Annex B

Hong Kong Industry Department

Study on the formulation of strategies for promoting the use of IT in Hong Kong's Service sectors

Executive Summary

February 1999

KPMG Consulting Limited

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Contents

1 Introduction

1.1 Background

The Hong Kong Industry Department commissioned KPMG Management Consulting in October 1997 to undertake a study on the level of information technology adoption in Hong Kong. The terms of reference requested that the study investigates ways in which service sector company competitiveness could be increased through higher levels of IT adoption. Specifically the objectives of the study are to:

- take stock of the current state of IT use;
- assess the implications of technological developments;
- examine the adequacy of local IT infrastructure;
- analyse the factors affecting business enterprises in their decisions on IT investment;
- research into models and strategies adopted in other economies in the region;
- identify the opportunities available to the local software industry;
- formulate a strategy for promoting the use of IT, both in large corporations and SMEs; and
- set out detailed findings, research results and observations arising from the study.

This report is the executive summary of the findings.

1.2 Study approach

The study was undertaken in two Phases. Phase I was a diagnostic phase which sought to examine the level of IT adoption as compared to other countries, the constraints on businesses in increasing the level of technology inputs and the provision of support both in Hong Kong and other competitor countries to encourage adoption. Phase II of the study focused on a sub set of services sectors and sought to examine the potential for IT adoption support programmes.

Phase I included the following components:

- telephone survey: we have conducted a cross country telephone survey of over 1,200 firms in Hong Kong, the United States and Singapore to gather information on the differences between these countries in the application and adoption of IT;
- face to face interviews: in Hong Kong we have conducted face-to-face interviews with some 70 firms in the 12 sectors selected to provide a deeper understanding of technology trends affecting companies, the constraints on IT adoption and the ways in which Government could assist in increasing adoption rates;
- review of technology trends: we have reviewed key technology trends facing each sector as a backdrop to the firm level interviews;
- interviews with key players: to understand the policy framework and current level of institutional support being provided in the area of IT. This has included representatives from the education sector, infrastructure providers and software companies.

Phase II of the study comprised a series of focus group meetings with representatives of four 'cluster' sectors including firms, associations, business support intermediaries educational establishments and academics. The working sessions discussed the findings from Phase I on the constraints on IT adoption and ways of supporting the adoption rate. This led to a summary of support measures which have been fed into the development of an IT support framework presented in this executive summary.

1.3 Sector coverage

The sectors on which this report focuses are shown in Figure 1 along with measures of their relative size.

Figure 1. The size of sectors of the service sector economy

	GDP contribution (HK$ bn)	Estimated % annual change in GDP, 96/97	Sales receipts (HK$ bn)
Retail	34	+8	280
Hotels	13	+10	22
Travel Services	37	+10	63
Transport	66	+5	114
Communications	24	+12	45
Banking	69	n/a	4,000 +
Insurance	35	+10	50
Media	7	+12	40
Advertising	4	+15	10
Building Services	7	+7	9
Professional Services	11	n/a	19
Import -Export	210	+12	2,269

Sources. KPMG and CSD

The service sectors of the economy are hugely diverse which is what makes any analysis across the service sectors particularly complex and challenging. Moreover their size, whether measured in terms of gross domestic product (GDP) contribution or sales receipts, varies enormously, from the import/export sector, which accounts for some 18% of Hong Kong's GDP, to advertising and market research, which account for less than 1%. The sectors are also at different levels of maturity and subject to different economic fortunes, from the fast growing communications and media sectors to the relatively mature transport and building services sectors, which are subject to less dramatic change.

1.4 Structure

The structure of the executive summary is as follows:

- section 2: overview of the study findings

- section 3: outlines the key issues for the support framework; and

- section 4: sets out the our recommended support framework and action plan

- Annex: contains more details of programme projects.

2 Study findings

2.1 Overview

2.1.1 *Introduction*

In this section we give the key highlights of our sector by sector analysis. The main basis of the findings are our two surveys, by telephone and face to face. These surveys enabled us to measure the use of IT by function and sector in comparison with the US and Singapore. These were countries chosen as examples of known advanced IT practice (US) and a significant regional competitor (Singapore). In the main interim report we have reported in detail on the percentage of firms which use different levels of computerised system, or manual processes, for various business functions in each sector. We have also devised a measure, which we have called the 'IT Gap', which gauges the distance of Hong Kong's service sectors from best practice of the US and Singapore in each sector. The IT Gap, based on statistical analysis, gives us composite indices of IT use across many functions and it also allows us to correct for some inconsistent sampling which arose in some sectors owing to difficulty in obtaining responses from certain types of company.

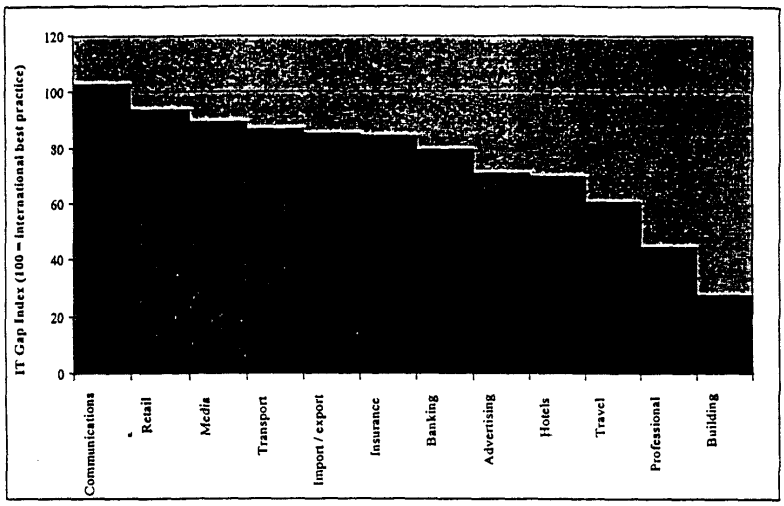
IT penetration and receptiveness in surveys has been shown to be high. Recent research by the HKPI has provided estimates of 41% penetration in the Home PC market which is similar to Singapore. However, whilst larger corporate score well the SME market was highlighted as having a low penetration rate. This is often the area where public support focuses.

2.1.2 *IT gap*

We have found considerable variations between sectors, types of system, size of firm and a number of other factors which apply in a number of sectors. There are strata within sectors that are internationally exposed and adopt best practice IT systems. If certain aspects of IT are examine in isolation Hong Kong firms are seen to perform at or better than best practice. The results highlight the complexity of technology across the services sectors. This report has sought to baseline the use of technology and explore some of the constraints on IT investment.

The IT Gap is a measure of the degree to which a sector in Hong Kong lags behind that of the two comparator countries in the level of IT adoption. If the resulting index is more negative the greater the gap from best practice in the other two countries. Where the index is positive, Hong Kong itself demonstrates best practice. The IT Gap is based on a selection of basic IT applications (such as the use of e-mail or the internet), applications in general functional areas (such as a finance or payroll) and sector specific applications (such as the use of a reservation systems in a hotel). The combination of these relative to the comparator country assist in identifying how well Hong Kong sectors are doing relatively. Figure 2 shows the overall ranking of sectors.

Figure 2: IT gap between Hong Kong and best practice



Source KPMG and AIM Survey 1998

Overall, Hong Kong service sector firms showed themselves to be behind both the US and Singapore in IT adoption. Indeed, in only one Hong Kong sector, communications, is IT adoption more developed than in both the US and Singapore. In most of the other sectors, though not all, it is the US rather than Singapore which constitutes best practice among the three countries. In the following we highlight the main conclusions from each sector.

2.2 Sector issues

2.2.1 *Import/export*

Hong Kong's import/export firms form one of the better performing sectors overall in IT use, comparing quite favourably with Singapore (at roughly the same standard on many indices) though still some distance from the US. Hong Kong import/export companies are less formally organised and planned for IT than their US counterparts. They make significant use of e-mail, though less than the US, but make considerably less use of EDI, which has considerable potential in this sector. Overall, a picture emerges that:

- as Hong Kong does not compare unfavourably with Singapore, one of its most significant competitors as a trading centre in Asia, its competitiveness in the region may not be significantly affected at present;
- however, it is clear that gains can be made if Hong Kong moved closer to US levels of practice. This would be most significant for smaller firms, which account for the vast majority of firms in Hong Kong's import/export sector. At this end of the spectrum, the firms are most prone to the threat of buyers going straight to suppliers in, say, mainland China rather than through a Hong Kong intermediary which may add little value; and

- the IT awareness of smaller firms appears low and the demand for training muted.

2.2.2 *Retail and commercial banking*

Perhaps more than any other sector in this report, the use of IT in banking varies much more by size and international ownership than by country. In Hong Kong, for example, the companies which rated the IT skills in their company as very high or high were overwhelmingly in the 500 employee plus category. Over half of all the banks (65%) rated themselves as normal but there were none which graded themselves below this. Similarly, in terms of IT equipment almost all the companies which considered their standards to be high were in the 500 plus employee category.

