

MINISTRY PAPER No.: _____

**PERFORMANCE OF THE e-LEARNING COMPANY JAMAICA LTD. FOR
FINANCIAL YEAR 2005/2006 AND FOCUS FOR FINANCIAL YEAR 2006/2007**

1.0 Purpose of Ministry Paper

The purpose of this Ministry Paper is to provide an update on the e-Learning Project which is a joint initiative of the Ministry of Industry, Technology, Energy and Commerce (MITEC) and the Ministry of Education and Youth (MOEY).

2.0 Project Justification

The current position of the Ministry is that the country has achieved practical universal access in voice telephony, with a penetration of approximately eighty two percent (82%). Hence, there is no intention at this time to pursue new initiatives to increase access to voice telephony, with the service providers actively building out their networks to meet the needs of inadequately served areas.

Against this background, the Ministry strategically shifted its focus from voice telephony to universal access to data and data-related services through the Internet. Access to data and the extensive use of data-related services are features of an educated, knowledge-based and competitive society. However, given the relatively low level of education in the country, the demand for Internet access and data-related services is low compared to that in developed countries and even in some other Caribbean territories.

MITEC is therefore convinced that in order to increase demand for access to data and data-related services and create a knowledge-based society, the educational level of the country must first be enhanced.

The Ministry is also of the persuasion that within the context of the CARICOM Single Market and Economy (CSME), the Free Trade Area of the Americas (FTAA) and economic globalization of markets, Jamaica's survival will be dependent on its ability to accelerate the creation of a highly educated and knowledge-based society. An educated society is a pre-requisite for international competitiveness and survival in the new global environment.

In light of the foregoing, MITEC has collaborated with the MOEY to provide targeted support to the education sector in order to improve the quality of education with emphasis on increasing CXC/CSEC Passes. MITEC is convinced that by improving the quality of education and increasing the use of the Internet by students in schools, demand for the Internet and data-related services will be stimulated and expanded at the household level. By systematically and constantly exposing students in schools to

the Internet, they will come to recognize its importance/usefulness and encourage their parents to acquire computers for home access to the information superhighway.

3.0 Project Development Process

Recognizing the potential of Information and Communications Technology (ICT) to enhance the education sector, the Ministry in early 2002 initiated discussions with the International Telecommunication Union (ITU). MITEC sought to interest the ITU in supporting a project in Jamaica that would draw on ICT to improve the quality of education in the schools and also to increase access to the out-of-school population. Following discussions and the concurrence of the Education Minister in December 2003, a memorandum of understanding (MOU) was signed between the MITEC and the ITU. The MOU proposed an intervention involving the use of information and communications technology (ICT) to support the education sector.

Following the signing of the MOU, MITEC, in collaboration with the MOEY, conducted research into the challenges being faced by the education sector and developed a Draft Feasibility Study pursuant to the shaping of the “e-Learning Project”.

This e-Learning Project is a comprehensive and integrated initiative anchored in information and communications technology (ICT) to address certain specific weaknesses within the education sector. The Minister of Education and Youth contributed to the shaping of the Project framework by indicating that in light of success achieved in increasing access to high schools, and other initiatives being pursued within the education sector, the e-Learning Project should focus exclusively on improving the quality of education in Jamaica’s high schools. This policy directive guided the preparation of the Draft Feasibility Study and the subsequent design of the Project.

From resources provided by the ITU, a consulting firm was contracted in mid-2004 to undertake wide stakeholder consultations in the field to validate the Draft Feasibility Study and recommend adjustments and modifications based on the feedback obtained.

In undertaking field work over a period of approximately six (6) months, the consultant met with senior officers/technocrats of the MOEY and some of its agencies. Through focus group meetings the consultants sought the views of principals, senior teachers and students from fifteen (15) of the proposed pilot schools. The consultants also sought the inputs of the Joint Board of Teacher Education (JBTE), Caribbean Examination Council (CXC) and other stakeholders in the education sector.

The consultants’ draft report was completed in November 2004 and findings/recommendations presented. There was general acceptance of the findings and recommendations. The final report was presented to the MOEY in late December 2004 and based on the findings and recommendations of the consultants, the Draft Feasibility Study was revised and finalized.

The ITU sent independent consultants to Jamaica to review the feasibility study and to consult with stakeholders. The Project was commended by the external experts who signed-off on it and subsequently supported the Project by providing some US\$30,000 worth of computer and other office equipment to the e-Learning Project office.

The Project was presented to Cabinet for its consideration in March 2005. Cabinet approved its implementation and also allocated \$50 M to commence immediate implementation. Below is a description of the components of the Project.

