PRICEWATERHOUSECOOPERS

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Miss Eva Cheng
Deputy Secretary
Information Technology and Broadcasting Bureau
1/F Murray Building
Garden Road
Hong Kong

19 January, 1999

Dear Ms Cheng

Appraisal of the options for developing a Cyberport

Pacific Century Group (PCG) appointed PricewaterhouseCoopers to assist with the evaluation of various options for developing and implementing a Cyberport in Hong Kong. In particular, we were asked to help PCG and its advisers assess the options against the criteria outlined by Government.

I have pleasure in attaching five copies of the report that we have prepared. In the report we have:

- collated the information and evidence available to PCG and its principal advisers, Larry HC Tam & Associates, Levett & Bailey, Wong Tung & Partners Limited and ourselves;
- prepared sets of cash flow projections for two of the options under consideration based on assumptions provided to us by PCG and its professional advisers;
- elaborated the potential economic costs and benefits of each of the options; and
- sought to ensure the consistency of the evidence that we have presented in the report.

The assumptions for the financial analysis are based on the experience and expertise of PCG's management and its professional advisers. Based on these assumptions, we have endeavored to ensure the mathematical accuracy of the cash flow projections that we have prepared.

If you have any queries or questions on the report, please do not hesitate to contact me.

Yours sincerely

Mark Ambler
Director

Appraisal of the options for developing a Cyberport

January 1999

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Appraisal of the options for developing a Cyberport

Introduction

The purpose of this paper is to extend the comparative analysis of the three different options for developing a Cyberport in Hong Kong which have been discussed by Government and Pacific Century Group (PCG). As such, the paper is intended to develop the initial analysis set out in Alex Arena's letter to Eva Cheng dated 8 January by presenting the evidence available for each of the assessment criteria identified by Government.

Cyberport implementation options

This paper considers three possible options for implementing the Cyberport project:

(a) **Option 1 - A Private Sector Led Development (a Public Private Partnership).** Under this option the Government would allow the private sector to develop the entire site originally proposed by PCG for the Cyberport. About two thirds of the site would be used for the Cyberport itself which would be developed by the private sector and operated by a management company or a corporation with specific responsibilities to the Government. Funding of the development of the Cyberport element would be via sale on the open market of a residential development on the rest of the site.

(b) **Option 2 - A Government Led Initiative.** Under this option the Government would be responsible for funding, building and operating the Cyberport. The Cyberport would be developed according to the outline plan originally submitted to Government by PCG in September 1998.

(c) **Option 3 - A Corporation Led Initiative.** Under this option the Government would establish a Corporation to build the Cyberport. For the purposes of the analysis, the physical development is assumed to be similar to Option 2.

Whilst there are other options which could be pursued, and those that have been considered have several possible variants, the three options above cover the broad spectrum of possibilities.

PCG has focused its efforts on developing its ideas and plans for Option 1. This means that, although the paper considers all three options, more detailed information is available for Option 1 than either of the other options.

Assessment criteria

Each of the options has been assessed against the criteria outlined by Government:

(a) the use of land;

(b) the management structure and responsibility;

(c) the timetable for the development programme;

(d) the design and planning of the project;

(e) the attractiveness of the development to prospective tenants;

(f) the financial costs and benefits of the development;

(g) the overall economic costs and benefits of the project to Hong Kong; and

(h) the impact on the Hong Kong SAR Government.

Each criterion is considered in turn.

Use of land

If the development of the Cyberport were to be led by the private sector (Option 1), the proposed use of the 26 ha of land at the site would be as shown in the table below[1].

Option 1 - Land use at Cyberport site

	Cyberport (sq. m)	Residential development (sq. m)
TOTAL	**160,820**	**98,566**

On the other hand, if the development were to be led by either the Government (Option 2) or a Corporation (Option 3), the project would not involve the separate residential development that features as part of the Private Sector Led Development option (Option 1). Indeed, for the purpose of the subsequent analysis, we assume that the site would be developed in the way originally outlined by PCG in September 1998. This would mean that the entire site - 290,000 sq. m^2 - would be devoted to the Cyberport.

Under Option 1, the land use allocation gives rise to the development shown in the table below.

[1] This is based on the proposal put forward by PCG and data provided by Wong Tung & Partners Limited.

[2] The site was originally thought to be this size when PCG submitted its original proposal.

