

For discussion on

Paper No. XX/98

on 16 November 1998

**Flexibility for Schools in Acquisition  
of Information Technology Facilities and Services**

**PURPOSE**

This paper seeks Members' views on our proposed new arrangements to give schools greater flexibility in the procurement of computer facilities, information technology (IT) training for teachers, and site preparation.

**BACKGROUND**

2. The Finance Committee (FC) approved \$252 million on 18 April 1997 and a further \$2,583 million on 5 December 1997 for various initiatives to enhance the use of IT in school education. These initiatives include-

- (a) provision of, on average, 30, 40 and 82 computers for each public sector special, primary and secondary schools respectively;
- (b) provision of over 45 000 training places at three competency levels for teachers;
- (c) establishment of an Information Technology Education Resource Centre (ITERC);
- (d) establishment of a multi-media learning centre in 103 secondary schools; and
- (e) introduction of an IT Pilot Scheme in ten primary and ten secondary schools.

3. These initiatives are at various stages of implementation.

- (a) Regarding 2(a), we have already procured some 22 000 computers for the provision of 15 computers to each primary school and 21 computers to each secondary school. As at October 1998, more than 60% of primary schools have been provided with the computers and provision for the remaining 40% will be completed by December 1998. The replacement of 21 computers in the

computer rooms for secondary schools was completed in August 1998. The replacement of computers in the computer rooms for special schools has also been completed.

- (b) Regarding 2(b), we have awarded two contracts for basic level IT training which aim to benefit 15 200 primary school teachers, and one contract for "creative" level IT training for some 1 500 teachers. As at October 1998, over 3 000 such teachers have received basic level IT training. The "creative" level training will commence in late November 1998.
- (c) As for 2(c), the ITERC has commenced operation in September 1998 to provide schools with professional and technical support in the use of IT, including hotline service and software preview.
- (d) As for 2(d), we have selected 103 secondary schools for the provision and completed the initial site investigation works.
- (e) As for 2(e), majority of the IT pilot schools will have their computer networks ready for full implementation by end 1998.

### **NEED FOR GREATER FLEXIBILITY**

4. Under existing arrangements, the procurement of computer facilities, teacher training as well as site preparation are all organised centrally. Indeed, a centralised approach was adopted for the procurement of 15 computers for each primary school, 21 computers for each secondary school, and three contracts for basic and "creative" levels of IT training for primary school teachers (of paragraphs 3(a) and (b)). During the implementation process, however, it becomes clear through our own observation and discussions with schools that needs and circumstances of individual schools vary considerably in terms of, for example, teachers' readiness to teach through the use of IT, and the physical layout and conditions of schools. This has led us to the view that we should bring in greater flexibility to better suit the different needs of different schools. We, therefore, propose to introduce the new arrangements outlined in paragraphs 5 to 13 below. The arrangements in respect of the procurement of computer facilities and teacher training apply equally to all public sector schools and those for site works would apply to aided and special schools. With the new arrangements, the overall financial commitment would still be contained within the \$2,835 million (i.e. the sum of \$252 million and \$2,583 million) non-recurrent commitment approved.

## **PROPOSALS**

### ***Provision of IT Facilities***

5. In addition to the provision mentioned in paragraph 3(a) above, we still need to provide primary schools, secondary schools and special schools with additional computers, totalling some 56 000 computers. To give schools greater flexibility in the procurement of these computers and peripheral equipment, we propose to give schools a cash grant to make their own purchase. The level of grant to each school will depend on its actual entitlement to computer facilities (which will be determined by the size of the school), and the average of the successful tendered prices for the computer facilities (see paragraph 6 below).

6. To obviate the need for individual schools to go through tendering procedures and to achieve some level of economies of scale, Government will still arrange a central tender. However, instead of awarding the contract to a single contractor, several contracts would be made with a number of conforming bidders with the lowest bids, preferably not less than five. The prices quoted by the successful bidders would become the ceiling prices for procurement of computer facilities under the contract. They would be required to provide updated prices on a regular basis, say, monthly. Schools would be free to make their purchase from any of the shortlisted contractors. In the process, schools may negotiate with the contractors for lower prices. Schools would be allowed to keep the surplus of the cash grant for other IT equipment or activities, if any, after they have met the prescribed minimum standard of IT provision. Alternatively, schools may deploy their own funds to top up the cash grant to procure more powerful and advanced computers.

7. The arrangements mentioned in the preceding two paragraphs will allow schools greater flexibility with regard to the quantity of IT equipment to be acquired and the timing of the purchase to suit their particular needs. Moreover, it would shorten the time incurred for the acquisition procedure and help address the issue of IT facilities having increasingly short product cycles. Another attraction is that it would instil competition among the shortlisted contractors who would be motivated to keep their prices and services competitive.

