

Provisional LegCo Panel on Welfare Services

Implementation of Information Systems Strategy Phase I : Computerised Social Security System

PURPOSE

To inform Members of the Administration's funding proposal for implementing Phase I of the Information Systems Strategy for the Social Welfare Department.

INTRODUCTION

2. At the Welfare Panel meeting on 3 October 1997, Members were informed that subject to the availability of funds, the Director of Social Welfare intends to proceed with the implementation of the Computerised Social Security System which would enhance the provision of service to clients of the social security system and provide better management information.

PROPOSAL

3. The Director of Social Welfare (DSW) proposes
- (i) a commitment of \$224,741,000 for implementing a Computerised Social Security System under Phase I of an Information Systems Strategy of the Social Welfare Department; and
 - (ii) to increase the NAMS ceilings of SWD from \$1,424,811,840 by \$4,183,140 to \$1,428,994,980 and of Information Technology

Services Department (ITSD) from \$370,341,680 by \$2,407,140 to \$372,748,820, to provide the development staff support needed.

JUSTIFICATION

4. The use of information technology (IT) in SWD is limited. To date, IT application is confined to the disbursement of social security payments through the SSPS, financial and accounting systems and other desktop computing. The SSPS is a payment system put into operation in 1994. It cannot generate the needed management information to support the monitoring of the social security schemes which now have a total recurrent spending of about \$12 billion. Better use of IT would enable better monitoring of the schemes and provide scope to improve service to recipients of the social security schemes totalling 780 000.

5. To explore opportunities for the use of IT in SWD on a department-wide basis and to develop a new CSSS as a matter of priority, we have completed in July 1997 an Information Systems Strategy Study (ISSS) of SWD and a feasibility study on CSSS. We now propose to implement a CSSS as Phase I of the Information System Strategy for SWD.

6. The feasibility study on CSSS concluded that apart from providing the social security payment functions, the CSSS should be capable of -

- (a) allowing on-line input of data and case details, and provide easy, prompt and user-friendly retrieval of information;
- (b) providing ready management information to facilitate policy analysis and reviews;

- (c) enabling changes in policy, management and operations of the social security schemes to be effected with minimum lead time and development efforts; and
- (d) interfacing with other new computerised information systems in SWD.

Improvement in Customer Service

7. With the implementation of the functions set out in paragraph 6, the new CSSS will enable the Social Security Field Units (SSFU) of SWD to attend to more customers at any one time. All the 33 SSFUs will be connected through communication network linking up about 1 262 workstations. Sophisticated on-line functions will also facilitate the collation and processing of data so that customers are less likely to be required to return to SSFU for a second time regarding their application. The expected improvements to customer service are summarized as follows -

(a) Reduced Waiting Time for Customers

The counter staff serving customers will be able to use on-line functions to extract information and notify the officer responsible for the case, thus shortening the duration of each enquiry. As a result, we expect 90% of customers to be attended to by the service unit staff within five minutes. The current performance pledge is attendance in ten minutes.

(b) Fewer Return Visits for Customers

The CSSS will capture more data to help determine the eligibility, amount and period of payment to each case. After its implementation, we expect 90% of the straight-forward applications (e.g. Old Age Allowance) with all supporting documents available to have the investigation, assessment and authorisation completed on the same day.

(c) Speedier Payment Processing

The CSSS will be able to support on-line assessment and authorisation of Traffic Accident Victims Assistance (TAVA) and Criminal and Law Enforcement Injuries Compensation (CLEIC) cases and the processing of payment. We expect to reduce the waiting time for payment to TAVA and CLEIC cases from seven to four working days.

(d) Speedier Processing for Off-site Cases

The CSSS also supports the use of portable computers and printers which will be used in sub-offices, hospitals and institutions. This will eliminate the need for field staff to return to the main office for checking computer records and making reference to old paper casefiles. We anticipate to reduce the turn-around time for processing these off-site cases from about one week at present to about three days. We also expect this supporting function that allows off-site access to the main system can enhance the productivity of the field staff.

(e) Operational Environment

In implementing CSSS, we will remove all the paper casefiles to a Central Casefile Depository (CCD). This will free up storage space for front office use. After the implementation of the CSSS and the setting up of the CCD, we estimate that about 1 800 m² of office space in field units can be released for improving office environment to customers and staff.

