

**LEGISLATIVE COUNCIL PANEL ON
INFORMATION TECHNOLOGY AND BROADCASTING**

**FUNDING APPLICATION FOR IMPLEMENTATION OF THE FIRST
PHASE OF THE ELECTRONIC SERVICE DELIVERY SCHEME**

INTRODUCTION

This paper briefs Members on the application of the Secretary for Information Technology and Broadcasting to the Finance Committee to create a new commitment of \$123.2 million under the Capital Works Reserve Fund Head 710 Computerisation to implement the first phase of the Electronic Service Delivery (ESD) scheme.

BACKGROUND

2. The Chief Executive outlined in the 1997 Policy Address his vision to make Hong Kong a leader in the information world of tomorrow. He further pledged in the 1998 Policy Address that we shall use information technology (IT) to help retain our competitive edge and to drive our overall economic expansion. To implement the Chief Executive's IT vision, we have formulated the "Digital 21" IT Strategy, the primary objective of which is to enhance and promote Hong Kong's information infrastructure and services so as to make Hong Kong a leading digital city in the globally connected world of the 21st century.

3. One key initiative which we have identified to implement our "Digital 21" Strategy is the provision of public services to the community electronically, through an information infrastructure with an open and common interface which is accessible throughout the territory, i.e. the ESD scheme. We consider the scheme a viable means -

- (a) to enable us to improve the quality and efficiency in the delivery of public services;
- (b) to improve the accessibility and widen the reach of such services; and
- (c) to reduce the cost of providing such services in the longer term.

Through ESD, we will be able to meet increasing service demand in the new Information Age. It will also help to pump-prime the development of electronic commerce in Hong Kong.

JUSTIFICATION

ESD scheme

4. We are now preparing for the implementation of the ESD scheme to provide public services to the community on-line. Potential access means for obtaining ESD services include -

- (a) personal computers at home or in the office over the Internet;

- (b) computers installed by Government at convenient public places which provide access to the Internet, e.g. district offices, public libraries;
- (c) public payphone systems with interactive interface over the local telecommunication networks;
- (d) interactive television;
- (e) public kiosks installed at convenient locations; and
- (f) other possible electronic means.

5. We plan to contract a private sector operator to establish the ESD information infrastructure. We will set up at our own cost an appropriate interface between the ESD infrastructure and Government departments and agencies which will use the ESD system for providing services. We will use the ESD infrastructure for the delivery of public services to the community during the contract period, which will be for an initial period of five years and which can be extended for two further years. The operator will derive revenue from charges payable by Government on the basis of usage of the ESD system.

6. The ESD scheme will cater for seven generic types of transactions, as set out in Annex A. A list of critical issues which have to be addressed in the implementation of the scheme is set out in Annex B.

7. With the ESD scheme, the public will be able to transact business with Government on-line. By providing a single entry point, we can provide services on a seamless basis to the community, instead of following the conventional department-centric approach. We will be able to provide services 24 hours a day and seven days a week. In short, the scheme can transform the way public services are delivered. While we do not intend to use the scheme, at least in its initial stage of operation, to replace counter service, the scheme will offer a substantially more efficient and effective alternative means in the delivery of services to the community through a single common interface. The switching from conventional ways of service delivery, such as over the counter, to ESD will enable departments to cope with increasing demand in a more cost-effective manner. In some cases this may justify the reduction of the extent of the present mode of service delivery, leading to higher productivity. We will review the requirements for the conventional type of delivery of those services covered under the first phase of ESD in the light of the scheme's operational experience.

8. We also anticipate that the scheme would act as a catalyst to promote the development of electronic commerce in the private sector, which can make use of the information infrastructure adopted for implementing the scheme for the conduct of electronic transactions at a later stage. This would also provide an additional and separate revenue source to the ESD operator which should help to reduce the cost to be borne by Government.