### ***Provision of teacher training***

8. We envisage four different levels of IT competency among teachers, namely "basic" level, "comfortable" level, "competent" level, and "creative" level. For this purpose, in addition to the 45 000 training places already approved by the FC (see paragraph 2(b) above), we shall be seeking further approval for a \$334 million non-recurrent commitment to provide another 35 000 training places at four different competency level and to develop ten self-learning packages for teachers. We will commission a study to clearly define the different levels of competency, the core competencies for each level, and corresponding assessment tools will also be developed. (A brief explanation on the four different competency level is at Annex I.)

9. To provide flexibility to schools, we propose to give a cash grant to schools to train their own teachers. The only exception would be the training places for which we have already awarded a contract (paragraph 3(b) above), and the training places at the "creative" level. (It would be more cost- effective for Government to provide the creative level training places centrally since only a small number of teachers from each school will be included.) The amount of grant for each school would depend on the size of the school as well as the unit cost of each training place at each of the three competency levels (i.e. excluding the creative level), the latter would depend on the outcome of the central tender mentioned in paragraph 10(a) below.

10. Schools may choose one or a combination of the following modes of training for their teachers -

- (a) schools may enroll their teachers in training courses run by training suppliers selected by Government through central tender. The suppliers will be selected with reference to criteria such as relevant experience, training facilities and course content which must include core elements specified by ED; or
- (b) schools may procure core training elements from the training suppliers shortlisted by ED through central tender and at the same time negotiate with these suppliers for additional tailor-made course elements and specific training arrangements; or
- (c) schools may devise their own training programme, with maximum flexibility in terms of course contents and logistical arrangements.

11. Regardless of the training modes chosen, the teachers will have to achieve the core competencies to be defined by ED. For modes (a) and (b)

above, the selected training suppliers would be responsible for assessing and confirming whether the teachers, having attended their courses, can meet the target core competencies by using the assessment tools adopted by ED. For mode (c), schools would be responsible for administering the assessment but using the tools adopted by ED.

12. By giving schools the flexibility mentioned above, they are likely to benefit more from the training programmes. The timing and venue for the training, as well as the course structure and contents would better address or take advantage of the characteristics of individual schools in terms of, for example, teachers' readiness, the school's curriculum and the presence or absence of an IT culture in the school. Schools may deploy the surplus of the cash grant, if any, for other IT related activities if their teachers have already reached the targeted competency level.

### *Site Works*

13. To pave the way for computer installation, site preparation works will be carried out at all public sector schools. We plan to complete works at about 520 sites by August 1999 and the remaining 480 sites (about 250 of which involve more substantial structural works such as the construction of new transformer rooms) by August 2000. We understand that the great majority of school would prefer Government to carry out the works on their behalf. A small number of schools may, however, wish to carry out the works themselves. To give these schools the necessary flexibility, we propose to allow them an option to engage authorised persons in the private sector to carry out the job. A cash grant, which will be equivalent to the average estimated costs of similar site preparation works should the works be carried out by Government, will be provided to these schools. To ensure the safety of teachers and students and the compatibility of computers for future networking, schools will be required to observe certain standard procedures. Government will provide assistance and advice.

**Education Department**  
**November 1998**

### **Four Different Competency Levels of Teacher Training**

**A. Basic Level (for all teachers)**

aware of the need to take up the new role as a learning facilitator, general computer operation and basic skills such as word processing, surfing through the Internet, as well as operating readily available educational software. About 18 training hours may be required;

**B. Comfortable Level (for 75% of teachers)**

capability to use IT tools and make use of teaching resources available on the Internet and the Intranet etc. In classroom teaching and lesson preparation. About 30 training hours may be required;

**C. Competent Level (for 25% of teachers)**

capability to handle computer networking, resolve simple hardware and software problems, make more advanced use of authorware for lesson preparation etc., and understand the characteristics and uses of different. IT tools and resources. 30 training hours in addition to those for "comfortable" level competency may be required;

**D. Creative Level (for 6% of teachers)**

capability to understand the functions of computer managed instruction systems, evaluate the effectiveness of instructional computer programs, design instructional materials with use of IT, and choose appropriate IT equipment to meet a school's needs. We expect teachers who reach the "creative" level to be able to advise their colleagues on a wide range of matters relating to use of IT in teaching, promote an IT culture in their schools, develop IT plans or teaching software for their schools, and manage the school networking system. Part-time studies taking up 120 hours over two years may be required. As the training could be fairly intensive, the teachers concerned may have to be partially relieved of their teaching duties during the training period.