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<u>e-LEARNING PROJECT</u>

1.0   Purpose of Submission

The purpose of this Ministry Paper is to provide information on a proposed e-Learning Project which is a joint initiative of the Ministry of Commerce, Science and Technology (MCST) and the Ministry of Education, Youth and Culture (MOEYC).

2.0   Project Justification

The MCST has made significant strides in the de-monopolization of the telecommunications sector. The position of the MCST is that the country has achieved practical universal access with respect to voice telephony. The country now has a penetration of approximately eighty two percent (82%). Hence, the MCST does not intend to pursue any new initiative at this time with respect to increasing the access to voice telephony. The MCST is of the view that the companies are actively building out their networks and areas which are inadequately served will have improved service in due course.

Against this background, the MCST has 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, competitive and knowledge-based 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 the developed countries and even compared to some Caribbean countries.

Jamaica is an oral society largely because of the low level of education. Hence, while use of voice telephony has increased significantly, access to data and written form of communication such as use of e-mail have lagged behind. The low level of education is a major hurdle to the creation of a knowledge-based society.

The MCST is very keen on expanding the island's Internet infrastructure to increase access to data and to reduce the digital divide. However, with the low level of education, many persons may not have interest in becoming connected to the Internet. The MCST is therefore convinced that in order to increase demand for access to data and data-related services and also in order to create a knowledge-based society, the educational level of the country must first be enhanced.

The Ministry is also convinced that within the context of the CARICOM Single Market and Economy (CSME), the Free Trade Areas 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, the MCST is collaborating with the MOEYC to provide targeted support to the education sector in order to improve the quality of education. The MCST is convinced that by improving the quality of education and increasing the use of the Internet by students in schools, this will create demand for the Internet and data-related services.   By significantly exposing students in schools to the use of the Internet, the students will recognize its importance and encourage their parents to acquire computers and gain access to the Internet.

3.0　　Project Development Process

Recognizing the potential of information and communications technology (ICT) to improve the education sector, the MCST initiated discussions in early 2002 with the International Telecommunication Union (ITU). The MCST 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 Hon. Minister of Education, Youth and Culture in December 2003, a memorandum of understanding (MOU) was signed between the MCST 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, the MCST, in collaboration with the MOEYC, conducted research into the challenges being faced by the education sector and developed a Draft Feasibility Study entitled "e-Learning Project."   This is a comprehensive and integrated project anchored in information and communications technology (ICT) to address certain specific weaknesses within the education sector. The Hon. Minister of Education, Youth and Culture provided the policy framework by instructing 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 the one hundred and fifty (150) high schools. This policy directive guided the design of the project and the preparation of the Draft Feasibility Study.

From resources provided by the ITU, the consulting firm FocalPoint Consulting Ltd. 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 their field work over a period of approximately six months, the Consultants met with officers of the Ministry of Education, Youth and Culture including the Hon. Minister, the Minister of State, Permanent Secretary, Chief Educational Officer, senior directors, technocrats and senior directors in agencies of the MOEYC such as

HEART and JAMAL. Through intensive focus group meetings over two days, 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, Caribbean Examination Council and other stakeholders in the education sector.

The Consultants completed their draft report in November 2004. The Permanent Secretary in the Ministry of Education, Youth and Culture convened a meeting involving several senior technocrats from the various divisions in the MOEYC where the consultants presented their findings and recommendations. There was general acceptance of the findings and recommendations of the Consultants. The Consultants were asked to complete their report subject to only minor modifications. The report was finalized and presented to the MOEYC in late December 2004. Based on the findings and recommendations of the Consultants, the Draft Feasibility Study was revised and finalized.

The ITU has since sent independent consultants to Jamaica to review the feasibility study and to consult with stakeholders. The consultants had very high praise for the project and have signed off on it. The ITU is now in the process of identifying funds to support the implementation.

The project was presented to Cabinet in March 2005. Cabinet approved its implementation and also allocated $50 million 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 fifty (150) high schools island-wide.

4.2   Specific Constraints

The Project is intended to address five (5) specific constraints which adversely impact the quality of education in the high schools. (Other constraints impacting negatively on the quality of education in the high schools will be addressed through other initiatives of the MOEYC.) 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 MOEYC 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 <u>standard</u> system of measuring and tracking the performance of students at <u>each grade</u> so that timely remedial action can be taken and also lack 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 positive impact on the above constraints, are as follows:

(i)   to provide a comprehensive set of standard <u>digital</u> instructional materials for teachers (especially the young and inexperienced teachers) and students, in eleven (11) subject areas;

(ii)   to provide equipment and software to schools to enhance teaching and learning using modern technologies and to institute an Educational Management Information System (EMIS) in the MOEYC to facilitate effective administration of the education sector;

(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 that is 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 <u>detailed</u> and <u>comprehensive</u> set of instructional materials in <u>digital</u> 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 dealt with at a later date)

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 <u>eleven</u> (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 to be carried out 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 TIMs 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 for the particular subject and will cover the topics in the syllabus comprehensively. 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 greater 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 to support these subjects and to complement lab work.   The MCST has a special interest in these subjects and is keen on mobilizing resources to improve the performance of the schools.

