For discussion **FCR(2018-19)76**
on 25 January 2019

ITEM FOR FINANCE COMMITTEE

CAPITAL WORKS RESERVE FUND
HEAD 710 – COMPUTERISATION
Social Welfare Department
New Subhead "Redevelopment of Client Information System"
New Subhead "Redevelopment of Service Performance Management Information System"

Members are invited to approve the creation of the following two new commitments for the Social Welfare Department –

(a) $316,877,000 for the redevelopment of Client Information System; and

(b) $65,424,000 for the redevelopment of Service Performance Management Information System.

PROBLEM

The Client Information System (CIS) and Service Performance Management Information System (SPMIS) of the Social Welfare Department (SWD) have been in use for about eight and 13 years respectively. SWD needs to replace the two systems with the aid of advanced technology to increase operation efficiency and meet with the changes driven by the significant expansion of social services as well as the adoption of new service delivery modes in recent years.

PROPOSAL

2. The Director of Social Welfare, with the support of the Secretary for Labour and Welfare and Government Chief Information Officer, proposes to create two new commitments of $316,877,000 and $65,424,000 for the redevelopment of CIS and SPMIS respectively.

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JUSTIFICATION

Problems of the Existing CIS

3. The existing CIS will have reached the end of its serviceable lifespan of ten years by December 2020. Despite the implementation of a number of upgrades and enhancements on CIS in the past years, the rapid development of information technology has rendered the key components of CIS obsolete. SWD conducted a feasibility study in 2017 to review CIS and identify further room to enhance the system in meeting new policies or business initiatives of SWD. The findings of the study revealed that there are limitations in the existing CIS in meeting SWD's growing business needs for the following reasons –

(a) with the core system components in service since 2010, both the hardware and software of CIS are becoming obsolete and approaching the end of their lifespan which may bring risk of service interruption or even suspension;

(b) with limitation in the system architecture and design, the system is inflexible to include new functions or cater for changes in workflow and business rules brought about by new policies or business initiatives, including the inability to support mobile computing for use in performing outreaching duties outside office/after office hours;

(c) the non-cloud design of the existing system is costly in system enhancement and inflexible in adopting the changing technologies;

(d) all referrals and applications for services from other bureaux/departments (B/Ds), government related organisations (GROs) and non-governmental organisations (NGOs) are currently received through post, fax or email. With the lack of an electronic submission platform, case information received has to be input to CIS manually by case workers of the concerned service units which is time consuming and inefficient; and

(e) the existing CIS has limited capacity to have further interface with other SWD systems or incorporate other systems to achieve better integration, which may compromise efficiency in case management.

Problems of the Existing SPMIS

4. SWD conducted a feasibility study cum business process re-engineering study on the redevelopment of SPMIS in 2017 with a view to automating and streamlining the processes of collation and consolidation of

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service performance returns so as to facilitate SWD's service performance monitoring and data analysis in a comprehensive manner. The findings of the study concluded that the existing SPMIS should be redeveloped in order to attain higher effectiveness and efficiency to cater for the evolving needs in service performance management for the following reasons –

(a) the design and technologies adopted at the time of development of the existing SPMIS are outdated, and are inflexible to incorporate new business needs and have low propensity for further system expansion;

(b) the existing SPMIS lacks an electronic communication platform for receiving performance returns from subvented NGOs. This generates much manual effort in data input and validation, and impacts on efficiency in timely service monitoring and formulation of remedial actions. Besides, the monitoring of subsidised services provided by NGOs is also currently outside SPMIS; and

(c) the existing SPMIS lacks business intelligence tool for generating comprehensive statistical data and alert function to facilitate service monitoring.

The Proposed Systems and Expected Benefits

5. SWD needs to redevelop CIS and SPMIS to respond to the problems identified. The proposed new systems, i.e. CIS-II and SPMIS-II, will be built based on new system frameworks and designs, and adopt cloud computing technology. The modular design of the new systems will also support efficient deployment of system enhancements to cater for changing operational requirements as well as new service and policy initiatives.