Option 1 – Development type by gross floor area[3]

	Cyberport (sq. m)	Residential development (sq. m)
Residential – low rise	28,945	14,500
Residential – mid/high rise	48,240	478,330
Commercial offices	115,778	-
Cyber mall	36,180	-
Serviced apartments	4,580	-
Hotel	7,477	-
TOTAL	**241,200**	**492,830**

In contrast, the developments created at the Cyberport site under Options 2 and 3 are shown in the table below.

Options 2 and 3 – Development type by gross floor area[4]

	Cyberport (sq. m)	Residential development (sq. m)
Residential – low rise	31,000	No separate residential development occurs under these Options
Residential – mid rise	121,500	
Residential – high rise	81,000	
Commercial offices	120,000	
Cyber mall	50,000	
Serviced apartments	7,500	
Hotel	9,000	
TOTAL	**420,000**	

[3] This is based on the proposal put forward by PCG and data provided by Wong Tung & Partners Limited.

[4] This is based on the original proposal put forward by PCG and data provided by Wong Tung & Partners Limited. It assumes a site area of 290,000 sq. m..

The key differences between the three options are summarised below.

Evaluation criteria	Private Sector Led Development (Option 1)	Government Led (Option 2)	Corporation Led (Option 3)
Use of land	• The Cyberport would be developed to provide a combination of residential, business and leisure facilities attractive to tourists • Some associated infrastructure development would also be required	• A Government Led initiative would result in less residential development than the Private Sector Led Development (Option 1) • Some associated infrastructure development would also be required although this would be less if there were no separate residential development	• The same land use pattern as Option 2 is assumed

Management structure and responsibility

The breakdown of responsibilities for the development of the Cyberport itself (rather than the separate residential development) under each of the three options is summarised below. In addition, under Option 1, the area of the site devoted to the residential development is assumed to remain in the ownership of the private sector developer.

Responsibility for Cyberport development

Respons-ibility	Private Sector Led Development (Option 1)	Government Led (Option 2)	Corporation Led (Option 3)
Design	• Private sector (subject to planning approval)	• Government (with some possible contracting out to private sector)	• Government or Corporation depending on how quickly the Corporation could be established and resourced (with some possible contracting out to private sector)
Construction	• Private sector	• Private sector under contract to Government	• Private sector under contract to the Corporation

Respons-ibility	Private Sector Led Development (Option 1)	Government Led (Option 2)	Corporation Led (Option 3)
Management	• Private sector • Management would be commercially oriented and sensitive to the development needs of the information services sector	• Government (although the work could be contracted out) • The management structure of the Project would depend on the outcome of lengthy institutional approvals	• Corporation (although the work could be contracted out)
Funding	• Largely private sector (except for some of the infrastructure works)	• Government	• Government
Ownership	• Government	• Government	• Corporation

Timetable for the development programme

There would potentially be significant differences between the three options in the timetable for development. The Private Sector Led Development option (Option 1) would be likely to lead to significantly faster development of the Cyberport than is possible under Options 2 and 3 for several reasons:

(a) the Government would find it difficult to complete all of the required external infrastructure development work as quickly as is desirable; under the Private Sector Led Development option (Option 1), a private sector developer such as PCG would be willing to assist with these works and, therefore, to expedite the project subject to satisfactory resolution of the associated commercial issues;

(b) the funding approvals required from the Legislative Council under both the Government Led and Corporation Led options (Options 2 and 3) would be more significant and, therefore, potentially more time consuming than if the project were implemented and funded by a private sector developer;

(c) if the Government decided to pursue the Corporation Led option (Option 3), it would need time to establish the corporate vehicle to deliver the project; again, this is likely to introduce additional delay; and

(d) both the Corporation Led and Government Led options (Options 2 and 3) would require an open tendering procedure to be initiated and this could add significantly, perhaps by two to three years, to the time needed to complete the project whereas the Private Sector Led Development option (Option 1) would enable all items of construction work on the project to be initiated more quickly, in late 1999.

Option 2, therefore, would result in an earlier completion date of the first phase of the project (late 2001). This is essential if Hong Kong is to be a credible location viz a viz its regional competitors.

The table below gives some indication of these differences by showing the expected (or potential) timetable for completion of the different phases of the Cyberport. Again, for the purposes of the analysis, no distinction is made between Options 2 and 3.