(iv)   A comprehensive videotaped 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 the school library or purchase for viewing at home at their convenience to reinforce and/or clarify the teaching in the classroom.   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 of multiple choice questions (MCQ's) and answers on a topic-by-topic basis for each subject at each grade would be built up over time. All questions and answers would be stored in an electronic database where they would be accessible to teachers and students via the school's intranet. A teacher will therefore be able to access questions and answers randomly from the database on a particular topic and set and mark a test with little effort.   Following the teaching of a topic, a student would also be able to do a self test on his/her own on-line and get the results of the test in real time. This will facilitate easy continuous assessment throughout the year.

The MOEYC will own the copyright to all materials developed so that schools, students and the public can reproduce them at will. The MOEYC will also have responsibility for the on-going updating of the materials.

(b)   Equipment/Technologies

(i)   The project will provide two computer labs in each school for teaching of all eleven (11) subjects. Each lab will house twenty five (25) computers. Schools will be equipped with multi-media projectors to facilitate interactive presentations by teachers and all schools would be connected to the Internet.

(ii)   Approximately one hundred (100) public libraries would also be equipped with computers and connected to the Internet to increase public access.

(iii)   Support would be provided for an Educational Management Information System (EMIS) for the MOEYC to enable that Ministry to properly administer the education sector.

(iv)   One (1) interactive education television station known as "Edu-TV" would be established by the MOEYC. This facility will provide access to a range of educational content.

(v)   There would also be some twelve (12) non-interactive low-cost cable television channels which will be dedicated to the transmission of the lecture series mentioned earlier. Each channel will be dedicated to the transmission of the lecture series for one (1) or two (2) subjects. The 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 cost 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.

(c)   Teacher Training

The project will provide teachers with an orientation to the new instructional materials (TIM's and SIM's). They would also be trained in the use of modern technologies with emphasis on interactive computer software and multimedia use.

(d)   Remedial Programme

The project will institute an extensive remedial programme based on voluntary inputs and use interactive software to buttress the effort of teachers, especially in the case of the newly upgraded high schools.

The programme will rely on high performing students and qualified persons outside the classroom to assist with reading and other areas of weakness. Students who attain a certain average in a subject will be required to assist weaker students as a part of their co-curricular activities. This work would be recorded on their transcripts and would also

be an indication of their performance in school. A student will not necessarily have to perform this function in his/her own school. Also a student will not necessarily have to attend remedial classes in his/her own school. Remedial training will be conducted in the evenings, weekends and on holidays.

A poorly performing student 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 would be encouraged to develop greater sense of loyalty 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 would also serve to operationalize an extensive Values and Attitudes Programme being considered for implementation in the school system. The programme will involve students receiving grades reflecting their values and attitudes, with these grades being recorded on the transcripts of the students 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 considering 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 of students. This exam will be administered at grades 7-10. At grade 11 the students will sit the usual CXC/CSEC Exams. 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 Exam will facilitate the early identification of academic weaknesses within and among schools so that timely affirmative action can be taken before the children are ready to sit the CXC Exams in grade 11. Affirmative action could mean the implementation of extensive remedial work among schools with weak students, and the provision of proportionally more resources to those schools to assist them in improving their performance.

In the focus group meetings, the schools supported the standard Pre-CXC Examination. However, some of them would like a phased implementation in terms of the level so that they will have some time to bring their students up to the national level. Schools will therefore have the option of doing the exam and deciding on the level of the exam papers. 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 CXC. By the end of the project it is expected that all schools will do the standard examination set by CXC so that there can be a proper measurement and comparison of performance.

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 the Ministry of Commerce, Science and Technology. A levy of US 3 cents per minute will be charged on the fixed lines incoming calls and two US cents per minute on incoming calls on mobile network. This follows a policy decision of the MCST to use resources from 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, the MCST contemplates shifting its emphasis to infrastructure development and universal access to data and the Internet in the event that such needs exist.

It is envisaged that development partners such as the International Telecommunication Union (ITU) and others to be identified will provide some support for the implementation of the Project.

As indicated earlier, Cabinet approved the implementation of the Project and also approved J$50 million to commence implementation.

6.0   Project Implementation

The Project will be implemented by a company to be known as "e-Learning Jamaica Ltd." The company is now being incorporated. Cabinet has already approved the Board of Directors which will be chaired by Professor Errol Miller.

The project will be implemented over three (3) to four (4) years, with the first year being a pilot phase involving twenty (20) schools. The other one hundred and thirty (130) schools would be addressed in years two (2) and three (3). Experiences from the pilot phase will inform and help guide the second phase.

The pilot schools are as follows:

School	Parish
(i) Ascot High	St. Catherine
(ii) Greater Portmore High	St. Catherine
(iii) Spanish Town High	St. Catherine
(iv) St. Jago High	St. Catherine
(v) Glengoffe High	St. Catherine
(vi) St. Mary's College	St. Catherine
(vii) Oberlin High	Kingston & St. Andrew
(viii) Campion College	Kingston & St. Andrew
(ix) Immaculate Conception	Kingston & St. Andrew
(x) Mona High	Kingston & St. Andrew
(xi) Excelsior High	Kingston & St. Andrew
(xii) Georges College	Kingston & St. Andrew
(xiii) Donald Quarrie High	Kingston & St. Andrew
(xiv) Kingston High	Kingston & St. Andrew
(xv) Denham Town High	Kingston & St. Andrew
(xvi) Morant Bay High	St. Thomas
(xvii) St. Thomas Technical High	St. Thomas
(xviii) Ardenne High	Kingston & St. Andrew
(xix) Vauxhall High School	Kingston & St. Andrew
(xx) St. Andrew High School for Girls	Kingston & St. Andrew

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