Expected Benefits of CIS-II

6. The system will be redeveloped to achieve the following benefits –

(a) to provide an electronic submission platform for other B/Ds, GROs and NGOs to submit referrals and information updates to SWD, which will streamline the operations by minimising manual work on data entry and increase efficiency. There will also be a smarter search engine which allows SWD users to efficiently search for targeted data;

(b) to facilitate the provision of e-services to the public, such as electronic submission of enquires on and applications and requests for various services by the public;

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(c) to integrate with other standalone SWD systems (such as the Clinical Psychological Services Information System and Integrated Vocational Training Centre System) or build interface with other systems, including the Computerised Social Security System, Long Term Care Service Delivery System, Account and Management Information System, Referral System for Training Subsidy Programme for Children on the Waiting List of Subvented Pre-school Rehabilitation Services, Community Care Service Voucher System (CCSVS), Residential Care Service Voucher System (RCSVS) and SPMIS-II, so as to streamline workflows and increase case management efficiency. There will also be a flexible, easy-to-use and versatile reporting tool which will facilitate users to create a variety of statistical reports; and

(d) to support mobile access to CIS-II, which will operate round the clock, by SWD workers in performing outreaching duties outside office/after office hours.

Expected Benefits of SPMIS-II

7. The system will be redeveloped to achieve the following benefits –

(a) to provide an electronic platform for use by NGOs in order to reduce manual data input, ensure data accuracy and facilitate timely receipt of service performance data for more comprehensive monitoring of service performance and service planning. The new system will also capture the financial information of NGOs to facilitate SWD's financial monitoring of these organisations;

(b) to expand the usage of the system to 1 838 service units operated by 169 subvented NGOs and 140 departmental service units and allow senior management of SWD and NGOs to obtain comprehensive service performance information about subvented and subsidised services, including underperformed service areas, thereby facilitating them to take prompt remedial action when situation warrants;

(c) to enable the generation of more useful service performance management information/reports of welfare services through the use of a flexible, easy-to-use and versatile reporting tool, with a view to ensuring proper use of public resources; and

(d) to facilitate data exchange with other systems of SWD, including the Subvention Computation System, Lotteries Fund Projects Information System, Case Management Cum Tracking Facilities

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System, Partnership Fund For The Disadvantaged Information System, CCSVS, RCSVS and CIS-II, for speeding up the processing of performance data in SPMIS-II.

FINANCIAL IMPLICATIONS

Non-recurrent Expenditure

8. It is estimated that the implementation of redeveloping CIS will incur a non-recurrent cost of $316,877,000 from 2019-20 to 2023-24, while the implementation of redeveloping SPMIS will incur a non-recurrent cost of $65,424,000 from 2019-20 to 2022-23.

CIS-II

9. The indicative cost breakdown and estimated cash flow requirements by financial years are as follows –

		2019-20 $'000	2020-21 $'000	2021-22 $'000	2022-23 $'000	2023-24 $'000	Total $'000
(a)	Hardware	1,481	1,885	22,452	38,583	8,052	72,453
(b)	Software	-	-	29,891	8,636	6,477	45,004
(c)	Implementation	14,143	39,688	42,893	44,058	21,264	162,046
(d)	Others	692	1,602	1,889	2,742	1,642	8,567
	Sub-total	16,316	43,175	97,125	94,019	37,435	288,070
(e)	Contingency	1,632	4,317	9,712	9,402	3,744	28,807
	Total	**17,948**	**47,492**	**106,837**	**103,421**	**41,179**	**316,877**

SPMIS-II

10. The indicative cost breakdown and estimated cash flow requirements by financial years are as follows –

		2019-20 $'000	2020-21 $'000	2021-22 $'000	2022-23 $'000	Total $'000
(a)	Hardware	-	1,601	3,750	1,044	6,395
(b)	Software	-	4,332	9,549	2,070	15,951
(c)	Implementation	4,984	10,297	10,297	7,084	32,662
(d)	Others	-	1,334	1,425	1,709	4,468
	Sub-total	4,984	17,564	25,021	11,907	59,476
(e)	Contingency	498	1,757	2,502	1,191	5,948
	Total	**5,482**	**19,321**	**27,523**	**13,098**	**65,424**

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11. On paragraphs 9(a) and 10(a) above, the estimated expenditure is for the acquisition of computer hardware, including servers, storage, security appliance, network equipment, desktop and notebook computers and other miscellaneous hardware.