Phasing of developments (sq.m by completion date)

	Phase 1	Phase 2	Phase 3
Option 1	*2001 Q4*	*2002 Q4*	*2003 Q4*
Residential	-	19,296	57,889
Commercial offices	46,310	23,158	46,310
Cyber mall	-	18,090	18,090
Serviced apartments	-	4,580	-
Hotel	-	-	7,477
Options 2 and 3	*2003 Q4*	*2003 Q4*	*2004 Q4*
Residential – low rise	31,000	-	-
Residential – mid rise	24,500	-	97,000
Residential – high rise	-	-	81,000
Commercial offices	60,000	60,000	-
Cyber mall	-	25,000	25,000
Hotel & serviced apartments	16,500	-	-

These differences in the timetable for completion of the development between the options have a very important potential bearing on the success of the Cyberport project and its overall contribution to Hong Kong's long term development. This is explored further below.

Evaluation criteria	Private Sector Led Development (Option 1)	Government Led (Option 2)	Corporation Led (Option 3)
Timetable for Cyberport programme	• This option would be the fastest way to implement the Project as the institutional arrangements and decision-making processes would be streamlined. • While the Government may have to fund and complete certain site works, and this would necessitate Legislative Council approvals, these approvals could be obtained in parallel with the Project development and ought not impact the timing • The developer would also bear responsibility for contract negotiations with contractors and could expedite these processes	• Development occurs more slowly because planning approval takes longer and more time is needed to identify a developer/ contractor due to public tendering procedures • The institutional arrangements accompanying this option (e.g. Legislative Council approval) could also impose substantial time delays on this Project	• This option could be considerably slower to implement • In addition the institutional arrangements (Legislative Council approvals) could contribute further delays.
	Earliest completion date of first phase: End of 2001 or early 2002	**Earliest completion date of first phase: Year 2003 or later**	**Earliest completion date of first phase: Year 2003 or later**

Design and planning of the project

In terms of design and planning, the relative merits of the different options depend critically upon the skills, knowledge and expertise of those responsible for developing and implementing the concept. This is particularly so since the proposed Cyberport is unusual in various respects:

(a) the vision it embraces;

(b) the combination of uses it envisages;

(c) the understanding of different users' needs; and

(d) the commitment behind it.

One firm, PCG, is uniquely well placed to design and plan the project for several reasons:

(a) PCG has developed the vision for the Cyberport;

(b) PCG has first hand experience and understanding of the needs of the prospective users of the Cyberport since its business interests span both property development and the information services sector;

(c) PCG's senior management team has the expertise and track record for delivering complex projects such as the Cyberport;

(d) PCG has already invested a considerable amount of time and effort in developing the concept; and

(e) PCC – a joint venture between PCG and Intel – may be willing to be an anchor tenant provided that the Cyberport is attractive to tenants and is well placed to bring with it several other leading international players in the information services sector.

No other developer is similarly placed. If the Government were to pursue Option 1 and allow PCG to take forward the project, this would offer the best prospect of fully realising the Cyberport concept and vision.

Evaluation criteria	**Private Sector Led Development (Option 1)**	**Government Led (Option 2)**	**Corporation Led (Option 3)**
Design and planning of the Cyberport project	• This option is likely to best execute the project; PCG developed the Cyberport vision and is uniquely placed as an information services company as well as a property developer	• This would depend to a large extent, on the skills and expertise within Government and its chosen contractors (if any) on projects of a similar nature	• This would depend on the overall skills available to the Corporation and its contractors

Attractiveness of the development to prospective tenants

The attractiveness of the Cyberport to prospective tenants depends on several inter-related factors:

(a) the time when space in the Cyberport becomes available;

(b) how well the type and quality of the space meets prospective users' (physical) needs;

(c) the quality of the living and working environment provided by the Cyberport and its immediate surroundings;

(d) the supporting services which are provided;

(e) how well the Cyberport is marketed to prospective tenants;

(f) the availability of a pool of appropriately skilled labour upon which businesses at the Cyberport can draw;

(g) the price at which space is made available; and

(h) which (if any) anchor tenants can be attracted.

Timing is potentially the crucial issue.

The Cyberport is targeted at businesses across the different parts of the information services sector. This sector is known to be diverse and growing rapidly with many new entrants. As a consequence, many major firms, especially multinational companies (MNCs), are considering what investments they should make and where they should locate them. Despite the effects of the Asian Financial Crisis, MNCs are still very interested in making investments in Asia.