In terms of IT usage it is possible to categorise the Hong Kong banking sector into three main groups which share broad characteristics in their IT strategies. These are:

- the major foreign-owned (mainly US) banks, which are at the leading edge of IT use. They are not merely advanced in their use of IT but see technology as a key driver of competitiveness and differentiation. They therefore see IT as a source of advantage rather than an operational cost. IT plays an integral part in their whole corporate strategy and systems are used uniformly across the world to ensure that they have a world-wide service offering;

- the major Hong Kong banks, which are similarly advanced in their use of IT. They tend to use IT efficiently and keep up to date with technologies. The main difference from the first group is their tendency to see IT more as technical support to deliver their service efficiently and effectively than seeing technology in itself as a source of business advantage through such applications as the internet;

- the local banks outside the large category, which are much less sophisticated in their use of IT and tend to focus on managing costs. They generally have a patchwork of legacy systems and have been reluctant to make wholesale radical change to achieve a more rational strategy. These banks are typically not focused on using technology for competitive advantage, although there are exceptions which are seeking niche positions.

The above broad categorisation is based both on our survey and our in-house knowledge of IT issues in the banking sector.

2.2.3 *Insurance*

The insurance sector is facing a period of change in Hong Kong in particular on the general (non-life) side of the sector. At present there are over 140 general insurers in the market. However, moves towards rationalisation of the sector could see drastic reductions in the number in the market. Domestic operators are under pressure from international firms.

A key source of business advantage in the industry is IT and Hong Kong's insurance companies are closer to IT best practice than many other sectors in this report. The basic requirements of IT are quite well served. However, a problem identified with many domestic insurance companies is their low use of IT for business advantage in areas such as marketing and selling. There are signs of domestic firms attempting to compete, with some existing operators looking for partners and financial support, and new entrants to

the market who have adopted better IT practice (such as in the area of mobile selling). However, the general picture is one of lagging developments in the industry internationally.

2.2.4 *Retail*

Retail is one of the best performing sectors in Hong Kong in terms of its IT relative to the US and Singapore. The Hong Kong retail sector marginally lags behind the other two countries in the use of e-mail, internet and EDI. The level of IT adoption of a number of sector-specific applications, such as sales automation, was less sophisticated in Hong Kong. However, the level of adoption of others, such as merchandise planning, was more sophisticated.

Other key points were that:

- retail is a high user of IT professionals and is fairly well organised in its IT function at the larger end of the sector;
- domestic large chain stores appear to lag behind best practice internationally as their international competitors roll out their world-wide systems quickly;
- the sector experiences shortages in the supply of IT professionals and, to a lesser extent, the turnover of staff who leave for higher paying sectors; and
- firms display high levels of interest in general computer awareness campaigns as well as provision of advice and training in the use of industry specific software.

2.2.5 *Hotels*

Hotels are middle-ranking among the Hong Kong service sectors in their relative overall use of IT compared with the US and Singapore. Use of IT clearly varies significantly by hotel size. However, we had difficulty in obtaining responses from small and medium-sized business in this sector, which is likely itself to be an indicator of the size of the gap at this end of the sector. Key findings from our survey were that:

- there are particular weaknesses in the uptake of technology within medium sized hotels who have poor systems in place or none at all;
- in larger hotels there are also signs of a poorer levels of technological adoption, even in hotels that are part of an international chain;
- internet has become a key marketing tool for hotels world-wide, but Hong Kong hotels lag in this area; and
- there is an enthusiasm in this sector across a whole range of potential Government or institutional programmes to support IT.

2.2.6 *Building services*

Building services includes architects, surveyors and engineers and is the worst performing sector in survey in terms of level of IT adoption in comparison with the US and Singapore. Building services companies in Hong Kong tend to under invest, relative to the other countries, in basic systems, general function applications and as well as specialist systems such as for design.

In our face to face interviews we were struck by those firms, often long-standing, with IT departments which felt that they lacked adequate IT applications. The primary reason given for this under-investment was the attitude of senior management or partners toward IT investment. There was generally a minimalist approach to IT use. Another constraint was that sector specific technologies would often require that working and business practices be changed, requiring significant reorganisation and retraining costs. As a consequence, an *ad hoc*, project-based approach to IT is normally adopted.

The sector has a bias toward owner management and partnership structures tending to lead to an under investment in technology. In spite of this it is encouraging to observe the positive interest in Government support. Specialist software and training is an area identified a key issue to the development of the sector.

2.2.7 *Professional services*

Professional services cover mainly accountancy and law practices, who have a similar ownership structure to building services. They also share a similar distance from best practice in IT use and are the second worst sector in our survey.

However, this varies greatly by type of service. It was evident from our face to face interviews and with representative associations that law firms feel that they have a very limited set of IT needs and that IT is not very relevant. This highlights an issue about awareness in the sector and the benefits of integrated systems that best practice firms employ. Accountancy firms differ. We found both small companies and larger practices that were more effectively employing IT in their business processes. This may be due to these firms' heavy involvement with the systems of their own clients and their role as providers of such advice. However, the level of IT adoption was generally low in smaller firms. We also found evidence of larger international practices that were behind the standards of their international partners.

Other key findings were that:

- the sector has a low level of take up of generic function packages compared with firms in the US;
- EDI in dealings with Government is seen as an important means of improving the relative efficiency of accountancy firms; and
- government support is presently low but there is a high level of enthusiasm for software training.

2.2.8 *Advertising and market research*

Advertising and market research constitute a middle-ranking sector among Hong Kong services in terms of the gap with the best practice of US and Singapore in IT adoption. In terms of the organisation of their IT, Hong Kong firms in this sector are similar to the other two countries, although significantly fewer Hong Kong firms plan their IT expenditure. The use of basic IT applications in Hong Kong is only marginally worse than best practice. However, Hong Kong firms significantly lag behind best practice in a number of applications which have a natural fit for advertising and media. In particular, the use of internet for business information and the use of web pages, where there is a significant gap with the US and to a lesser extent Singapore too. The level of IT

adoption of a number of general functional systems such as customer billing is also relatively low in Hong Kong firms.

Firms in this sector are often quite small in size, though in an IT oriented environment this should not significantly affect IT use. Noticeable is that firms not linked to international firms or partnerships show a lower level of IT adoption overall. In terms of interest in government support, sector-specific software and training are seen as the key issues and support in this area would be welcome.

2.2.9 *Transport*

The transport sector in our survey consists of three key modes: air, sea and rail. Each is very specific and consists of a few, if not just one, operator. They therefore each regard themselves as unique with separate IT needs.

Overall, this is a sector where at the top end the leading transport companies and entities providing the infrastructure are at the forefront of technology and have given Hong Kong the reputation for efficiency than it has in the smaller and medium sized firms, where there are more weaknesses.

Those sectors that are internationally exposed, such as airlines, tend to adopt (and indeed are required to adopt) best practice systems. Domestically oriented firms in more or less monopoly positions, however, are less inclined to do so.

A number of the larger organisations in the sector expressed their concern over the availability of skills and the high levels of turnover experienced and raised issues regarding software availability.

Our key findings were that:

- transport firms overall have a higher utilisation of basic and manual systems than the US, but lower than Singapore;
- specialist software availability and training deficiencies exist; and
- there was an overall high level of awareness and interest in Government support programmes.

2.2.10 *Communications*

In communications we covered fixed link and mobile telecoms, other telecoms services such as paging and telegraph services, as well as internet services providers. The sector as a whole performed the best in our survey of IT use and indeed is the sole sector which achieved higher IT adoption rates in Hong Kong than both the other two countries surveyed, so that Hong Kong itself was the best practice country of the three.

The communication sector is itself high technology intensive in its products and services and it is therefore not surprising to find high use in information technology. Hong Kong performs well in the organisation and budgeting for IT and the use of basic IT applications as office automation software, and e-mail. However, it does seem to be behind the US and Singapore in its use of internet for business information and its own web pages. Hong Kong makes quite extensive use of automation in most basic functions such as finance and customer billing.

Hong Kong firms did, however, report some significant constraints, with particular concerns about the cost of IT professionals, skills levels and, to an extent, staff turnover. They have seen significant competition from the high demand for Year 2000 resources and many larger companies have started formalised training for IT professionals for the first time.

2.2.11 *Travel services*

Travel services, consisting mainly of travel agencies and tour operators, are one of the poorer performing sectors in our survey in terms of IT adoption compared with the US and Singapore. While basic automation in the form of office software is quite prevalent, e-mail is distinctly under-used and internet is well below the best practice standard. While finance packages are well used areas such as customer billing was found to be significantly more manually based than in the US and Singapore.

Travel agents in Hong Kong are commonly regarded by users with experience elsewhere as providing low levels of customer service. IT is one way which travel agents have enhanced service through the range of options offered, speed of response and comparability of options. With the developments in E-ticketing and possible circumventing of travel agents in the reservations process, the role of travel agents is under potential threat. Those most able to enhance their customer service are likely to be most robust in this environment.

