT AND EXPORT LICENSING REQUIREMENTSINTRODUCTION

Under the Import and Export Ordinance (Chapter 60), the Reserved Commodities Ordinance (Chapter 296), the Ozone Layer Protection Ordinance (Chapter 403) and their subsidiary legislation, imports and exports of certain articles are subject to licensing control. All articles subject to import and export licensing control are deemed "prohibited articles" for the purpose of these three Ordinances. Hong Kong's import and export controls are kept to a minimum, and either stem from her obligations under various international undertakings, or are applied for health, safety or security reasons.

2. This pamphlet outlines Trade Department's licensing requirements and procedures. It should, however, be noted that this pamphlet serves only as a general guide and in no way does it detract from or supersede the provisions of the Ordinances and their subsidiary legislation. Furthermore, since changes may be effected at short notice, the information given here may not be completely up-to-date. Information on import and/or export control exercised by other Departments of the Hong Kong Government is briefly given in para. 33 below.

IMPORT LICENCES

3. Imports of the following articles from any territory must be covered by valid import licences -

(a) Strategic commodities	(see para. 24 below)
(b) Reserved commodities	(" 25 ")
(c) Agricultural pesticides	(" 26 ")
(d) Radioactive substances and irradiating apparatus	(" 27 ")
(e) Pharmaceutical products and medicines	(" 28 ")
(f) Textiles	(" 29 ")
(g) Gold coins, iron and steel imported from South Africa	(" 30 ")
(h) Ozone depleting substances	(" 31 ")

4. A person to whom an import licence has been issued under the Import and Export Ordinance, the Ozone Layer Protection Ordinance or the Reserved Commodities Ordinance in respect of a "prohibited article" shall present the licence to the owner of the vessel, aircraft or vehicle in or on which the article was imported within 7 days after importation.

5. The owner of a vessel, aircraft or vehicle in or on which any "prohibited article" is imported shall retain possession of the "prohibited article", until there is produced to him a licence issued under the Import and Export Ordinance, the Reserved Commodities Ordinance, the Ozone Layer Protection Ordinance, or under some other law in respect of the "prohibited article".

EXPORT LICENCES

6. Exports of the following articles to any territory must be covered by valid export licences -

(a) Strategic commodities	(see para. 24 below)
(b) Reserved commodities	(" 25 ")
(c) Agricultural pesticides	(" 26 ")
(d) Pharmaceutical products and medicines	(" 28 ")
(e) Textiles	(" 29 ")
(f) Ozone depleting substances	(" 31 ")
(g) Chemicals precursors.....	(" 32 ")

7. When an export licence has been issued under the Import and Export Ordinance, the Ozone Layer Protection Ordinance or the Reserved Commodities Ordinance in respect of a "prohibited article", the owner of the article shall, before it is exported, deliver the licence to the owner of the vessel, aircraft or vehicle in or on which he intends to export it.

8. The owner of a vessel, aircraft or vehicle shall not accept any "prohibited article" for export in or on the vessel, aircraft or vehicle until there is produced to him a valid export licence issued under the relevant Ordinance.

TRANSHIPMENT CARGO EXEMPTION SCHEME

9. Subject to certain conditions being met, shipping companies, airline companies and their appointed agents registered with the Trade Department under the Transshipment Cargo Exemption Scheme are exempted from import and export licensing requirements in respect of certain types of transshipment cargo. It should, however, be noted that the Scheme is not intended for importers or exporters.

Exemption of Personal Effects
from Licensing Requirements

10. The following textile articles and pharmaceutical products are exempted from licensing if they are in a quantity which is reasonable having regard to the purpose for which they are imported or exported as the case may be :

- (a) Pharmaceutical products and medicines as defined by Section 2 of the Pharmacy and Poisons Ordinance

Pharmaceutical products imported or exported in the accompanied baggage of a person entering or leaving Hong Kong and which are for his personal use.

- (b) Textile Imports

(i) textile articles imported in accompanied or unaccompanied baggage which are personal effects or gifts.

(ii) woven or knitted fabric swatches and sample yarn imported by air and not exceeding 0.8m² in size in respect of fabric swatches and 1.2kg in weight in respect of each type of yarn.

- (c) Textile Exports

Textile articles exported in the accompanied baggage of a person leaving Hong Kong and which are for his personal use.

- (d) Provisions for Passengers and Crew

Textiles and pharmaceutical products imported or exported as part of the provisions required for consumption or use by the crew or passengers of the vessel, aircraft or vehicle on which the article is carried.

APPLICATION FORMS

11. Applications for import and export licences should be made on the appropriate standard forms as follows :-

- (a) Import Licences -

- (i) Form 3 (blue) - for imports other than textiles;
(ii) Form 7 (White) - for imports of textiles;
(iii) Import Licence Form - for imports of ozone depleting substances.

- (b) Export Licences -

- (i) Form 4 (White) - for exports of textiles not subject to quota restraint;
(ii) Form 5 (Blue) - for exports of textiles subject to quota restraint;
(iii) Form 6 (White) - for exports other than textiles;
(iv) Export Licence Form - for exports of ozone depleting substances.

12. Import and export licence forms mentioned above are available for sale from -

- (a) Government Publications Centre,
G/F., General Post Office Building,
Connaught Place,
Hong Kong

Tel No : 523 5377

- (b) Trade Department,
Collection Office,
Room 813, 8/F,
Trade Department Tower,
700 Nathan Road,
Tel No : 398 5325

Form 5, available only upon application to the Textiles Controls Registration Registry of the Trade Department on 8/F, Trade Department Tower, is restricted to those companies who are registered with the Trade Department for textiles controls purposes.

The application forms are sold at -

	<u>HKD</u> <u>per pad</u>	<u>Set/s</u> <u>per pad</u>
Form 3	17.00	20
Form 4	1.50	1
	20.00	21
Form 5	2.00	1
Form 6	20.00	25
	10.00	20
	1.00	1
Form 7	15.00	20
Form 7 (Continuous Stationery)	75.00	100
Import Licence Form	17.00	25
Export Licence Form	17.00	25

APPLICATION PROCEDURES

Submission of Applications

13. To avoid delay in processing, licence applications should be properly completed and, where necessary (see paragraphs 24, 26 and 28 below), prior endorsement from the relevant authorities obtained before submission to the Receiving Counters of the Trade Department at -

	<u>For Licences Covering</u>	<u>Counters at</u>
(a) Headquarters, B1 to 4/F, Trade Department Tower, 700 Nathan Road, Kowloon	Exports of Textiles to Europe	M/F
	Exports of Textiles to North America	B1/F
	Exports of Textiles to Other Regions of the world	2/F (Counters 1 - 22)
	Imports of Textiles	2/F (Counters 23 - 39)
	Import and Export of other prohibited articles	4/F
(b) Hong Kong Sub-Office, 2/F, Harbour Building, 38 Pier Road, Hong Kong		
(c) Airport Receiving and Issuing Counter, Room 131, 1/F, New Cargo Office Block, Hong Kong Airport, Kowloon		

Applicants are requested to note that licence applications for Ozone depleting substances will only be collected at Trade Department Headquarters.

14. Licence applications other than those that can be issued instantaneously will be given a reference number and a receipt bearing this number will be issued to the applicant. This receipt should later be presented to the Issuing Counters at the same premises when collecting the approved licence.

15. Under normal circumstances, application for Import Licence Form 7, Export Licence Forms 4 and 5 and import and export licences for Ozone depleting substances are approved 2 clear working days after submission. Applications for Import Licence Form 3 and Export Licence Form 6 are approved in 1-3 clear working days after submission. Clear working days exclude the day of submission of the application, any intervening Sundays and public holidays. Instant licensing service is provided for textile imports from all countries and textile exports destined to the non-restrained markets (other than Switzerland) and samples where the licence applications are submitted to Trade Department Tower. Details can be obtained from the respective Divisions with enquiries numbers at para 17.

Amendment of Licences

16. Particulars on an approved import/export licence can be amended only by an authorised officer of the Trade Department. If an amendment is necessary, the applicant should notify the Department in writing which should be accompanied by the copies of the relevant licence issued and supporting documents as appropriate. Unauthorised alterations of or amendments to an approved import/export licence is an offence.

- 4 -

ENQUIRIES

17. Enquiries concerning licensing requirements and procedures may be made as follows :-

(a) Textile Items

Europe Division, Textiles Control

FR Germany, and Spain	398 5378
Portugal, Greece and Denmark	398 5379
Benelux.....	398 5381
France and Italy	398 5382
United Kingdom.....	398 5383
Ireland.....	398 5385
Sweden and Switzerland	398 5466
Austria	398 5467
Finland and Norway.....	398 5468
Sample Licensing	398 5386
Non-restrained.....	398 5387
Re-export Items.....	398 5393
Swing and Transfer of Quotas.....	398 5388
Sample Classification.....	398 5389
Expeditious Issue of Licences.....	398 5391
Receipt & Issue Counters	398 5520
Enquiries.....	398 5390

North America Division, Textiles Control

USA, Group I Categories	398 5423
USA, Group II Cotton Garment Quota Categories.....	398 5419/5420
USA, Group II Man-made Fibre Garment Quota Categories.....	398 5421
USA, Group II Cotton EA Quota Categories and Man-made Fibre Garment Quota Categories.....	398 5589
USA, Group II Wool Garment Categories and Group II Man-made Fibre EA Quota Categories.....	398 5422
USA, Group III and Sweaters Categories and Non-apparel of Silk blend and/or Other Vegetable Fibre.....	398 5426
USA, Quota Window Arrangement, Personal Shipments, and Mutilated or Stamped Commercial Sample Shipments, Re-export and Non-restrained Items.....	398 5427
USA, Swing and Transfer of Quotas	398 5424
Canada Swing and Transfer of Quotas; EA and Non-restrained Items.....	398 5424
Canada, Quota Items.....	398 5425

Other Regions Division, Textiles Control

Export of textiles to other Non-restrained Markets	398 5469/5472
Import of textiles from all countries.....	398 5473/5461
Textiles Importer Registration	398 5465

(b) Items other than Textiles

Trade Licensing (Non-textiles) Section	398 5559/5560
Strategic Commodities Section	398 5576/5577
Reserved Commodities Section	398 5569/5570

DEFINITIONS & EXPLANATORY NOTES

18. Import and export controls under the Import and Export Ordinance, the Reserved Commodities Ordinance and Ozone Layer Protection Ordinance apply to all "prohibited articles" except "articles in transit".

19. "Article in transit" means an article which -

- (a) is brought into Hong Kong solely for the purpose of taking it out of Hong Kong; and
- (b) remains at all times in or on the vessel, aircraft or vehicle in or on which it is brought into Hong Kong.

20. "Export" means to take, or cause to be taken, out of Hong Kong any article other than an article in transit.

21. "Import" means to bring, or cause to be brought, into Hong Kong any article other than an article in transit.

22. "Owner" means :-

- (a) in respect of an article, any person being or holding himself out to be the owner, importer, exporter, consignee, agent or person in possession of, or beneficially interested in, or having any control of, or power of disposition over the article; and

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(b) in respect of a vessel, aircraft or vehicle :-

- (i) the registered owner and any person holding himself out to be the owner thereof;
- (ii) any person acting as agent for the owner in connection with the handling of cargo carried in or on the vessel, aircraft or vehicle;
- (iii) any person to whom the vessel, aircraft or vehicle has been chartered or hired; and
- (iv) any person having for the time being the control or management of the vessel, aircraft or vehicle.

23. "Prohibited article" means any article -

- (a) the import or export of which is prohibited under the provisions of the Import and Export Ordinance and the Reserved Commodities Ordinance;
- (b) the import or export of which is permitted subject to the terms and conditions of a licence; or
- (c) the import or export of which is prohibited or controlled under any other law.

24. "Strategic commodities" means commodities set out in the Schedule to the Import and Export (Strategic Commodities) Regulations, copies of which are available for sale from the Government Publications Centre at G/F., General Post Office Building, Connaught Place, Hong Kong. Tel. No. 523 5377.

Notes

- (1) Products such as high speed digital computers, erasable optical disks, high resolution (over 1280 X 1024 pixels) graphic displays, high capacity memory integrated circuits, data-switching equipment, high capacity fibre optics communication systems, etc, are generally considered to be strategic commodities. Licence applications covering imports and exports of such commodities submitted to the Trade Department will be internally passed to the Classification Unit of the Strategic Commodities Section for a decision as to whether the commodities are in fact covered by the Schedule to the Import and Export (Strategic Commodities) Regulations. As such, applicants should attach, to their licence applications, brochures/catalogues giving adequate technical details of the commodities under application.
- (2) Detailed licensing procedures relating to imports and exports of strategic commodities are set out in a separate pamphlet, available free of charge from the Strategic Commodities Section of the Trade Department at Room 516B, 5/F, Trade Department Tower, 700 Nathan Road, Kowloon. Tel. No. 398 5574, 398 5576 and 398 5577.
- (3) Arms and ammunition are classified as strategic commodities. Applications covering imports and exports of guns, etc. should be supported by a licence for possession or a dealer's licence issued by the Royal Hong Kong Police Force at Police Headquarters, G/F, Caine House Annexe, Arsenal St., Wanchai, Hong Kong. Tel. No. 860 2526.
- (4) Explosives are classified as strategic commodities. Applications covering imports and exports of explosives must have the prior endorsement of the Mines Division, Civil Engineering Services Department before submission to the Trade Department for processing. The Mines Division is situated at 5/F., Canton Road Government Offices, 393 Canton Road, Kowloon. Tel. No. 733 2371.

25. "Reserved commodities" means commodities set out in the Schedule to the Reserved Commodities (Control of Imports, Exports and Reserve Stocks) Regulations, which are :-

- (a) Rice, with or without husk, and milled or unmilled.
- (b) Frozen or chilled beef, mutton and pork, including veal, lamb, and all offals.
- (c) Frozen poultry, including -
 - (i) the carcass of a domestic fowl, duck, goose or turkey;
 - (ii) any part of any such carcass; or
 - (iii) any part of any bird mentioned in paragraph (i) of this item, other than a part mentioned in paragraph (i) or (ii), which is edible or which is used in the preparation of food.

Notes

- (1) Import licences for reserved commodities imported for local consumption are issued only to companies registered with the Director-General of Trade under the Reserved Commodities (Control of Imports, Exports and Reserve Stocks) Regulations as approved stockholders of such commodities.
- (2) Import licences for frozen meat or frozen poultry for local consumption must be supported by valid health certificates issued by the recognized authority of the exporting country concerned or by specific prior approval from the Hygiene Division of the Department of Health.
- (3) No licence is required for the import or export of any reserved commodity in the personal luggage of a person for personal consumption or as gifts, in an amount not exceeding 15 kg.