At the same time, many Governments in the region are aggressively seeking to attract this investment. For example:

(a) The recent report of the Committee on Singapore's Competitiveness has highlighted the importance of developing Singapore as a regional hub for information services and proposed a programme of support. As such, this builds on established initiatives such as Singapore One. In addition, Singapore has already announced a S$5 bn project to develop a 810 ha site as a Science Hub.

(b) Malaysia has embarked on an ambitious programme to develop its information services sector with the Multimedia Super Corridor Project as the flagship. The policy package includes 10 year tax free pioneer status for major inward investors and funding for small and medium enterprises undertaking R&D.

(c) Australia established the Ministerial Council for the Information Economy in 1997 and subsequent policy initiatives include an increase of A$556 million in R&D Start Program and another A$43 million for the extension of Innovation Investment Fund.

Furthermore, Hong Kong's competitiveness is threatened by the relatively high costs of both its property and labour. It is also disadvantaged by its weak technology base and an unbalanced information services sector. These are reflected in concerns about the lack of appropriate information service related skills in Hong Kong's working population.

This means that Hong Kong is far from the inevitable choice for investors. If the Cyberport is to attract the leading information services companies, it must do so:

(a) by offering a more attractive overall package than other locations in the region – this package needs to ensure that Hong Kong is an attractive all round location for investment, for example by ensuring that investors are able to bring skilled staff to work in Hong Kong and that they have access to business and residential accommodation of the right quality at the right price; and

(b) in the knowledge that many MNCs cannot afford to delay making their investment decisions otherwise they will miss important business opportunities, and the viability of their projects will potentially be undermined; this is particularly relevant since emerging thinking on the digital economy suggests that "first mover advantages" will be vital.

For these reasons, a Private Sector Led Development (Option 1) involving PCG is likely to offer important advantages in terms of its attractiveness to tenants for two key reasons:

(a) its earlier timescale for completion; and

(b) its ability to bring with it a powerful anchor tenant such as Pacific Convergence Corporation and the prospect of associated prestigious investors.

These advantages, however, could be undermined if the cost of space at the Cyberport were too expensive for prospective tenants.

Evaluation criteria	Private Sector Led Development (Option 1)	Government Led (Option 2)	Corporation Led (Option 3)
Attractiveness to tenants	• Under this option, the Cyberport could be delivered earlier (2001/2002) • This is sufficiently close for MNCs to consider the Cyberport as an imminent reality. Hence, Hong Kong could still be positioned to attract "Blue Chip" tenants	• Key multinational corporations are making their location decisions now. • If the Cyberport was not scheduled to be available until 2003/2004, many would not choose Hong Kong • Once an alternative location is chosen by an MNC, it would be difficult for Hong Kong to convince them otherwise	• Essentially, this option suffers from the same weaknesses as Option 2

Financial costs and benefits of the development

The financial costs and benefits of Options 1 and 2 have been examined from the perspective of the developer[5]. Since PCG has focused its attention on the Private Sector Led Development option (Option 1), more detailed cost and revenue data are available for this option than for Option 2. Nevertheless, in order to provide some insight into how the options would differ, the financial costs and benefits of Option 2 have been modelled on the basis that the Government develops the Cyberport along the lines originally outlined by PCG in its submission of September 1998.

The key features of the analysis are summarised below. The detailed cashflow projections for Option 1 and Option 2 are included as Appendix 1 and Appendix 2 respectively.

Key assumptions

The financial modelling has required assumptions to be made regarding:

(a) the likely costs of undertaking the different developments - these are based on estimates provided by Levett & Bailey;

(b) the likely timetable for the development – these are also based on information provided by Levett & Bailey, Wong Tung & Partners and PCG;

[5] No financial analysis of Option 3 has been undertaken.

(c) the likely take up and rentals achievable on the Cyberport – these are based on views expressed by Larry Tam & Associates and PCG; and

(d) the likely proceeds from sale of the residential development under Option 1 – these are also based on views expressed by Larry Tam & Associates.

For the purpose of the cashflow projection in Option 1, it is assumed that the project would be wholly debt financed and the related interest is charged on the capital deployed in line with private practice. As yet, PCG has not yet decided how it would fund the project, and there has not been any discussion with potential lenders.

All costs and revenues have been expressed at January 1999 prices.

The detailed assumptions used in the financial modelling of Options 1 and 2 are contained in Appendices 3 and 4 respectively.