2.2.12 *Media*

The media sector makes extensive use of IT and is one of the leading sectors in Hong Kong in IT adoption, performing close to US and Singapore levels.

There is a high adoption of all the basic IT facilities in the media sector. Virtually all companies surveyed having standard office automation software and most use e-mail. Media firms are high users of the internet, like communications, although this is still rather behind in Singapore and the US.

An important feature of the media sector is that IT is intimately bound up with its products and services rather than being part of the support infrastructure. Most companies are therefore generally very IT-aware and although there is a preponderance of small and medium sized firms there are relatively few which can do business outside an IT environment.

IT adoption in Hong Kong media firms compares well across the general business functions relative to both other sectors of the Hong Kong service sector and media firms in the other two countries. Media has one of the highest uses of IT for the finance function and other key functional areas with the exception of staff time management. Sales related infrastructure is less IT based, possibly because in many cases media companies are not dealing with volume sales. Under many of the above categories, Hong Kong performs at the level of, if not better than, Singapore and the US.

2.3 Cross-sectoral issues

Above we summarised the picture which has emerged of the adoption of IT in the different sectors and how they compare with each other and the US and Singapore. Here

we give the key highlights of the findings cross-sectorally, focusing more on differences between the size and age of firms.

2.3.1 *Organisation of IT*

- overall firms in Hong Kong were more likely to have an IT department that the two comparartors countries;
- however, firms up to 50 employees in Hong Kong are less likely to have a separate IT department than in the US;
- similarly, firms up to 50 employees are less likely to have a plan for their IT expenditure over the next two years than US or Singaporean firms,
- comparing firms like for like, Hong Kong firms have significantly lower average IT budget than the US, but similar to that of Singapore. This result is significant at the 5% significance level, and
- while Hong Kong firms appear to employ more IT professionals than a similar firm in the other two countries, they employ less highly qualified IT staff. However, these results are not significant at the 5% significance level.

2.3.2 *IT use*

- Hong Kong firms' uptake of office automation software is higher than the US and similar to that of Singapore. This conclusion holds for the entire profile of firm sizes and ages. It is essentially due to the use of automation software instead of more sophisticated sector-specific applications,
- US firms are more likely to consider that they have a very high level of IT equipment relative to their competitors,
- firms up to 50 employees in Hong Kong and Singapore are less likely to have a network computer than the US. However, the opposite is true of large firms,
- of young firms, those from Singapore are more likely to have networked computers,
- Hong Kong firms are generally less likely to utilise internet technologies than firms from other countries, i.e. e-mail, the internet for business information, the internet for electronic commerce and having a web page. This low uptake is generally in small younger firms rather than larger established firms, and
- Hong Kong and Singaporean firms outsource payroll operations less than US firms,
- but Hong Kong firms appear more likely to outsource the finance area than the other countries.

2.3.3 *Skills*

- there is no evidence of a greater perceived skill gap in Hong Kong,
- Hong Kong firms appear less likely to utilise external training, particularly micro and SME firms and those which have been trading between 4-10 years, and
- firms in Hong Kong appear marginally less likely to conduct internal training courses, particularly very small firms.

2.3.4 *Constraints*

- an investigation of a number of specific constraints on the effectiveness of IT operations suggested that the availability of appropriate software was marginally more of a serious influence in Hong Kong than the US. However, the cost of appropriate labour and level of labour turnover appeared to hold a similar level of influence in each of the countries, and

- the lack of Chinese language versions of software appears a major constraint to Hong Kong firms, particularly in the smaller firm sector.

2.3.5 *Government support*

- Both Hong Kong and Singaporean companies have made very limited use of any government support programmes but express significant interest in doing so., in particular in the case of Hong Kong businesses,

- US firms are in complete contrast; while they have also made little use of government schemes, they have very little interest in ever doing so.

3 Key issues for IT support framework

3.1 IT and Competitiveness

Public support to enhance IT adoption at the firm level is part of an overall policy towards making firms more competitive. The degree to which IT plays a critical role in firm level competitiveness varies across size of firms and the sector or product specialisation. However, there is a general trend towards IT being more, rather than less, important in all business processes. Key points include:

- In many sectors and especially manufacturing the relationship between IT inputs and the efficiency of outputs is proven. In the service sectors the impact is less evident due to the nature of the services offered and the way technologies affect outputs. The lack of transparency of the contribution on IT in services often leads to a high reluctance by firms to invest in technology

- Implementation of IT systems often requires changes in business processes which in turn present major barriers due to the cost of change and a reluctance to change working practices.

3.2 Range of policy responses

Our analysis of government IT support showed that there is a significant variety in approaches taken by the countries reviewed in promoting IT use in companies. The most basic aspect of this is the degree of activeness of the overall approach. In this regard the countries split into three broad groups:

- **Singapore and the UK:** which have a very proactive policy to promote IT use, a clear policy banner and awareness programmes. Singapore, however, adopts a more interventionist style with more 'winner picking' and financial support. This used to characterise UK policy but this has been abandoned over the last two decades;

- **Hong Kong and Australia:** having some initiatives from various bodies, though not pulled together and packaged in any systematic way and which are low on awareness raising; and

- **US and Japan:** which have no consciously thought out policy, with Japan having a traditional focus on industry and the US having little taste for policies in this area in general.

Table 5.3: Summary of initiatives

	Form of support								
	Policy statement	**Clear objectives**	**Awareness campaign**	**Advisory**	**Financial assistance**	**Sector specific**	**Taxation system**	**Evidence of Significant review**	**Summary of features**
United Kingdom	✓✓✓	✓✓✓	✓✓	✓✓✓	✓			✓✓✓	n Co-ordinated contact point and packaging n Assists all company types
Singapore	✓✓✓	✓✓✓	✓✓✓	✓✓	✓✓✓	✓✓	✓	✓✓✓	n Small firm sector specific programme n financial support for adoption n focus on infrastructure and training
Japan	✓✓	✓							n Seeks to encourage private sector by investment in public sector as a leader n focus on R&D and training initiatives
United States	✓✓	✓							n R&D linked to setting national standards
Australia	✓✓	✓✓	✓	✓✓	✓		✓		n All levels of government have policies and responsibilities in place n Bias towards infrastructure and on-line services
Hong Kong	✓✓	✓		✓✓	✓			✓✓	n Not systematically packaged n Policy focus relatively new

The table above summarises the relevant features of government programmes for service sector companies, according to the following scale:
✓ feature exists
✓✓ feature is prominent
✓✓✓ feature is key part of policy

Table 5.3 highlights key aspects of the initiative and points to note are:

- **Policy statements and objectives:** Singapore and the UK have the clearest policy statements and objectives behind their policy package. They have strong banners, which in Singapore is underpinned by visionary infrastructure investment;

- **Awareness raising:** again the UK and Singapore are strongest on awareness raising and have opted for a packaged approach which makes IT easier to "sell" and gives the user everything in one place;

- **Advisory services** are key to the more active support programmes and Hong Kong compares reasonably well on paper with Singapore and the UK. The difference perhaps is that Hong Kong's focus on advisory services is relatively recently adopted, by HKPC and others. This means that the activity of awareness raising has not been going on for very long and scale of the advisory activity is quite limited compared with, say, Singapore which devotes significant resources to this area. Also the Hong Kong advisory effort is more fragmented between institutions, which need not be a disadvantage if services are co-ordinated and packaged. There is still a certain degree of overlap and rivalry (as well as mutual criticism) among Hong Kong institutions in this area;

- **Financial assistance:** financial assistance in the form of direct subsidies for training or investment are not commonplace in this policy area, other than in Singapore where it forms the basis of a number of the schemes;

- **Sector specific initiatives** are generally not common though are found in Singapore. Technology-specific initiatives (directed at, say, EDI or multi-media) are more frequent elsewhere, but not in Hong Kong.

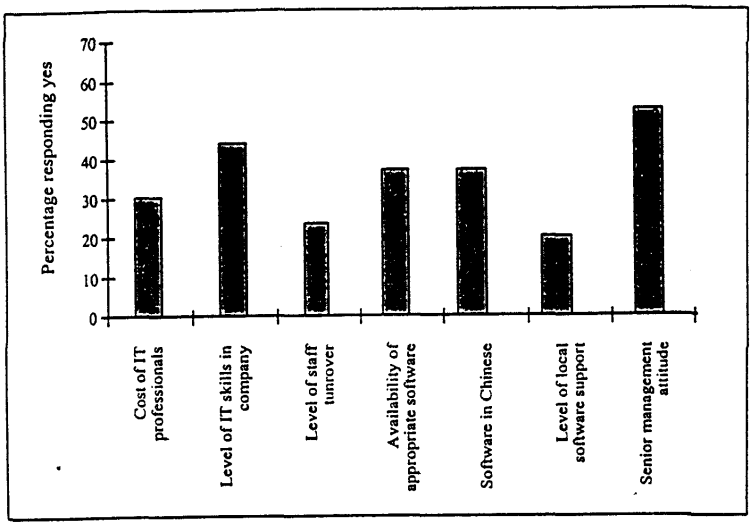
- **The taxation system** is not used extensively to promote use of IT other than standard allowances made in countries for capital investment; and

- **Systematic review** of policy has been undertaken in Singapore and the UK and form the basis of the policy platform in those countries.