9. We intend to implement the ESD scheme progressively by phases. We will invite tenders for the ESD operation contract by the end of the year or early next year, award the contract within 1999 and roll out the first phase of the scheme in the latter half of 2000. Tentatively, we will include a selection of services of ten departments and agencies in the first phase of the scheme, as set out in Annex C. Depending on the nature of specific services and the proposals

made by potential ESD operators in the tender exercise, some of these services may be made available only through some but not all of the access means set out in paragraph 4 above. We will provide the full details of these services in the tender document to be published so that potential bidders can use the information to draw up their own business case for the project.

Benefits

10. We have set out the general benefits of the ESD scheme in paragraphs 3, 7 and 8 above. As the scheme aims to provide an alternative and better means of service delivery to the public and we will not reduce existing services delivered through conventional means, at least in the initial stage, we do not anticipate that we can derive substantial savings immediately from the scheme which would allow it to break even. However, we anticipate that there would be significant savings in the longer run through streamlining service delivery and in terms of cost avoidance as departments which take part in the scheme would be able to meet increased service demand through the scheme rather than through an increase in resources for providing the conventional form of counter service. We will review the situation after the implementation of the scheme and take its impact into account to ensure optimal deployment of resources.

11. Based on the services which we will tentatively cover in the first phase of the scheme, some specific examples of improvements in the quality of service delivery are -

- (a) taxpayers can submit their salaries tax return, pay their taxes or purchase tax reserve certificates electronically;

- (b) job-seekers can look for job vacancies and employers can submit job vacancies and search for suitable candidates electronically. This will substantially improve job searching and matching, and enhance the efficiency and effectiveness of the recruitment service provided by the Labour Department;
- (c) eligible individuals can register as a voter electronically and this will make future voter registration exercises substantially more effective;
- (d) drivers can renew their driving or vehicle licences (the renewed licences will be sent to the applicant by mail) or book appointment for road tests electronically. The current pledged waiting time for the renewal of driving or vehicle licence over service counter is 40-85 minutes, and in the case of postal application, 10 working days;
- (e) individuals can change electronically their personal particulars kept by various departments in one go if they so select, e.g. notifying the Inland Revenue Department (as a taxpayer), the Rating and Valuation Department (as a ratepayer), Transport Department (as a driving licence holder or a vehicle owner), and the Registration and Electoral Office (as a registered voter) about a change of address. At present, they have to notify individual departments separately;
- (f) clients can pay Government bills, e.g. rates, Government rent and water charges, electronically. This provides additional

outlets and mechanisms for paying Government bills;

- (g) businesses can apply for business registration certificates (initially for sole proprietors only) and copies of extracts of the business register electronically. The processing time for application cases can be reduced from four to two days;
- (h) businesses can obtain advice and guidance on investment and business licensing requirements electronically, which makes such information more easily accessible. This is particularly useful to small and medium sized enterprises and individuals who wish to set up a business;
- (i) individuals can book appointment for identity card registration or search and apply for copies of birth/death/marriage certificate electronically. At present they have to visit the offices of the Immigration Department physically to obtain the latter services; and
- (j) clients can make on-line applications for volunteer scheme registration and senior citizen cards. The time taken for the issue of senior citizen cards can be reduced from seven to five working days.

Through ESD, members of the public will thus be able to obtain these services through a single common interface and at a place and time which are more convenient to them. In most cases, they will no longer need to travel physically to the Government offices concerned for obtaining the respective services. There will thus be substantial savings in community cost, in terms of time saved which

can be used for work or leisure.

12. Moreover, in parallel with the implementation of the scheme, we will establish a public key infrastructure and introduce legislation to provide a clear legal framework for electronic transactions. Also, use of the scheme by members of the public will help to raise awareness and trust in electronic transactions over the Internet. We will thus create an environment which is conducive to the development of electronic commerce in Hong Kong. This is important in strengthening our efficiency and productivity, thereby sharpening our overall competitiveness in the new Information Age and providing impetus for our economic growth.