4.0 Description of Project Components

4.1 Project Goal

The primary goal of the Project is to contribute to an improvement in the quality of education between Grades 7-11 (Forms 1-5) in the one hundred and seventy-two (172) secondary, technical, agricultural and special high schools island-wide.

4.2 Specific Constraints

The Project is intended to address five (5) specific constraints which adversely impact on the quality of education in the targeted schools (other constraints inhibiting the quality of education in the schools will be addressed through additional initiatives of the MOEY) The five (5) constraints are as follows:

- (i) lack of a comprehensive set of standard instructional materials for both teachers (especially young and inexperienced teachers) and students;
- (ii) inadequate equipment in schools to enhance teaching and learning using modern technologies and lack of a proper Educational Management Information System (EMIS) in the MOEY to facilitate effective administration of the education sector;
- (iii) low level of skills among some teachers in the use of certain technologies such as interactive software for teaching “hard to grasp” topics and stimulating interest among students, especially boys;
- (iv) inadequate remedial programme at Grade 7 to enable weak students who have been promoted from Grade 6 to high school to cope with high school work. This is especially so among the newly upgraded high schools; and
- (v) lack of a standard system of measuring and tracking the performance of students at each grade so that timely remedial action can be taken and absence of a common yardstick for measuring the performance of teachers and schools so that effort can be rewarded.

4.3 Project Objectives

The objectives of the project, which are intended to have a counteractive effect on the above constraints, are as follows:

- (i) to provide a comprehensive set of standard digital instructional materials for teachers (especially the young and inexperienced teachers) and students, as well as subject tutors in the institutions that train teachers, in eleven (11) subject areas;
- (ii) to ensure access to the materials by
 - a. providing equipment and software to schools to enhance teaching and learning using modern technologies;
 - b. establishing a Central Repository for Instructional Materials (CRIM) at the MOEY to manage the storage and dissemination of the materials;
 - c. instituting an Educational Management Information System (EMIS) in the MOEY to facilitate effective administration of the education sector
 - d. arranging for the transmission of lecture videos through cable television
- (iii) to train teachers in the use of certain technologies such as interactive software in the teaching of “hard to grasp” topics and to stimulate interest among students, especially boys;
- (iv) to institute in the high schools, an extensive remedial programme based on volunteerism; and
- (v) to institute a standard examination that will measure performance of students in each grade between grades 7-10.

4.4 Project Components

The Project has five (5) components which are intended to address the five (5) specific constraints and which are aligned to the five (5) objectives indicated above. Below is a concise description of the five (5) project components.

(a) Development of Instructional Materials

This component involves the development of a detailed and comprehensive set of instructional materials in digital format for teachers and students in eleven (11) designated subjects spanning grades 7-11. The subjects decided on in consultation with the schools are:

- (i) English Language
- (ii) Mathematics
- (iii) Social Studies

- (iv) Integrated Science
- (v) Resource & Technology/Information Technology
- (vi) Spanish
- (vii) Geography
- (viii) Building Technology
- (ix) Chemistry
- (x) Biology
- (xi) Physics

(It is envisaged that depending on resource availability, other subjects will be incorporated in future).

This is a major undertaking and is the most important and involved component of the Project. The materials will include the development of the following for the eleven (11) subjects at the five (5) grades:

- (i) Teachers' Instructional Manuals (TIM's) - These will be developed on a modular/unit basis and include comprehensive content, suggested international best practice teaching methodologies for each topic, and recommended best practice assignments and projects. The TIM for a particular grade would have a suggested set of student activities/assignments/projects on a topic basis drawing on extensive national and international best practices. For each subject at a particular grade, there would be a recommended timetable with due dates regarding each activity/assignment/project. Hence, at the start of the year, each student would be aware of the assignments/projects and due dates in a similar way to the school-based assessment (SBA) for CSEC (CXC). It is envisaged that through carefully selected activities/assignments/projects, Jamaican students will be assured the highest quality "hands-on" learning experiences similar to those afforded students in developed countries. It is also intended to shift the learning focus away from the abstract and more toward the practical and student-centered learning. The TIM's will be in digital format to facilitate easy modification by teachers to suit their personal tastes and preferences.
- (ii) Students' Instructional Manuals (SIM's) mirroring the TIM's - The SIM will act as the core text for the student and will comprehensively cover the syllabus topic. The schools will continue to rent texts to students to complement the SIM's and to provide variety.
- (iii) The project will identify interactive computer software with emphasis initially on free computer software (freeware) that is available on the Internet, to support the teaching of selected "hard to grasp" topics or for reinforcement and effective internalization by students. Where necessary, software will be procured and/or developed. In the case of the sciences

(chemistry, physics and biology), interactive software will be developed/acquired in support and to complement laboratory work.