3.3 Sector needs : cluster analysis

The Phase II focus groups with the four cluster groups have sought to interpret the main problems facing companies from an IT perspective and then to move to consider how best these problems can be resolved. The focus groups comprised a cross section of firms, representative bodies and IT intermediary agencies. However, they cannot be regarded as fully representative of issues and there will be need to consult more widely as particular programmes or projects are developed.

Figure 2: Constraints acting on firms IT adoption levels (all sectors)



Source : KPMG & AMI Survey 1998

Across the sectors there were some general themes that emerged where there may be a role for Government and intermediary agencies to act. The common problems identified were at quite a high level across many of the cluster groups. These included:

- labour market constraints in the form of insufficient IT professionals in the market and the associated high cost and labour turnover issues;
- the decoupling of the link between IT strategy development and business strategy resulting in poor business cases for investment;
- no major concerns over the physical IT infrastructure - but some concern over telecoms cost;
- the business culture of short termism which acted against IT investment affecting both large and small enterprises; and
- local software /vendor support, including the availability of software in Chinese, was a significant issue.

These are constraints that are found in many competitor countries. In Hong Kong it appears that some constraints faced by firms are more severe due to the combination of industrial size structure with a bias towards SMEs; ownership patterns across sectors - which leads to short term profit focus; and a general culture of resistance to business process change.

Figure 3 outlines the key areas of potential support by cluster.

Area of support	Types of support for professional service sectors	Types of support for the financial services	Types of support for tourism cluster service sectors	Types of support for the Import/export sector
Information	Need to increase general levels of IT literacy and awareness-in company and wider community Professional association for IT managers/registration process to help change attitudes of management to IT profession through greater professionalistion Best practice and dissemination of cost/benefits of employing new technology (benchmark data/TQM adoption/integration of business planning with IT planning) Target SMEs with information on IT role in developing their business Disseminate the benefits of EDI Practical research on IT application in professional services sectors Encourage use of extranets by firms	Awareness of benefits of IT to business strategy was required at a 'high level'	Awareness of benefits of IT to business development Awareness of existing providers of solutions and support Projects to get retailing and banking to co-operate on integrating point of sale information and technology International "IT in Travel and Tourism Conference" in Hong Kong and/ or hotel software conference	Awareness of benefit s of IT to business Awareness of existing providers of solutions and support Awareness of wider benefits of EDI Enhanced awareness of the implications of Government's move to electronic submission o f export documentation Implications for the sector of failure to adopt in HK competitiveness through a study on the costs of non adoption

Area of support	Types of support for professional service sectors	Types of support for the financial services	Types of support for tourism cluster service sectors	Types of support for the Import/export sector
Regulation	Government to set frameworks on data exchange in Government departments and develop standards through contracting procedures (compatibility) Government led industry wide standards EDI connectivity between software - one standard Open up telecoms market to enable benefits of telecoms liberalisation in HK			Interconnectivity of existing software solutions for export documentation Pricing policy to encourage electronic commerce (paper v electronic commerce)
Education	Ensure degree curriculum incorporates business related subjects Develop life long learning in IT Support up-to-date course development	The responsiveness of the education system to financial services needs and availability of IT manpower Poor quality and value for money in Government supported financial institutions		
Direct support	Co-operation with PRC on Chinese software development through research centres	Measures to increase the quality and stability of local software vendors	Package of support to develop a first phase capability in IT for smaller and medium sized businesses, particularly in the hotel and travel agency fields (consulting, training, software, hardware) Best practice outreach, through existing trade associations	Package of support to develop a first phase capability in IT for Smaller Import/Export enterprises (eg. consulting, training, software, hardware)

Area of support	Types of support for professional service sectors	Types of support for the financial services	Types of support for tourism cluster service sectors	Types of support for the import/export sector
Government leadership		The assessment of Government departments' IT needs leading to a rationalisation of IT manpower was a way of addressing one of the key problems faced by the cluster		
Public enterprise				Pilot projects to disseminate best practice and successes with smaller Import/Export
Political		General vision of moving Government up the IT technology curve would raise general IT awareness and provide leadership of the importance of IT in society	Awards for successful implementation of IT in hotels, retailing and tourism	Awards for successful implementation of IT in Import/Export

4 Study recommendations

4.1 Introduction

This section outlines our recommendations on the approach that the Hong Kong Government should adopt in order to encourage, support and facilitate the rate of technology adoption across the services sectors. Given the wide ranging scope of this study this can only be seen as the start of a process which examines, from a sectoral and firm level, how technology adoption is progressing in Hong Kong and the barriers to achieving an 'appropriate' level of technological input to business processes.

The rationale for Government support in the area of technology adoption hinges around market failure both on the supply (ie. providers of technology) and demand side (users of technology or firms). In technology adoption a key problem encountered - in particular amongst smaller firm - is the flow of information and the cost of acquiring the knowledge to understand the IT need of the firm. This key information failure the rationale for many developed countries involvement in the promotion of technology in a very active manner.

In each of the programme descriptions below we start with an overview of the key problems we have found in our review of the services sector and the rationale for government support. We set out five programmes within the framework to tackle the barriers identified in this study holding back the level of IT adoption.

4.2 IT Support Framework

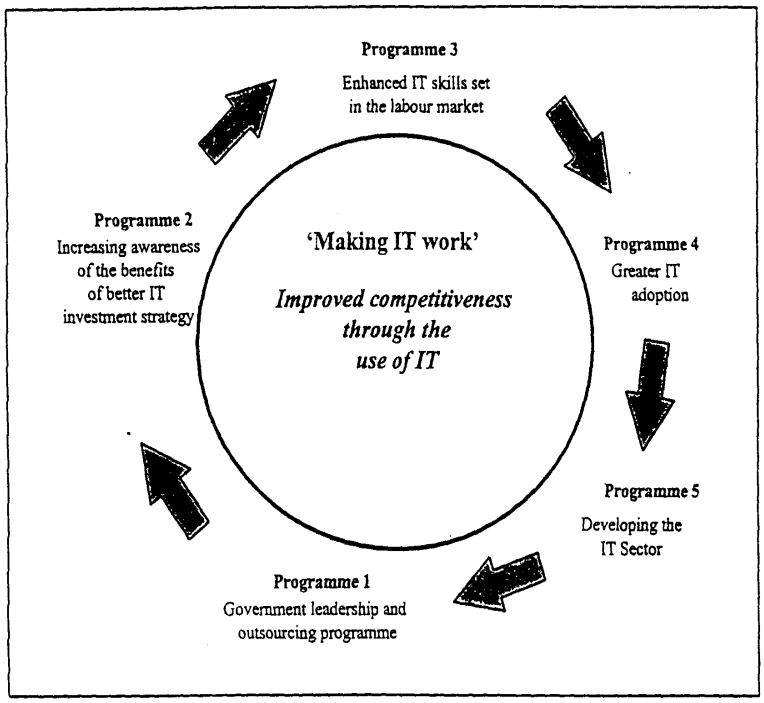
4.2.1 *Policy objectives*

The objectives of this support programme are:

- increase competitiveness of Hong Kong firms through the adoption of *appropriate* technologies; and
- contributing to the development of the information society.

In order to achieve these objectives there is a need to tackle the key weaknesses through a series of programme measures. The focus of the approach is twofold: to maximise the use of the private sector to develop in order to support IT rather than building new infrastructures; and on the use of existing technologies to maximise the efficiency of firms and therefore enhance the competitiveness of the economy.

Figure 8.1: Overview of IT Support Framework approach



4.3 IT Support Framework programmes

This section sets out a framework which aim to achieve the two overall objectives set out above. An overall campaign has begun at Government level with the establishment of the IT Bureau. This has as its overall objective the development of an information society at the leading edge of technological development in the region. We propose that HKID in light of the current policy thrust, and the results of this study undertake a ***'Making IT Work'*** industry support programme to build on good practice and to overcome the negative perceptions of the role that IT can play in supporting competitiveness and enhancing quality of service.

4.3.1 *Programme 1: Government leadership*

There is much support in the private sector for Government taking on a leadership role in developing a more IT orientated economy. This involves Government taking action at a number of levels, both in setting the vision and in setting standards through its own investment in IT to support its own business processes. Increased investment in IT by Government would potentially have benefits for the private sector in a number of important ways. By reforming its business processes it will encourage the take-up of IT in private sector firms that supply Government and it would potentially release IT manpower resources as a by product of streamlined processes. If Government reform measures resulted in increased contracting out of services this would expand the private

IT industry and give it more critical mass. Such measures can have a significant impact on the adoption of IT in the private sector.