26. "Agricultural pesticides" means any insecticide, fungicide, herbicide, nematocide, molluscicide or any substance (whether organic or inorganic) having any of the properties of -

- (a) destroying or repelling any insect, mite, mollusc, nematode, fungus, bacterium, virus or other pest capable of destroying or damaging plants;
- (b) directly or indirectly controlling the activity of, or preventing or mitigating the harmful effect on plants of, any such pest;
- (c) destroying weeds;
- (d) acting as a bird or animal repellent, plant growth regulator, defoliant or desiccant.

Note

Licence applications covering imports or exports of agricultural pesticides should have the prior endorsement by the Agriculture and Fisheries Department before submission to the Trade Department for processing. The Agriculture and Fisheries Department is located at Room 917A, Canton Road Government Offices, 393 Canton Road, Kowloon. Tel. No. 733 2163.

27. "Radioactive substances" and "irradiating apparatus" mean those items set out in the Schedule to the Import (Radiation) (Prohibition) Regulations.

Note

Import licences are issued only to holders of Radioactive Substances Licences or Irradiating Apparatus Licences issued by the Radiation Board. Enquiries should be made to the Radiation Health Unit of the Department of Health at G/F, 99 Kennedy Road, Wanchai, Hong Kong. Tel. No. 836 3532.

28. "Pharmaceutical products" and "medicines" mean any substance or mixture of substances manufactured, sold, supplied or offered for sale or supply for use in -

- (a) the diagnosis, treatment, mitigation, alleviation or prevention of disease or any symptom thereof;
- (b) the diagnosis, treatment, mitigation, alleviation of any abnormal physical or physiological state or any symptom thereof;
- (c) altering, modifying, correcting or restoring any organic function;

in human beings or in animals.

Note

Licence applications covering imports or exports of pharmaceutical products and medicines must have the prior endorsement of the Pharmacy and Poisons Board before submission to the Trade Department for processing. To obtain the endorsement of the Board, applicants should approach the Pharmaceutical Import and Export Control Section of the Department of Health at 3/F., Centre Point, 181-185 Gloucester Road, Wanchai, Hong Kong. Tel. No. 573 4578.

29. "Textiles" includes any natural or artificial fibre products and any combination of natural and artificial fibre products in the form of yarn, fabrics, garments or other manufactured articles.

Note

Importers of textile goods into Hong Kong should be registered with the Textiles Importer Registration Unit of the Trade Department in Room 104, 1/F, Trade Department Tower, before they may apply for textile import licence Form 7.

30. Gold coins, iron and steel imported from South Africa are subject to licensing control by the Trade Department under the Import Prohibition (South Africa) Regulations. However, import licence applications covering such articles will be approved only in certain circumstances.

31. "Ozone depleting substances" refer to the substances set out in the schedule to the Ozone Layer Protection Ordinance i.e. scheduled substances as follows -

Chemical Name	Common Name
CFCl_3 - Trichlorofluoromethane	CFC 11
CF_2Cl_2 - Dichlorodifluoromethane	CFC 12
$\text{C}_2\text{F}_3\text{Cl}_3$ - Trichlorotrifluoroethane	CFC 113
$\text{C}_2\text{F}_4\text{Cl}_2$ - Dichlorotetrafluoroethane	CFC 114
$\text{C}_2\text{F}_5\text{Cl}$ - Chloropentafluoroethane	CFC 115
CF_2BrCl - Bromochlorodifluoromethane	halon 1211
CF_3Br - Bromotrifluoromethane	halon 1301
$\text{C}_2\text{F}_4\text{Br}_2$ - Dibromotetrafluoroethane	halon 2402

A scheduled substance is subject to control whether existing alone or in a mixture but does not include a substance that is -

- (i) in a manufactured product (other than one used solely for the transportation or storage of the substance) and the substance is used in the operation of the product or the mere dispensing of the contents of the product constitutes the intended use of the substance; or
- (ii) part of a manufactured product solely because the substance was used in the process of manufacturing the product.

Note

Import and export licences are issued only to companies registered with the Trade Department. All imports of chlorofluorocarbons (CFCs) for local consumption are subject to availability of quota holdings held by the importer. Imports of all ozone depleting substances from non-parties to the Montreal Protocol are banned. The list of parties to the Montreal Protocol can be obtained from Trade Department at Room 408, 4/F, Trade Department Tower, 700 Nathan Road, Kowloon. Tel No 398 5559 and 398 5560. Enquiries relating to products under control and quota allocation should be directed to the Environmental Protection Department, Air Control Group, 26/F., Southorn Centre, 130 Hennessy Road, Wanchai, Hong Kong. Tel. No. 835 1089 and 835 1323.

32. "Chemicals Precursors" refer to those chemicals set out in the Second Schedule to the Import and Export (General) Regulations as follows :

- | | |
|---|---|
| (1) Thioldiglycol | (2) Phosphorus oxychloride |
| (3) Dimethyl methyl phosphonate | (4) Methyl phosphonyl difluoride |
| (5) Methyl phosphonyl dichloride | (6) Dimethyl phosphite |
| (7) Phosphorus trichloride | (8) Trimethyl phosphite |
| (9) Thionyl chloride | (10) Hydrogen flouride |
| (11) Chloroethanol | (12) Dimethylamine |
| (13) Potassium fluoride | (14) Dimethylamine hydrochloride |
| (15) Tris-ethanolamine | (16) 3-Quinuclidinol |
| (17) Pinacolyl Alcohol | (18) Pinacolone |
| (19) Methyl Benzilate | (20) Phosphorus Pentasulphide |
| (21) Di-isopropylamine | (22) 3-Hydroxy-1-methylpiperidine |
| (23) N, N-Diisopropyl-(beta)-aminoethyl chloride | (24) N, N-Diisopropyl-(beta)-aminoethanethiol |
| (25) Diethyl ethylphosphonate | (26) Diethyl N, N-dimethylphosphoramidate |
| (27) Ethyl phosphinyl dichloride | (28) Ethyl phosphonyl dichloride |
| (29) Ethyl phosphonyl difluoride | (30) Methyl phosphinyl dichloride |
| (31) N, N-Diisopropyl-(beta)-aminoethanol | (32) Diethyl methylphosphonite |
| (33) Dimethyl ethylphosphonate | (34) Ethyl phosphinyl difluoride |
| (35) Methyl phosphinyl difluoride
(Methyl phosphorus difluoride) | (36) 3-Quinuclidone |

OTHER INFORMATION

Import and Export Declarations

33. Under the Import and Export (Registration) Regulations, any person who imports or exports/re-exports any article (other than an exempted article) is required to lodge with the Commissioner of Customs and Excise an accurate and complete import or export/re-export declaration within 14 days after the importation or exportation of the article. Enquiries about lodgement of such declarations can be made to the Trade Statistics Office at 7/F., Wanchai Tower I, 12 Harbour Road, Wanchai, Hong Kong. Tel. No. 823 4901 - 823 4912 (12 lines).

Import and Export Controls by Other Departments

4. Controls on imports and/or exports of the following items are exercised by other Departments of the Hong Kong Government :

<u>Department</u>	<u>Item</u>	<u>Legal Authority</u>	<u>Enquiries should be made to</u>
a) Agriculture and Fisheries Department	Import and transhipment/transit of <u>animals, birds & reptiles</u>	Public Health (Animals & Birds) Regulations, Cap 139	Canton Road Government Offices 12/F - 14/F, 393 Canton Road, Kowloon Tel No 733 2142 & 733 2161
b) - do -	Import and transhipment/transit of <u>dogs and cats</u>	Dogs and Cats Regulations, Cap 167	- do -
c) - do -	Export of <u>poultry carcasses or poultry products</u> to certain scheduled countries	Poultry (Slaughtering for Export) Regulations, Cap 139	- do -

<u>Department</u>	<u>Item</u>	<u>Legal Authority</u>	<u>Enquiries should be made to</u>
(d) - do -	Import of <u>plants, plant pests and soil</u>	Plant (Importation and Pest Control) Ordinance, Cap 207	- do - Tel No 733 2162
(e) - do -	Import and export of <u>endangered species</u> , whether alive or dead or their parts or derivatives; these are controlled as scheduled plants, scheduled animals, and scheduled parts and derivatives	Animals & Plants (Protection of Endangered Species) Ordinance, Cap 187	- do - Tel No 733 2117/2122
(f) - do -	Export of any <u>local wild plant</u> , or any part of it	Forest and Countryside Ordinance, Cap 96	- do - Tel No 733 2493
(g) - do -	Export of any <u>protected wild animal</u> or part of a protected wild animal, killed or taken in Hong Kong; or export of any nest or egg of any protected wild animal taken in Hong Kong	Wild Animals Protection Ordinance, Cap 170	- do - Tel No 733 2117
(h) Customs & Excise Department	Import and export of <u>dutiable commodities</u> (tobacco, liquor, methyl alcohol, hydrocarbon oils, cosmetics, non-alcoholic beverages and concentrates)	Dutiable Commodities Ordinance, Cap 109	Dutiable Commodities Office, 2/F, Harbour Building, 38 Pier Road, Hong Kong Tel No 852 3027 (Permits) 852 3260 (Licences) Kowloon Sub-Office, Canton Road Government Offices, 10/F, 393 Canton Road, Kowloon, Tel No 366 6065 (Permits and Licences)
(i) - do -	Import and export of <u>acetylating substances</u>	Acetylating Substances (Control) Ordinance, Cap 145	- do -
(j) - do -	Export of television sets, video cassette recorders and video cassette players by small vessel less than 250 gross tons	Import & Export Ordinance Cap 60. Export (Prescribed Articles) Regulations.	- do -
(k) Civil Engineering Services Department	Import of <u>sand</u>	Sand Ordinance, Cap 147	Materials Division, Geotechnical Control Office, Room 908 - 911, 9/F, East Wing, Tsimshatsui Centre, Tsimshatsui East, Kowloon Tel No 722 4017 722 4084
(l) Civil Engineering Services Department	Import and export of <u>explosives</u>	Dangerous Goods (General) Regulations, Cap 295	5/F, Canton Road Government Offices, 393 Canton Road, Kowloon Tel No 733 2371
(m) Post Office	Import and export of <u>radio transmitting equipment</u>	Telecommunication Ordinance Cap 106	Telecommunications Branch, Hong Kong Post Office, 5/F, Sincere Building, 173 Des Voeux Road Central, Hong Kong Tel No 852 9600
(n) Royal Hong Kong Police Force	Import and export of <u>arms and ammunition</u>	Firearms and Ammunition Ordinance, Cap 238	Police Headquarters, G/F, Caine House Annex, 3 Arsenal Street, Wanchai, Hong Kong Tel No 860 2527
(o) Department of Health	Import and export of <u>dangerous drugs</u>	Dangerous Drugs Ordinance Cap 134	3/F, Centre Point, 181-185, Gloucester Road, Wanchai, Hong Kong Tel No 573 6436

<u>Department</u>	<u>Item</u>	<u>Legal Authority</u>	<u>Enquiries should be made to</u>
(p) - do -	Import (whether direct or by way of transshipment) of game, meat, poultry and prohibited meat	Imported Meat and Poultry Regulations, Cap 132	Hygiene Division, Urban Council Fa Yuen St Complex 8/F, 123A Fa Yuen Street, Kowloon Tel No 392 0325 392 0549
(q) - do -	Import of food containing added colouring matter	Colouring matter in Food Regulations, Cap 132	- do -
(r) - do -	Import of food containing metals	Food Adulteration (Metallic Contamination) Regulations, Cap 132	- do -
(s) - do -	Import of artificial sweeteners and food containing artificial sweeteners	Food Adulteration (Artificial Sweeteners) Regulations, Cap 132	- do -
(t) - do -	Import of food containing aflatoxins and/or erucic acid	Harmful substances in Food Regulations, Cap 132	- do -
(u) - do -	Import of food containing preservatives and/or antioxidants	Preservatives in Food Regulations, Cap 132	- do -
(v) - do -	Sale of imported frozen confections	Frozen confections (Regional Council) By-laws and Frozen Confections (Urban Council) By-laws, Cap 132	- do -
(w) - do -	Sale or heat-treatment of imported milk and milk beverages	Milk (Regional Council) By-laws and Milk (Urban Council) By-laws, Cap 132	- do -
(x) - do -	Import of smokeless tobacco products	Smokeless Tobacco Products (Prohibition) Regulations, Cap 132	- do -
(y) Environmental Protection Department	Import & Export of Ozone Depleting Substances	Ozone Layer Protection Ordinance and its subsidiary regulations	Air Control Group, 26/F, Southorn Centre, 130 Hennessy Road, Wanchai, Hong Kong Tel No 835 1089

Trade Department
Trade Department Tower,
Kowloon,
Hong Kong

Revised March 1991

[TL 1]

Appendix 8

TL 202 II

Imports and Exports of Strategic Commodities

Imports and Exports of Strategic Commodities

Introduction

Commodities covered by the Schedule to the Import and Export (Strategic Commodities) Regulations are strategic commodities and as such, are subject to licensing control by Trade Department. The schedule is available for sale at the Government Publications Centre at the General Post Office Building, G/F, Connaught Place, Hong Kong (Tel No 523 5377, 522 6389). Products such as high speed digital computers, erasable optical disks, high resolution (over 1280 X 1024 pixels) graphic displays, high capacity memory integrated circuits, data-switching equipment, high capacity fibre optics communication systems, etc, are generally classified as strategic commodities.

2. When applying for a licence for import or export of strategic commodities, applicants should ensure that -

- (a) all details required in the application form are correctly filled in; and
- (b) the application is accompanied by either brochures/catalogues giving adequate technical details of the commodities under application, or previous classification rulings ie a photocopy of a previous licence or a classification letter issued by the Classification Unit of the Department.

Applications forms that are not properly completed, or not accompanied by technical information/previous classification rulings will be rejected.

3. Imports and exports of strategic commodities should be made on Form 3 (blue) and Form 6 (white) respectively which are available for sale at -

- (a) Government Publications Centre,
General Post Office Building, G/F,
Connaught Place,
Hong Kong; and
- (b) Collection Office,
Trade Department,
Room 813, 8/F,
Trade Department Tower,
700 Nathan Road,
Kowloon

Imports and Exports of Strategic Commodities to Non-proscribed Countries

4. Licence applications covering imports and exports (including re-exports) of strategic commodities to non-proscribed countries are normally approved 3 clear working days after submission.

Exports of Strategic Commodities to Proscribed Countries

5. A licence application covering a consignment of strategic commodities to a proscribed country can also be approved readily if the application is supported by a valid export licence, clearly indicating the proscribed country as the destination, issued by one of the following COCOM (Co-ordinating Committee for Multilateral Export Controls) countries -

Australia, Belgium, Canada, Denmark, France, F R Germany, Greece, Italy, Japan, Luxemburg, Netherlands, Norway, Portugal, Spain, Turkey, UK and USA

6. A valid supporting COCOM member licence should take one of the following forms -

- (a) the original or a certified true copy of a valid export licence issued by a COCOM member country; or
- (b) a copy of the original export licence sent to the Trade Department directly via facsimile by the licensing authorities of the COCOM member concerned.

