MAURITIUS

1. INTRODUCTION

Mauritius is an island nation with a population of about 1.2 million inhabitants. Since independence in 1968, the country has grown from a low-income, agriculturally based economy to a middle income diversified economy with growing industrial, financial, and tourist sectors. Since independence, annual growth has been around 5% to 6% which has also been reflected in increased life expectancy, lowered infant mortality and improved infrastructure. Estimated at $16.28 billion for 2005, Mauritius has the 2nd highest GDP per capita in Africa[1].

Table 1: Basic Economic Indicators, Mauritius, 2005[2]

Population	1,200,000 (2005)
Languages	Official language: English. Other languages: Creole, French and Bhojpuri.
2005 Economic activity (% of GDP)	Agriculture: 6.1 ;Industry: 28.1 ; Services:65.8
Human Development Index	0.800 (2004)source: www.undp.org
Per capita Gross National Income	2005: 5,200 USD

2. EDUCATION SYSTEM STRUCTURE

Having been a former British colony, the education system is based largely on the British school system. Education has been free through the secondary level since 1976 and through the post-secondary level since 1998. Expenditure in the Private Catholic Church-controlled confessional schools have also been subsidized. However, pre-primary schools are still mainly privately owned.

Tertiary education is delivered by a wide range of institutions with diverse characteristics. Some provide all levels of tertiary education in a range of disciplines while others focus their activities on only one or two areas at certain levels. A number of the institutions are overseas with their provisions made available through distance education. Public tertiary education institutions include the University of Mauritius (UoM), the Mauritius Institute of Education (MIE), the Mahatma Gandhi Institute (MGI) and the Mauritius College of the Air (MCA). Overseeing the four tertiary education institutions (TEIs) is the Tertiary Education Commission (TEC) which, inter alia, has responsibility for allocating public funds, and fostering, planning and coordinating the development of post-secondary education and training. These TEI are geared towards programs in very limited or specific disciplines.

Two Polytechnics, managed by the Technical School Management Trust Fund (TSMTF) also operate within the public sector. They are the Swami Dayanand Institute of Management and the Institut Superieur de Technologie. The Industrial and Vocational Training Board (IVTB) and the Mauritius Institute of Health (MIH) equally dispense tertiary level programmes in selected areas.

In addition to the above publicly-funded institutions (PFIs), an estimated 35 private institutions and 50 overseas institutions/bodies are presently delivering tertiary-level programs, mostly in niche areas like Information Technology, Law, Management, Accountancy and Finance. A majority of these private institutions operate on a part-time basis, in the evenings, weekends and on some weekdays with relatively small student cohorts.

The country has 1070 pre primary schools, 289 primary schools and 176 secondary schools.

Adult literacy rate, 2000-2004*, male	88
Adult literacy rate, 2000-2004*, female	81
Primary school enrolment ratio 2000-2005*, gross, male	102

Primary school enrolment ratio 2000-2005*, gross, female	102
Secondary school enrolment ratio 2000-2005*, gross, male	89
Secondary school enrolment ratio 2000-2005*, gross, female	88

3. INFRASTRUCTURE

According to the World Economic Forum *Global Information Technology Report*, Mauritius ranks 45th out of 115 economies in 2005-2006, in terms its Network Readiness Index which measures the degree of preparation of a nation to participate in and benefit from ICT developments[3].

Table 3: ICT Infrastructure Indicators, Mauritius, 2005[4]

Fixed line subscribers (2004)	287 per 1000 persons World Bank
Mobile subscribers (2004)	505 per 1000 persons: World Bank
	510 per 1000 persons: ITU
Dial-up subscribers	30,000 (source: www.afridigital.net)
Broadband subscribers (2004)	2.0
Internet users (2004)	146 per 1000 persons
Television broadcast stations	2
Radio stations	AM 5, FM 9, Shortwave 2.

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Mauritius in the league of top performers in the global economy, has accelerated the liberalization of the telecommunications sector by an early termination of the exclusivity of the incumbent operator as from 1st January 2003.Mauritius was among the 69 signatories to the GATS in 1997. In 2001 it introduced the ICT Act which provided the legal framework for liberalization and a subsequent amendment in 2002 brought forward the liberalization in early 2003.

The country has a high level of universal access to telephony. The small size of the island makes it easy to cover with telecommunication facilities and all localities have telephone services. Almost the entire population was in the range of a cellular phone signal[5]. The high level of universal access is attributed to subsidization of home telephone costs as well as increase in household incomes which make telephony more affordable for households.