Results

The key results of the financial analysis are summarised below.

	Option 1	Option 2
Total GFA constructed in square metres	734,030	420,000
PCG's Cash Flows		
Revenue from sale of residential property	22,719	N/A
Residential costs before financing	(10,477)	N/A
Cyberport costs before financing	(6,903)	N/A
Total costs before financing	5,340	N/A
Interest expense	(2,902)	N/A
Total cash flows after financing	2,437	N/A
Government's Cash Flows		
Rental revenue (over 25 years)	8,550	16,319
Total costs (over 25 years)	(695)	(10,942)
Cash flows before financing (over 25 years)	7,855	5,377
Interest expense (over 25 years)	0	(10,865)
Cash flows after financing (over 25 years)	7,855	(5,488)

Interpretation

Based on the assumptions which have been made, the key conclusions which emerge from the financial analysis are as follows:

(a) Under **Option 1** the private sector developer (PCG) would earn a return on capital employed before tax of 12.0%; this is low and less than is needed to make the project attractive to such a developer. From Government's perspective, Option 1 shows a total revenue stream of HK$8.6 bn (before

discounting) over 25 years.

(b) Under **Option 2**, Government's cost of developing the Cyberport exclusive of financing costs is HK$10.9 bn; the financing costs are an additional HK$ 10.9 bn. The Cyberport project generates a cumulative negative cash flow over 25 years of HK$5.5 bn.

Economic costs and benefits

The key categories of economic costs and benefits of the Cyberport are shown in the table below. The costs and the direct benefits of the Cyberport development are considered above; this section focuses on each of the other potential benefits of the Cyberport.

Costs		Benefits	
Capital	• Land • Construction • Supporting infrastructure (roads, etc)	*Direct*	• Rentals from office, residential and other commercial (including tourism/ entertainment) properties
Operating	• Running costs of Cyberport and other developments (staff, overheads, etc)	*Indirect*	• Value added by tenants (or their employment) • Value added by suppliers to the company or organisation operating the Cyberport
		Induced	• Value added from expenditure by employees of the company or organisation operating the Cyberport
		Wider	• Improved competitiveness of Hong Kong based businesses, especially the information services sector • Additional benefit from "demonstration" effect of successful Cyberport • Enhancement to skills of Hong Kong's labour force from training and experience provided by Cyberport tenants • Enhanced value added from additional tourism • Environmental improvements – enhanced amenity, reduced congestion

Value added by tenants

The Cyberport is intended to provide a focus for the development of Hong Kong's information services sector. It is estimated that at its peak, assuming it is a success, the Cyberport could accommodate 15,000 employees working in 100 or more companies spread across a diverse range of fields.

As already noted, the success of the Cyberport depends on several factors although the speed of development and the ability to attract a prestigious anchor tenant are,

perhaps, the two most important. This suggests that a Private Sector Led Development option (Option 1) is likely to offer significant advantages over other slower options. Moreover, the involvement of PCG in Option 1 would mean that the Cyberport would be able to attract a valuable anchor tenant. This will be reflected not only in the likely rate of take-up of the Cyberport (and the level of rentals achievable) but also the possibility that Hong Kong can attract and benefit from a strong information services cluster.

This is significant for two related reasons:

(a) There is growing recognition of the potential to achieve "first mover advantages" in the new network industries such as information services which are emerging and growing based on developments in information and communications technologies. In particular, this means that firms (and, by extension, regions/locations) which are first to develop successful new technology based products and services stand to see their market positioning get stronger and stronger due to "positive feedback". Several factors are relevant: the high up-front R&D costs; the network effects; and customers' costs of switching to alternative suppliers. This means that a business (or a territory) which is able to get to the market first with the right product and technology can enjoy "first mover advantages" which make it very difficult for competitors to overcome.

(b) The development of clusters is also an effective way of promoting collaboration between organisations, especially businesses. This, in turn, is conducive to fostering innovation that is crucial to long term competitiveness. There are four benefits to firms in a cluster:

(i) firms in clusters can gain economies of scale for example by drawing upon companies with complementary skills;

(ii) clustering can reinforce linkages between firms within the cluster - potentially, the Cyberport could stimulate the development of further services like digital animation, computer graphic design, hardware development and R&D in transmission technology and software development;

(iii) firms in clusters can benefit from external benefits for example, knowledge spillovers; empirical research has shown that there is a positive link between such spillovers and the proximity of innovative activity; and

(iv) clusters facilitate other forms of collaboration or networking between firms in part because co-location and repeated contact help build up a relationship of trust, and this translates into benefits like reduced uncertainty, learning from others and absorbing best practice and reduced transaction costs.