For cases which have been approved under Administrative Exception (AE) procedures [ie by a COCOM member country under national discretion], the Department may approve an export licence application on the strength of a photocopy of the COCOM export licence in the first instance subject to an undertaking (Annex I) to provide (a) or (b) above within 30 days. For cases which have been approved under General Exception (GE) procedures [ie by all COCOM members collectively], the relevant COCOM Document Number must also be provided at time of application.

7. However, if the licence application is not supported by such an export licence, the application will be referred to the UK authorities for assessment. It normally takes about 1 - 2 months for the assessment to be completed. It may take longer, and occasionally much longer, if additional technical details and/or clarifications are required. Under this referral procedure, the application should be supported by the following documents -

- (a) catalogues/brochures giving full technical details of the commodity/commodities, to be submitted in duplicate;
- (b) a completed HKF5 Form (Annex II), to be submitted in duplicate;
- (c) a completed questionnaire, to be submitted in duplicate, if the commodities concerned are computers, switching systems or machine tools [For details, please see Annex III]; and
- (d) a completed Importer Statement on End-User and End-Use (Annex IV), issued by the Ministry of Foreign Economic Relations and Trade (MOFERT) in Beijing, China. This document must be an original document. [See para 8 below for detailed procedure to obtain such a Statement. However, see para 9 below if the goods are for export to a proscribed country other than China.]

8. The procedure to obtain an Importer Statement on End-User and End-Use from MOFERT is as follows -

- (a) The applicant for export licence asks the importer in China to obtain three blank Statements from the Technology Import and Export Department, Ministry of Foreign Economic Relations and Trade, whose address is 2, Dong Chang An Street, Beijing.
- (b) The importer fills in each of the three blank Statements separately. In other words, each completed Statement should be an original;
- (c) The importer sends the three completed Statements to the Technology Import and Export Department, which, after completion of checks, will return two of the Statements, signed and sealed, to the importer;
- (d) The importer retains one signed and sealed Statement, and sends the other signed and sealed Statement to the applicant; and
- (e) On receipt of the signed and sealed Statement from the importer, the applicant sends it, together with his application and other supporting documents, to the Trade Department.

9. If the goods are for export to a proscribed country other than China, an End-user Statement as in Annex V should be submitted instead of the MOFERT Statement mentioned in para 7 (d) above. Other supporting documents mentioned in para 7 (a), (b) and (c) are, of course, required.

Warning

10. Regulation 2 of the Import and Export (Strategic Commodities) Regulations states that no person shall import or export any article specified in the Schedule (to the Regulations) except under and in accordance with a licence issued by the Director-General of Trade. Regulation 3 stipulates that any person who contravenes Regulation 2 shall be guilty of an offence and shall be liable on conviction to a fine of five hundred thousand dollars and to imprisonment for two years.

Enquiries

11. This is a general guide only. Further enquiries concerning import and export licensing procedures of strategic commodities may be made to the Licensing Officers of the Strategic Commodities Section at Room 516B, 5/F, Trade Department Tower, 700 Nathan Road, Kowloon.

Trade Licensing (Non-textiles) Branch
Trade Department

Director-General of Trade
Trade Department
Trade Department Tower,
700 Nathan Road,
Kowloon
Hong Kong

Import and Export Ordinance (Cap 60)

Import and Export (Strategic Commodities) Regulations

Declaration and Undertaking

In connection with the attached export licence application for export of strategic commodities, I, authorized person of

_____, hereby declare
(Name of exporter)

that the goods under application (see particulars in paragraph 2 below) have been authorized by _____

(Name of COCOM country)
under export licence No _____ for permanent export to

_____ under Administrative Exception Note
(Name of proscribed country)
ie under national discretion.

2. Particulars of the goods are -

<u>Description of Goods</u>	<u>Quantity</u>
_____	_____
_____	_____
_____	_____
_____	_____

3. I undertake to -

either (a) furnish the Trade Department within 30 days from the date of this undertaking the original or a certified true copy of the above mentioned COCOM member export licence;

or (b) arrange with the authorities responsible for issue of the above mentioned licence to fax, within 30 days from the date of this undertaking, a copy of the said licence to the Trade Department.

Signature

Name of signatory (in block letters)

Date of Signature

Company Chop

HKF5 Form

THIS FORM IS USED TO FACILITATE PROCESSING OF APPLICATIONS TO EXPORT STRATEGIC COMMODITIES TO DESIGNATED COUNTRIES.

TO AVOID UNNECESSARY DELAYS, PLEASE ANSWER ALL QUESTIONS FULLY IN ENGLISH.

- a) Name, address, telephone no and fax no of consignee :

- b) Nature of consignee's business :

- (c) Name, address, telephone no and fax no of the ultimate end-user(s) :

- (d) Nature of end-user's business (if more than one end-user, complete details on a separate sheet) :

- (e) Name, address, telephone no and fax no of agent through whom the order was secured :

- (f) Precise purpose(s) for which the goods are to be used (answers such as "Teaching purposes" or "Servicing" etc will not be sufficient) :

- (g) If the proposed export is to be used for enhancement, maintenance, servicing or repair, please give full details of the end-use of the existing equipment :
- (h) When was the existing equipment exported and which country was it exported from :
- (i) If the goods concerned are electronic computers or related equipment, please complete the attached computer questionnaire and give a block configuration diagram of the existing/proposed computer system :

Note : Please return this form together with the attached end-user statement duly completed and signed by the ultimate end-user who should state his requirement for the proposed equipment and confirm that the goods will not be re-exported or sold to a third party.



APPLICATION FOR AN EXPORT LICENCE
COVERING COMPUTERS AND COMPUTER-RELATED EQUIPMENT
COMPLETION OF COMPUTER QUESTIONNAIRE

Guidance Notes:

- 1) Please complete all sections as indicated on the attached questionnaire by deleting the incorrect response, inserting the information requested or by writing N/A if not applicable. This will assist our technical officers in assessing the equipment you wish to export against the current export controls. The questionnaire is of a technical nature and should only be completed by a qualified engineer or someone competent to answer all the questions accurately. If you require assistance please contact the case officer handling your licence application and a technical officer will contact you as soon as possible to give further advice.
- 2) Whilst completing this questionnaire we recommend that you have a copy of the Import and Export (Strategic Commodities) Regulations (Amendment of Schedule) Order 1991 for reference. For the full definition of terms within quotation marks please refer to the section of the Schedule titled: "DEFINITIONS OF TERMS". The above-mentioned Schedule is available for sale at Government Publication Centre at the General Post Office Building, G/F, Connaught Place, Hong Kong. Tel No : 523 5377 or 522 6389.
- 3) You should note it is not necessary to complete a questionnaire if you propose to export only basic personal computers. In that case you only need to submit, with the licence application, a signed statement, which records any extra facilities or enhancements included with, or within, the computer. This covers, for example, graphics cards, accelerator boards, networking facilities or anything else which alters the manufacturers basic machine specifications. Brochures and/or machine specifications must be supplied for all equipment being exported. For larger computer systems, or enhancements to existing systems, it is essential to provide detailed block diagrams. If additional sheets are required please ensure they are securely attached.
- 4) Please ensure the questionnaire is completed correctly and signed. Failure to do so may cause delay in the processing of your licence applications.

**Questionnaires for Computers/Switching Systems/
Numerical Control (NC) Machine Tools**

Export licence applications for proscribed countries should be supported, among other things, by a completed questionnaire in duplicate if the commodity under application is one of the following :

<u>Goods</u>	<u>Questionnaire(s) to be completed</u>
1. Electronic computers or related equipment	Computer Questionnaire
2. Digital PABXs for export to China	FP1
3. Digital PABXs for export to a proscribed country other than China	FP2
4. Numerically Controlled Units for machine tools for export to China	F1 - CNC
5. Numerically controlled boring mills, milling machines and machining centres for export to China	F1 - CNC + F1 - MILL
6. Numerically controlled machine tools other than boring mills, milling machines and machining centres for export to China	F1 - CNC + F1 + TURN or F1 - CNC + F1 + GRIND

A copy of the computer questionnaire is attached at Annex III.1. A list of definitions of computer-related terms and other questionnaires for switching systems/numerical control (NC) machine tools is obtainable at :

Trade Department,
Strategic Commodities Section,
Room 516B, 5/F,
Trade Department Tower,
700 Nathan Road,
Kowloon



HONG KONG TRADE DEPARTMENT
EXPORT LICENSING COMPUTER QUESTIONNAIRE

Name of Applicant : _____ Your ref : _____

Name of End User : _____

(a) Make and model of computer system : _____

(b) The equipment of which the computer forms a part or with which it is used:

1. Is the computer, or "Related Equipment", one of, or contain, the following?

(a) An "Analogue Computer", YES/NO

(b) A "Hybrid Computer", YES/NO

(c) Equipment for interconnecting "analogue computers"
with "digital computers". YES/NO

2. Does the equipment have any of the following characteristics?

(a) Has it been designed or modified for use in airborne
vehicles, missiles or space vehicles and rated for
continuous operation at temperatures from below
228 K (-45°C) to above 328 K (+55°C)? YES/NO

(b) Has it been designed or modified to limit electromagnetic
radiation to levels much less than those required by
government civil interference specifications? YES/NO

(c) Has it been designed as ruggedized or radiation-hardened
equipment and capable of meeting military specifications
for ruggedized or radiation-hardened equipment? YES/NO

(d) Has it been modified for military use or designed for
certifiable multi-level security or certifiable user
isolation applicable to Government classified material or
to applications requiring equivalent level of security? YES/NO

(e) Will it be put to military applications? YES/NO

3. Does the material being exported involve the transfer of technology in terms of the development, production or use of any type of electronic computer or related equipment? YES/NO
- If YES please explain:
- _____
- _____
- _____
4. Is the computer equipment contained in other equipment? YES/NO
If YES, go to Q9
5. Is the computer equipment for use in medical equipment? YES/NO
If YES, go to Q10
6. Will the equipment be designed or modified for, or contain devices for:
- (a) "Signal processing"? YES/NO
- (b) "Image enhancement"? YES/NO
- (c) "Local area networks"? YES/NO
- (d) "Multi-data-stream processing"? YES/NO
- (e) Combined recognition, understanding and interpretation of image, continuous (connected) speech or connected word text other than "signal processing" or "image enhancement"? YES/NO
- (f) "Real time processing" of sensor data? YES/NO
- (g) "Fault tolerance"? YES/NO
- (h) "User-accessible microprogrammability"? YES/NO
- (i) "Wide area networks"? YES/NO
7. Will the equipment be exported as a complete system? YES/NO
8. Will the equipment be used to enhance an existing system? YES/NO

Now please complete the parameter sheets. Indicate clearly if any section is NOT applicable for your computer equipment.

IT IS NOT NECESSARY TO COMPLETE ANY OF THE PARAMETER SHEETS FOR EQUIPMENT COVERED BY QUESTIONS 9 OR 10 BELOW.

9. For computer equipment contained in other equipment only; i.e. for computers "embedded", "incorporated" or associated with other dependent equipment:

- (a) Is the computer or "related equipment" essential for the operation of the equipment or systems? YES/NO
- (b) Is the computer or "related equipment" a "principal element" of the other equipment or systems? YES/NO
- (c) What will the equipment be used for?

Please sign declaration on p11

10. For computers forming part of medical equipment only:

- (a) Are they essential for medical applications? YES/NO
- (b) Is the equipment substantially restricted to medical applications by nature of its design and performance? YES/NO
- (c) Does the equipment have "user-accessible programmability" other than that allowing for insertion of the original or modified "programmes" supplied by the original manufacturer? YES/NO
- (d) If performing "signal processing", "image enhancement" or "multi-data-stream processing" functions are they:
 - (i) Essential for medical applications and; YES/NO
 - (ii) Designed or modified for the identifiable and dedicated medical application? YES/NO
- (e) Does any computer which is not designed or modified for but is essential to the identifiable and dedicated medical application have a "total processing data rate" greater than 550 million bit per second? YES/NO

Please quote the make and clock speed of the main processing unit (CPU) installed.

Please sign declaration on p11

PARAMETER SHEETS

	Existing System	Proposed System
--	------------------------	------------------------

1. **CENTRAL PROCESSING UNIT -
"MAIN STORAGE" COMBINATIONS:**

(a) "Total processing data rate" (million bit per second):	<hr/>	<hr/>
---	-------	-------

(b) "Total connected capacity" of "main storage" (RAM) (Megabytes):	<hr/>	<hr/>
--	-------	-------

For the purpose of this section please state (if applicable)

(a) The make and type of the CPU microprocessors/microcomputers:
_____, clock speed _____ MHz

(b) The principle internal word length (data path): _____

2. **INPUT/OUTPUT CONTROL UNIT -
DRUM, DISK DRIVE COMBINATIONS:**

(a) **Magnetic drum/disk drive units (hard disk):**

Model numbers/OEM and type numbers of each device used in the system:

(1) Total connected "net capacity" (Megabytes):	<hr/>	<hr/>
---	-------	-------

(2) "Maximum bit transfer rate" of any disk drive (million bit/s):	<hr/>	<hr/>
---	-------	-------

(3) Number of independent drum or disk drives with a "maximum bit transfer rate" greater than 16 million bit/s	<hr/>	<hr/>
---	-------	-------

(4) "Access rate" (accesses per second):	<hr/>	<hr/>
--	-------	-------

(b) **Disk drives utilizing erasable optical or
magneto-optical media:**

Model numbers/OEM and type numbers of each device used in the system:

(1) Total connected "net capacity" (Megabytes):	<hr/>	<hr/>
---	-------	-------

Existing System

Proposed System

(c) Disk drives for optical media (write-once-read-many (WORM) disks):

Model numbers/OEM and type numbers of each device used in the system:

(1) Total connected "net capacity" (Gigabytes):

(2) "Maximum bit transfer rate" (million bit/s):

(3) "Access rate" (accesses per second):

(d) Disk drives for non-rigid magnetic media (floppy disks) or cartridge type magnetic disk drives:

(1) "Maximum bit transfer rate" (million bit/s):

(2) "Access rate" (accesses per second):

3. SOLID STATE STORAGE EQUIPMENT OTHER THAN "MAIN STORAGE" (ALSO KNOWN AS SOLID STATE DISKS OR RAM DISKS):

(a) "Net capacity" (Megabytes):

4. INPUT/OUTPUT CONTROL UNIT - MAGNETIC TAPE OR CARTRIDGE-TYPE STREAMER TAPE DRIVE COMBINATIONS:

Model numbers/OEM and type numbers of each device used in the system:

(a) Magnetic tape drives:

(1) "Maximum bit packing density" (bits per inch per track):

(2) "Maximum bit transfer rate" (million bit/s):

(b) Cartridge-type streamer tape drives:

(1) "Maximum bit transfer rate" (million bit/s):

Existing
System

Proposed
System

5. INPUT/OUTPUT COMMUNICATION CONTROL UNIT -
DIRECTLY CONNECTED DATA CHANNEL COMBINATIONS
(other than those in (2)-(4) above and
(6)-(8) below):

[These refer to channels connected to "data devices" other
than drums, disc, tapes, bubble memory and "terminal devices"
i.e. I/O channels to other equipment with which the computer
system is used.]