These actions require commitment from all Government departments and are not solely within the scope of the Industry Department. Areas that affect all Government departments will require a sponsor that has a cross departmental working brief.

The initiatives under this programme are:

- Project A: Government IT outsourcing : to assess the potential impacts on the Hong Kong IT labour market of the outsourcing of Government IT services; and

- Project B: Standardisation of Government's electronic interchange requirements internally and viz. a viz. the private sector.

4.3.2 *Programme 2: Increasing awareness of IT*

A striking feature of the study results has been the high level of interest expressed in greater information flows on technology issues from the general to the specific. This is consistent with international experience that firms often face market failure in the form of a lack of information. Information failure provides a basic rationale for Government intervention resulting in measures to support higher awareness levels. This market failure is greater the smaller the size of firm, thus leading support programmes to a focus on SMEs.

The size structure of Hong Kong and the small market size in relation to local vendor support suggest, that this is potentially a bigger issue for Hong Kong than many competitor countries. Firms find 'honest broker' information on IT and software difficult to access or expensive to access. This places a high dependency on information from friends or informal networks, rather than formal networks. Our findings also suggest that representative associations do not fulfil a role in this area, or are resource constrained in what they can do.

More recently intermediary agencies and private sector software providers have sought to fill the gap. The NTTS has been used for running awareness seminars, albeit in the manufacturing sector and HKPC has established the SME centre and operates the Software Industry Information Centre.

There are varying degree of support under the umbrella of awareness. Our analysis suggests that there is a need for Government support in this area and six initiatives are proposed for consideration:

- Project A: Good practice dissemination: Good practice dissemination of IT at the general systems level and also in the area of sector specific software needs. The development of template materials of what an 'IT smart' firms would employ in its business processes;

- Project B: IT outreach counsellors: IT outreach counsellors pilot scheme in conjunction with industry associations to develop more effective bridging between firms, associations and IT support intermediaries;

- Project C: Hotel sector software conference: Measures to promote availability of software systems for hotels and travel agencies;

- Project D: Executive level IT seminar programme: to promote IT benefits to directors and owners involved in running businesses;
- Project E: IT awards: IT awards for adopting best practice (already submitted to the HKID);
- Project F: Financial services innovation lecture to raise the profile of the importance of IT in the sector; and
- Project G : Attitude tracking survey to measures the changes of programmes over time.

4.3.3 *Programme 3: Increasing IT skills*

Education and training is a key feature in any strategy to ensure an appropriate level of IT adoption. Countries are moving towards the concept of learning organisations which can make the most of IT inputs to the business process. The availability of basic skills across the general workforce, qualified IT professionals and access to ongoing and up to date training play a fundamental part in IT adoption rates.

The IT industry is fast moving and therefore presents special problems in intermediaries keeping up to date with industry requirements. This tends to lead to a perception of dissatisfaction with providers of training - mainly Government educational institutions. This is a general issue faced by all countries. The study results have highlighted a number of concerns over the existing level of IT education and training provision. This includes the tight labour market in particular the supply of IT professionals at a Graduate level, poor communications between industry and colleges in the development of courses and concerns over the appropriateness of VTC courses, as well as cost and lack of up to date topics in the syllabuses offered.

Four initiatives are proposed:

- Project A: IT Graduates : Development of IT graduate's industry awareness through curriculum development;
- Project B: Vocational skills enhancement - increasing the supply of qualified IT professionals through the introduction of an *IT fast track* vocational training scheme; and
- Project C: Increasing in-company IT skills levels through the introduction of a grant scheme to encourage training.

4.3.4 *Programme 4: Appropriate IT adoption*

There is a reluctance on the part of companies to adopt appropriate technologies for multiple reasons of cost/benefits perceptions, short term business culture and in certain sectors ownership patterns. These problems are found in all sectors and sizes of companies, but are generally more severe the smaller the size of the company. It is also more acute in Hong Kong because local business culture tends towards the shorter term.

Experience of existing intermediaries working with smaller firms has highlighted the difficulty of firms being receptive to support to bring forward new technologies. It suggests that change programme will take a long time to effect. In order to enhance adoption and the competitiveness of Hong Kong there is a need to use of mix of pilots

and demonstrations within priority sectors to heighten the benefits of technology transfer. The level of support and mode of delivery will vary by sector and firm type but broadly takes the form of bridging the perception and cost gap.

Direct forms of support should be specified, time limited and subject to ongoing review. The purpose will be to seek to effect change through firm level pro active support, but not to generate an ongoing dependency culture. This programme includes the following proposed initiatives:

- Project A IT starter consultancy support: technology starter pilot consultancy support scheme to SMEs. A focus of the scheme would be EDI take-up support to firms to encourage a review of the role of EDI across the whole supply chain function.

4.3.5 *Programme 5: Developing the IT sector*

There has been much concern raised over the quality of the IT industry and the need to develop standards. This includes the development of IT professionals to play a full role in business development as well as the enhancement of the quality of local software provision.

A key problem is a weakness in the supply side of the software and IT support industry. This was the subject of a separate study by the industry department in 1995 and the main conclusions were that the industry was that the small market size, local cost of skilled labour and firms being undercapitalised presented major constraints. Our study has again found that private sector firms are in many cases reluctant to contract out technical support due to both cost and quality of service factors. Where firms contract out services then overseas providers are often used. This programme includes the following initiatives:

- Project A - IT and Quality assurance: formation of a task force to support the development of local software vendors to meet market demands and compete internationally; and

- Project B - IT Managers Professional forum: to promote a more cohesive professional forum for IT managers.

4.4 Framework

This section provides summary sheets for the programme measures. Each measure has a basic description of the problem identified, the form of initiative proposed to tackle the issue, the target group or sector, key players that could be brought to bear to deliver or co-ordinate the programme measure, expected outputs, funding and risks.

Programme	**Projects**	**Partners**
Programme 1: Government leadership	Project A Government IT outsourcing study	Government
	Project B Government standardisation	Government/professional bodies
Programme 2: Increasing awareness of IT	Project A IT Good practice dissemination	HKPC SME centre/SIIC/Private sector
	Project B IT outreach counsellors pilot	Government/Trade Associations
	Project C Hotel sector software conference	Government/SIC/HKTA/ARTS
	Project D Executive level IT seminar programme	Government/Trade Associations
	Project E IT awards (already submitted)	Government
	Project F Financial services innovation lecture	Government
	Project G Attitude tracking survey	Government
Programme 3: Increasing IT skills	Project A IT Graduates	HK higher education/Associations
	Project B Vocations skills	VTC/Associations
	Project C IT Skills 2000 plus	Government/VTC/educational institutions
Programme 4: Appropriate IT technology adoption	Project A IT 'starter' consulting support/ EDI take-up support	HKPC/HKANA/Private sector consultants/HKPC
Programme 5: IT sector development	Project A Quality assurance support in software firms	Government/software sector/HKPC
	Project B Professional forum	Associations/HKPC

4.5 Action plan

4.5.1 *Introduction*

The above section has outlined a number of possible project areas by programme type. This section outlines a way forward for HKG in formalising an *IT strategy* by setting out some of the key actions that need to be taken. Strategy is a living concept and is about doing it. This study has sought to explore a wide range if issues across a large number of sub-sectors and therefore represents only the start of the process.

4.5.2 *Actions*

Action 1: building consensus - the measures outlined in this report need to be debated by a wider audience to develop consensus on the proposals and build a coalition between industry and Government. An executive summary of the report should be disseminated and comments requested by the end of 1998. The comment and discussion phase could be established on the internet through using a *GO HKIT FORUM* site.

Action 2: adoption of IT strategy - HKG should announce the formal launch at the start of 1999 of the *'Making IT work'* strategy. The government department responsible for monitoring the strategy campaign should be announced.

Action 3: strategy framework - we have identified a series of measures that we recommend should form part of the IT strategy. The building consensus process may add more or refine measures adopted. HKG will need to agree the framework, programme heads and new budgets or transfer/use of existing budgets. The output of this phase will be an IT strategy framework which should outline for 1999 - 2002 (i.e. the first three years) the following:

- programme heads;
- project areas;
- budget;
- lead organisations/partners;
- expected intermediate outputs (i.e. number of firms assisted, seminars run etc);
- timescale; and
- evaluation process (i.e. pilot reviews etc).

Action 4: strategy implementation - the above process should lead to an agreed set of programmes and projects to be executed under the strategy. Based on our analysis at this stage we recommend the following mix of actions in the first year across the five programme areas. This mix incorporates some early wins to raise the profile and demonstrate Government leadership of the strategy and also the design and establishment of significant programmes that businesses can tap into.

These are:

- Programme 1 : Government leadership

Project A: Announce **target** for Government business to be undertaken electronically having established estimate of baseline. Request all government departments to prepare individual action plans to work towards the target and estimate budget cost implications.

Project B: Set target date for contracting out opportunities review and subsequent plan for additional contracting out of government services over the next five years.

- Programme 2: Increasing awareness of IT

Project F: Government agrees to host the Financial Services Innovation Lecture 1999 with banking and insurance associations.