4. POLICY FRAMEWORK

The Government of Mauritius has been active in the promotion of information and communication technology since 1989. Since then it also proposed a national ICT policy modeled on the Singaporean experience. The Mauritius strategy involved creating instruments to support the liberalization of its telecommunications sector, creating IT literate workforce, improving the capacity of public institutions to harness ICTs and positioning Mauritius to be a key player in ICTs by creating enabling environment and robust infrastructure.

In 1989 the government set up four institutions :the National Computer Board (NCB), Central Informatics Bureau (CIB), State Informatics Limited (SIL) and State Informatics Training Centre Limited (SITRAC). The Ministry of Information Technology and Telecommunications deals with the formulation and implementation of government policies in the ICT sector

National Information & Communication Technology Strategic Plan
http://www.gov.mu/portal/sites/nictsp/main.jsp
The NITSP was first adopted in 1998 and was accompanied by the launch of a number of projects in policy formulation, ICT awareness, human resources development, government computerization and standard setting. The Mauritius Parliament also passed an Electronic Transaction Act in July 2000 to provide an appropriate legal environment for electronic transactions covering electronic contracts, establishment of Certification Authorities and standards to combat forgery and fraud in electronic business.

The policy's vision is to make Mauritius a 'cyber island' in which ICT would become the fifth pillar of the economy after sugar, textile, tourism and financial services as well as a regional ICT hub.

A revised strategy was approved by the Government in February 2006 following a review of the first five years of the NICTSP between 1998 to 2005.

This revised strategy revolves around focusing on niche markets in the ICT Industry, developing strategic partnerships with ICT leaders, investing in a world class physical and telecommunications infrastructure, emphasising on ICT Culture development, providing for an adequate supply of human resources and establishing a favourable business environment. It has three key focus areas:

- The establishment of an ICT industry comprising the Cyber City and Business Parks supported by telecommunications infrastructure for wealth and job creation
- Attracting and maintaining a high calibre of ICT experts in Mauritius and to increase local availability of trained manpower in ICT
- Creating a favourable business environment with a sound legal framework and attractive financial incentives for foreign investors

The purpose of the National ICT Strategic Plan (NICTSP) would be to develop a comprehensive action plan for the development of the ICT Sector for the period 2006 to 2010 to enable the Mauritius government to achieve its vision of transforming Mauritius into a Cyber Island, to be part of the Information Society and to provide equal ICT opportunities to citizens.

5. MAJOR INITIATIVES

5.1 National Computer Board | http://ncb.intnet.mu/education/ict1.htm

The National Computer Board (NCB) was set up in 1988 as the managing agency for the country's national ICT strategy. It is a para-statal body administered by a Board of Directors and operates under the aegis of the Ministry of Information Technology and Telecommunications.

Its vision is to be the key enabler in transforming Mauritius into a Cyber island and a regional ICT hub whilst its mission is to 'e-power people, businesses and the public sector by developing and promoting ICT and ICT related services in Mauritius'.

The NCB oversees a range of projects in education, business and the public sector. These include:

Universal ICT Education Program | http://www.gov.mu/portal/sites/uieptest
This programme, approved in March 2006, aims at imparting computer proficiency skills to all students, workers, unemployed and the population at large. Through the UIEP, Government is aiming to train 400,000 trainees over a 4-year period to obtain the internationally recognised

Internet and Computing Core Certification (IC3) certificate. This programme would create a significant pool of ICT professionals which, in turn, would attract employers interested in using Mauritius as an ICT bridge between India and Africa and between India and French-speaking countries.

The main objectives of the Universal ICT Education Programme are:

- Making of an e-society where ICT pervades in all sphere of social development and well-being of all Mauritians
- Meeting the demand of IT manpower for the ICT industry
- Aligning Mauritius to International benchmarking in IT literacy
- Encouraging people to go for higher level industry-based certifications

The program delivers an IC3 basic computing skills course in 59 training centres which are situated in schools across Mauritius. The Internet and Computing Core Certification which was developed by Certiport Incorporation (USA) is the first globally accepted, standards-based, validated certification program for basic computing skills. Becoming IC3 certified demonstrates that one possesses the knowledge required for basic use of computer hardware, software, and the Internet which are nowadays prerequisites for virtually every placement opportunity.

Etienne Sinatambou also announced that all Mauritians who successfully obtain the IC3 certification under the Universal ICT Education Programme (UIEP) will be able to follow professional ICT courses at a 95% discounted rate. The UIEP aims at imparting computer proficiency skills to over 400 000 persons over the next four years.