Model numbers/OEM and type numbers of any other
"data devices" used with the system:

(a) Maximum "transfer rate of any data channel"
(million bit/s):

6. COMMUNICATIONS CONTROL UNIT - "COMMUNICATION
CHANNEL" COMBINATIONS:

Model numbers/OEM and type numbers of each device
used in the system:

(a) Maximum "data signalling rate" of any remote
"communication channel" (bits per second)
(NB: remote means outside the "computer
using facility"):

7. COMMUNICATIONS CONTROL UNIT -
"LOCAL AREA NETWORK" COMBINATIONS:

Model numbers/OEM and type numbers of each
device used in the system:

(a) Maximum "data signalling rate" on the common
medium (million bit/s):

(b) Number of "internetwork gateways":

Note: Please remember to list any networking software packages on p10.

	Existing System	Proposed System
8. DISPLAYS OR GRAPHIC INPUT DEVICES:		
(i) Is the display for a system specially designed and limited to graphic arts, desktop publishing, document image publishing (e.g. printing, publishing)?	YES/NO	YES/NO
(ii) Is the display monochrome?	YES/NO	YES/NO
(iii)		
(a) The number of resolvable elements along one axis	_____	_____
(b) The number of resolvable elements along the other axis	_____	_____
(c) The number of shades of grey or colour capable of display at any one time.	_____	_____

9. GRAPHIC WORKSTATIONS OR EQUIPMENT INCORPORATING GRAPHIC ACCELERATORS AND/OR GRAPHIC CO-PROCESSORS:

(i) Is the equipment designed for and limited to graphic arts (e.g. printing, publishing)?	YES/NO	YES/NO
(ii) Is the equipment a stand-alone graphics workstation designed or modified for the generation of two- or three-dimensional vectors?	YES/NO	YES/NO
(iii)		
(a) The make and type of processor used: _____, clock speed _____ MHz		
(b) "Block move data rate" (million pixel/s):	_____	_____
(c) Maximum bit transfer rate of the channel for direct access to the main storage (Direct Memory Access (DMA) Channel) (million bit/s):	_____	_____

10. EQUIPMENT FOR "SIGNAL PROCESSING" AND/OR "IMAGE ENHANCEMENT":	Existing System	Proposed System
(i) Does the equipment have "user-accessible microprogrammability"?	YES/NO	YES/NO
(ii) Does the equipment have "user-accessible programmability"?	YES/NO	YES/NO
(iii) (a) "Equivalent multiply rate"	_____	_____
(million operations per second):		

For the purpose of this application please state (if applicable):

The make and type of Digital Signal Processor/Array Processor:

_____, clock speed _____ MHz

List below any software packages proposed in this export; e.g. operating system, development system, programming system, diagnostics system, maintenance system, expert system, application software, etc. Technical brochures should also be attached (use additional sheets if necessary):

**BLOCK DIAGRAMS SHOWING THE EXISTING AND PROPOSED COMPUTER SYSTEMS
(use additional sheets if necessary):**

**DECLARATION: TO THE BEST OF MY KNOWLEDGE THE INFORMATION
CONTAINED IN THIS QUESTIONNAIRE IS ACCURATE.**

Signed on behalf of the exporter _____
(Authorized signatory)

Name: _____

Date: _____

最终用户和最终用途说明

IMPORTER STATEMENT ON END-USER AND END-USE

编号
Series No. _____

国别: _____

填报日期: _____

合同名称 Title of contract			
合同号 Contract No.		签字日期 Date of sign.	
进口商 Name of Importer		出口商 Name of Exporter	
最终用户 End-user			
最终用途 End-use			
说明 Statement	下列商品用于中华人民共和国，不向第三国转口。 The commodities listed below is for use in the People's Republic of China and not for re-export to the third country.	进口商签字盖章 Signature and Seal by the Importer	
商 品 Commodities			
序号 No. No.	商品名称及说明 Name of Commodities and Description	数量 Quantity	金额 Value

上述最终用户最终用途说明业经对外经济贸易部技术进出口局核实无误，特此证明。

签字 _____
(技术进出口局副局长)

日期 _____

盖章 _____

END-USER STATEMENT

We _____
(name, address, tel no and fax no of end-user)

have requested _____
(name and address of HK exporter)

to provide _____
(quantity and description of equipment)

which we intend to use for _____

(specific purpose for which the equipment will be used)

We confirm that the equipment will be used solely for civilian applications and will not be re-exported or sold to a third party.

(Signature and Date)

(Signatory's Name in Block Letters)

(Company Chop)

Notes

(1) End User

For electronic component assemblies such as integrated circuits, give the name, address, telephone no and fax no of the factory in which the goods are used to repair or manufacture other products.

For computer and other electronic equipment, give the name, address, telephone no and fax no of the factory, company, education/research institute or unit ultimately using the equipment.

An intermediate trading or import/export firm is usually not the ultimate user of the goods.

(2) End Use

For electronic component assemblies such as integrated circuits, indicate the end product into which the goods are assembled. If the electronic components are to be used to form an integral part of a computer system, completion of the computer questionnaire is required.

For computer and other electronic equipment, explain in detail how the goods will be used. Vague statements such as "for educational purposes", "for accounting applications" or "for scientific research", etc, are not acceptable.

Appendix 9

ET Chinese Computing System

Price List and Product Descriptions

型號	倚天中文系統產品介紹	(港幣)訂價
飛碟五號 ET16V5L ET16V5 ET16V5BL ET16V5B	倚天飛碟五號 (軟碟版, 不含使用手冊) 倚天飛碟五號 (軟碟版) 倚天飛碟五號 (軟碟版, 含中文文書軟體, 無使用手冊) 倚天飛碟五號 (軟碟版, 含中文文書軟體)	480.00 650.00 660.00 850.00
C16H3 光電三號 (C16H3B)	可配合 VGA 或 Mono-Graphic 卡, 顯示 16 X 15 字型 卡上含 16 X 15 明體字型 光電三號含中文文書處理軟件	990.00 (1,290.00)
C16H6 光電六號	可配合 VGA 卡或 Mono-Graphic 卡, 顯示 16 X 15 字型 卡上含 16 X 15、24 X 24 明體字型及倚天圖龍字庫	2,900.00
C16DH6 閃電六號	具有 Mono-Graphic Display Card 所有功能 可配合 EGA 或 VGA 卡, 顯示 16 X 15 字型 卡上含 16 X 15、24 X 24 明體字型及倚天圖龍字庫	3,350.00
C24DH6 霹靂六號	具有 Mono-Graphic Display Card 所有功能 卡上含 16 X 15、24 X 24 明體字型及倚天圖龍字庫 必須配合 25 / 31.5KHz 單色顯示器 (DATAS), 顯示 24 X 24 字型	5,650.00
C24SV6 彩虹六號	具有 1024 X 768 (16 / 256 色) VGA 卡功能 卡上含 16 X 15、24 X 24 明體字型及倚天圖龍字庫 配合 1024 X 768 VGA 顯示器, 顯示 24 X 24 字型	6,950.00
C24SV5 彩虹五號	具有 1024 X 768 (256 色) VGA 卡功能 (含有快速圖形處理器) 卡上含 24 X 24 明體字型及倚天圖龍字庫 配合 1024 X 768 VGA 顯示器, 顯示 24 X 24 字型	7,950.00
C24DH8 霹靂八號	具有 Mono-Graphic Display Card 所有功能的高速單色中文卡 卡上含 24 X 24 明體字型及倚天圖龍字庫 必須配合 25 / 31.5KHz 單色顯示器 (DATAS), 顯示 24 X 24 字型	10,000.00
C24SV8 彩虹八號	具有 1024 X 768 VGA 卡功能的高速彩色中文卡 卡上含 24 X 24 明體字型及倚天圖龍字庫 配合 1024 X 768 VGA 顯示器, 顯示 24 X 24 字型	10,000.00
S16H 簡體光電卡	可配合 VGA 卡或 Mono-Graphic 卡, 顯示 16 X 15 字型 卡上含 16 X 15 簡體明體字型	2,900.00
S24SV 簡體彩虹卡	具有 1024 X 768 (16 / 256 色) VGA 卡功能 卡上含 24 X 24 簡體明體字型 配合 1024 X 768 VGA 顯示器, 顯示 24 X 24 字型	6,950.00

倚天中文系統

型號	倚天中文軟硬體介紹	(港幣) 訂價
中文應用軟件		
VE2	唯易中文文書處理系統 (5.25" 版本)	400.00
VE3	唯易中文整合系統 (5.25" 版本)	950.00
IWP	巧筆中文文書處理系統 (5.25" 版本)	450.00
ETPTRN	倚天新翰藝中文出版系統 (教育版)	1,000.00
ETPDOT	倚天新翰藝中文出版系統 (點陣版)	2,850.00
ETPPCL	倚天新翰藝中文出版系統 (HP 版)	10,000.00
ETPNET	倚天新翰藝中文出版系統 (專業版)	14,000.00
ETKBF	倚天中文字型集	1,380.00
ETV10-HP	倚天中文視頻介面卡 (FOR ETPNET)	6,800.00
OAMATE 系列		
OAGM	ETEN OAMATE 中文編排系統 (普及版)	900.00
OANET	ETEN OAMATE 中文編排系統 (網絡版)	4,000.00
OAV10	ETEN OAMATE 中文編排系統 (VIDEO 版)	6,800.00
簡體系列		
ET005	繁簡體翻譯軟件 (必須配合簡體字庫, 慧星一號不合用)	1,000.00
ET006	普通話拼音輸入法 (必須配合簡體字庫)	750.00
JETMATE III 系列		
ET04A	Jetmate III (含明體 32、40、48 及編字系統)	2,500.00
CTFONT 1 系列	K1-明體、L1-隸書或S1-行書 (48 及 32 字型)	每款650.00
CTFONT 2 系列	M2-明書、F2-宋體、H2-黑體、K2-楷書、L2-隸書或S2-行書 (64 字型)	每款650.00
其他		
HRS-1	新穎中文手寫辨識系統	1,800.00
ET002	DATAS 15" 25KHz 單色顯示器 (供霹靂系列使用)	2,000.00
ET007	倚天雜誌 (香港版)	23.00
ET008	倚天中文系統操作手冊	165.00
ET011	倚天中文系統技術手冊	165.00
ET012	倚天中文系統初學手冊	165.00
VI002	精技版 VIDEO INTERFACE 快速列印介面卡	5,700.00
GBIIA-GEN	華康金蝶卡 II 型通用版 (可使用二種中文字型)	2,000.00
GBIIA-STD	華康金蝶卡 II 型標準版 (可使用五種中文字型)	5,000.00
GBIIA-PRO	華康金蝶卡 II 型專業版 (可使用九種中文字型)	9,500.00

總代理：聯宇電子有限公司

地 址：香港灣仔軒尼詩道六號先施保險大廈十三及十五字樓

電 話：529 4433

傳 真：865 1995

倚天®

倚天中文系統 ETEN CHINESE SYSTEM



彩虹六號 C24SVG

- 卡上提供16、24明體字型13502字及倉頡、注音、行列、忘形輸入法對照表，不需安裝且不佔記憶體及磁碟空間。
- 卡上提供倚天圖龍字庫。
- 具有SUPER VGA顯示功能，提供1024×768-16/256色高解析度彩色中文系統，顯示24×24明體字型，亦支援16系列卡版EGA/VGA中文系統。
- 可搭配交錯式或非交錯式彩色顯示器。
- 具有WINDOWS加速器(Windows Accelerator)的功能。在WINDOWS的環境下，提供硬體控制游標(Hardware Cursor)及硬體區塊移動(Bit Block)的功能，圖形處理比一般SUPER VGA快。
- 卡上含有1MB DRAM，採用16bit讀寫模式，顯示速度快。
- 另提供與IBM PS/2顯示界面卡相容的備用接頭(Feature Connector)更具擴充性。



霹靂六號 C24DH6

- 卡上提供16、24明體字型13502字及倉頡、注音、行列、忘形輸入法對照表，不需安裝且不佔記憶體及磁碟空間。
- 卡上提供倚天圖龍字庫。
- 可搭配18~29.5K 各種不同頻率的單色顯示器。
- 卡上提供一個印表輸出埠，可調整輸出埠的位址，以降低輸出埠互相衝突的機率。
- 支援8/16BIT的存取模式，顯示速度快。
- 具有單色顯示功能，提供1024×729高解析度單色中文系統，顯示24×24明體字型。



閃電六號 C16DH6

- 卡上提供16、24明體字型13502字及倉頡、注音、行列、忘形輸入法對照表，不需安裝且不佔記憶體及磁碟空間。
- 卡上提供倚天圖龍字庫。
- 卡上具有單色顯示功能，亦支援CGA或CGA模擬狀態的顯示模式。
- 提供關閉顯示狀態的功能，可為字型卡或單色顯示卡，依需求做彈性的選擇。
- 卡上提供一個印表輸出埠，可調整輸出埠的位址，以降低輸出埠互相衝突的機率。
- 可搭配EGA/VGA顯示卡，支援640×408/640×480單、彩色中文系統，顯示16×15明體字型。



光電六號 C16H6

- 卡上提供16、24明體字型13502字及倉頡、注音、行列、忘形輸入法對照表，不需安裝且不佔記憶體及磁碟空間。
- 卡上提供倚天圖龍字庫。
- 可搭配MGA/EGA/VGA顯示卡，支援640×408/640×480單、彩色中文系統，顯示16×15明體字型。



光電三號 C16H3

- 卡上提供16×15明體字型13502字及倉頡、注音、行列、忘形輸入法對照表，不需安裝佔記憶體及磁碟空間。
- 搭配 MGA/EGA/VGA 顯示卡，提供640×408/640×480單、彩色中文系統，顯示16×15明體字型。
- 體積短小、輕薄的字型卡，安裝容易。

飛碟五號 ET16V5

- 提供16×15、24×24字型及所有輸入法對照表（包含詞庫）載入延伸記憶體 (XMS)，可完全不佔用主記憶體。
- 搭配 MGA/EGA/VGA 顯示卡，提供640×408/640×480單、彩色中文系統，顯示16×15明體字型。
- VGA 版 (ET16V.COM) 提供硬體捲頁功能 (Hardware Scrolling)，捲頁速度更快。