12. On paragraphs 9(b) and 10(b) above, the estimated expenditure is for the acquisition of system software, including operating systems, database management systems, application server software, virtualisation software, document management software, business intelligence/reporting tool and anti-virus software, etc.

13. On paragraphs 9(c) and 10(c) above, the estimated expenditure is for the implementation of the project, including proof-of-concept, system analysis and design, development, site preparation and system configuration.

14. On paragraphs 9(d) and 10(d) above, the estimated expenditure is for security risk assessment and audit, communication lines, setting up of facilities for staff training on new system functions, consumables and service charge for hosting the electronic submission platform. For CIS-II, an additional cost for privacy impact assessment is required as personal data will be stored in the system.

15. On paragraphs 9(e) and 10(e) above, the estimates represent respectively a 10% contingency on items set out in paragraphs 9(a) to (d) and paragraphs 10(a) to (d) above.

Other Non-recurrent Expenditure

16. A project team will be set up in SWD for implementation of the redevelopment of CIS and SPMIS, including tendering, project management, supporting system analysis and design, conducting user acceptance tests, etc. The project team will entail a total non-recurrent staff cost of about $93,841,000 from 2019-20 to 2023-24. The cost will be largely absorbed from within SWD's existing resources.

Recurrent Expenditure

17. It is estimated that the recurrent expenditure for maintaining and supporting CIS-II is $30,488,000 per annum from 2024-25 onwards, while that for SPMIS-II is $13,113,000 per annum from 2023-24 onwards, which will be

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partly met by the realisable savings mentioned in paragraphs 25(a) and 27(a) below and be absorbed from within existing resources. The breakdown of recurrent expenditure of the two systems is set out in the tables below. Such requirements, including any staff cost incurred, will be reviewed nearer the time when the system is commissioned.

CIS-II

18. Breakdown of the recurrent requirement is as follows –

		2023-24	2024-25 onwards
		$'000	**$'000**
(a)	Hardware and Software Maintenance	4,750	18,197
(b)	On-going System Support	2,371	9,485
(c)	Communication Network and Hosting Services	592	2,367
(d)	Training	51	206
(e)	Consumables	58	233
	Total	**7,822**	**30,488**

SPMIS-II

19. Breakdown of the recurrent requirement is as follows –

		2022-23	2023-24 onwards
		$'000	**$'000**
(a)	Hardware and Software Maintenance	-	4,671
(b)	On-going System Support	2,952	7,084
(c)	Communication Network and Hosting Services	-	1,276
(d)	Consumables	-	82
	Total	**2,952**	**13,113**

20. On paragraphs 18(a) and 19(a) above, the estimated annual expenditure is for the hardware and software maintenance costs, including servers, storage, security appliance, network equipment, desktop and notebook computers, operating systems, database management systems, application server software, virtualisation software, document management software, business intelligence/reporting tool and anti-virus software, etc.

21. On paragraphs 18(b) and 19(b) above, the estimated annual expenditure is for the maintenance cost of custom items for the systems, including apply updates/patches for the systems, etc.

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22. On paragraphs 18(c) and 19(c) above, the estimated annual expenditure is for the subscription of communication lines and hosting service for electronic submission platform.

23. On paragraphs 18(d) above, the estimated annual expenditure is for conducting training to CIS-II users while training for SPMIS-II users will be conducted with existing in-house resources.

24. On paragraphs 18(e) and 19(d) above, the estimated annual expenditure is for the acquisition of consumable items, for example, backup tapes.

Cost Savings/Avoidance

CIS

25. It is estimated that the proposed redevelopment of CIS will generate annual savings of $62,327,000 from 2024-25 onwards, comprising –

(a) Realisable savings of $21,022,000 per annum

This represents the maintenance and support cost of existing CIS and other end user computing systems to be incorporated in CIS-II. The savings will be ploughed back to cover part of the maintenance and support costs of the new system.

(b) Notional savings of $32,875,000 per annum

With the improvements brought about by the new system, notional savings will be achieved mainly through reduction in staff effort required for various activities, such as handling of service recipients' enquiries and manual efforts in data input and checking.

(c) Cost avoidance of $8,430,000 per annum

The additional recurrent cost for upgrading and enhancing CIS will be avoided with the implementation of the new system.

Encl. 1 26. A cost and benefit analysis for the proposed system is at Enclosure 1.