US based CYBERLEARNING Foundation has signed an agreement to that effect with the Government of Mauritius and has further agreed to extend this facility to those having at least a diploma in Computer Science or any other related field to be agreed upon between CYBERLEARNING and the NCB.

The Cyber Caravan

Launched in November 2000, the Cyber Caravan Project aims at making IT facilities available in the most isolated areas in Mauritius through NCB's Cyber Caravans. The NCB presently operates two Cyber Caravans, which are equipped with 9 and 10 PCs respectively and Internet connection. MQA registered IT Support Officers provide training on board according to the needs of people, regardless of age, education background or profession.

As at 2nd March 2007, about 55, 700 persons have followed ICT Literacy and ICT Awareness Courses

The main objectives of the Cyber Caravan Project are:

- To raise the level of knowledge about ICT and the level of competence in using personal computers and common computer applications
- To promote and encourage ICT literacy
- To ensure all computer users understand the advantages of using a personal computer.
- To enhance the employability of all people, to enable them to be part of the global Information Society

The ICT Literacy programmes provided by the Cyber Caravans are customized to meet the needs of all people with little or no IT skills. These courses are delivered by MQA registered IT Support Officers. There are five types of training programmes which include:

- ICT Literacy
- IT Introductory Course
- ICT Awareness
- ICT Awareness Programme for Children
- Evening ICT Awareness Programmes

IT Empowerment Programme for the Unemployed

With the widespread of Information Technology (IT) in businesses, employees at all levels are more and more expected to have a basic knowledge in IT Tools.

In this context, the National Computer Board runs a free training programme for the unemployed (HSC holders) to empower them with IT skills with a view to increase their employability.

A training programme of 60 hours duration, spread over 10 full days is being carried out in the NCB Cyber Caravans. A certificate of attendance will be issued to all participants who successfully complete the course.

Community Empowerment Programme

The Community Empowerment Programme (CEP) was introduced with the objective to facilitate the process for the community to make use of ICT to fully participate in the socio-economic development of our country. The CEP is in line with the Government programme *to encourage the development of local content and creativity*

The programme will contribute for the development of auritius in the following ways:

Bring together the country's development stakeholders to build a strong online network of local, regional and global development communities on the web. Address the needs of various communities in Mauritius including NGOs, academic and private sectors and professionals.

The aim of the program is to use the Internet more effectively to find solutions to development challenges in the communities. It will provide a common platform for sharing local knowledge, a marketplace for project proposals, discussion forums, and thematic web directories. It will also enable communities to formulate and implement their own development projects by collaborating with donors and other stakeholders.

ICT Literacy Training for Women

ICT Literacy courses are provided to women of different regions across Mauritius after which a certificate of attendance is issued.

ICT Services on your TV Set

The Mauritius Government also announced in late 2006, an ICT empowerment programme called 'ICT Services on your TV set' which is designed to further empower people to the use of ICT to improve their knowledge and living standards and which is planned to launch in 2007.

The project 'ICT Services on your TV set' which has as prime objective to serve the needs of mass consumers for information and knowledge adds on to numerous on-going national initiatives aimed at bridging the digital divide in Mauritius. The project provides for the transmission to individual television sets of useful information on Government services and on other sectors of economic and social activities. The service can at the same time be used as a medium to educate a wide spectrum of the population young and old with specific contents adapted to local needs and requirements.

5.2 Schools Projects

The Mauritius Ministry of Education have been discussing and planning the introduction of ICTs in schools since 1991.An ICTcommittee at the ministry level already existed long before the presentation of the renewal of the primary school curriculum project in March 2001. Moreover, the idea of a new curriculum for the primary education sector is found in the *Action Plan* published in 1998[6].

School IT Project

The national ICT policy states that IT would be taught in schools as a subject and that IT will also be integrated into the teaching of subjects across the curriculum In primary and secondary schools. Still a challenge to promote connectivity in schools and establish a network for information exchange and information in the education sector[7]

The plan for the Schools IT project was that all the 277 primary schools in Mauritius will have, at least, a Computer laboratory with 21 computers, two printers (one ink-jet colour and one laser black and white), a scanner, a digital camera and a server with a LAN. They will all be connected to a network (School Net) controlled by a powerful central server, based at the MoESR, through which Internet connection will be possible and on which server on-line educational resources will be available.