● 共同規格

- 可使用中英文磁碟作業系統，軟體廠商可視需求依 CMEX 規格自行開發中文系統下的驅動程式。
- 提供中文工作環境的設定程式 (ETSETUP.EXE)，可依需求規劃出最佳中文環境。
- 提供 BIG-5 碼、通用碼、公會碼、倚天碼、IBM5550碼、電信碼 (13053字)、澳英碼 (13053字) 等七套內碼系統。
- 搭配 IHMEM.SYS，可將字型及輸入法對照表 (含詞庫) 載入延伸記憶體，完全不佔用主記憶體空間。
- 在 DOS V5.0 及 PC-386 (含) 以上機器，支援 EMM386、QEMM 的高記憶 (UMB) 規格，提供自動 Loadhigh 功能，成為 OK 中文系統。
- 提供倉頡、簡易、注音、行列、行列30鍵、三角、電信、詞庫、內碼等多種中英文輸入方法，可配合泰山、羅馬拼音、筆劃、聯想字、聯想詞、記憶字、耳語等特殊輸入功能，使用者可依需要自行選擇輸入系統，達到多重選擇且高於彈性的輸入功能。
- 新增好用不必學的忘形輸入法，加速輸入效率。
- 提供明、楷、隸、圓、黑、行六套重新美化的 24×24點陣字型，可同時顯示或列印。
- 六號卡版提供明體 (單線/細/中/粗)、圓體 (單線/細/中/粗)、黑體 (單線/細/中/粗) 等十一套圖龍字庫及七套英文字 (三套固定字，四套調和字)，每套圖龍字型皆提供13827字的全字型 (單線體為13104字)。

- 提供任意大小的顯示或列印功能，平滑字型由24到240點。
- 提供 HP Laserjet II、III 列印功能。
- 螢幕拷貝 (Hardcopy) 可倍數列印，倍數範圍為1~4倍。
- 提供造字功能，字數達5000字以上，可建入倉頡、注音、行列、行列30鍵、三角輸入碼及列印功能。
- 提供中文滑鼠驅動程式，使滑鼠游標在中文下可平滑的移動。
- 支援網絡功能，中文系統的資源可共享。
- 主機：適用於一般 IBM PC XT/AT/386/486 及其相容機種。

總代理： 聯宇電子有限公司

香港灣仔軒尼詩道6號先施保險大廈15字樓
電話：529 4433 圖文傳真：865 1995

新穎

第四代

中文手寫辨識系統

輕鬆提筆，直接輸入
免除中文拆字拼音困擾

- 採用最新特徵，字根辨識技術
- 真正沒有筆劃順序的手寫中文輸入
- 軟硬體需求最低
- 可接受連筆



硬體最小需求：

- IBM 相容 8088cpu 以上
- 640K RAM
- 1.2MB FLOPPY DISK (可不裝 3.5")
- Monitor 單色，EGA、VGA 等

軟體基本需求：

- MS DOS 3.0 以上
- 倚天中文 2.0 以上
- 可執行倚天中文下常用軟體
(如：PE II、LOTUS 1 2 3、
DBASE III、BASIC 等)

主要功能：

- 第四代手寫辨識系統
- 辨識速率平均 0.3-0.5 秒
- 完全不受筆劃限制
- 可辨識正楷、連筆、部份草體
- 辨識率正楷 98.1% (以自然分配)
- 辨識正楷字、連筆、繁體、簡體、異體字 13000 字
- 不受書寫習慣限制

手寫中文包含：

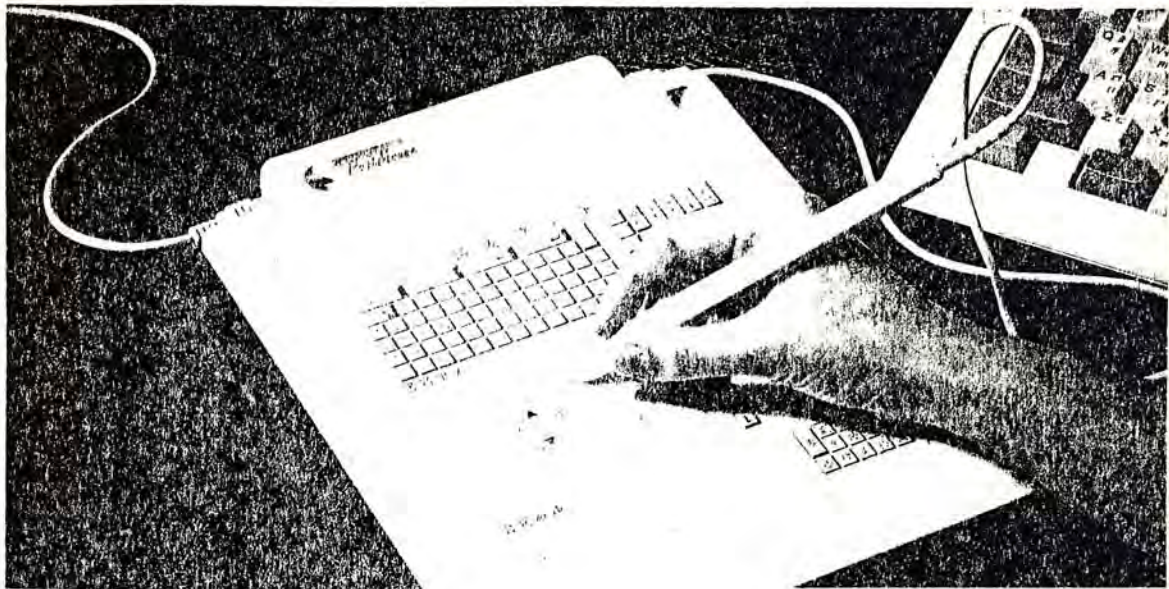
- 介面卡一片
- 壓電感應式輸入裝置一部
- 壓力筆一支
- 軟體一套

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揚友博士筆 中文手寫輸入

符合國人書寫習慣
免除拆字拼音困擾



中文手寫輸入

- 可直接書寫中文、注音、數字；可辨識正楷、簡體、連筆字達13,000字
- 辨識率達95%；正楷書寫配合選字辨識更可達99.5%
- 可連續輸入，邊寫邊認，零等待時間
- 可依書寫速度自行調整辨識時間
- 可自行定義辭庫、功能鍵及符號以取代冗長鍵盤輸入
- 直接連接RS-232，安裝方便
- 支援倚天、震漢、國喬等中文系統下之DOS 應用軟體如PE II、LOTUS、DBSAE及各類套裝軟體

標準配備：

可在中文 Windows 3.1 手寫輸入中文字

6" x 6" 數位板
2 按鍵式定位筆
中文手寫辨識軟體
英文手寫辨識軟體 — SPen
簡易繪圖軟體 — SDraw
自定功能表軟體 — TsmarT +
TsmarT DOS & AUTOCAD & SDraw & 中文手寫功能表
使用說明書
資料傳輸/電源線
磁片 (含ADI、MOUSE、WINDOWS、DIGITIZER DRIVER)

一筆全能
可寫可畫

超藝電腦顧問公司
SUPERTECH CONSULTANTS
九龍旺角彌敦道8號旺角電腦中心307室
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經銷商

Appendix 11

IPLC Charge Rates

and

Service Description



**International Private Leased Circuit (IPLC)
Digital Data Service (DDS)**

Occasional Use

(all figures are HK\$)

With effect from 1 April 1992

Satellite and/or Terrestrial									
	Zone 1		Zone 2		Zone 3		Zone 4		
	Macao South China (Guangdong)		China Philippines Taiwan		SE Asia and Pacific		Indian Subcontinent (a) Europe, Middle East UK, North America, Rest of World		
	Initial 30-min	Additional 15-min	Initial 30-min	Additional 15-min	Initial 30-min	Additional 15-min	Initial 30-min	Additional 15-min	
56/64 Kbps	150	75	240	120	240	120	300	150	
128 Kbps	240	120	380	190	380	190	470	235	
192 Kbps	320	160	510	255	510	255	640	320	
256 Kbps	380	190	600	300	600	300	750	375	
320 Kbps	430	215	690	345	690	345	860	430	
384 Kbps	490	245	780	390	780	390	980	490	
448 Kbps	540	270	860	430	860	430	1070	535	
512 Kbps	580	290	930	465	930	465	1160	580	
576 Kbps	640	320	1020	510	1020	510	1270	635	
640 Kbps	690	345	1100	550	1100	550	1370	685	
704 Kbps	730	365	1170	585	1170	585	1460	730	
768 Kbps	770	385	1230	615	1230	615	1540	770	
832 Kbps	810	405	1290	645	1290	645	1610	805	
896 Kbps	850	425	1350	675	1350	675	1690	845	
960 Kbps	880	440	1410	705	1410	705	1760	880	
1024 Kbps	920	460	1470	735	1470	735	1840	920	
1088 Kbps	960	480	1530	765	1530	765	1910	955	
1152 Kbps	1000	500	1590	795	1590	795	1990	995	
1216 Kbps	1030	515	1650	825	1650	825	2060	1030	
1280 Kbps	1070	535	1710	855	1710	855	2140	1070	
1344 Kbps	1110	555	1770	885	1770	885	2210	1105	
1408 Kbps	1150	575	1830	915	1830	915	2290	1145	
1472 Kbps	1180	590	1880	940	1880	940	2350	1175	
1536/1544 Kbps	1200	600	1920	960	1920	960	2400	1200	
1600 Kbps	1230	615	1960	980	1960	980	2450	1225	
1664 Kbps	1250	625	2000	1000	2000	1000	2500	1250	
1728 Kbps	1280	640	2050	1025	2050	1025	2560	1280	
1792 Kbps	1310	655	2090	1045	2090	1045	2610	1305	
1856 Kbps	1330	665	2130	1065	2130	1065	2660	1330	
1920 Kbps	1360	680	2170	1085	2170	1085	2710	1355	
1984 Kbps	1380	690	2200	1100	2200	1100	2750	1375	
2048 Kbps	1400	700	2240	1120	2240	1120	2800	1400	

- Notes : a) Indian sub-continent includes Bangladesh, India, Maldives, Nepal, Pakistan, Sri Lanka.
 b) Cancellation charge applies to occasional lease which will be 50% of applicable usage charge if cancellation notice received within 36-60 hours. Full charge will be applied to cancellation notice received less than 36 hours prior to schedule.
 No charge will be applied if cancellation notice received more than 60 hours prior to schedule.



**International Private Leased Circuit (IPLC)
Digital Data Service (DDS)**

Monthly Rental

(all figures are HK\$)

With effect from 1 April 1992

Satellite and/or Terrestrial								
	Zone 1		Zone 2		Zone 3		Zone 4	
	Macao South China (Guangdong)		China Philippines Taiwan		SE Asia and Pacific		Indian Subcontinent (a) Europe, Middle East UK, North America, Rest of World	
	Duplex	Simplex	Duplex	Simplex	Duplex	Simplex	Duplex	Simplex
9.6 Kbps	11,000	-	17,600	-	17,600	-	22,000	-
19.2 Kbps	13,000	-	20,800	-	20,800	-	26,000	-
56/64 Kbps	20,000	13,000	32,000	20,800	32,000	20,800	40,000	26,000
128 Kbps	31,000	20,150	49,600	32,240	49,600	32,240	62,000	40,300
192 Kbps	42,500	27,630	68,000	44,200	68,000	44,200	85,000	55,250
256 Kbps	50,000	32,500	80,000	52,000	80,000	52,000	100,000	65,000
320 Kbps	57,500	37,380	92,000	59,800	92,000	59,800	115,000	74,750
384 Kbps	65,000	42,250	104,000	67,600	104,000	67,600	130,000	84,500
448 Kbps	71,500	46,480	114,400	74,360	114,400	74,360	143,000	92,950
512 Kbps	77,500	50,380	124,000	80,600	124,000	80,600	155,000	100,750
576 Kbps	84,500	54,930	135,200	87,880	135,200	87,880	169,000	109,850
640 Kbps	91,500	59,480	146,400	95,160	146,400	95,160	183,000	118,950
704 Kbps	97,500	63,380	156,000	101,400	156,000	101,400	195,000	126,750
768 Kbps	102,500	66,630	164,000	106,600	164,000	106,600	205,000	133,250
832 Kbps	107,500	69,880	172,000	111,800	172,000	111,800	215,000	139,750
896 Kbps	112,500	73,130	180,000	117,000	180,000	117,000	225,000	146,250
960 Kbps	117,500	76,380	188,000	122,200	188,000	122,200	235,000	152,750
1024 Kbps	122,500	79,630	196,000	127,400	196,000	127,400	245,000	159,250
1088 Kbps	127,500	82,880	204,000	132,600	204,000	132,600	255,000	165,750
1152 Kbps	132,500	86,130	212,000	137,800	212,000	137,800	265,000	172,250
1216 Kbps	137,500	89,380	220,000	143,000	220,000	143,000	275,000	178,750
1280 Kbps	142,500	92,630	228,000	148,200	228,000	148,200	285,000	185,250
1344 Kbps	147,500	95,880	236,000	153,400	236,000	153,400	295,000	191,750
1408 Kbps	152,500	99,130	244,000	158,600	244,000	158,600	305,000	198,250
1472 Kbps	156,500	101,730	250,400	162,760	250,400	162,760	313,000	203,450
1536/1544 Kbps	160,000	104,000	256,000	166,400	256,000	166,400	320,000	208,000
1600 Kbps	163,500	106,280	261,600	170,040	261,600	170,040	327,000	212,550
1664 Kbps	167,000	108,550	267,200	173,680	267,200	173,680	334,000	217,100
1728 Kbps	170,500	110,830	272,800	177,320	272,800	177,320	341,000	221,650
1792 Kbps	174,000	113,100	278,400	180,960	278,400	180,960	348,000	226,200
1856 Kbps	177,500	115,380	284,000	184,600	284,000	184,600	355,000	230,750
1920 Kbps	181,000	117,650	289,600	188,240	289,600	188,240	362,000	235,300
1984 Kbps	184,500	119,930	295,200	191,880	295,200	191,880	369,000	239,850
2048 Kbps	187,500	121,880	300,000	195,000	300,000	195,000	375,000	243,750

- Notes : a) Indian sub-continent includes Bangladesh, India, Maldives, Nepal, Pakistan, Sri Lanka.
 b) Contractual period for IPLC below 56Kbps is one month. For IPLC at speeds 56Kbps or above, a three months contractual period will apply.
 c) HKTI offers Aggregate Tariff for diverse routing, Fixed Term Discount and Digital Network Hubbing Discount.