SPMIS

27. It is estimated that the proposed redevelopment of SPMIS will generate annual savings of $4,731,000 from 2023-24 onwards, comprising –

(a) Realisable savings of $61,000 per annum

These are the recurrent system maintenance costs of the existing SPMIS. The savings will be ploughed back to cover part of the recurrent costs of the new system.

(b) Notional savings of $4,670,000 per annum

With the improvements brought about by the new system, notional savings will be achieved through reduction in staff effort required by automating and streamlining the processes of submission of service performance returns on the electronic platform and more efficient retrieval of performance data and reports generation.

Encl. 2 28. A cost and benefit analysis for the proposed system is at Enclosure 2.

IMPLEMENTATION PLAN

29. The planned implementation schedules of the two redevelopment projects are as follows –

	Activity	**Target completion date**	
		CIS-II	**SPMIS-II**
(a)	Setting up of Project Development Office and project preparation work	Q3 2019	Q3 2019
(b)	System analysis and design	Q4 2020	Q3 2020
(c)	Phase 1[1]		
	• Development	Q4 2021	Q1 2021
	• Testing	Q2 2022	Q2 2021
	• System rollout	Q3 2022	Q3 2021
(d)	Phase 2[2]		
	• Development	Q1 2023	Q1 2022
	• Testing	Q2 2023	Q2 2022
	• System rollout	Q2 2023	Q3 2022

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[1] Phase 1: CIS – re-development in modular design and with electronic submission;
SPMIS – system development for subvented services with electronic submission.

[2] Phase 2: CIS – development of new interfaces with other systems and generation of new reports, etc.;
SPMIS – system development for subsidised services and interface with other systems, etc.

PUBLIC CONSULTATION

30. We briefed the Legislative Council Panel on Welfare Services on 10 December 2018. Panel Members supported the submission of the proposal to the Finance Committee for funding approval.

BACKGROUND

31. SWD provides social welfare services directly through its service units to meet multifarious welfare needs of the public, while subvented and subsidised services are provided by NGOs. SWD has, based on a set of well-defined Service Quality Standards and Funding and Service Agreements (FSAs)/Service Documents (SDs), established a service performance monitoring mechanism to monitor the service performance of the services provided by departmental units and NGOs.

CIS

32. Launched in 2010, CIS is a mission-critical, service-user-centred case management system for the recording and consolidation of information of service users. This system is currently used by around 3 000 staff of SWD with information shared among different service units/offices on a need-to-know basis for the purposes of case management, handling of case referrals, and processing of service applications to facilitate the delivery of social services to members of the public in need. CIS has currently incorporated 24 end-user computing systems serving different business areas such as waitlisting applications and registries of cases for specific services. It also provides data exchange functions with other SWD application systems to facilitate case management and delivery of services. The current reporting function in CIS serves to monitor service progress and compile management information reports for service monitoring and planning. Through CIS, approximately 150 000 referrals, 100 000 intake records and 200 000 cases are processed each year.

SPMIS

33. Launched in 2005, SPMIS is used by staff of SWD's Subventions Branch to collate and consolidate the performance management information of subvented NGOs and service units of SWD. Information captured includes those from performance return forms, on-site assessment and complaint handling records to facilitate SWD's monitoring of these service units. Subvented service units of NGOs and departmental service units are required to submit service performance data by mail, email or fax on a regular basis for the purpose of

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service performance monitoring in accordance with the outcome and output standards set out in the FSAs/SDs. These returns will be manually processed, with the key statistics transferred to SPMIS. Service units with underperformed service outcome and output will be requested to submit action plan for improvement. SPMIS currently captures the service performance returns of 1 838 service units operated by 169 subvented NGOs as well as 140 departmental service units, based on the 375 types of statistical form for various services.