Improvement in Management Information

8. The existing SSPS provides only limited information on the profile of social security assistance recipients. As a result, we have to conduct sample case surveys of social security recipients annually in order to obtain information and statistics on the profile of those receiving social security. Due to the long lead time required for completing the statistical surveys and analyses, the information thus obtained cannot be up-to-date. We need much better management information of the CSSA and SSA schemes to ensure effective monitoring and to support policy reviews.

9. We summarize below the expected improvements in management information -

- (a) the CSSS can provide regular reports such as the total and average recognised needs, resources and assistance payments by nature of case (e.g. old age, physically disabled); by case type (e.g. single, family, unemployed); and by household size;

- (b) the time to obtain those limited statistics or management information can be reduced from the present 10 to 14 days to two days or less on average;
- (c) the CSSS can provide an important decision support capability function that enables the user to analyse different scenarios by providing the projected outcome under various assumptions and scenarios. This will enable the Administration to be more proactive and responsive in coping with the socio-economic changes in the management of and policy formulation on the social security schemes.

Cost Savings

10. The major savings come from the anticipated reduction of staff in administering the social security schemes. The CSSS provides new functions and facilitate business process re-engineering to achieve the following -

- (a) All existing paper casefiles will be removed to the CCD. Only documentary evidence such as application forms and medical assessment forms will be retained in new case files. We anticipate that the workload of Assistant Clerical Officers and Clerical Assistants will be reduced by 25% and 55% respectively.
- (b) All forms, letters, notifications etc. will be stored in the CSSS in electronic form. On-line functions will be available for the issue of these documents during case processing. We anticipate that no Typists will be needed in SSFUs after the implementation of the CSSS.

- (c) The CSSS captures additional data for determining the eligibility of customers and calculating payments for some simple CSSA cases. The scrutiny of these applications can therefore be performed by staff at a junior rank.

11. From 2001-02, we estimate that we can delete 100 posts from the existing establishment of SWD and ITSD. This amounts to a realisable annual saving of \$35.35 million. Furthermore, much less printing and photocopying will be required because almost all paper documents such as forms, reports, circulars and manuals can be stored in electronic form. The total realisable staff and cost savings will amount to \$38.5 million.

Cost Benefit Analysis

Enclosure 1 12. We have carried out the usual cost benefit analysis applicable to major computer projects on the CSSS as contained in Enclosure 1. In this analysis, we have only accounted for tangible benefits in terms of savings which are either realisable, for example, posts to be deleted, or non-realisable such as fragmented posts that cannot be deleted and computer capacity released from ITSD's Computer Bureau as a result of the discontinuation of SSPS. We have not made an attempt to quantify in monetary terms the benefits likely to accrue from closer monitoring of the social security schemes made possible with the CSSS. Furthermore, the system should bring about significant intangible benefits in terms of improved customer service. Therefore, despite a cost-benefit analysis which shows that the system will not break even for a long time or at all, we consider there are sufficient justifications to proceed with its development.

FINANCIAL IMPLICATIONS

13. The estimated cost and cashflow for the implementation of CSSS are as follows -

Non-recurrent Cost for Development and Implementation

	97-98	98-99	99-00	00-01	Total
	\$M	\$M	\$M	\$M	\$M
(a) Computer hardware	-	13.581	0.665	28.402	42.648
(b) Computer software	-	3.975	0.162	20.216	24.353
(c) Site preparation	-	0.455	3.449	14.839	18.743
(d) Development services	-	25.748	25.748	18.697	70.193
(e) Training	-	0.322	2.542	15.625	18.489
(f) Data migration	-	0.000	5.943	22.320	28.263
(g) Consumables and Miscellaneous	-	0.256	0.178	1.187	1.621
(h) Contingency	-	4.434	3.869	12.128	20.431
Sub-total	-	48.771	42.556	133.414	224.741

Non-recurrent Staff Cost

(i) Staff costs					
(i) SWD	3.607	8.061	16.759	10.102	38.529
(ii) ITSD	1.520	7.650	7.790	4.630	21.590
Sub-total	5.127	15.711	24.549	14.732	60.119
Total	5.127	64.482	67.105	148.146	284.860

14. As regards paragraph 13(a) above, the cost of \$42,648,000 is for the acquisition of 1 262 workstations, servers, peripherals, and data communication and related equipment.