FINANCIAL IMPLICATIONS

Non-recurrent expenditure

13. The capital cost to Government of implementing the first phase of the ESD scheme is estimated at \$123.2 million, and the staff cost required for the implementation work at \$ 27.6 million. We propose to create a commitment of \$123.2 million under the Capital Works Reserve Fund Head 710 Computerisation. We set out below details of the cost estimates -

	1998-99 (\$M)	1999-2000 (\$M)	2000-01 (\$M)	Total (\$M)
(a) Implementation services	-	30.0	30.0	60.0
(b) Hardware, software and communications	-	6.0	6.0	12.0
(c) Specialist and technical services	-	15.0	-	15.0
(d) Accounting/management consultancy for evaluation of tenders	-	3.0	-	3.0
(e) Publicity and promotion	-	-	6.0	6.0
(f) Miscellaneous items	-	6.0	10.0	16.0
(g) Contingency	-	6.0	5.2	11.2
Sub-total	-	66.0	57.2	123.2
(h) Staff costs				
(i) Information Technology Services Department (ITSD)	2.6	10.4	5.2	18.2

	1998-99 (\$M)	1999-2000 (\$M)	2000-01 (\$M)	Total (\$M)
(ii) Departments and agencies	0.2	3.6	5.6	9.4
Sub-total	<u>2.8</u>	<u>14.0</u>	<u>10.8</u>	<u>27.6</u>
Total	<u>2.8</u>	<u>80.0</u>	<u>68.0</u>	<u>150.8</u>

14. As regards paragraph 13 (a), the expenditure of \$60 million is for the hiring of services for the development of interfaces between the ESD system and the host systems of the ten departments and agencies which will participate in the first phase of the scheme.

15. As regards paragraph 13 (b), the expenditure of \$12 million is for the acquisition of computer hardware and software and the establishment of a secure communication network for the participating departments and agencies.

16. As regards paragraph 13 (c), the expenditure of \$15 million is for the hiring of specialist and technical services in areas in which practical implementation expertise is necessary, e.g. the use of smart card technology in the scheme.

17. As regards paragraph 13 (d), the expenditure of \$3 million is for the hiring of accounting/management consultancy expertise for the evaluation of the bids received, e.g. examination of the financial model proposed in the tender exercise.

18. As regards paragraph 13 (e), the expenditure of \$6 million is for publicising the ESD scheme and promoting the use of ESD services within the community.

19. As regards paragraph 13 (f), the expenditure of \$16 million is for site preparation work, the provision of training for the staff of the ITSD and the participating departments and agencies, and the acquisition of consumables and miscellaneous items during the implementation process.

20. As regards paragraph 13 (g), the expenditure of \$11.2 million represents a 10% contingency in respect of items (a) - (f) above.

21. As regards paragraph 13 (h)(i), the expenditure of \$18.2 million represents ITSD staff costs to be incurred for its implementation team to undertake overall project management, contract management, application development, system installation and co-ordination with the participating departments and agencies. It comprises 10.5 man-months of Assistant Director effort, 10.5 man-months of Chief Systems Manager effort, 42 man-months of Senior Systems Manager effort, 63 man-months of Systems Manager effort and 42 man-months of Analyst/Programmer I effort. ITSD will meet all these requirements from within its existing resources.

22. As regards paragraph 13 (h)(ii), the expenditure of \$9.4 million represents the combined staff costs of the ten participating departments and agencies to be incurred in the implementation process. The departments and agencies concerned will meet all these requirements from within their own resources.

Recurrent expenditure

23. The estimated recurrent cost of implementing the first phase of the ESD scheme for the initial three years is \$48.3 million for 2000-2001, rising to \$75.6 million in 2001-02 and to \$55.7 million in 2002-03. We set out below details of the cost estimates -

Recurrent expenditure	<u>2000-2001</u> (\$M)	<u>2001-2002</u> (\$M)	<u>2002-2003</u> (\$M)
(a) Fixed subscription fees payable annually to the ESD operator for departments and agencies to participate in the scheme	6.0	6.0	6.0
(b) ESD transaction fees	8.0	20.0	25.0
(c) Help desk and back end support	5.3	7.0	7.0
(d) Digital certificates for secure ESD transactions	17.0	25.5	-
(e) Digital certificates for Government users	1.0	0.5	1.1
(f) Maintenance cost	2.2	2.9	2.9
Sub-total	39.5	61.9	42.0
(g) Staff costs			
(i) ITSD	4.4	8.8	8.8

Recurrent expenditure	<u>2000-2001</u> (\$M)	<u>2001-2002</u> (\$M)	<u>2002-2003</u> (\$M)
(ii) Departments and agencies	4.4	4.9	4.9
Sub-total	8.8	13.7	13.7
Total	48.3	75.6	55.7

24. As regards paragraph 23 (a) above, the expenditure of \$6 million is the estimated total annual subscription fees payable to the ESD operator for ten departments and agencies to use the ESD system for providing services.