**International Private Leased Circuit (IPLC)
Digital Data Service (DDS)**

Part Time Lease

(all figures are HK\$)

With effect from 1 April 1992

Satellite and/or Terrestrial				
	Zone 1	Zone 2	Zone 3	Zone 4
	Macao South China (Guangdong)	China Philippines Taiwan	SE Asia and Pacific	Indian Subcontinent (a) Europe, Middle East UK, North America, Rest of World
56/64 kbps	150	240	240	300
128 Kbps	240	380	380	470
192 Kbps	320	510	510	640
256 Kbps	380	600	600	750
320 Kbps	430	690	690	860
384 Kbps	490	780	780	980
448 Kbps	540	860	860	1070
512 Kbps	580	930	930	1160
576 Kbps	640	1020	1020	1270
640 Kbps	690	1100	1100	1370
704 Kbps	730	1170	1170	1460
768 Kbps	770	1230	1230	1540
832 Kbps	810	1290	1290	1610
896 Kbps	850	1350	1350	1690
960 Kbps	880	1410	1410	1760
1024 Kbps	920	1470	1470	1840
1088 Kbps	960	1530	1530	1910
1152 Kbps	1000	1590	1590	1990
1216 Kbps	1030	1650	1650	2060
1280 Kbps	1070	1710	1710	2140
1344 Kbps	1110	1770	1770	2210
1408 Kbps	1150	1830	1830	2290
1472 Kbps	1180	1880	1880	2350
1536/1544 Kbps	1200	1920	1920	2400
1600 Kbps	1230	1960	1960	2450
1664 Kbps	1250	2000	2000	2500
1728 Kbps	1280	2050	2050	2560
1792 Kbps	1310	2090	2090	2610
1856 Kbps	1330	2130	2130	2660
1920 Kbps	1360	2170	2170	2710
1984 Kbps	1380	2200	2200	2750
2048 Kbps	1400	2240	2240	2800

- Notes : a) Indian sub-continent includes Bangladesh, India, Maldives, Nepal, Pakistan, Sri Lanka.
b) Part time period offered beginning and ending at the same time every day. Minimum period of one continuous hour per day, 7 days per week.
c) Contract period for part time service will be 3 months.



**International Private Leased Circuit (IPLC)
Telegraph & Voice Band Services**

Monthly Rental

(all figures are HK\$)

With effect from 1 April 1992

	Satellite and/or Terrestrial				H.F. Radio
	Zone 1	Zone 2	Zone 3	Zone 4	Laos
	Macao South China (Guangdong)	Philippines Taiwan	SE Asia, China (Excl. Guangdong), North America (a) and Pacific	Indian Subcontinent (b) Europe, Middle East UK, Rest of World	
50 Baud (1/4 Speed) (c)	—	3,000	3,600	4,500	12,960
50 Baud (1/2 Speed) (c)	—	4,000	4,800	6,000	17,280
50 Baud (Full Speed)	2,500	5,000	6,000	7,500	21,600
75 Baud	2,750	5,500	6,600	8,250	23,760
100 Baud	3,750	7,500	9,000	11,250	—
200 Baud	5,000	10,000	12,000	15,000	—
300 Baud	5,500	11,000	13,200	16,500	—
1.2 Kbps	6,500	13,000	15,600	19,500	—
2.4 Kbps	7,200	14,400	17,280	21,600	—
4.8 Kbps	8,000	16,000	19,200	24,000	—
7.2/9.6 Kbps	10,000	20,000	24,000	30,000	—
Voice-grade (d)	10,000	20,000	24,000	30,000	43,200
Voice-Only	-	14,400	17,280	21,600	—
PBS (Simplex) (e)	-	3,640	3,640	3,640	—
PBS (Duplex) — 50 Baud	2,500	5,000	5,600	5,600	—
— 75 Baud	2,750	5,500	5,600	5,600	—

- Notes:
- a) 50 Baud (1/4 Speed) to North America is HK\$4,500
50 Baud (1/2 Speed) to North America is HK\$6,000
 - b) Indian Sub-continent includes Bangladesh, India, Maldives, Nepal, Pakistan, Sri Lanka.
 - c) Full Speed rentals apply for countries which have abolished sub-speed working.
 - d) M1020 Conditioning will be charged at HK\$1,200 per month.
 - e) PBS (Press Bulletin Service) is restricted to point to point direct relations (excluding HF radio).
rentals stated are for service at 50 Bauds and 75 Bauds.
 - f) Contractual period for IPLC is one month.
 - g) HKTI offers Fixed Term Discount.



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International Private Leased Circuit (IPLC)

Fixed-Term Contract Discount Scheme

This Scheme applies to all full time International Private Leased Circuits (IPLCs) under a Fixed-Term Contract with Hong Kong Telecom International with details as follows:

3 year-term-contract : 5% discount on the published IPLC monthly rental

5 year-term-contract : 10% discount on the published IPLC monthly rental

* Already effective

Digital Data Service (DDS) - Aggregate Tariff

All Digital Data Service (DDS) circuits at 56 Kbps & above to a single country will be charged the aggregate speed, i.e. sum of the circuits' speed, based on the STANDARD tariff, plus a 10% surcharge.

* Effective date : 1 April 1992

Digital Network Hubbing Discount

Customers with Digital Data Service (DDS) circuits at 56 Kbps and above to more than one country will qualify for the Digital Network Hubbing Discount as follows:

2 Destination Countries 5% Discount

3 Destination Countries 7% Discount

4 Destination Countries 9% Discount

5 Destination Countries 11% Discount

6 Destination Countries 13% Discount

7+ Destination Countries 15% Discount

* Effective date : 1 April 1992



Hongkong Telecom

香港電訊

Digital Data Service
Occasional Use
(All Figures Are HK\$)
With Effect From 1 April 1992

	Satellite and/or Terrestrial							
	Zone 1		Zone 2		Zone 3		Zone 4	
	Macao South China (Guangdong)		China Philippines Taiwan		SE Asia and Pacific		Indian Subcontinent (a) Europe, Middle East UK, North America, Rest of World	
	Duplex Initial 30-min Additional 15-min		Duplex Initial 30-min Additional 15-min		Duplex Initial 30-min Additional 15-min		Duplex Initial 30-min Additional 15-min	
56/64 Kbps	150	75	240	120	240	120	300	150
128 Kbps	240	120	380	190	380	190	470	235
192 Kbps	320	160	510	255	510	255	640	320
256 Kbps	380	190	600	300	600	300	750	375
384 Kbps	490	245	780	390	780	390	980	490
512 Kbps	580	290	930	465	930	465	1160	580
768 Kbps	770	385	1230	615	1230	615	1540	770
1.544 Mbps	1200	600	1920	960	1920	960	2400	1200
2.048 Mbps	1400	700	2240	1120	2240	1120	2800	1400

Notes :

- a) Indian sub-continent includes Bangladesh, India, Maldives, Nepal, Pakistan, Sri Lanka.
- b) Cancellation charge applies to occasional lease which will be 50% of applicable usage charge if cancellation notice received within 36-60 hours. Full charge will be applied to cancellation notice received less than 36 hours prior to schedule.
No charge will be applied if cancellation notice received more than 60 hours prior to schedule.

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HONG KONG TELECOMMUNICATIONS LIMITED
PO Box 9896 GPO Hong Kong
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A Cable & Wireless company

Digital Data Service
Occasional Use
(All Figures Are HK\$)
With Effect From 1 April 1992

	Satellite and/or Terrestrial							
	Zone 1		Zone 2		Zone 3		Zone 4	
	Macao South China (Guangdong)		China Philippines Taiwan		SE Asia and Pacific		Indian Subcontinent (a) Europe, Middle East UK, North America, Rest of World	
	Simplex Initial 30-min	Additional 15-min	Simplex Initial 30-min	Additional 15-min	Simplex Initial 30-min	Additional 15-min	Simplex Initial 30-min	Additional 15-min
56/64 Kbps	100	50	160	80	160	80	195	97
128 Kbps	150	75	240	120	240	120	300	150
192 Kbps	210	105	340	170	340	170	420	210
256 Kbps	250	125	390	195	390	195	490	245
384 Kbps	320	160	510	255	510	255	640	320
512 Kbps	380	190	600	300	600	300	750	375
768 Kbps	500	250	800	400	800	400	1000	500
1.544 Mbps	780	390	1250	625	1250	625	1560	780
2.048 Mbps	900	450	1440	720	1440	720	1800	900

Notes :

- a) Indian sub-continent includes Bangladesh, India, Maldives, Nepal, Pakistan, Sri Lanka.
b) Cancellation charge applies to occasional lease which will be 50% of applicable usage charge if cancellation notice received within 36-60 hours. Full charge will be applied to cancellation notice received less than 36 hours prior to schedule.
No charge will be applied if cancellation notice received more than 60 hours prior to schedule.



Hongkong Telecom

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Digital Data Service
 Monthly rental
 (All Figures Are HK\$ Per Month)
 With Effect From 1 April 1992

	Satellite and/or Terrestrial							
	Zone 1		Zone 2		Zone 3		Zone 4	
	Macao South China (Guangdong)		China Philippines Taiwan		SE Asia and Pacific		Indian Subcontinent (a) Europe, Middle East UK, North America, Rest of World	
	Duplex	Simplex	Duplex	Simplex	Duplex	Simplex	Duplex	Simplex
9.6 Kbps	11,000	-	17,600	-	17,600	-	22,000	-
19.2 Kbps	13,000	-	20,800	-	20,800	-	26,000	-
32 Kbps	17,000	-	27,200	-	27,200	-	34,000	-
56/64 Kbps	20,000	13,000	32,000	20,800	32,000	20,800	40,000	26,000
128 Kbps	31,000	20,150	49,600	32,240	49,600	32,240	62,000	40,300
192 Kbps	42,500	27,630	68,000	44,200	68,000	44,200	85,000	55,250
256 Kbps	50,000	32,500	80,000	52,000	80,000	52,000	100,000	65,000
384 Kbps	65,000	42,250	104,000	67,600	104,000	67,600	130,000	84,500
512 Kbps	77,500	50,380	124,000	80,600	124,000	80,600	155,000	100,750
768 Kbps	102,500	66,630	164,000	106,600	164,000	106,600	205,000	133,250
1.544 Mbps	160,000	104,000	256,000	166,400	256,000	166,400	320,000	208,000
2.048 Mbps	187,500	121,880	300,000	195,000	300,000	195,000	375,000	243,750

Notes :

- a) Indian sub-continent includes Bangladesh, India, Maldives, Nepal, Pakistan, Sri Lanka.
- b) Contractual period for IPLC below 56Kbps is one month. For IPLC at speeds 56Kbps or above, a three months contractual period will apply.
- c) HKTI offers Aggregate Tariff for diverse routing, Fixed Term Discount and Digital Network Hubbing Discount.

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A Cable & Wireless company

Digital Data Service
Part Time Lease
(All Figures Are HK\$ Per Hour)
With Effect From 1 April 1992

	Satellite and/or Terrestrial							
	Zone 1		Zone 2		Zone 3		Zone 4	
	Macao South China (Guangdong)		China Philippines Taiwan		SE Asia and Pacific		Indian Subcontinent (a) Europe, Middle East UK, North America, Rest of World	
	Duplex	Simplex	Duplex	Simplex	Duplex	Simplex	Duplex	Simplex
56/64 Kbps	150	100	240	160	240	160	300	195
128 Kbps	240	150	380	240	380	240	470	300
192 Kbps	320	210	510	340	510	340	640	420
256 Kbps	380	250	600	390	600	390	750	490
384 Kbps	490	320	780	510	780	510	980	640
512 Kbps	580	380	930	600	930	600	1160	750
768 Kbps	770	500	1230	800	1230	800	1540	1000
1.544 Mbps	1200	780	1920	1250	1920	1250	2400	1560
2.048 Mbps	1400	900	2240	1440	2240	1440	2800	1800

Notes :

- a) Indian sub-continent includes Bangladesh, India, Maldives, Nepal, Pakistan, Sri Lanka.
- b) Part time period offered beginning and ending at the same time every day. Minimum period of one continuous hour per day, 7 days per week.
- c) Contract period for part time service will be 3 months.



Hongkong Telecom

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Leased Circuit Rentals
(All Figures Are HK\$ Per Month)
With Effect From 1 April 1992

	Satellite and/or Terrestrial				HF Radio Laos
	Zone 1	Zone 2	Zone 3	Zone 4	
	Macao South China (Guangdong)	Philippines Taiwan	SE Asia, China Excl. Guangdong, North America (a), and Pacific	Indian Subcontinent (b) Europe, Middle East UK, Rest of World	
50 Baud (1/4 Speed) (c)	-	3,000	3,600	4,500	12,960
50 Baud (1/2 Speed) (c)	-	4,000	4,800	6,000	17,280
50 Baud (Full Speed)	2,500	5,000	6,000	7,500	21,600
75 Baud	2,750	5,500	6,600	8,250	23,760
100 Baud	3,750	7,500	9,000	11,250	-
200 Baud	5,000	10,000	12,000	15,000	-
300 Baud	5,500	11,000	13,200	16,500	-
1.2 Kbps	6,500	13,000	15,600	19,500	-
2.4 Kbps	7,200	14,400	17,280	21,600	-
4.8 Kbps	8,000	16,000	19,200	24,000	-
7.2/9.6 Kbps	10,000	20,000	24,000	30,000	-
Voice-Grade (d)	10,000	20,000	24,000	30,000	43,200
Voice-Only	-	14,400	17,280	21,600	-
56 Kbps (e)	-	55,000	55,000	60,000	-
64 Kbps (e)	27,000	60,000	60,000	65,000	-
PBS (Simplex) (f)	-	3,640	3,640	3,640	-
PBS (Duplex) - 50 Baud	2,500	5,000	5,600	5,600	-
- 75 Baud	2,750	5,500	5,600	5,600	-

Notes :

- a) 50 Baud (1/4 Speed) to North America is HK\$4,500
50 Baud (1/2 Speed) to North America is HK\$6,000
- b) Indian sub-continent includes Bangladesh, India, Maldives, Nepal, Pakistan, Sri Lanka.
- c) Full Speed rentals apply for countries which have abolished sub-speed working.
- d) M1020 Conditioning will be charged at HK\$1,200 per month.
- e) Rentals stated are for service via satellite except Zone 1.
- f) PBS (Press Bulletin Service) is restricted to point to point direct relations (excluding HF radio).
Rentals stated are for service at 50 Bauds and 75 Bauds.

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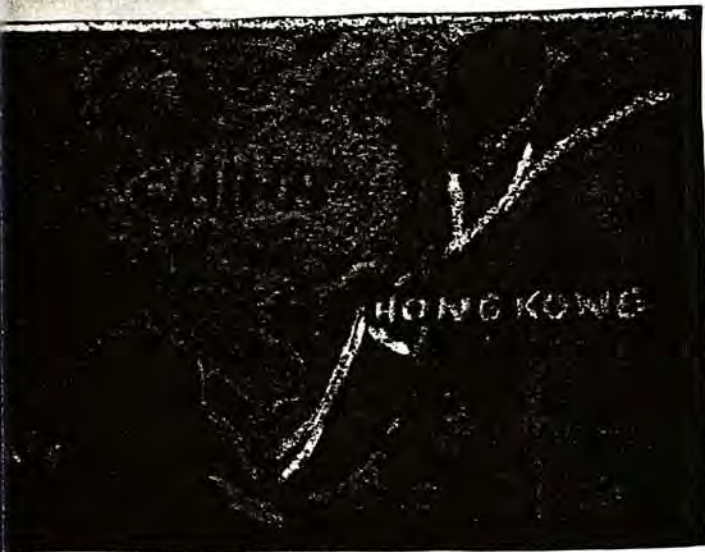


Your Passport To The World Of Advanced Telecommunications

One of the most important strategic decisions you face when doing business in the international marketplace is the structuring of an effective telecommunications networks. You need a flexible and cost-effective solution that offers high line quality, ready availability, reliability and security. For many companies, faced with growing voice and data traffic requirements to specific destinations, international private leased circuits become key components in their overall system.