Project G: Develop design of annual survey specification with statistical division of Government.

- Programme 3: Increasing IT skills

Project C: Design SME IT 2000 technology support scheme and implement pilot programme.

Project B: Design and develop IT 'in college' scheme with education sector and industry bodies.

Project A: Education sector IT review.

- Programme 4: Appropriate IT adoption

Project A: SME IT starter Pilot scheme.

- Programme 5: Developing the IT sector

Project A: Progress review on software sector development after completion of model development project. Develop roll out of Quality Assurance across the 500 ISVs.

Action 5: annual review process: the responsible department will report back to the responsible committee and ultimately the public on the outputs of the strategy and the necessary adjustments to programmes or project areas.

5 Annex : Programme details

5.1.1 *Programme 1 - Project A: HKG Outsourcing*

Project A

A study to assess the potential impacts on the Hong Kong IT labour market of the outsourcing of Government IT services.

Rationale

A major issue identified through many of the focus group sessions and face-to-face interview programme conducted was the problems of supply side constraints in the IT labour market. An important element of this problem is considered to be linked to the "crowding out" effect of government demands for IT staff. In part this was felt to be a function of the better terms and conditions offered by Government as well as the volume of IT staff required by Government given the variety and complexity of its IT systems.

Form of initiative

Outsourcing is well advanced in many countries for major government functions. For example, the leading IT services company EDS is alone responsible for IT systems of NATO, the US Defence Department, the UK Inland Revenue and the Italian Ministry of Education proposed among many others. This highlights that nearly all departmental areas have seen IT outsourced. The US and UK have led the way in this field. The process can be difficult and many lessons have been learnt over the past 10 years. The cost-benefit of outsourcing again varies from case to case. In the UK form example earlier estimates of central government IT outsourcing estimates 25% costs saving (Source OECD Economic Outlook December 1993). The case in favour of detailed examination of outsourcing has been proven with most government services subject to market testing to ensure internal efficiency is being achieved. It is not exception and indeed is inherently an area where economies of scale can be found.

The Hong Kong Information Technology Services Division under an outsourcing project started in October 1997 has as one of its six main objectives 'developing an outsourcing and contracting strategy' in order to stimulate and harness the IT industry. At present there is not strategy statement in this areas and we would concur with the ITSD that it is an important area to develop and should brought within the scope of the IT Strategy Framework.

A study should therefore be completed within Government assessing the extent to which large scale or piecemeal outsourcing of IT services by Government would be effective at reducing the Government's demand on the IT labour market; creating greater mobility and opportunity for skills to be transferred across the IT labour market; assessing the potential benefits of new (international) outsourcing companies increasing their presence or helping to develop a domestic company base in IT service provision. This is in line with the current initiative by the ITSD which is exploring the feasibility of adopting an IT outsourcing arrangement for provision of IT services to the Government Departments and Bureaux.

Key players

The study would need to be run by the Government with external consulting assistance and perhaps involve a number of other Government departments that are in the process of thinking about, or actually contracting out, their IT functions.

Expected outputs

The study could provide a framework for a policy on outsourcing of IT if this was deemed to be the best way to proceed. Any outsourcing initiative that followed could then be shaped and assessed to ensure that it was meeting the objectives that the study had identified. There would also be cost savings benefits to Government in the long run.

Financing

The study would need to be funded by Government.

Risks

There is already agreement under the ITSD outsourcing initiative for this type of review. The study would need support form the very top of Government. If the study produced results that were controversial, these issues would have to be dealt with on a continuing basis. It is likely that the study would need to explore policy options to ensure that local IT businesses would benefit from outsourcing; not just large overseas firms.

5.1.2 *Programme 1 - Project B: Government standardisation*

Project B

Government standardisation of electronic interchange.

Rationale

The Government through its contracting and regulatory relationships with the private sector is in a position to encourage the adoption of new technologies. Progress has been made in certain departments, for example, the Inland Revenue department. However, there are departments that lag behind in their use of electronic interchange and standard formats. For example, in professional building services some Government departments are said to insist on paper copies, while other departments are using different packages for CAD/CAM requiring supplier firms to hold multiple packages.

Form of initiative

Government departments could be requested to review the way they interface with the private sector and present the implications of moving towards systems that are standardised and make maximum use of electronic interchange. Tendering procedure in Government contracts can seek to set standards of formatting to drive adoption in the market. This is a feature that has been developed in the UK and is now built within the contracting process, and is also key to Japan's IT policy drive where the introduction of systems in the public sector is seen as a key driver in private sector. The work could be undertaken as a consulting study to provide a more independent view.

An outcome of the process would be the establishment of a target for all processing with external parties to be conducted electronically by a certain date. In the UK, for example the new government has set a target of 25% by 2002 - an indicator of how low is currently is and the scope for improvement. This initiative can be facilitated by the ITBB's recent target to develop an electronic service delivery system for public services.

Target

Professional building services in use of CAD/CAM/other professional services/other sectors.

Key players

Government department and professional associations in communicating the costs to business in not standardising IT systems.

Expected outputs

Cost savings and pressure on firms to move up the technology curve.

Financing

There would be an impact on Government's IT budget as a result of a move to common packages. This will need to be costed by departments and reviewed by Government in the context of its existing IT budget. It is beyond the scope of this study to estimate the increased cost to Government.

Risks

Impact on smaller firms through exclusion from bidding for contracts. Need to provide support to bring up standards by affected contractors.

5.1.3 *Programme 2 - Project A: Good practice dissemination*

Project A

Good practice dissemination.

Rationale

There is a lack of awareness of how technology can deliver effective solutions for business and what best practice standards are. There is also a reluctance to consider additional investment in IT due to a mix of factors including lack of awareness of the benefits of increased technological inputs. Across all services sector companies surveyed there was an interest in access to information on IT and software related issues.

Form of initiative

The dissemination programme will be based around a series of events as appropriate to the different sectors. This includes roadshows, seminars, publication flyers, visits to exemplar companies. It would include the benefits of general technologies such as communications and specific technologies related specifically to sectors. Such support is almost standard across many competitor countries.

Areas to consider include:

- making IT investment decisions - key issues to consider;
- effective selling through the internet (tourism focus);
- getting the most out of EDI (retail and I/E focus expanding on HKANA work); and
- hotel sector specific software options and benefits (SME hotels).

These are suggestive. The IT outreach counsellors would be able to play a role in developing materials and the areas of importance as knowledge and understanding is built up. Good practice materials develop overtime the important issue is having the structures in place to deliver dissemination that is focused and monitored.

The materials would need to be developed by appropriate sector bodies who would solicit information form IT vendors/software companies.

Target group

The target group is SMEs. Priority sectors include import/export/hotels/travel agencies/retail.

Key players

Some existing outreach work is undertaken by agencies such as HKANA, Tradelink and HKPC SIIC. The delivery of the good practice dissemination programme would be by private sector or trade associations, using the proposed IT counsellors. The good practice materials could be developed by existing providers of information of this type building on existing experience.

Expected outputs

Greater awareness of what level of technology to adopt for a given sector. Appropriate firms can also be directed to further levels of advice, in the private sector or through the proposed public sector scheme.

Financing

The initiative will require funding by the Government for materials and research and the programme of events.

Risks

No major risks identified. The quality of information provided needs to be high to lend credibility to the overall Government backed IT support programme.

5.1.4 *Programme 2 - Project B: IT 'outreach' counsellors*

Project B

IT 'outreach' counsellors pilot scheme.

Rationale

There are weaknesses in the IT liaison processes to raise awareness of IT developments at the sector or trade association level. Awareness of IT is currently undertaken by private sector vendors, the newly established SME centre and the Software Industry

Information Centre. Some professional associations also have a contact officer with responsibility to raise awareness of technology developments (for example the Institute of Engineers and the HKTA in the area of multi-media applications). However, our study has found poor referrals processes from trade associations to potential support organisations and an inadequate volume of support in relation to the scale of the problem.

Form of initiative

Many countries have lead officers for technology issues based around some business support intermediary organisation. In the UK each area based 'Business Link' provides a resource base with appointed technology counsellors. The Business Link service is targeted at smaller firms that may lack the necessary in-house skills and wish to gain a independent view. Business links are also focused on growth and competitiveness and see the important role that IT plays in overall competitiveness.

IT counsellors therefore act as a bridge agents that can deal as a first port of call on issues and refer firms in the right direction. In some cases they can act as outreach agents making visits to firms to increase awareness within target sectors where problems have been identified.

The UK Government provided funding of around £ 12 million in 1996/7 to support 4,250 firms through 40 counsellors. This represents case loads of around 100 per counsellor.

In Hong Kong for the past year the HKPC has employed some 13 counsellors on a sectoral basis. These counsellors are based within HKPC and are focused on dissemination of best practice IT. Of the 13 only one officer has responsibility for dissemination in the services sector.