25. As regards paragraph 23 (b) above, the expenditure of \$8 million, \$20 million and \$25 million in 2000-01, 2001-02 and 2002-03 respectively is the payment of fees for transactions processed by the ESD operator at an estimate of \$10 each. For 2000-01, we have estimated a transaction volume of 800,000 on the basis that we would implement the first phase of the scheme in the latter half of 2000. We forecast that there would be a 10% growth in transaction volume in 2001-02 on a full year basis and a 25% growth in 2002-03 as the community becomes more familiar with the operation of the scheme. We will thus meet the expenditure arising from the payment of transaction fees to the ESD operator so that the public will not have to pay more for using ESD services, thereby encouraging the public to use the scheme for obtaining public services and opening the scope for reducing the existing provision of services in the conventional form. We will review the situation in three years after the implementation of the first phase of the scheme to assess whether the arrangement should continue.

26. As regards paragraph 23 (c) above, the annual expenditure of \$7.0 million represents the cost for providing a help-desk service and back-end support to the participating departments and agencies and the ESD service users, monitoring the secure network interfacing the ESD operator and our back-end systems, the agency servers, etc. as well as for receiving and routing of feed-back on services to the participating departments and agencies. The first year estimate of \$5.3 million reflects our plan to implement the first phase of the scheme in the latter half of 2000.

27. As regards paragraph 23 (d), the expenditure of \$17.0 million in 2000-01 and \$25.5 million in 2001-02 represents Government contribution to assist non-Government ESD users to obtain digital certificates for the first time from certification authorities (CA) for carrying out secure ESD transactions. We estimate that there would be 800,000 transactions in 2000-01 and some 340,000 are likely to require authentication. Discounting possible overlap, we estimate that \$17.0 million is necessary in 2000-01. The increase in 2001-02 reflects the estimated increase in transaction volume and thus the increase in the demand for digital certificates. We will thus meet part of the cost for the issue of first time digital certificates to ESD users in the initial period of ESD operation (up to the end of 2001-02), thus encouraging users to take part in secure electronic transactions. This is justified as a form of Government investment to kick-start and encourage the community to engage in electronic commerce and to build up the public key infrastructure in Hong Kong. However, as the certificates can be used for other non-ESD purposes, we do not consider that the arrangement should be permanent. The normal user-pays principle should apply after 2001-02 and therefore we have not assumed continued expenditure for this item from 2002-03 onwards.

28. As regards paragraph 23 (e), the expenditure of \$1 million in 2000-01 represents the costs for procuring digital certificates for Government users. On the assumption that the certificates have a validity period of two years and taking into account increase in demand, the expenditure will decrease in 2001-02 and rise again in 2002-03.

29. As regards paragraph 23 (f), the annual expenditure of \$2.9 million represents the recurrent maintenance cost for the departmental systems interface for ESD, computer facilities installed by Government in public places, etc.

30. As regards paragraph 23 (g)(i), the annual expenditure of \$8.8 million in 2001-02 and 2002-03 represents the staff costs of the ITSD support effort for contract management, co-ordination with the participating departments and agencies and for developing new ESD services. It comprises 3 man-months of Assistant Director effort, 6 man-months of Chief Systems Manager effort, 24 man-months of Senior Systems Manager effort, 24 man-months of Systems Manager effort and 24 man-months of Analyst/Programmer I effort. The cost of \$4.4 million for 2000-01 represents a half-year requirement. ITSD will meet these requirements from within its existing resources.