15. As regards paragraph 13(b) above, the cost of \$24,353,000 is for the acquisition of system software including operating systems, database licences and PC software.

16. As regards paragraph 13(c) above, the cost of \$18,743,000 is for the installation of trunking and power sockets, and cabling work at 33 SSFUs, 18 other SWD offices including SWD headquarters and service units (e.g. CSSS Support Centre, Social Security Payment Control Section, Central Casefile Depository, Criminal and Law Enforcement Injuries Compensation Section and Traffic Accident Victims Assistance Section and two ITSD offices (Data Centre and Disaster Recovery Bureau)).

17. As regards paragraph 13(d) above, the cost of \$70,193,000 is for the employment of contractor to provide services on system development and implementation.

18. As regards paragraph 13(e) above, the cost of \$18,489,000 is for training on the use of personal computers and CSSS applications for both SWD and ITSD staff. We estimated that a total of 1 324 staff will have to be trained in the initial years.

19. As regards paragraph 13(f), the cost of \$28,263,000 is for data migration/conversion services. This includes costs for moving paper files to the CCD, inputting additional clients' and case data to the CSSS, and developing programmes to convert existing data under the SSPS to the new CSSS.

20. As regards paragraph 13(g) above, the cost of \$1,621,000 is for procurement of consumables and the miscellaneous items prior to the on-line running of CSSS.

21. As regards paragraph 13(h) above, the cost of \$20,431,000 represents 10% contingency on the cost items set out in paragraph 13(a) to (g).

22. As regards paragraph 13(i)(i) above, the cost of \$38,529,000 represents the staff cost for setting up an SWD Project Team. The Team comprises 684 man-months of Social Security Officer/Assistant grade officers and 204 man-months of clerical and operations staff required over the three years of development and implementation. The main responsibilities of the Team are to manage the project, co-ordinate training, conduct user acceptance tests on CSSS functions and programs developed for data migration/conversion from the existing SSPS to the CSSS and start up the CCD. In terms of posts required in 1997-98, this will involve nine additional posts, at an additional NAMS value of \$4,183,140. Details are set out in Enclosures 2 and 3.

Enclosures
2 & 3

23. As regards paragraph 13(i)(ii) above, the cost of \$21,590,000 represents the staff cost for setting up an ITSD Development Team. The Team comprises 261 man-months of staffing resources required over the three years of development and implementation. The main responsibilities of the Team are to oversee the development and migration services as provided by the contractor, to provide administrative and technical support services including system management, network and operation support, hardware and software procurement, site preparation, and system nursing. To supervise this project, ITSD will require inputs from a Chief Systems Manager on a part-time basis. In terms of non-directorate posts, ITSD will require to create four additional posts in 1997-98 with a NAMS value of \$2,407,140. Details are set out in Enclosures 4 and 5.

Enclosures
4 & 5

Recurrent Cost

24. We estimate the annual recurrent costs as follows -

	First year cost in 2000-01 upon live-run of CSSS in October 2000 (\$M)	Full year cost from 2005-06 onwards (\$M)
(a) Hardware maintenance	3.252	9.990
(b) Software licence and maintenance	0.528	5.128
(c) CSSS application maintenance services	7.438	14.877
(d) Other miscellaneous items	1.187	1.793
Sub-total	12.405	31.788
(e) Staff costs		
(i) SWD	8.474	16.948
(ii) ITSD	4.894	9.788
Sub-total	13.368	26.736
Total	25.773	58.524

25. As regards paragraphs 24(a) and (b) above, the annual expenditure is for the maintenance of hardware, system software and communications network equipment. It also includes the rental of communication lines, as well as the licence fees for software for the CSSS. The terms and conditions of the computer bulk contract allow a special discount for the maintenance service charge of some equipment for the first four years. Thus, the full year recurrent maintenance cost will increase from about \$9.6 million in 2002-03 to \$15.1 million in 2005-06.

Enclosure 1 Details are set out in the cost and benefit analysis in Enclosure 1.