Taken together, these two factors offer the possibility that, if it is successful, the Cyberport could help to generate a source of strong and sustained competitive

advantage in Hong Kong. To do so, the Government needs to act quickly to promote Hong Kong as a regional hub of the information services sector in Asia-Pacific and to beat strong regional competition. As argued above, the Private Sector Led Development (Option 1) is the quickest way of implementing the Cyberport and, therefore, the most likely to achieve this goal. Moreover, the involvement of PCG would bring with it the prospect of a key anchor tenant, PCC.

Value added by suppliers to the Cyberport operator

Besides the benefits that accrue from the activity of the occupants of the Cyberport, the Cyberport operator will also need to make purchases of materials and services. The most significant purchases will occur during the development phase although smaller purchases will arise during the Cyberport's operation. To the extent that these purchases are supplied from within Hong Kong, they will add value and generate economic benefits for Hong Kong.

One of the major differences between the three implementation options is largely a matter of timing. The Private Sector Led Development option (Option 1) will involve earlier construction activity. The scale of the construction, which would involve approximately 15,000 man years of effort by the construction sector (this is equivalent to about 4,000 full-time jobs), and the current state of Hong Kong's economy mean that this benefit could be significant.

Value added from expenditure by employees of tenants and operating company

A further potential benefit of the Cyberport project is the induced benefit that arises as a result of expenditure by the people employed at the Cyberport. The difference between the three implementation options is potentially important. If the Cyberport project is occupied more quickly and fully under the Private Sector Led Development option (Option 1), as the above arguments would suggest and as the financial analysis assumes, the number of employees at the Cyberport is likely to be larger than under either of the other two options.

Wider effects

The success or otherwise of the Cyberport also stands to have significant wider economic effects, for example on Hong Kong's long term competitiveness.

The successful development of the Cyberport could enhance the competitiveness of existing and potential users of information services by providing them with better quality, cheaper services in a more timely manner. For many industries such as communications and transport and financial and business services this could affect their competitiveness and, hence, their contribution to Hong Kong's GDP. Evidence of the significance of this effect can be seen in several places:

(a) OECD research has also shown that countries that have responded most positively to the information revolution – as measured by their investment in IT – are the ones whose economic performance has been the strongest.

(b) In the US, IT is making an increasing contribution to the growth of real GDP. By investing in IT, companies increase their efficiency and productivity. The US Department of Commerce estimates that in recent years, IT industries have been responsible for more than one-quarter of real economic growth. Furthermore, the information technology industries support high-paying jobs: in 1996, 7.4 million people worked in IT industries and in IT-related occupations across the economy and earned close to US$46,000 per year, compared to an average of US$28,000 for the private sector as a whole.

For the reasons explained above, a Private Sector Led Development (Option 1) offers the greatest chance of realising these benefits. For example, if it is assumed that the competitiveness of Hong Kong's finance, insurance and business services sector were to deteriorate such that its contribution to GDP was reduced by 1% in each of (only) five years, this implies that the benefits of a Cyberport would be of the order of HK$12 bn; this compares with the estimated gross cost of the Cyberport of HK$7.3 bn under Option 1 (and HK$10.9 bn under Option 2). Clearly, such a set of assumptions is prudent in the sense that:

(a) no allowance is made for the potential growth of the sector;

(b) the impact is limited to a very short period of time whereas in practice it might be expected to continue for longer;

(c) the impact on competitiveness is modest given the importance of information services to the sector; and

(d) the impact on other sectors of the economy is ignored.

A similar argument and approach can be applied to assess the impact on tourism. If the Cyberport were to induce an increase in receipts from tourists of only 1% for a period of five years, this would represent a further "benefit" of HK$9bn. Whilst only part of this is an increase in value added, it is still a potentially significant impact when put alongside the costs of constructing the Cyberport.

Finally, the successful development of the Cyberport will have significant benefits in terms of improving the skills of Hong Kong's labour force:

(a) it will provide job opportunities which will help to attract skilled people, notably "knowledge workers", to Hong Kong, especially overseas Chinese and help to slow the rate of emigration of skilled people; and

(b) it will provide a good training ground for Hong Kong to enhance the skills of its labour force (especially for university graduates in the technical fields) in a way that will enable it to benefit from the new knowledge and information driven economy.