31. As regards paragraph 23 (g)(ii), the expenditure of \$4.4 M in 2000-01 and \$4.9 million in 2001-02 and in 2002-03 represents the combined staff costs of the ten participating departments and agencies in providing on- going support to ESD operation. The departments and agencies will meet these requirements from within their existing resources.

Requirement for additional funding

32. We have drawn up the financial model of the ESD scheme on the basis that there will not be any form of Government investment in the ESD operator. However, the response to our invitations for expression of interest on the scheme earlier this year suggests that potential ESD operators may look for some form of Government investment in the project in order to strengthen their business case and to reduce their initial capital outlay. This would also help to lower the transaction fees to be paid by Government. Subject to Finance Committee's approval of the commitment which we now seek to create and the proposals which we would receive in the tender exercise, we may need to seek the further approval of the Finance Committee for an increase in the commitment to be created or to create a new commitment for making a co-investment in the ESD scheme with the selected operator. We will examine the requirement after the tenders have been received, and we will make another funding submission to the Finance Committee where necessary, before we award the contract to the selected operator.

Implementation plan

33. Our plan to implement the ESD scheme will tie in with that to be proposed by the ESD operator in order to achieve our aim of providing services for the first phase of the scheme in the latter half of 2000.

Future phases of ESD scheme

34. We will examine the development of future phases of the ESD scheme to cover other Government services after the implementation of the first phase of the scheme.

ESD RELATED ISSUES

Certification authorities

35. To tie in with the implementation of the ESD scheme and to facilitate the development of electronic commerce in Hong Kong, we consider it necessary to have locally established CAs to provide security and trust in the conduct of electronic transactions under a public key infrastructure. While we will leave it to the market to decide on the number of CAs to be established in Hong Kong, we accept that Government should take an active lead in the establishment of the public key infrastructure. We have thus invited the Hongkong Post to serve as the public CA in Hong Kong. Our target is to establish the local public CA by the end of 1999 to tie in with the implementation of the first phase of the ESD scheme. We would welcome the establishment of CAs by other private bodies to serve the needs of the community.

Legislative framework

36. We also need to establish a clear legal framework in order to provide certainty in the conduct of electronic transactions. This is essential to promote and facilitate the development of electronic commerce in Hong Kong. The framework should deal with issues such as the legal recognition of electronic records and digital signature, and the establishment of CAs. We will introduce a bill into the Legislative Council in the first half of 1999 to establish the legal framework for electronic transactions.

Expression of Interest

37. We invited expression of interest in June this year so as to gauge the interest in the private sector in taking part in establishing the ESD system and taking up the role of the ESD operator. The exercise ended in mid-August. We received a total of 44 submissions from various local and overseas companies. Many of these companies have solid experience in implementing similar systems elsewhere. Based on the results of this exercise, we anticipate that there would be a good response to the ESD tender.

NEXT STEP

38. We will submit the funding application to the Finance Committee for consideration on 18 December 1998.

**Information Technology and Broadcasting Bureau
December 1998**

**Generic types of transactions
which can be covered under the Electronic Service Delivery scheme**

There are seven generic types of transactions which can be covered under the Electronic Service Delivery scheme -

- (1) changing clients' particulars, e.g. address;
- (2) booking services or appointments;
- (3) acquiring documents and services;
- (4) making payments;
- (5) obtaining information;
- (6) submitting applications and returns, providing feedback, e.g. making complaints, suggestions, etc.; and
- (7) monitoring progress, e.g. checking the status of an application, etc.