- (iv) A comprehensive video lecture series on a topic-by-topic basis delivered by master teachers for all eleven (11) subjects for the five (5) grades will be developed. These lectures will also be available for students to borrow through school libraries or purchase for viewing at their convenience to reinforce and/clarify classroom instructions. There will also be high quality video recordings of a comprehensive set of lab procedures/experiments to buttress laboratory teaching in chemistry, physics and biology.
- (v) An extensive database (Item Bank/Question Bank) of questions and answers (multiple choice questions, structured questions, etc.) on a topic-by-topic basis for each subject at each grade will be developed. All information will be stored in an electronic database and be accessible to teachers and students via schools' intranets. The technology will facilitate teachers accessing questions and answers randomly on a random basis and setting/marking tests with relative ease. Following the impartation of a topic, students will also be able to do self tests at home and obtain real time results. This will facilitate easy continuous assessment throughout the year.

The MOEY will own the copyright to all materials developed so that schools, students and the public can reproduce them at will. The MOEY will also have responsibility for updating the materials at intervals.

(b) Equipment/Technologies

- (i) The project will provide computers, workstations, and local area networks (LAN's) in each school for teaching of all eleven (11) subjects. Schools will be equipped with multi-media projectors and other curriculum delivery equipment to facilitate interactive presentations by teachers and all schools will be connected to the Internet.
- (ii) The eight (8) educational Institutions that train high school teachers will also be equipped with computers and multimedia equipment.
- (iii) Support will be provided for the establishment of the CRIM and implementation of the EMIS at the MOEY
- (iv) Support will also be provided for the interactive education television station known as "Edu-TV" being established by the MOEY. This facility will provide access to a range of educational contents.
- (v) Arrangements will be made for some twelve (12) cable television channels to be dedicated to the transmission of the lecture series cited above. Each channel will

be dedicated to the transmission of lecture series for one (1) or two (2) subjects. The given channel, which would transmit content continuously, would serve to enhance the promotion and development of that particular subject. Centre-of-excellence teachers in the subject will be featured, sharing local and international best practices in the teaching of the subject. Companies will be invited to sponsor the operating costs of the channels for possibly a two-year period. A company will advertise its products on the channel and associate itself with the development and promotion of the particular subject.

- (vi) It is also envisaged that teachers will be supported to acquire their own modern teaching technologies to enhance their effectiveness.

(c) Teacher Training

The e-Learning Project will provide all teachers in the targeted high schools and subject lecturers from the targeted teacher training institutions with an orientation to the new instructional materials (TIM's and SIM's). Teachers will also be trained and certified in Information and Communication technologies and will be trained in the use of these modern technologies in instructional delivery.

(d) Remedial Programme

The project will identify and support existing remedial programmes and collaborate in enhancing these programmes to strengthen the effort of teachers, particularly with the use of ICT's such as interactive software and specialized equipment.

The programme will explore the possibility of utilizing exceptional students (as a part of their co-curricular activities), and qualified persons outside the classroom, to assist with reading and other areas of weakness. Poorly performing students will be recommended by the subject teacher to attend remedial classes early so as to correct identified weaknesses.

This component will have an element for the training of parents in parental skills and the kind of support and guidance parents need to provide to their children at home to facilitate performance in school. Parents will be encouraged to develop a greater sense of loyalty to and "ownership" of the school. Parents of students in the same grade would be encouraged to form networks/support groups and meet at intervals to discuss problems, share experiences and devise solutions.

This component of the Project will also serve to operationalize an extensive Values and Attitudes Programme being considered for implementation in the school system. The programme will involve students being graded for their values and attitudes, with these grades being recorded on their transcripts and having a bearing on their employment prospects. Government agencies and the private sector will be asked to take the values and attitudes grades into consideration when assessing graduates for employment, in

effect making the values and attitudes training in schools as important as the academic aspect of education.

(e) Voluntary End-of-Year Pre-CXC Exam

The Project will institute on a voluntary and phased basis, a standard end-of-year Pre-CXC Examination in the eleven (11) subjects, to measure performance/progress of students. This examination will be administered at grades 7-10. Students will sit the usual CXC/CSEC Examinations at Grade 11. CXC will prepare the Pre-CXC Exam papers but the scripts will be marked by the schools. Teachers will be trained by CXC to mark the papers, so facilitating the comparison of all high schools using a common yardstick.