This will help to maintain its long-term competitiveness. However, given other governments' policy initiatives to develop their information industry, it is crucial that the Cyberport project be implemented in a time sensitive manner.

The other benefits that have been identified are rather more speculative although that does not mean they should be ignored. The Cyberport is a flagship project that can be expected to stimulate further inward investment in Hong Kong, and its associated benefits. In addition, rather than being a cost, it might be argued that the development would enhance the environment through improved amenity and reduced traffic congestion in other parts of Hong Kong. Certainly, there should be no presumption that there are environmental costs.

Evaluation criteria	Private Sector Led Development (Option 1)	Government Led (Option 2)	Corporation Led (Option 3)
Overall economic costs and benefits to Hong Kong	• Construction activity would be accelerated thus stimulating the economy in a timely manner • The Cyberport would be delivered earlier thus accelerating the sectoral development benefits • Because of the earlier delivery of the Project, Hong Kong has the opportunity to secure potentially significant long term economic benefits	• Hong Kong has the opportunity to secure potentially significant long term economic benefits although these are perhaps less likely because of the slower pace of development	• Hong Kong has the opportunity to secure potentially significant long term economic benefits. However, the economic benefits of this Project might still be jeopardised by the slower pace of development

Evaluation criteria	Private Sector Led Development (Option 1)	Government Led (Option 2)	Corporation Led (Option 3)
Impact on Hong Kong's information services sector	• Potentially great benefits to the industry if the Project is executed well and in a timely manner	• Slow development of the site jeopardises its ability to secure the "Blue Chip" tenants which are needed for it to be successful • PCC quickly needs to find a location for its flagship project otherwise it will miss out on its opportunity in the market place • In turn, Hong Kong risks losing the investment associated with the PCG project	• Hong Kong retains the opportunity to develop as the leading information services hub in the region
Impact on tourism within Hong Kong	• Hong Kong is provided with a further potentially significant tourist attraction • In part at least, the attraction of the Cyberport is directly related to its success	• Hong Kong is provided with a further potentially significant tourist attraction under this option • Since the attraction of the Cyberport is at least partly related to its success, the threat to its success posed by the slower pace of development may also detract from the potential tourism benefits	• Essentially, the same as Option 2

Evaluation criteria	Private Sector Led Development (Option 1)	Government Led (Option 2)	Corporation Led (Option 3)
Impact on Hong Kong's environment	• Essentially the same as the other two options	• Depends on the nature of the development and the associated infrastructure • By no means certain that the net effects across Hong Kong would be negative; for example, congestion in Central might be reduced by providing another focus for development	• Essentially the same as the Government led option (unless there are reasons for supposing that the nature of the physical development would be significantly different)

Impact on Government

Finally, the implications of the alternative implementation options need to be considered from the perspective of Government. There are three key dimensions (apart from those implicitly addressed above):

(a) the impact on the public finances;

(b) the impact on the distribution of risks to the Government and the extent to which Government can get appropriate assurances from prospective partners; and

(c) the contribution to the achievement of the Government's broad policy objectives.

Public finances

The different options have important implications for public finance in Hong Kong.

Under Option 1, the Government bears little of the (additional) costs of developing the Cyberport. It does, however, potentially forego any land premium which would be due on the site. In return, it receives a stream of rental revenues from the Cyberport amounting to some HK$8.6 bn over 25 years.

In contrast, under Option 2, the Government bears the entire capital cost of developing the Cyberport (HK$10.9 bn). It also foregoes any land premium which would be due from alternative development of the site. In return, Government receives a stream of rentals of HK$16.3 bn but it faces financing costs of HK$10.9 bn.

Risks and rewards

The Private Sector Led Development (Option 1) ensures that effectively all of the financial risks of the Cyberport development would be transferred to the private sector whereas both the alternative options imply that considerable financial risks remain with Government.

The extent to which a private developer would be prepared to offer assurances to Government depends on the whole package proposed by Government. It is a matter of negotiation.

Achievement of policy objectives

The Chief Executive has emphasised the important role that technology plays in Hong Kong's long term development and has set ambitious objectives in both his Policy Addresses.