Labour and Welfare Bureau
Social Welfare Department
January 2019

Cost and Benefit Analysis for the Redevelopment of Client Information System (CIS)

		Cash Flow ($'000)										
		2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**Total**
1	**Non-Recurrent**											
	Expenditure	17,948	47,492	106,837	103,421	41,179	-	-	-	-	-	316,877
	Staff Cost	9,959	11,658	11,658	13,099	15,109	-	-	-	-	-	61,483
	Total Non-Recurrent Cost	**27,907**	**59,150**	**118,495**	**116,520**	**56,288**	**-**	**-**	**-**	**-**	**-**	**378,360**
2	**Recurrent**											
	Expenditure	-	-	-	-	7,822	30,488	30,488	30,488	30,488	30,488	160,262
	Total Recurrent Cost	**-**	**-**	**-**	**-**	**7,822**	**30,488**	**30,488**	**30,488**	**30,488**	**30,488**	**160,262**
	Total Non-Recurrent and Recurrent Cost (A)	**27,907**	**59,150**	**118,495**	**116,520**	**64,110**	**30,488**	**30,488**	**30,488**	**30,488**	**30,488**	**538,622**
3	**Savings**											
	Realisable Savings[Note 1]	-	-	-	-	5,256	21,022	21,022	21,022	21,022	21,022	110,366
	Notional Savings[Note 2]	-	-	-	-	8,219	32,875	32,875	32,875	32,875	32,875	172,594
	Cost Avoidance[Note 3]	-	-	-	-	2,108	8,430	8,430	8,430	8,430	8,430	44,258
	Total Savings (B)	**-**	**-**	**-**	**-**	**15,583**	**62,327**	**62,327**	**62,327**	**62,327**	**62,327**	**327,218**
	Net Savings (C) = (B) - (A)	**(27,907)**	**(59,150)**	**(118,495)**	**(116,520)**	**(48,527)**	**31,839**	**31,839**	**31,839**	**31,839**	**31,839**	**(211,404)**
	Net Savings Cumulative	**(27,907)**	**(87,057)**	**(205,552)**	**(322,072)**	**(370,599)**	**(338,760)**	**(306,921)**	**(275,082)**	**(243,243)**	**(211,404)**	

Notes –

1. This represents the maintenance and support cost of existing CIS and other end user computing systems to be incorporated in CIS-II.
2. Notional savings will be achieved through reduction in staff effort due to streamlining of business operation under CIS-II.
3. This represents the additional recurrent cost for upgrading and enhancing CIS, which will be avoided with implementation of CIS-II.

Cost and Benefit Analysis for the Redevelopment of Service Performance Management Information System (SPMIS)

		Cash Flow ($'000)										
		2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**Total**
1	**Non-Recurrent**											
	Expenditure	5,482	19,321	27,523	13,098	-	-	-	-	-	-	65,424
	Staff Cost	7,354	8,825	8,825	7,354	-	-	-	-	-	-	32,358
	Total Non-Recurrent Cost	**12,836**	**28,146**	**36,348**	**20,452**	**-**	**-**	**-**	**-**	**-**	**-**	**97,782**
2	**Recurrent**											
	Expenditure	-	-	-	2,952	13,113	13,113	13,113	13,113	13,113	13,113	81,630
	Total Recurrent Cost	**-**	**-**	**-**	**2,952**	**13,113**	**13,113**	**13,113**	**13,113**	**13,113**	**13,113**	**81,630**
	Total Non-Recurrent and Recurrent Cost(A)	**12,836**	**28,146**	**36,348**	**23,404**	**13,113**	**13,113**	**13,113**	**13,113**	**13,113**	**13,113**	**179,412**
3	**Savings**											
	Realisable Savings[Note 1]	-	-	-	-	61	61	61	61	61	61	366
	Notional Savings[Note 2]	-	-	-	2,335	4,670	4,670	4,670	4,670	4,670	4,670	30,355
	Total Savings (B)	**-**	**-**	**-**	**2,335**	**4,731**	**4,731**	**4,731**	**4,731**	**4,731**	**4,731**	**30,721**
	Net Savings (C) = (B) – (A)	**(12,836)**	**(28,146)**	**(36,348)**	**(21,069)**	**(8,382)**	**(8,382)**	**(8,382)**	**(8,382)**	**(8,382)**	**(8,382)**	**(148,691)**
	Net Savings Cumulative	**(12,836)**	**(40,982)**	**(77,330)**	**(98,399)**	**(106,781)**	**(115,163)**	**(123,545)**	**(131,927)**	**(140,309)**	**(148,691)**	

Notes –

1. This represents the system maintenance cost of existing SPMIS.
2. Notional savings will be achieved by automating and streamlining the existing business processes under the new system.