In 2003, approximately 317 computer laboratories, instead of 222 as it was initially intended, were needed for the 277 schools on the grounds that 40 overpopulated schools will have 2 laboratories instead of one. All 5400 primary school teachers are also targeted to be trained in ICTs so as to be able to use it as a pedagogical tool as of 2006. By the end of 2002, 330 newly recruited ICT teachers had already been trained by the Mauritius Institute of Education and had been posted to primary schools in January 2003[8].

ICT Competition

With the objective of promoting ICT use as an education instrument, the NCB organizes each year two IT competitions for secondary and tertiary level students, namely the School IT Competition and the ICT Project Competition. This year the NCB has revised the scope of the School IT Competition to allow students to participate in an international website competition: ThinkQuest.

NEPAD eSchools Mauritius

The New Partnership for Africa's Development (NEPAD) eSchools Initiative is a is a multi-country, multi-stakeholder, continental initiative that aims to:

- impart ICT skills to young Africans in primary and secondary schools;
- improve the provision of education in schools through ICT applications and the use of the Internet.

The first phase of the Initiative is a Demonstration (Demo) project that is being implemented by the private sector partners.

The objectives of the Demo project are to:

- determine typical e-School scenarios and requirements in various circumstances in Africa;
- highlight the challenges inherent in a large-scale implementation of e-Schools programmes;
- monitor the effectiveness of multi-country, multi-stakeholder partnerships;
- determine 'best practice' and exemplary working models for the large-scale implementation of the *NEPAD e-Schools Initiative*, which aims to equip more than 550,000 African schools with ICTs and connect them to the Internet;

- demonstrate the costs, benefits, appropriateness and challenges of a satellite-based network;
- demonstrate the costs, benefits and challenges of ICT use in African schools.

The Demo Project has been implemented in six schools in each of 16 countries across Africa through partnerships that involve private sector consortia[1]. Mauritius is one of the 16 countries where the Demo Project was co-ordinated by a dedicated Country Liaison Person (CLP). Cisco and Microsoft are two companies who formed consortia to support the Demo Project in 6 Mauritius high schools where the typical model involved fitting each school with a PC lab comprising approximately 20 PCs, a server and printer; a media lab in some instances which included a PC-based kiosk containing health information and a television with satellite television access to a bouquet of education channels including National Geographic, the History Channel, SABC Africa and Mindset Learn. Teachers at the 6 schools received training and learners have subsequently used the PC labs in the classroom.

5.3 Tertiary Institutions

There are five institutions which offer courses leading to certificates, diplomas and degrees in IT: University of Mauritius, Mauritius Chamber of Commerce and Industry, Swami Dyanand Polytechnic, De Chazal Du Mee Business School and University of Technology of Mauritius.

The Mauritius Institute of Education is the only teacher training institution in Mauritius. It was set up in 1973 and since then it has been responsible for the training of primary and secondary school teachers. The MIE has an online facility through which it engages with its students and lecturers obtainable at www.mieonline.org

The University of Mauritius

University of Mauritius dominates the Tertiary Education Sector locally. In 2003, it established the Life-long Learning Cluster (LLC) which groups a three dedicated to multi-modal lifelong learning centres. They include the J Baguant Centre for Distance Learning (JBCDL), the Virtual Centre for Innovative Learning Technology (VCILT), and the Centre for Information Technology and Systems (CITS). The LLC was set-up to:

- enhance learning; develop flexible learning and experiment with education delivery systems.
- strengthen the University's role as a provider of distance learning as part of the continuing development of innovative teaching and learning strategies
- upgrade the centre for distance learning
- to provide more comprehensive opportunities for open and distance learning
- expand and diversify the range of Programs offered by mixed mode in a phased manne.
- satisfy the existing and emerging needs of non-conventional learners

In this way, the LLC encourages the pooling of human and financial resources to facilitate the design of programs of study and identify and supervise research projects in the ICT and Lifelong Learning.

Virtual Centre for Innovative Learning Technology (VCILT)

The Virtual Centre for Innovative Learning Technology hosted on the 2003 International Conference on Open and Online Learning (ICOOL 2003) in partnership with inter alia, the Commonwealth of Learning, the University of La Reunion, Hewlett Foundation and UNESCO, during which the VCILT was able to strengthen links with other institutions/organisations both at the national and international levels. Further, the Lifelong Learning Cluster (LLC) created in

2003/2004, consolidated the existence of the Centre with the view to enabling it to attend to new challenges in the field of technology-enhanced education, e-learning paradigm and innovative learning. The VCILT also participates on behalf of the University of Mauritius on a Commonwealth of Learning and Hewlett Foundation-supported initiative known as the Virtual University for Small States of the Commonwealth (VUSSC) which aims to build community through collaboration on open content.

