**For discussion
on 14 January 2008**

Legislative Council Panel on Education

Upgrading of the
Web-based School Administration and Management System

Purpose

This paper seeks Members' views on the Administration's proposal to upgrade the computer server and related system software of the Web-based School Administration and Management System in government, aided and caput schools as well as local schools under the Direct Subsidy Scheme (DSS schools).

Background

2.	The School Administration and Management System (SAMS) was first launched in 1994 to provide all government, aided, caput and DSS schools with a networked computer system to assist in their administration and management processes and enable the electronic transmission of information between schools and the then Education Department. To meet users' needs, we started to replace SAMS computers in 2000-01 and converted the system into a web-based application which was rolled out from 2003 onwards. The enhanced system was thereafter referred to as WebSAMS.

3.	The major system functions of WebSAMS now include electronic data exchange between schools and the Education Bureau (EDB), report card printing, management of school, staff and student information, timetabling, supporting school places allocation, etc. A list of WebSAMS applications is at the Annex.

Problem

4.	The current hardware server of WebSAMS is becoming obsolete. The system processing power and the storage capacity, which was based on the standards in 2001, can no longer meet present day users' requirements. In addition, the system software will no longer be supported by the vendors in 2010. We have to resolve the problems ahead to avoid possible instabilities and minimise security risks.

Proposal

5.   We propose to create a new commitment of $67 million to –

     (a)   replace and upgrade the WebSAMS servers and related system software in government, aided, caput and DSS schools; and

     (b)   enhance the WebSAMS application programs to ensure that they can continue to be run in the upgraded system environment.

Justification

Improving efficiency

6.   After the rollout of WebSAMS, the usage rate of the system keeps on rising. In particular, for some functions such as the electronic submission of survey returns to EDB, basically all schools are now using WebSAMS. To meet the increasing needs, there have been continuous enhancements to the functions of the system, which in turn have added loading to the system. The system capacity is now nearly fully stretched, affecting at times its overall performance and efficiency. More processing power is required to sustain the future growth of WebSAMS in support of the new business requirements and enhancements in the school sector.

7.   To better serve the users and to improve the efficiency of the system, we consider it necessary to replace and upgrade the WebSAMS server.

Reducing security risk

8.   The WebSAMS system software, including the operating system and database management software, is becoming obsolete. The software vendors will no longer provide upgrade patches for fixing problems and addressing security issues in about 3 years' time. Due to the lack of upgrade patches, the system will become more vulnerable to security risks and system instabilities. Since WebSAMS contains personal information of students, parents and teaching staff, it is essential to upgrade the system software to minimise security risks.

Ensuring program compatibility

9.   The existing WebSAMS application programs are developed for running in the current system environment. While their functions are to be retained, all programs will have to be retested and scrutinised for necessary modifications so that the system will continue to function properly in the new system environment. This is to ensure a smooth switchover with minimum disruption to the operation of the schools.

Cost and Benefit

10. The proposed system upgrading seeks to maintain a reasonable performance level of WebSAMS required by schools. With an upgraded WebSAMS, we expect that all tasks currently performed by the system will be handled more efficiently and in a more secure manner. Although these benefits being scattered in some 1 100 schools cannot be realised in the form of staff savings, the time and efforts of school staff thus saved can be diverted to other work conducive to the teaching and learning in schools. Overall speaking, we expect the system upgrading would bring about enhanced productivity and better customer services.

Implementation Plan

11. The proposed upgrading project will comprise two main parts: acquisition of hardware and software by schools and enhancement of the WebSAMS application programs at central level by EDB.

12. Specifically, to provide schools with greater flexibility in procuring the computer equipment and migrating it to the enhanced WebSAMS in accordance with their own schedule, each eligible school will be provided with a one-off cash grant in 2008-09 for acquiring the new hardware server and system software. The upgrading cost of one server is estimated at about $56,000, including the cost for data conversion and the cost of some system software which can be purchased centrally by EDB at lower prices. Schools may spend the one-off grant across years, but in any case no later than end 2010. Unspent provisions would be clawed back. The EDB will provide schools with the required technical specification for reference and will offer assistance/support to schools throughout the upgrading exercise.

13. The enhancement of the WebSAMS application programs for adaptation to the upgraded system environment will be centrally arranged by EDB. The new version of WebSAMS will be distributed to schools in late 2008 for deployment under the new platform.

Consultation

14. According to a survey conducted in 2006 on the utilisation of WebSAMS by schools, over 80% of the 957 schools responding to the survey indicated that it was "necessary" or "very necessary" to upgrade the hardware server of WebSAMS. We have also consulted the WebSAMS User Group comprised mainly of schools' WebSAMS co-ordinators who are all very supportive of the present proposal.

Financial Implications

15.   We estimate that the proposed system upgrading will give rise to non-recurrent expenditure of about $67 million over three years from 2008-09 to 2010-11, about $57 million of which will go to hardware and software acquisition in schools. The balance will be used to procure support services for schools and EDB.

16.   We will earmark sufficient funds for the proposal in the estimates for respective financial years. The estimated cash flow for the proposal is as follows –

	2008-09	**2009-10**	**2010-11**
Estimated expenditure	$61.7 m	$3.8 m	$1.5 m

17.   The proposal does not have any additional recurrent financial implications as the existing recurrent provision for WebSAMS will be deployed to meet the recurrent expenditure in support of the upgraded system.

18.   Subject to Members' views, we will seek funding approval from the Finance Committee in February 2008.

Education Bureau
January 2008

Annex

**Functions and Applications of the
Web-based School Administration and Management System (WebSAMS)**

There are currently 20 applications in the WebSAMS -

- School basic information
- Student basic information
- Student attendance
- Student activities
- Award and punishment record
- Assessment and reporting
- Assessment of students with special education needs
- Staff deployment (arranging substitue teachers within school)
- Staff basic information
- Hong Kong Attainment Tests (for student performance analysis)
- Applied Learning
- Communication with Hong Kong Examinations and Assessment Authority (HKEAA)
- School financial monitoring and planning
- School places allocation (primary 1, secondary 1, 4 and 6)
- Report management (for schools to edit report templates for school-based needs)
- Data management (for schools to extract data from WebSAMS for their own computer applications)
- Timetabling
- Code management (including standard codes and school-defined codes, like school-based subjects and activities)
- System security management (controlling access rights)
- E-mail

To facilitate electronic communication between the Education Bureau (EDB) and schools, a Communication and Delivery System is installed in WebSAMS to serve as an interface between WebSAMS and other computer systems of the EDB and the HKEAA. In addition, a Data Query Tool is also provided for schools to conveniently compile survey data in specified format as required.