26. As regards paragraph 24(c) above, the annual expenditure is required for hiring service to perform on-going application maintenance and support.

27. As regards paragraph 24(d) above, the annual expenditure is for consumables required after the CSSS live-run. These will include toner cartridge for printers, tape cartridge for backup data, optical disks and paper.

28. As regards paragraph 24(e)(i) above, the annual expenditure is required to meet the staff cost of 38 posts in SWD for the administration, user help-desk function and user-training of the CSSS. It will be offset by deleting 10 posts currently running the SSPS . Details are set out in Enclosure 6.

29. As regards paragraph 24(e)(ii) above, the annual expenditure is required to meet the staff cost of 16 posts of ITSD staff resources for overseeing the contractor for performing application maintenance and for providing system management, help desk, round-the-clock operation, and technical support services. It will be offset by deleting 5 posts currently running the SSPS. Details are set out in Enclosure 7.

IMPLEMENTATION PLAN

30. We propose the implementation plan as follows -

<u>Activities</u>	<u>Expected completion date</u>
Tendering for implementation of CSSS	End August 1998
Development and Implementation of CSSS	End September 2000
Data migration and CSSS goes live	Early October 2000
Manual conversion to CSSS on line	End March 2001

THE WAY FORWARD

31. We intend to seek the approval of the Finance Committee for the implementation of the Computerised Social Security System at its meeting on 28 November 1997.

BACKGROUND INFORMATION

32. To meet the problem described in paragraph 4, SWD with the assistance of ITSD and Consultants has -

- (a) conducted a departmental ISSS with the following broad objectives -
 - (i) to assess the long term IT potential and quantify the current IT requirements of SWD, having regard to its business and operational strategies; and
 - (ii) to recommend a departmental IT strategic plan.
- (b) in parallel with the ISSS, a feasibility study was conducted to examine the development of a new CSSS. The objective of this study was to recommend, in the light of the policy and operational objectives of SWD, and the likely technology options and resource constraints, a computerised social security system that would involve a replacement of the current Social Security Payment System to meet fully the Administration's operational and management information needs for policy review, analysis, forecasting, operation and financial management control and payment within an early timeframe.

33. The ISSS was completed in July 1997. In their final deliverable the Consultants have outlined seven application systems for further development, including the CSSS. The seven potential applications are outlined as follows -

- (a) **Computerised Social Security System** - This supports the processing of social security cases and automates key activities, thereby improving customer service;
- (b) **Client Information System** - This provides a centralized database for SWD's clients, thereby facilitating sharing of client information among front-line workers in SWD, case monitoring and service planning;
- (c) **Technical Infrastructure** - This consists of networking and workstation facilities to enable individuals and groups to exchange key documents electronically, thereby facilitating person-to-person communication, access to other applications etc.;
- (d) **Service Provider Information System** - This is a centralised database with detailed information on services and staffing of all SWD & non-government organisation service units, thereby facilitating better service co-ordination, monitoring and planning;
- (e) **Human Resource Management System** - This is a centralized database of SWD staff, thereby facilitating staff management and training;
- (f) **Project and Service Planning System** - The system contains updated and accurate information on all existing and new projects,

thus facilitating project monitoring, control and service planning;
and

- (g) **Management Information System** - This system extracts information from the above applications and provides reports, thereby enabling better access and more accurate data to be made available for management and policy planning.

34. We accord top priority to the CSSS and propose to proceed with its development and implementation as Phase I of the Information System Strategy of SWD. The next priority will be to conduct feasibility studies on the Client Information System and Technical Infrastructure. Subject to the findings and the business case of the feasibility studies, we intend to pursue them as Phase II of the Strategy. We will pursue studies on the remaining application systems in subsequent phases.