There are different models of how IT counsellors operate. The choice of location often depends on the existing supporting infrastructure - primarily for smaller enterprises. Where fragmentation exists for historical reasons of how support has grown up then a focus on establishing effective networks becomes important. In Hong Kong the HKPC has been the main body undertaking such initiatives. We would recommend that the pilot be closely aligned with the industry associations as it a sector focus that we wish to develop. They would act as outreach officers and undertake general awareness as well as firm level support. They should have an effective core base to feed off and a critical mass to develop appropriate cross sector initiatives. This could be provided by the HKPC which already has a base and experience of such support work.

The establishment of a number of IT lead counsellors that would specialise in sectoral technology issues and operate from/within trade associations and with existing intermediary organisations. It is envisaged at this stage that a pilot be established with five officers based around the clusters that we have short-listed in this study: import/export (1), tourism (1) and professional services (1) with the exception of financial services cluster. If the pilot is found to be successful, the initiative could then be extended to include the rest of the service sectors. At this stage we would see the pilot extended to 10 counsellors in year 2 and year 3. This would be distributed as import/export (4), tourism (4) (distributed over the sub-sectors of retailers (1), hotels (2) and travel agencies(1)), professional services cluster (2) to work across accounting and legal services, building services and advertising.

Target sectors

Hotels (medium sized)/travel agencies/import-export and freight forwarders/retail sector.

Key players

HKPC and/or lead associations for the industry clusters or other representative groups.

Expected outputs

Each IT counsellor will be involved in sector based awareness measures, generation of ideas, research programmes and referral work. The output will be measures in terms of number of referrals and subsequent take-up of technologies.

Financing

The main costs are the employment and supporting administration costs. A mixed contribution from key players could be sought.

Risks

The posts impact will be very dependent on employing the right skilled people that can network effectively within existing provision and be pro active.

5.1.5 *Programme 2 - Project C: Software awareness in hotel and travel Project C*

Measures to promote availability of software systems for hotels and travel agencies.

Rationale

There is a general lack of local support for software in Hong Kong in these sectors. This is partly due to a reluctance by hotels to invest in new software systems, particularly in the medium-sized sector (between 100 and 200 rooms) and a large number of small travel agencies that have neither the knowledge or in some cases the resources and expertise to invest in IT systems.

Some of the larger hotel chains are understood to tend to leave Hong Kong to the end of any international software renewal programmes. Other hotels, at the smaller end of the market have no real IT systems and no contact with suppliers of any description.

Form of initiative

An initiative to generate profile and interest in Hong Kong as a place to sell software and systems as well as raising the awareness of potential purchasers could be put together. This might take the form of:

- hosting an international tourism/hotel congress on IT and inviting vendors and potential purchasers to attend; combined with;
- hosting a major international conference on developments of software in the tourism sector.

Key players

The key players are likely to include the HKTA as well as the Hong Kong Hoteliers' Association and the IT Federation, representatives from some relevant software bodies and other international institutions for example the World Tourism Organisation. The programme will also need to attract leading international software manufacturers and possibly some of the bigger hotel and travel agencies (which could provide examples of their best practice at an exhibition/conference and use the event for publicity purposes). The TDC also has experience to draw in organising such events.

Expected outputs

Raised awareness of software in the sector and better take up of software by hotels and travel agencies.

Financing

The Government might wish to subsidise the cost of attendance for exhibitors, speakers participants and delegates. In addition, the government might wish to provide benefits in kind (such as secondment or free/subsidised use of conference or exhibition facilities). It might also wish to consider providing cash grants to the relevant trade associations involved. There is a potential, however, for this to be self-funding through normal commercial charging.

Risks

The main risk would be a lack of interest in the Hong Kong market and therefore the project failing to meet its objectives.

5.1.6 *Programme 2-Project D: Executive/owners awareness of IT*

Project D

Promote IT benefits to directors and owners targeted at specific sectors (such as the tourist cluster) as well as large private sector organisations.

Rationale

Whilst on the one hand it is generally recognised that IT managers need to gain better knowledge and understanding of wider business practices, it is also widely considered that those who have the final say about IT investment or business processes often regard much of the technology as being either simply another cost or with considerable suspicion. This information failure leads to poor business investment decision making and a general lack of understanding of the potential benefits that could be exploited from smarter use of existing IT infrastructure and programmes or new investment.

Form of initiative

To provide the target group with the opportunity to learn about the benefits and experience using IT. A rolling programme of roadshows and talks could be organised by a combination of the IT professional forum (proposed as a separate initiative - Programme 5, Project B) or by a Government agency delivered through other professional associations or bodies that executives are already members of. In addition, conferences or other events that the group in question normally attend could be used to

provide a "safe" forum for business people to "play with IT" and find out more about its uses and advantages.

In many countries it is standard to have such awareness measures - often promoted by the private sector software vendors. For example, the Financial Times on 2nd September provides a good example of a high level IT awareness function aimed at senior executives in major enterprises.

Key players

Existing professional organisations and IT promotional and professional bodies. If the programme were general issues the HKCS may be appropriate, if sector specific and in say, tourism the HKTA may be an appropriate organiser. If import/export the trade associations and HKPC may be appropriate bodies.

Expected outputs

The benefits of this type of activity are likely to be realised over the long term. The activities identified would aim to ensure a better understanding of IT developments and its role in the executives' businesses to ultimately ensure more effective decision making leading to businesses with more competitive advantage. A key indicator might therefore be a greater willingness on the part of executives to invest in better IT systems. Higher general awareness and more effective communication between decision-makers leading businesses and their IT counterparts would also be anticipated to flow from this type of activity.

Financing

The Government might wish to contribute toward the cost of providing roadshow initiatives or provide benefits in kind to those charged with organising activities and events.

Risks

As with a number of the other suggested awareness programmes, the main risk would be failing to generate serious interest in the project. Tracking and monitoring the impact of the programme on attitudes within the target group in order to consider how to change the programme of activities or indeed to curtail it might be considered desirable.

5.1.7 ***Programme 2 - Project E: IT best practice award scheme***

Project E

This type of initiative is already being taken forward by the Hong Kong Computer Society and has received the support of HKID. It might be useful to suggest to the HKCS that they have one award specifically for the service sector.

5.1.8 ***Programme 2 - Project F: Financial services innovation lecture***

Projects F

Raising awareness of innovation in financial services.

Rationale

There is a reluctance to invest in IT in segments of the financial services sector. This is due to a mix of factors including poor relationships between IT strategy and business planning. This manifests itself in a poor understanding of the benefits of IT on the part of managers and also what can be seen as inability to produce business plans of any quality to support IT investment decisions. The sector, however, is crucial to the economic prospects of the economy in such circumstances government will wish to support the sector in an appropriate way if it is operating below the IT industry curve.

Form of initiative

The sector is very sophisticated and consists of organisations that do not see a direct role for Government in dealing with IT related issues. However, the sector is important to the economic base of Hong Kong and an appropriate response should be considered by Government (the IT labour market is on of the most important to the sector). While the large international and local banks have adequate resource in IT investment, the smaller local banks may be reluctant to invest on IT even though this may be essential for them to remain competitive and stay in the market. As a direct measures it is proposed that an Annual Innovation in Banking lecture hosted by a senior government official to promote IT in the sector.

Key players

Government, large vendors and financial institution associations.

Expected outputs

Very high profile of the importance of IT issues in financial services.

Financing

Banking associations and Government could support the event.

Risks

None.

5.1.9 ***Programme 2 - Project G: Attitude tracking survey***

Project G

An annual IT attitude-tracking survey amongst leading business executives in Hong Kong.

Rationale

General awareness about the role of IT in creating business competitiveness is regarded as poor in Hong Kong, particularly amongst the senior business community. In addition there is a general lack of understanding as to how effective existing initiatives are likely to be.

Form of initiative

An annual survey of business executives' attitudes to IT would help the government to both publicise the importance of the IT issue as well as to see how attitudes were changing in response to the awareness programmes and publicity being resourced as part of government strategy. It is quite common for similar surveys to be undertaken in other parts of the world, often on specific forms of technology, such as uptake of the internet and EDI. KPMG itself conducts large scale annual surveys of executive directors in the area of IT take up. For example firm undertakes a yearly UK based survey of Marketing Directors, covering issues to do with the development of Internet services and products. Year on year results and changes are then presented in the report.

Key players

The initiative would require a sponsoring government department and market research agency. In addition, sponsorship of the survey might be forthcoming from a leading hardware or software manufacturer.

Expected outputs

An annual survey report, with associated publicity would be the key output. Its findings could be used by government for use in its reports, speeches and policy development programmes.

Financing and funding

Initially the government would probably have to fund the survey. Over time, it might be possible to attract sponsorship. In any event, it is unlikely to be a very costly initiative.

Risks

If it became apparent after a number of surveys that attitudes were simply not changing or were in fact becoming less favourable towards IT, this might be a potential source of embarrassment to the Government. However, it is unlikely that all the survey findings would be "bad news." In any event, if there were problems with the survey or its findings, the Government could simply not publicise the findings or discontinue the activity.