**Critical Issues to be addressed in the Implementation of
the Electronic Service Delivery scheme**

- (1) Viability - ESD services should be economically viable to departments and agencies which use the scheme to provide their services to the community on-line.
- (2) Financial transactions - financial transactions, e.g. the payment of Government bills, etc. are an important element of the ESD scheme. The ESD operator should have sufficient capacity and capability to handle financial transactions through establishing appropriate mechanisms with financial institutions. ESD service will not accept cash payment. The ESD operator does not have to act as a financial intermediary. All payments should be directed through available banking mechanisms to the appropriate Government accounts.
- (3) Ease-of-use - ESD applications should be designed for maximum ease of use. Applications should be developed with a wide target audience in mind. There should be a user-friendly client interface. A fast system response has to be provided.
- (4) Accessibility - a key objective of the ESD scheme is to improve the accessibility of public services. ESD service should operate 24 hours a day and 7 days a week. It should also provide access to Government transactions and information at locations which are readily accessible to the public.
- (5) Bilingual interface - ESD service should provide a bilingual interface so that the public can obtain the services readily through either the English or the Chinese language medium. In respect of the Chinese language interface, the ESD operator should be able to handle various types of internal codes used at different platforms within Government and in other participating agencies.
- (6) Reliability - reliability is required to encourage the use of ESD services and to ensure client satisfaction. Adequate back-up will be mandated in the design of ESD operational centres, equipment and communication network. Extensive testing and pilot runs will have to be performed before actual service delivery. Proven reliability at the early stage of implementation will have a significant positive impact on the success of the scheme.

- (7) Security - ESD services will be used to conduct a wide range of transactions involving personal information and payment. The ESD system should ensure that these transactions are secure and that the privacy of clients using ESD services is protected. The security of departments and agencies which will use the ESD system to provide services must not be compromised.
- (8) Scope - We plan to establish ESD services which will support the requirements of the public sector initially. The services of the private sector will be covered at a later stage. The ESD system should have adequate scope to meet these requirements.
- (9) Ownership - Government intends to contract for ESD services. We do not intend to purchase any major infrastructure for the operation of the ESD scheme. The ESD operator should provide the necessary infrastructure.
- (10) Scalability - ESD services must be capable of scaling up to cater for a large variety and possibly substantial and rapid increases in the volume of transactions and information. ESD services must prove scalability without the requirement for redesign.
- (11) Consistency - we will develop a variety of applications across a range of delivery channels for the provision of ESD services. Each ESD service or application should, as far as possible, be made available across various ESD delivery channels using a consistent user interface.
- (12) Modular solutions - ESD services must offer modular solutions, and provide suitable assurance that the system would allow cost-effective and timely modifications to support the introduction of additional delivery channels in future.
- (13) Data management - A well designed interface strategy and a defined and structured approach are necessary to access and update data from a disparate range of databases in an integrated form.

**Tentative services to be covered under the first phase of the
Electronic Service Delivery scheme**

(a) **Inland Revenue Department**

Tax payment; submission of simple tax return (for individuals only); interactive tax enquiry system, e.g. tax amount, due date, etc.; change of taxpayers' particulars, e.g. address, etc.; application for business registration certificate (for sole proprietor only) or copy of extracts of the business register; and purchase of tax reserve certificates.

(b) **Immigration Department**

Booking appointment for identity card registration; application for search and copy of birth/death/marriage certificate; notification of pre-mature termination of contracts of imported workers/foreign domestic helpers; and general enquiry and information look-up.

(c) **Labour Department**

Job vacancy database search by job seekers; submission of job vacancy by employers; search of suitable job applicants by employers; and general enquiry.

(d) **Transport Department**

Application for renewal of driving licence and vehicle licence; application for reservation of non-special registration mark for auction; road test appointment booking for repeaters; application for certificate of vehicle particulars; vehicle examination appointment booking; and change of address for driving licence or vehicle licence holder.

(e) **Registration and Electoral Office**

Voter registration; change of address of registered voters; and general enquiry, e.g. voter status, polling station, etc.

(f) **Rating and Valuation Department**

Change of ratepayers' or rent-payers' particulars, e.g. name and address, etc.; and general enquiry, e.g. rates and Government rent account balances, etc.

(g) **Industry Department**

Business licence information enquiry; on-line application for the various financing schemes for industry; and small and medium sized enterprise information and enquiry service.

(h) **Social Welfare Department**

Application for senior citizen card and volunteer schemes registration; application for participation in senior citizen card scheme, obtaining information about parties participating in senior citizen card scheme and organisations granted with charitable fund-raising permits; and general information look-up.

(i) **Treasury**

Payment of Government bills - rates, Government rent and water charges.

(j) **Hong Kong Tourist Association**

Computerised map enquiry system for tourists; and tourist information look-up.