Computerised Social Security System
Costs/Benefits Analysis (Note 1)

	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	Total
I. Costs										
A. Non-recurrent cost (\$M)										
1. Hardware/software		17 555	0 827	40 610						67 000
2. Site preparation		0 455	3 449	14 839						18 743
3. Development services		25 740	25 748	18 697	15 625					70 193
4. Training		0 322	2 542	15 625	22 320					18 489
5. Data migration		0 256	0 178	1 107	10 102					28 263
6. Consumables and miscellaneous	3 607	8 061	16 759	4 630						1 621
7. Staff costs	1 520	7 650	7 790	4 630						38 529
ITSD	5 127	60 047	63 236	136 048						21 599
Total non-recurrent costs (Note 2)										264 478
B. Recurrent cost (\$/year) (\$M)										
1. Hardware/software maintenance			2 152	3 780	9 572	9 572	14 458	14 566	15 118	69 218
2. CSSS application maintenance services				7 438	14 877	14 877	14 877	14 877	14 877	81 823
3. Other miscellaneous items				1 107	1 793	1 793	1 793	1 793	1 793	10 152
4. Staff costs				8 474	16 947	16 947	16 947	16 947	16 948	93 210
ITSD				4 094	9 700	9 700	9 700	9 700	9 700	51 834
Total recurrent costs			2 152	25 773	52 977	52 977	57 863	57 971	58 574	308 237
Total costs (A+B)	5 127	60 047	65 388	161 791	52 977	52 977	57 863	57 971	58 574	572 665
II. Benefits (5 years)										
C. Realisable savings (\$M)										
1. SSFUs (post savings)				5 446	26 226	26 226	26 226	26 226	26 226	136 576
2. TAVAS/CLICS (post savings)				0 470	1 139	1 139	1 139	1 139	1 139	6 165
3. Discontinuation of SSFS (post and cost savings)				5 570	11 139	11 139	11 139	11 139	11 139	61 265
Total realisable benefits				11 486	38 504	38 504	38 504	38 504	38 504	204 005
D. Non-realizable savings (\$M) (Note 3)										
1. SSFUs				(0 026)	0 138	0 138	0 138	0 138	0 138	0 664
2. Discontinuation of SSFS				1 258	2 515	2 515	2 515	2 515	2 515	13 833
Total non-realizable benefits				1 232	2 653	2 653	2 653	2 653	2 653	14 497
Total benefits (C+D)				12 718	41 157	41 157	41 157	41 157	41 157	218 503
III. Net costs/benefits	(5 127)	(60 047)	(65 388)	(149 073)	(11 820)	(11 820)	(16 706)	(16 814)	(17 367)	(354 162)
Net present value (NPV) ratio	1 000	0 962	0 925	0 809	0 855	0 822	0 790	0 760	0 731	
IV. NPV of net costs/benefits	(5 127)	(57 765)	(60 403)	(132 526)	(10 106)	(9 716)	(13 198)	(12 779)	(12 695)	
V. Cumulative NPV of costs/benefits	(5 127)	(62 892)	(123 375)	(255 901)	(266 007)	(275 723)	(288 921)	(301 700)	(314 395)	

Note 1: This Costs/Benefits Analysis is based on the caseload of 1997-98. No projected growth is assumed.

Note 2: The total non-recurrent costs do not include the contingency cost of \$20.431 million in the project estimates.

Note 3: Non-realizable savings constitute fragmented posts that cannot be deleted and computer capacity released from ITSD's Computer Bureau as a result of the discontinuation of SSFS.

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**Proposed increase in the establishment ceiling of
Social Welfare Department**

The ceiling placed on the total notional annual mid-point salary (NAMS) value of all non-directorate posts in the permanent establishment of the Social Welfare Department in 1997-98 will be increased from \$1,424,811,840 by \$4,183,140 to \$1,428,994,980 for creating the following non-directorate posts to provide development support for the implementation of the system -

Rank	(a) No. of Posts	(b) Unit NAMS \$	(a) x (b) Total NAMS \$
Chief Social Security Officer	1	869,220	869,220
Senior Social Security Officer	2	637,200	1,274,400
Social Security Officer I	2	450,360	900,720
Social Security Officer II	4	284,700	1,138,800
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Total	9		4,183,140

**Proposed non-recurrent staff cost of
Social Welfare Department**

The proposed non-recurrent staff cost in the Social Welfare Department at \$38.529 million is for establishing the project team for system development and implementation -