Many of the world's most successful companies are basing their Pacific communications hub in Hong Kong.

Why? Because they know that with Hongkong Telecom they have an ideal combination: the right setting, the right technology and the right commitment.



**The Setting: Hong Kong —
Centre Of Southeast Asia
Gateway To China**

**Unparalleled
Infrastructure
Ideal geographic
Setting**

Hong Kong is the financial, commercial and telecommunications hub of Southeast Asia. Operating one of the biggest container ports and one of the busiest airports in the world, Hong Kong's strategic importance for trade with China and the world is without equal.

Today, Hong Kong is home to over 3,500 international companies and over 200,000 local businesses.

To meet the growing needs of Hong Kong's international commercial activities, Hongkong Telecom has invested extensively to provide a wide variety of global links within an infrastructure that is second to none.

Hong Kong is also ideally located for any company that needs (either now or in the future) reliable telecommunications with China. As the major gateway to China and with the announcement of the PRC's third international telecommunications centre in Guangzhou, Hongkong Telecom anticipates continuing, steady growth of traffic between Hong Kong and China.

Hongkong Telecom has developed one of the most technologically advanced telecommunication systems in the world, and we plan to keep it that way. Hongkong Telecom has invested in over 20 undersea cable systems in the Asia/Pacific and Indian Ocean regions and has ongoing commitments to invest in more.

Philippines, Guam, North America and Europe. New systems are planned to link destinations such as Singapore and Australia over the next few years, thus creating a truly global network.

Hong Kong is also connected to China via a fibre optic cable system into Guangdong Province in southern China.

The Technology: The Most Advanced In The World

- Extensive fibre optic network
- Digital microwave radio systems
- Satellite earth stations

In addition, we are participating in the development of an extensive optical fibre submarine cable network for the Pacific Rim. Currently, Hong Kong is directly connected with Japan, Taiwan and Korea with onward connections to the

Another fibre optic cable link to Shenzhen is in the planning stages. Digital microwave radio systems linking Hong Kong with China and Hong Kong with Macau provide additional circuits and backup facilities. We also provide an extensive back-haul system and eight satellite earth stations reaching every corner of the Globe.



Hongkong Telecom is committed to providing you with the highest quality telecommunications infrastructure, services and staff possible. That means offering not only the most technologically advanced systems in the world, but also the most knowledgeable and respected professionals in the industry.

A variety of cost-effective applications

Private Leased Networks provide ready availability of high-quality voice lines.

The high bandwidth and transmission speeds available over leased circuits make it feasible to connect data intensive applications like Computer Aided Design in research departments with manufacturing facilities located in other countries.

A flexible and manageable service helps you do business your way

The built-in flexibility of your network allows you to tailor your system for the mix of voice, text, data transfer, graphics and video that your business needs require.

Commitment:
Hongkong Telecom's Pledge

Hongkong Telecom we believe that it is only through our commitment to advanced technology and the highest levels of customer service that we can ensure your business grow and...

Data transmission through private leased networks can be applied to fax, electronic mail and the sharing of computer files such as spread-sheets, formatted documents, graphics, databases and more.

It can be configured to give priority to different types of transmission at different times of the day. For example, your Hong Kong office may need to transfer large volumes of data in the late afternoon to coincide with the opening of your London office before reverting back to voice transmission for the next office day.

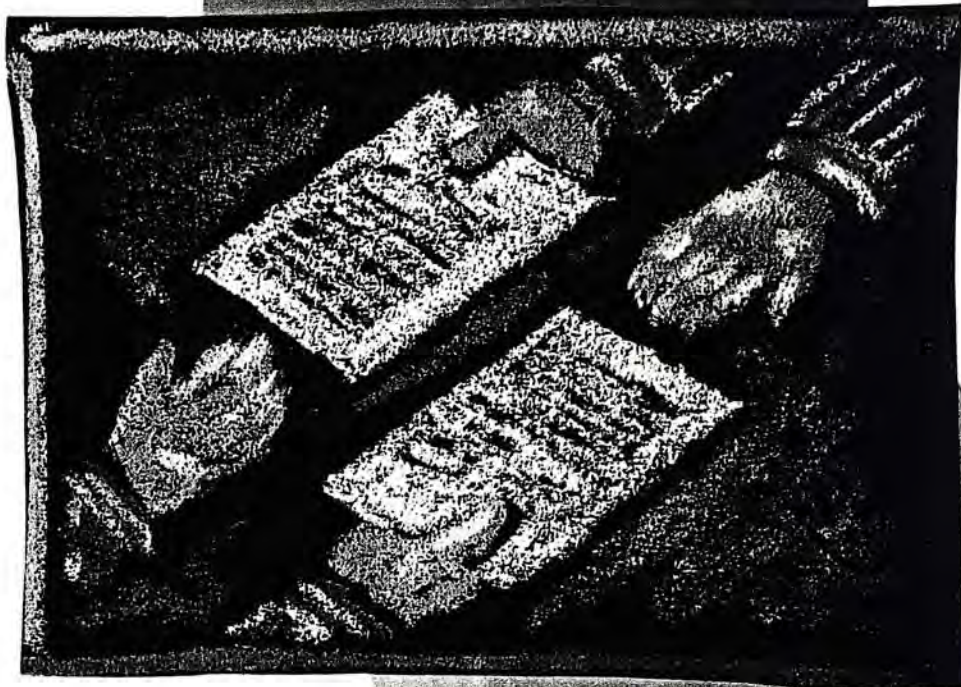
Superior line quality ensures trouble-free communication around the world

Digital transmissions over fibre optic cable are far less susceptible to noise and interference which can degrade voice connections or corrupt data. A fibre connection also minimises transmission delays for easier communications.

Private leased service is highly secure and reliable

A Hongkong Telecom Private Leased Circuit is one of the most reliable and secure in the world. Continuous round-the-clock monitoring, 365 days a year, guarantees that your system is always in perfect working order. And if a problem is detected, engineering teams are standing by to provide speedy fault diagnosis and rectification.

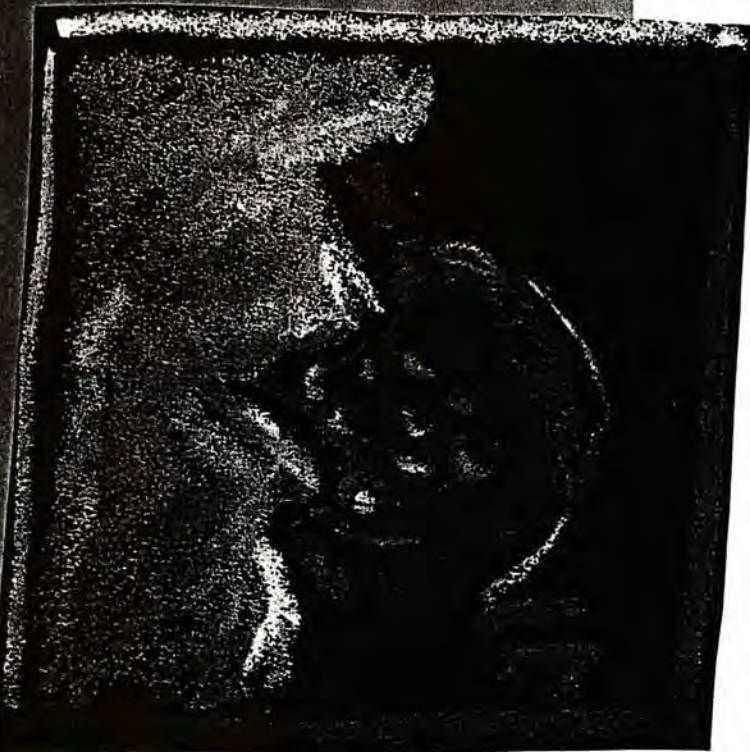
For added protection and security, Hongkong Telecom's digital fibre optic cable network has high inherent resilience.



Your Private Network can be further protected with back-up routings via cable and satellite, ensuring rapid restoration of services in the event of a major network interruption.

P Private Leased Services
Available In 4 Categories

Telegraph Circuit
Voice Only Circuit
Voice Grade Circuit
Digital Data Service



Telegraph circuits are offered at rates from 50 baud (1/4 speed) to 300 baud. They can be used for point-to-point or multipoint teletype communication at a speed tailored to your traffic volume and at relatively low cost.

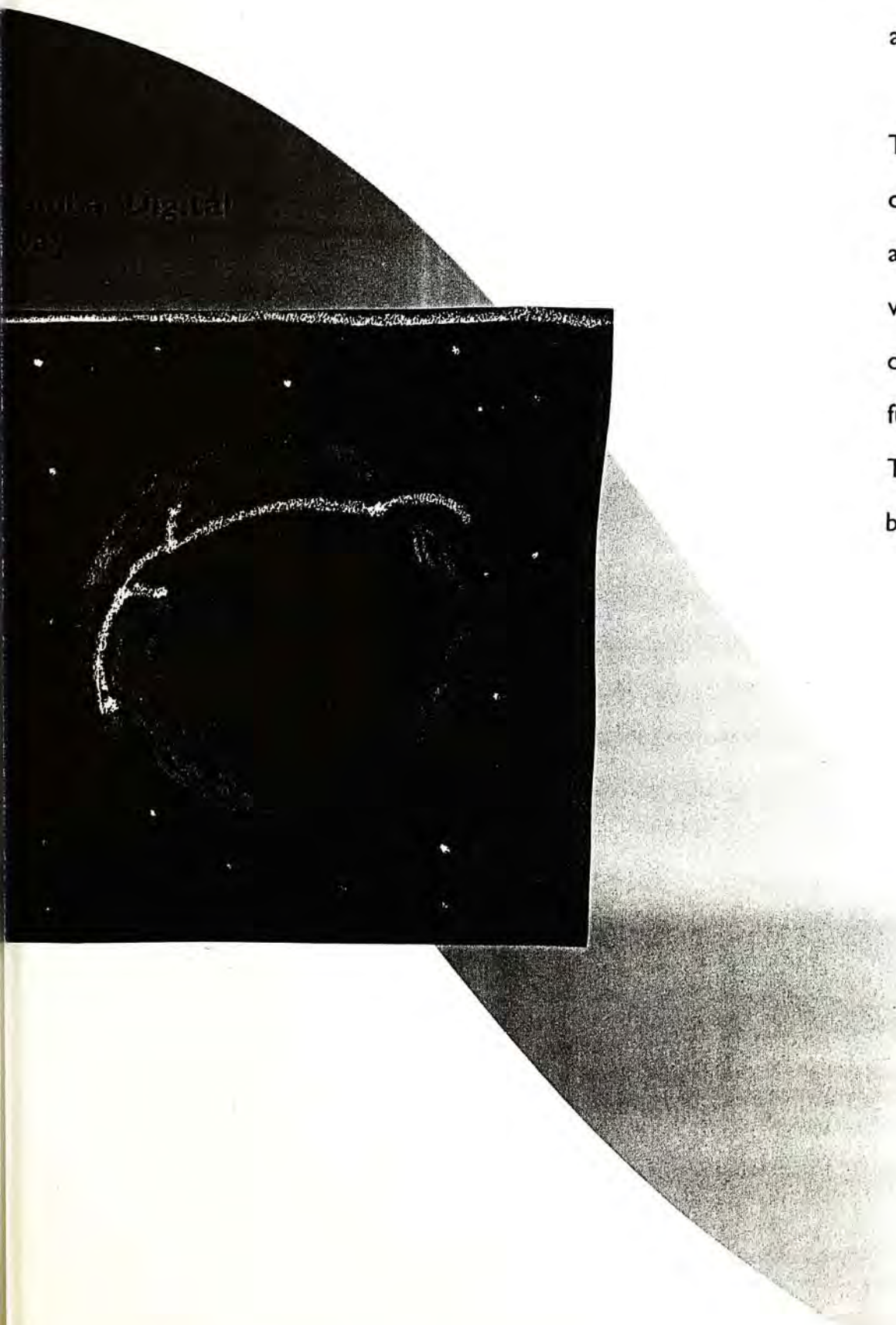
Voice-only circuits are provided at a discounted rate over voice grade circuits or digital channels employing a 32Kbps ADPCM technique, for customers who require only voice communications.

Voice Grade circuits are designed for a combination of voice, data & teletype services, either simultaneously or separately. They are also suited to transmitting data to countries where digital services are not available. With the installation of a suitable modem at each end, you can achieve speeds ranging from 1.2 Kbps up to 19.2 Kbps, depending on the quality of the circuit. Facsimile messages can also be carried over a voice grade circuit.

Digital Data Service provides a full-digital connection, ranging from 9.6Kbps to 2.048 Mbps. It employs the latest technology to deliver the required data speeds over digital fibre optical cable and satellite systems. It supports an even wider choice of applications, including data, voice, fax & video, allowing greater options when planning your telecommunications network.

AAdvanced Digital Technology

You can use your Hongkong Telecom Private Leased Service for any type of transmission or mixture of transmissions that you require. Hongkong Telecom offers a comprehensive range of multiplexors, modems, data switches and message switches that are compatible with your Private Network and are designed to maximise the transmission capacity and efficiency of your network.



The Global Digital Highway

was built by Cable and Wireless, the parent company of Hongkong Telecom, and links the world's principal business centres.

This enables Hongkong Telecom to offer the benefits of digital fibre optic cable technology on a uniquely global basis.

In addition, Hongkong Telecom's continuing policy and commitment to participating in all major cable and satellite ventures is increasing worldwide coverage and capacity still further. A benefit for Hongkong Telecom which, in turn, is a benefit for our customers.

As part of the Cable & Wireless group of telecommunications operations, Hongkong Telecom has great partners all around the world. And that means better service and quality for you, our customers.

37 nations and domestic telecommunications in over 20.

Hongkong Telecom is committed to providing international



Hongkong Telecom Part of the Cable and Wireless Group

The Cable and Wireless Group is one of the world's largest telecommunications operators. Its geographical spread is unrivalled – with offices in over 70 countries and operations in almost 50 countries, providing international communications for

services. Using the highest available standards of technology and quality and working hand-in-hand with our customers, Hongkong Telecom is ready to become your business partner.