The examination will facilitate early identification of academic deficiencies within and across schools so that timely affirmative action can be taken before the students are scheduled to sit the CXC Exams in Grade 11. Affirmative action could mean the implementation of extensive remedial work among schools with higher ratios of weak students, and the provision of proportionally greater level of resources to those schools to assist them in improving performance.

At the focus group level, the standard Pre-CXC Examination found support among the schools, although there is some preference for phased implementation in terms of the level, to allow for time to bring targeted students up to the national level. Schools will therefore have the option of conducting the exam and deciding on the level at which papers are set. Initially it is envisaged that schools with students at the same academic level will partner in the setting of their exam papers under the guidance of the CXC. By the end of the Project it is expected that all schools will do the standard examination set by the CXC to facilitate proper measurement and comparison of performance across all high schools.

5.0 Project Funding

The project is estimated to cost approximately US\$50 Million over three (3) to four (4) years. Funding will come mainly from a universal service obligation levy through MITEC. Since September 2005, a levy of US 3 cents per minute has been charged on the fixed lines incoming calls and two US cents per minute on incoming calls on mobile networks, has been imposed. This follows a policy decision of MITEC to use resources from the telecommunications sector to improve the quality of education over the next three (3) to four (4) years and to increase the demand for access to the Internet and data-related services. Following the implementation of the Project, MITEC contemplates shifting its emphasis to infrastructure development and universal access to data and the Internet in the event that such needs exist.

The International Telecommunication Union (ITU) has provided computer equipment valued at approximately US\$30,000 to the e-learning administrative office. It is envisaged that other development partners to be identified will provide some support for the implementation of the Project.

As indicated earlier, Cabinet approved implementation of the Project as well as expenditure of \$50 M to commence implementation; this funding was provided to the MOEYC to accelerate the introduction/development of its EMIS.

6.0 Project Implementation

e-Learning Jamaica Company Limited (e-LJam) was incorporated on July 6, 2005. Cabinet approved appointment of a Board of Directors in March 2005. This is a portfolio agency of the Ministry of Industry, Technology, Energy and Commerce and is the implementation arm of the Universal Access Fund. In the first instance, e-LJam has responsibility for implementing the e-Learning Project. At the end of the Project, the Company will shift its attention to the implementation of other universal access type projects in telecommunications sector.

e-LJam now has its key staff members in place and implementation of project activities are now being accelerated. Of the five components of the project, implementation has commenced on three components as follows:

- (a) Teacher training
- (b) Development of Instructional Materials
- (c) Provision of Technology to schools

The Project is being implemented in three (3) phases, with the first year being a pilot phase involving thirty one (31) institutions consisting of twenty-seven (27) public high schools (including one special school), one (1) independent high school and three (3) teachers colleges. The other targeted institutions will be addressed in the subsequent years. Experiences from the pilot phase will inform and help guide the second phase.

Phase 1 of the Project will run from September 2006 to June 2007

Five (5) subjects will be included in the pilot at grades 10 & 11. These are:

- English Language
- Mathematics
- Chemistry
- Biology
- Information Technology

It is intended that equipment and some instructional materials will be installed in the pilot schools for use beginning September 2006. Methodology Training of teachers in

the pilot schools has commenced and all grade 10 & 11 teachers will be trained by September 2006. ICT training and certification will commence during the summer holidays of 2006 and some 2,000 teachers will be certified by the end of Phase 1

Acquisition and development of instructional materials, including educational software will initially focus on weak areas as identified by the reports on the CXC results over the years, so that the current examination students can gain the maximum benefit from the programme. Item writing has already commenced and it is expected that some twelve thousand (12,000) questions will be available in the Item/Question Bank by January 2007.

Some teachers from the pilot schools have been trained in the preparation of items/questions for the first five subjects and are now developing items for inclusion in the Item Bank. A consultant has been hired who is now working on the initial phase of the computer software for the Bank. This is in an advanced state.

The CRIM will be established by January 2007; this will allow materials to be available online in addition to CD's and DVD's. Some lectures on video will be available as of September 2006. Work will also begin on the Remedial and Assessment programmes during the pilot phase.

An evaluation of the pilot will be carried out in July and August 2007, to inform the planning for Phase 2 which will begin in September 2007.

A major focus of e-LJam now is the award of contracts for the supply of computers and other teaching equipment and technologies. Four bids packages for the provision of computers and other teaching technologies are now being finalized and will be available by June 8, 2006. The objective is that bids will be evaluated and contracts awarded to enable the pilot schools to have modern technologies in the early phase of the September 2006 school year.

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