Rank	(a) No. of man- months	(b) Monthly Staff Cost \$	(a) x (b) Total Staff Cost \$
Chief Social Security Officer	36	118,118	4,252,248
Senior Social Security Officer	72	83,604	6,019,488
Social Security Officer I	96	63,721	6,117,216
Social Security Officer II	240	47,085	11,300,400
Senior Social Security Assistant	132	37,991	5,014,812
Social Security Assistant	108	23,206	2,506,248
Assistant Clerical Officer	12	25,400	304,800
Clerical Assistant	120	16,562	1,987,440
Office Assistant	60	13,763	825,780
Motor Driver	12	16,735	200,820
Total	888		38,529,252

**Proposed increase in the establishment ceiling of
Information Technology Services Department**

The ceiling placed on the total notional annual mid-point salary (NAMS) value of all non-directorate posts in the permanent establishment of the Information Technology Services Department in 1997-98 will be increased from \$370,341,680 by \$2,407,140 to \$372,748,820 for creating the following non-directorate posts to provide development support for the implementation of the system -

Rank	(a) No. of Posts	(b) Unit NAMS \$	(a) x (b) Total NAMS \$
Senior Systems Manager	1	869,220	869,220
Systems Manager	1	637,200	637,200
Analyst/Programmer I	2	450,360	900,720
Total	4		2,407,140

**Proposed non-recurrent staff cost of
Information Technology Services Department**

The proposed non-recurrent staff cost of \$21.586 million is required for setting up an ITSD Development Team. The Team comprises 261 man-months of staff resources required for three years of development and implementation. The breakdown is as follows -

Rank	(a) No. of man- months	(b) Monthly Staff Cost \$	(a) x (b) Total Staff Cost \$
Chief Systems Manager	18	171,951	3,095,118
Senior Systems Manager	47	136,040	6,393,880
Systems Manager	59	86,750	5,118,250
Analyst / Programmer I	110	55,657	6,122,270
Computer Operator I	27	31,722	856,494
Total	261		21,586,012

**Proposed recurrent staff cost of
Social Welfare Department**

(a) Recurrent posts to support the CSSS

The proposed annual recurrent staff cost in the Social Welfare Department at \$16.948 million is made up of the following 38 posts required for system administration and management, change requests, user help desk, user training and Central Casefile Depository operations -

Rank	(a) No. of Posts	(b) Annual Staff Cost \$	(a) x (b) Total Staff Cost \$
Chief Social Security Officer	1	1,417,416	1,417,416
Senior Social Security Officer	2	1,003,248	2,006,496
Social Security Officer I	4	764,652	3,058,608
Social Security Officer II	7	565,020	3,955,140
Senior Social Security Assistant	7	455,892	3,191,244
Assistant Clerical Officer	1	304,800	304,800
Clerical Assistant	10	198,744	1,987,440
Office Assistant	5	165,156	825,780
Motor Driver	1	200,820	200,820
Total	38		16,947,744

(b) Posts to be deleted as a result of cessation of the SSPS -

Rank	(a) No. of Posts	(b) Annual Staff Cost \$	(a) x (b) Total Staff Cost \$
Senior Social Security Officer	1	1,003,248	1,003,248
Social Security Officer I	1	764,652	764,652
Social Security Officer II	3	565,020	1,695,060
Senior Social Security Assistant	5	455,892	2,279,460
Total	10		5,742,420

**Proposed annual recurrent staff cost of
Information Technology Services Department**

(a) Recurrent staff resources to support the CSSS

The proposed annual recurrent staff cost in the Information Technology Services Department at \$9.788 million is made up of 16 posts for monitoring application maintenance, system management, help desk and technical support services -

Rank	(a) No. of Post	(b) Annual Staff Cost \$	(a) x (b) Total Staff Cost \$
Senior Systems Manager	1	1,632,480	1,632,480
Systems Manager	1	1,041,000	1,041,000
Analyst / Programmer I	5	667,884	3,339,420
Senior Computer Operator	2	555,192	1,110,384
Computer Operator I	7	380,664	2,664,648
Total	16		9,787,932

(b) Posts to be deleted as a result of cessation of the SSPS -

Rank	(a) No. of Post	(b) Annual Staff Cost \$	(a) x (b) Total Staff Cost \$
Systems Manager	1	1,041,000	1,041,000
Analyst / Programmer I	2	667,884	1,335,768
Analyst / Programmer II	2	388,080	776,160
Total	5		3,152,928