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Appendix 12

Newspaper Advertisement

of

Video Telephone

心有靈犀 點會成日通？ 始終都要 「面對面」溝通！



電訊 CSL「話視 Phone」助您
面對面溝通。

與其憑聲寄意，倒不如直接了當，用電訊 CSL「話視 PHONE」與對方通話，親切的面孔，溫馨的笑容，俱歷歷在目，毋須心有靈犀，都可以傳情達意，親切得猶如近在眼前！

使用電訊 CSL「話視 PHONE」系列，只須接駁普通電話線，便可與同一型號的「話視 PHONE」互通訊息。用戶無須繳付任何額外費用。「話視 PHONE」有兩種型號以供選擇，能提供清晰的彩色活動影像，配合時尚典雅的設計，無論家居或商用，俱為聲色兼備的現代通訊設備。

電訊 CSL 實力雄厚，更為您提供免費一年保用及完善周到的售後服務，絕對值得您信賴。

邁進視像通訊新紀元，歡迎即日駕臨下列電訊 CSL 商店或致電直銷熱線 885 2211



香港電訊 CSL

電訊系統及產品



「話視 Phone 2000」

「話視 Phone 2500」

電訊 CSL 商店：

中環 I：太子大廈 116 號	845 6789	北角：英皇道 367 號	512 8899	油蔴地：彌敦道 501 號	770 8633	九龍灣：德福商場 G 81 號	754 3333	大埔：荳蔴街 45 號	656 22
中環 II：國際大廈地下	543 0603	西環：皇后大道西 596 號	819 0288	旺角：太平道西 157 號	394 8131	官塘：牛頭角道 327 號	342 6128	元朗：大馬路 232 號	479 33
中環 III：中環地鐵站	868 1083	香港仔：香港仔大道 138 號	873 2838	紅磡：紅磡商業中心 G 25 號	330 3399	長沙灣：青山道 252 號	728 3332	屯門：屯門市廣場地下 36 號	451 81
灣仔：軒尼詩道 46 號	528 2266	尖沙咀：新港中心地下 60 號	375 2200	土瓜灣：土瓜灣道 289 號	766 1166	荃灣：青山道 303 號	414 3322		
銅鑼灣：波斯富街 66 號	881 8898	佐敦：彌敦道 221 號	730 6633	新蒲崗：彩虹道 110 號	351 1822	沙田：沙田中心三樓 31D 號	605 8012		

Appendix 13

Production Description

of

Videophone 2500

Telecom CSL Videophone

2500



It puts people in the picture.



Hongkong Telecom CSL

TeleCom Systems & Products

Videophone 2500 - it puts people in the picture

突破時空界限 隨時「面對面」溝通



The telephone is great but Hongkong Telecom CSL's Videophone 2500, manufactured by AT&T, is so much better. For the first time, video link-ups with vivid, motion pictures are as convenient and affordable as IDD.

Easy to use and simple to install-you don't even need a visit from a technician-Videophone 2500 brings full colour video phone calls within the reach of everyone. No longer is video calling confined to the big corporate user. Its applications are limited only by your imagination.

For families, small businesses, companies with contacts across town or around the world, the Videophone 2500, now exclusive from Telecom CSL, brings people closer together.

The latest word in user-friendly

Take your Videophone 2500 home and plug it into any direct line telephone jack and standard electrical outlet. You're now ready to make your first video call*.

Make an IDD call in the usual way. Then press the video button and you're face to face with someone far away. The bright, 3.3-in LCD screen displays message prompts that remind you which button to press and help you to achieve the sharpest, brightest video images of the person, or people, you're speaking to.

A **Self-View** mode lets you see exactly how you'll look to the other party before video transmission. And if you like, see yourself together with the called party on the screen with the **Picture-in-Picture** function.

What's more, the unit is so lightweight you can move it from room to room, or from office to home, to make video calls whenever you choose.

* Only videophones of the same standard can support video calls.

電話固然是偉大的發明,但當你親身體驗過在通話時能同時看見對方的笑容和喜悅,你更會發現視像通訊所帶來的方便和樂趣,實在無法抗拒。

香港電訊 CSL 推出的「話視 Phone 2500」視像電話,由著名廠商美國電話電報公司(AT&T)製造,結合先進電話通訊及生動傳神的影像,將這雙重方便以實惠的價錢帶到你的日常生活中。

「話視 Phone 2500」操作容易,安裝簡便,用戶甚至毋需專業技工代為安裝。無論是日常家居、小型企業及商業機構,均可隨時與世界另一方保持緊密聯繫,享有聲容並茂的現代化視像通訊。

操作簡易 公私皆宜

「話視 Phone 2500」和普通電話一樣,你只須將電話插上街線電話插座及電源,便可立即與對方進行面對面通話*。

欲一睹身處外國的親朋戚友的近況,更是易如反掌。只須如往常一樣打出長途電話,再按下視像功能鍵便可。電訊 CSL 「話視 Phone 2500」特設的 3.3 吋液晶體螢光幕,除提供彩色活動畫像外,更能發出文字顯示,從旁提點用戶按鍵的步驟,使他們能享受最佳的視訊效果。

在打出視像電話之前,你可一按「自我影像」功能,預先看看自己在鏡頭前的模樣;或選用「畫中畫」功能,在通話時,同時在螢幕上看到自己及對方的面貌。

「話視 Phone 2500」機身小巧靈活,用戶可按需要將電話移往家中任何一間房間,又或從辦公室攜帶回家中使用。

* 雙方須擁有相同標準視像電話,才能進行視像通訊。





Looking good, sounding fine

With a **high quality, fixed-focus lens**, you can send natural, moving close-ups with synchronised sound. Or if you step back a little, a number of people can be shown clearly on screen at the same time from anywhere within 9 feet of the Videophone 2500. Or you can demonstrate a product. Or show what the kids made at school.

You can even move around or bring another person into view just by swivelling the camera console. And the picture quality remains sharp and bright.

The improved **directional microphone** of the Videophone 2500 suppresses background noise and echoes so you don't get that distracting 'hollow' sound of traditional speakerphones.



You don't have to be seen

Telecom CSL's Videophone 2500 offers guaranteed privacy whenever you want it. Whether you are making or answering a call, you don't have to switch to video transmission if you don't want to. The Videophone 2500 works just like an advanced, tone dial phone until you press the video button.

影像清晰 音質特佳

「話視 Phone 2500」內置高質素的定焦拍攝鏡頭和可左右調校角度的鏡頭座，可清楚拍攝 9 呎以內的景物。在一般單對單通話時，對方的面貌活靈活現；就是想仔細顯示物件，或加插其他人物於螢幕前，「話視 Phone 2500」都能使你隨心所欲。



此外，「話視 Phone 2500」具備經過特別設計的收音器，在收音時能同時抑制雜音，避免在一般使用免提聽筒操作時所出現的回音，令音質倍添清晰傳真。

影音保密 悉隨尊便

選擇進行視像通話與否，完全是閣下的自由。無論是打出或接聽電話，雙方就只有在同時按下視像功能鍵後才能互傳影像，否則「話視 Phone 2500」就與一部先進的音頻電話無異，只發揮一般電話功能。

If you want to cut off vision in the middle of a call, you can close the camera lens shutter at any time, or simply swivel the camera screen away from you.

A **Hold** button suspends both sound and video until you're ready to resume the conversation, while a **Mute** button silences the handset and speakerphone so you can have a private word with someone during the call.

Affordable

The Videophone 2500 is priced to ensure it's within the reach of the average family or small business in Hong Kong.

You don't have to worry about paying extra, as everything is just like using normal telephones. There is no special charge for using the video function, whereas international call is charged on the usual IDD rates.

Advanced telephone features

As well as incorporating sophisticated video capability, Videophone 2500 has all the features of an advanced tonal dial phone.

These include **12 one-touch memories**, **last number redial** and **handsfree operation**. The screen displays the number being dialled and a **battery back-up** saves memory and video settings in case of power cuts.

There's a **volume control** for adjustment of the speakerphone and handset as well as a **Mute** button for audio privacy.

Quality assurance

The Videophone 2500 comes, naturally, with full after-sales support and a 12-month warranty from its sole distributor **Telecom CSL**, Hong Kong's leading telecommunications company.

Need to know more?

For more information on how the Videophone 2500 can enhance your lifestyle, visit your nearest **Telecom CSL Shop** or call **Telesales Hotline, 885 2211**.

在通話進行中,你亦可隨時暫停視像功能,方法有幾種:你可直接關上鏡頭蓋;又或是將鏡頭座移開;若須同時中斷對話,你更可按下「影音保密」鍵,而「話音保密」鍵則方便你將聽筒及收音器暫時關閉。

費用廉宜 絕無取巧

電訊CSL的「話視Phone 2500」定價實惠,為一般香港家庭和商業機構所能負擔。

IDD

使用視像電話時,就如使用普通電話一樣,視像功能無須額外繳費,長途電話則與一般IDD收費無異。

電話功能 應有盡有

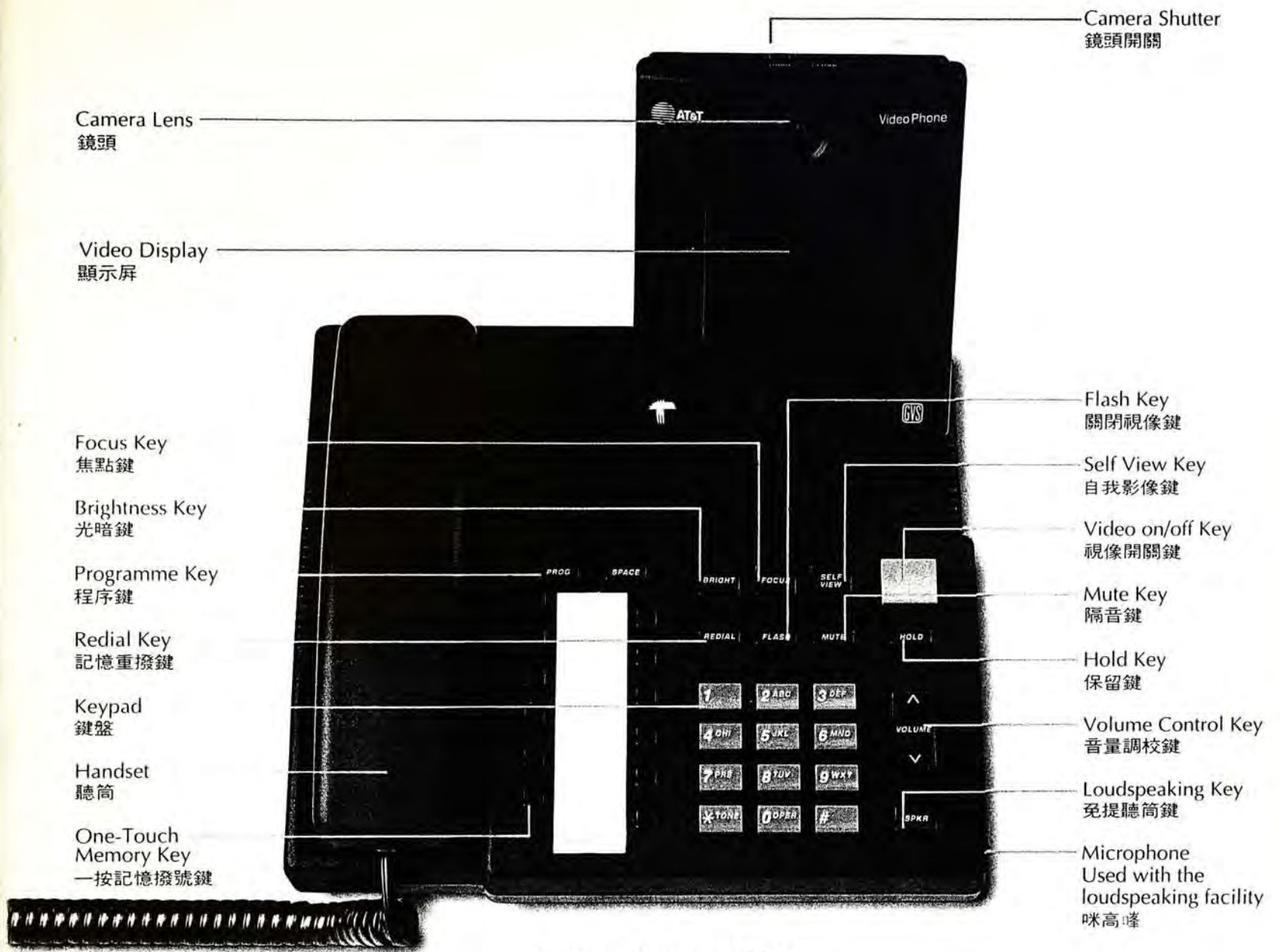
電訊CSL「話視Phone 2500」具備一切先進音頻電話的卓越功能,完全可配合一般電話作話音通訊使用,先進功能包括**12個單按記憶撥號**、**免提聽筒**、**記憶重撥**、**螢光幕顯示所撥號碼**、**後備電池裝置**,以及聽筒及收音器音量調校等。

免費保養 十足信心

「話視Phone 2500」由領導資訊科技的香港電訊CSL獨家提供,並設有一年的免費保用期,品質可靠,信譽超著。

使用「話視Phone 2500」視像電話樂趣無窮,今日就請親臨電訊CSL商店或致電電訊CSL直銷熱線**885 2211**,我們會樂意為你安排示範,令你領會現代科技為個人通訊帶來的全新領域。





Videophone 2500
「話視Phone 2500」

Features Summary 功能摘要

Video 視像功能

- Full Colour Video (10Hz) 全彩色動畫(每秒10格)
- Self View 自我影像
- Picture in Picture 畫中畫
- Manual Video Mode Control 手動視像功能控制
- Focus/Brightness Level Control 焦點/光度調節
- Tilt-and-Swivel Screen 可上下左右調校角度顯示器
- Manual Camera Shutter (open and close) 手動鏡頭開關
- Hold 影音保密
- Message Display 文字訊息顯示

Others 其它功能

- Tone/Pulse Switchable 音頻/脈衝撥號
- Handsfree Operation 免提聽筒操作
- Volume Control 音量調校
- Last Number Redial 電話重撥
- Ringer Volume Control 嚮鈴音量調節
- 12 One-touch Memories 12個一按記憶撥號
- Mute 話音保密

Specifications 規格

Size 尺寸:

248mm x 229mm x 219mm 248×229×219毫米
 (when video unit is up) (當顯示器豎起)

Weight 重量:

2.7 Kg (Tel) 2.7千克 (電話)
 1 Kg (Transformer) 1千克 (變壓器)

Power in 電源:

110/220V AC 110/220伏特輸入

Power Consumption 用電量:

35Watts 35W

Modem 調制器:

19.2Kbs (normal) 16.8Kbs (fall back rate)
 19.2Kbs (正常) 16.8Kbs (慢速)

Camera 鏡頭:

CCD 固體式CCD

Display 顯示:

Passive LCD (85mm diagonal) 被動式液晶體示器 (85毫米對角)

Algorithm 資料壓縮:

Proprietary GVS GVS專用規格

CUHK Libraries



000376312