5.1.10 ***Programme 3 - Project A: IT Graduate skills***

Project A

Development of IT Graduates' industry awareness through curriculum development.

Rationale

Many sector representatives raised concerns over the lack of business education and sector specific awareness modules in the syllabuses of IT higher education courses. Some universities are responding with joint IT and business courses (e.g. HKU and City University). However, there is a perceived need to introduce modules across a range of courses. Some sectors raised this a significant issue affecting their IT functions, for example the financial services sector, where the need is for IT managers and not solely technical experts. A greater emphasis on communication skills and business awareness is required.

The shaping of general educational programmes to the needs of business is an issue raised in most countries. In order to effectively develop a syllabus there is a need for communication between industry and educational institutions and in some cases specific measures to incorporate optional components that are of interest to specific industries.

Form of initiative

Industry associations and the higher education sector convene a seminar to explore and discuss the development of courses with invitees from local and overseas universities that have developed courses in close consultation with industries. This may lead to more formalised relationships for planning graduate needs that reflects industry demand.

Target

The main targets are the high users of IT graduates, including banking and insurance.

Key players

Associations and educational sector representatives and the UGC.

Expected outputs

The output would be a stocktake on industry needs at this level and provisional views on the best regular form on cross industry/education training developments. The output could feed into the review of higher education and future planning of volume needs.

Financing

Government (UGC), associations and the education sector could sponsor the event.

Risks

Low.

5.1.11 ***Programme 3 - Project B: Vocational skills enhancement***

Project B

Development of IT studentship scheme (in-company) to assist in filling the market for skilled IT professionals and "retreads" (graduates that have qualified in other subjects and wish to move into IT).

Rationale

There is a general shortage of IT professionals make more difficult by the year 2000 bug. This places pressure on wage costs and turnover of staff in a fast market. Some countries and companies have sought to tackle the problem through a mix of studentship or apprenticeship schemes and the retraining of "retreads" through fast track programmes. EDS has recently embarked on such a set of training initiatives in the face of a tight labour market.

Form of initiative

The university and vocational system has been expanding its provision of IT graduates and technicians over the past five years. However, firms still face difficulties in recruiting IT staff and this would appear to be an issues for the foreseeable future based

on manpower projections. This issue is not specific to Hong Kong but is an industry issue world-wide.

This initiative proposes the introduction of an IT studentship to enhance existing provision with an emphasis on quality training in company with college support.

Key players

Larger companies and educational establishments.

Expected outputs

Increased volume of qualified IT professionals to ease the constraints on technical support staff.

Financing

Government training support as a skill shortage area.

Risks

Low. There is a need to co-ordinate initiatives with Manpower planning at VTC.

5.1.12 ***Programme 3 - Project C: IT skills 2000 plus***

Project C

To encourage the take-up of IT training within smaller enterprises and to educate the workforce as to the benefits of IT in the workplace.

Description of problem identified

Smaller enterprises are more dependent on the general IT skills of the workforce to exploit technologies as they do not have the scale to employ dedicated IT professionals. At the same time they are likely to under-invest in IT training due to the costs of courses and the opportunity cost of time.

Form of initiative

This project aims to offer, at a discounted rate, basic IT awareness courses for existing employees within SME enterprises. The course would be aimed at employees in SMEs that have with a need to more fully understand the impact and potential of basic applications on the development of the business (including the value of basic software, the internet, multi-media, communications such as networking and EDI). The course programme could be run at two levels; for employees with an interest in understanding the basic applications and for employees that have a basic knowledge and wish to develop this further.

Target groups

Employees across SME enterprises.

Key players

Educational and training establishments. There will be a need to devise a syllabus that fits the need of delivering a high level of awareness for employees to follow through

with more specific courses. Institutions are already offering course along such lines although often dealing with more topics in greater details.

Expected outputs

Higher awareness of basic IT by employees across smaller enterprises. The aim of the programme would be to offer all firms in the target sizeband range a opportunity to bring employees up to speed with IT developments. Firms would need to contribute in the form of release of staff for day sessions.

Funding

Government grant towards actual cost of scheme refundable after completion of training course.

Risks

Smaller enterprises are reluctant to release staff for training courses. The delivery of courses may well be critical to take up with flexibility required on the part of training institutions as to where and when courses are run.

5.1.13 *Programme 4 - Project A: IT 'starter' consultancy support*

Project A

IT starter consultancy support scheme to SMEs.

Rationale

Smaller enterprises are reluctant to enter in the first stages of computerisation due to a variety of barriers including information failure, cost of capital equipment and uncertainty over appropriate software. Smaller firms require hands on support in developing their IT capability as they do not have an in-house IT resources to draw on. Further, firms with only a basic infrastructure capability tend to under-utilise IT for business advantage.

Form of initiative

The initiative aims to provide a package of support for SME enterprises in selected sectors to support a move to entry level in using computers or provide support in maximising the use of existing technologies. This support on offer would cover a diagnostic review, systems/software selection, and implementation and training (basic provision and signposting). The initiative would offer free advice at the diagnostic stage and a subsidy for implementation. The aim is to support the development of computerisation to provide a basic firm level IT infrastructure to build on.

This model of support was common in the UK before the advent of the Business Link SME support services and is a feature of support programmes in countries such as Singapore. Models of tapering support over time or up front support followed by normal services from lower cost vendors can be examined. Such support provides more in-depth

support for firms that are marginal about their IT investment but with an relatively small investment will bring this forward. The area of marketing was once seen in a similar way with firms reluctant to buy marketing services.

Target group

The scheme will need to be targeted effectively to maximise value for money for Government. The priority segments identified are: import/export, travel agencies, hotels and certain retailers. The target size band of companies is under 20 employees.

Key players

There are already organisations with experience of delivering support programmes in certain sectors, most notably Tradelink and HKANA. They are aware of the difficulties and requirements of smaller enterprises. The initiative could be operated by HKPC SME centre, but utilise the resources of the private sector to deliver the support programmes under contract agreements.

Expected outputs

The output will be practical package support to SMEs with demonstration effects for the wider SME community. Dissemination of the benefits of the programme to the business community will be key output.

Financing

The initiative will require funding by the Government. The scheme has a target population that is large and therefore would need to be capped in any year.

Risks

Firms have shown a reluctance to use other support schemes even when offered free. The scheme would need to run on a pilot basis to establish the outreach working mechanisms to increase take-up. The pilot would aim to shape the best way to operate the scheme using private sector organisations.

5.1.14 *Programme 5 - Project A: Quality assurance in software firms*

Project A

Quality assurance measures to support the development of the software sector.

Rationale

This study has received widespread views on the extent to which the local software sector operates below expectations. This relates to the scope and quality of provision. Since HKID examined the sector fully in 1995 the SIIC has been established. Overseeing these problems require a series of combined measures and will require co-ordination having agreed the role of Government in its development.

At present the Government is sponsoring three initiatives under the Industrial Support Fund aimed at improving the software sector. This has covered : promotion of the importance of quality, training on software quality related topics and development of a model for Hong Kong on Software Quality Assurance (under ISO 9001). These measures are important developmental initiatives which are helping to provide the basic understanding of problems and the type of effective support over the longer term to

develop the HK software sector. The current initiative is considered to be adequate and similar effort should be continued to promote the quality standard in the software sector.

5.1.15 *Programme 5 - Project B: IT professionals' forum*

Project B

Improving general business know how of IT professionals through using existing professional and business association(s) to provide a focus for IT mangers.

Rationale

Professional bodies such as HKCS see the need for an additional emphasis for IT professionals as business managers building on existing organisations. There is a lack of opportunity for IT managers to meet and discuss issues of common professional importance with each other and for them to be represented in discussions with other trade bodies or indeed with government. This impedes both the professionalisation of the IT labour force and its opportunity to learn about new developments in business and inform Government policy. The need to expose more IT professionals to wider business issues and for them to be encouraged to play a more active role in the development of their companies is a recurrent theme affecting many parts of the service sector.

Form of initiative

To establish IT professionals forums for different sectors (e.g. hotels/tourism, retailing/restaurants etc) through HKCS or the IT Federation.

Key players

The key players are likely to include professional bodies and organisations. They could be used to promote the new forum and encourage relevant members to join. In addition, tertiary educational bodies could also be involved to assist in feeding graduates into the association.

Expected outputs

A forum for IT professionals within (for example) three years of being launched providing a platform for a vocal and cohesive professional body covering the IT manager population. Greater awareness and understanding of the needs of businesses across the economy by members of the association combined with better knowledge of issues from the IT professionals' perspective should be aimed for. In addition, a concerted attempt to forge strong links with other professional associations should be made.

Financing

Depending on the choice of organisational structure selected, the government might wish to provide it with start-up funding. This could be used to help the organisation to obtain office space etc as well as contribute towards the costs of either programmes of events and/or the cost of membership of the association.

Risks

The key risks associated with this type of venture is that it will either fail to gain interest at the beginning or after one or two years the number of members (actively) participating will fall.