VCILT has also developed an e-Learning platform, iLearn to deliver online modules, provide support to conventional classes and host training programs to enable life-long learning. To support the management of learning activities, iLearn offers a panoply of pedagogical tools such as forum, self-assessment, assignments and submission box facilities, bookmark-gathering, sharing of private space, and a test centre to assess a student on a module. The platform allows individuals across borders to communicate and share knowledge and experience from anywhere at anytime through the Internet. The VCILT also developed a multimedia enhancement CD-Rom for the teaching and learning of History and Geography at primary level. This research project, which was approved by the Mauritius Research Council

The VCILT also assisted with the Development of *a Bilingual Indian Ocean Open Learning Portal* which serves to promote open links internationally and especially among the Indian Ocean islands.

5.4 TVET

Mauritius has an Industrial and Vocational Training Board and Technical Board. The board provides incentives to firms to promote training in-house. Firms can claim back 75% of their training costs depending on their tax status. Trainig may be conducted in house or with a traing institution recognised by the Mauritius Qualifications Authority. Grants are based on a cost sharing principle[9]

8. ENABLING AND CONSTRAINING FACTORS

The table below provides a brief overview of the current stage of development on ICTs in education in Mauritius.

Variables	Enabling	Constraining
Policy Framework & Implementation	Mauritius has been a front runner in an overall comprehensive national ICT policy and liberalised telecommunications framework. The national ICT policy also includes a component on education.	There is no comprehensive policy on ICTs in education
Advocacy Leadership	Government has been in the forefront of driving ICT access and use at all levels of Mauritian society and have implemented projects with ambitious targets	
Gender Equity re access to ICTs	Government has introduced a dedicated project promoting the use of ICT by women	There is no explicit reference to gender equality and womens' empowerment in the national ICT policy
Infrastructure & Access	Mauritius has a relatively good ICT infrastructure and high levels of ICT access include Internet connectivity	
Collaborating mechanisms	Government has instituted some collaborating mechanism to co-ordinate, monitor and manage ICT initiatives in the country	
Human Resource Capacity		
Fiscal Resources	Dedicated budgets have been allocated for various ICT projects that promote the vision of government's	
Learning content		
Procurement regulations		
Attitudes	The leadership of Mauritian government have a confident and ambitious attitude in their promotion of ICTs as a cornerstone of the Mauritan economy. Their focus appears to be on technical training	

[1] http://en.wikipedia.org/wiki/Mauritius
[2] www.worldbank.org

[3] http://www2.weforum.org/site/homepublic.nsf/Content/Global+Competitiveness+Programme/Global+Information+Technology+Report.html

[4] https://www.cia.gov/cia/publications/factbook/geos/wa.html

[5] ITU (2004): The fifth pillar: Republic of Mauritius ICT Case Study , http://66.102.9.104/search?q=cache:ENZqiFZweqIJ:www.itu.int/ITU-D/ict/cs/mauritius/material/CS_MUS.pdf+MAuritius+ict+schools&hl=en&ct=clnk&cd=14&gl=za

[6] [6]Dr V. Ramharai,, Mr K. Goodoory, (2003) ICT in primary schools in Mauritius, Policy and Practice. ICOOL 2003, http://66.102.9.104/search?q=cache:rE-Bezf7DQkJ:icool.uom.ac.mu/2003/papers/file/Ramharai.pdf+mauritius+ict+schools&hl=en&ct=clnk&cd=2&gl=za

[7] National ICT Strategic Plan, Government of Mauritius and UNDP (2006). www.gov.mu/portal/sites/nictsp1/NICTSPReviewed3F.pdf

[8]Dr V. Ramharai,, Mr K. Goodoory, (2003) ICT in primary schools in Mauritius, Policy and Practice. ICOOL 2003, http://66.102.9.104/search?q=cache:rE-Bezf7DQkJ:icool.uom.ac.mu/2003/papers/file/Ramharai.pdf+mauritius+ict+schools&hl=en&ct=clnk&cd=2&gl=za

[9] National ICT Strategic Plan, Government of Mauritius and UNDP (2006). www.gov.mu/portal/sites/nictsp1/NICTSPReviewed3F.pdf