Although Hong Kong has some fundamental strengths which favour the development of a strong information services sector, for example it has an advanced, efficient and competitive telecommunications infrastructure and it has important industry clusters which will be significantly affected by the information revolution. Hong Kong does, however, have some basic weaknesses that detract from the development of its information services sector:

(a) office and housing costs are much higher than other cities in the region – this means that it is difficult to attract mobile business and skilled labour;

(b) many of Hong Kong's businesses are small and unsophisticated users of technology;

(c) the existing information services sector is very limited;

(d) Hong Kong does not have a reputation for being at the leading edge of technological developments; and

(e) Hong Kong lacks commitment to ensuring the quality of environment.

Potentially, a Private Sector Led Development (Option 1) represents the best chance Hong Kong has of achieving its policy objectives in the area of information services for the reasons set out above. It also offers the opportunity to increase the stock of publicly available housing in Hong Kong because the residential development assumes the provision of 5,000 units whereas the site is currently zoned to provide 2,600 units. Under Options 2 and 3 no units would be provided which would be publicly available.

Evaluation criteria	Private Sector Led Development (Option 1)	Government Led (Option 2)	Corporation Led (Option 3)
Contribution to the achievement of the Government's broad policy objectives	• Key Policy Address objectives will be most likely to be achieved under this option although Government's role will be primarily that of a facilitator • For example, for Hong Kong to be a regional centre for multi-media based information and entertainment services and for Hong Kong to bolster its tourism industry by becoming Asia's entertainment centre	• Key Policy Address objectives are at serious risk due to the slower pace of development	• Essentially, the same as Option 2

Evaluation criteria	Private Sector Led Development (Option 1)	Government Led (Option 2)	Corporation Led (Option 3)
Financial costs and benefits to Hong Kong SAR Government	• The developer would have to fund the Project. Detailed negotiations would determine the exact financial arrangements but it should be possible to have 100% private sector funding for the Cyberport development • Any government contribution via site preparation and infrastructure works would require some Government funding as in normal cases but this would be relatively small relative to the overall cost of the project	• Government (or Cyberport Authority) initially bears all costs of development of whole site, including infrastructure • The Government would contribute the land and expend about HK$10 billion in construction costs. • Revenues only start to accrue once land is sold or rents are earned on occupied projects • Continued management costs in the future should be borne by the tenants of the Cyberport assuming the Project is successfully managed – any shortfall would be borne by the Government	• The Corporation would be expected to be self-financing. • There would be a need for working capital to the Corporation to be recovered later from the project
Distribution of risks to the Government	• The private sector developer bears all the commercial and financial risks of this Project	• Government bears almost all of the financial/ commercial risk associated with failure of the project • It also bears the political risk	• Depending on the precise contractual arrangements agreed between the parties, significant elements of the financial/ commercial risk can be transferred to the private sector partner • The substantive involvement of the private sector mitigates the political risks

Conclusions

In conclusion, this analysis has confirmed the important potential benefits that would arise from the development of a successful Cyberport in Hong Kong.

The analysis has also shown that the way in which the Cyberport project is implemented will have an important bearing on the balance of costs and benefits:

- A Private Sector Led Development (Option 1) is superior because:
  - It can be built more quickly than other options
  - It reduces Government's financial exposure and risk
  - It ensures that the Cyberport is professionally marketed and managed.
- In contrast, both the Government led option (Option 2) and the Corporation Led option (Option 3) are significantly less attractive because:
  - They both carry substantial risk for the Government
  - They require significant Government funding and necessitate heavy Government participation in the Cyberport development
  - They would also result in a much delayed project completion date and this would effectively mean that Hong Kong would miss out many of the economic opportunities represented by the Cyberport vision.
- In addition, the Corporation Led option would also introduce complex relationships between the Government and any private sector participating in the Corporation; these could be inimicable to the smooth and successful delivery of the project.

By asking PCG to lead a Private Sector Led Development this would offer other important potential benefits for Hong Kong:

- PCG is uniquely placed to implement the project because it has developed the vision for the Cyberport;
- PCG has already invested a considerable amount of time and effort in developing the concept;
- PCG has first hand experience and understanding of the needs of the prospective users of the Cyberport since its business interests span both property development and the information services sector;
- PCG's senior management team has the expertise and track record for delivering complex projects such as the Cyberport; and
- PCC is willing to be an anchor tenant and is well placed to bring with it several other leading international players in the information services sector.