Pilot Project Proposals

Member States of the Organisation of Eastern Caribbean States (OECS)
Grenada, St Vincent & The Grenadines, St Lucia, Dominica, St Kitts & Nevis, Antigua & Barbuda, Montserrat, Anguilla and the British Virgin Islands

Telecommunication Reform & Modernisation Project
Consulting Services in
Information & Communication Technology

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Table of Contents

Annexes

Annex 1: Annex01-eEuropeBenchmarks.pdf
Annex 2: Annex02-e government global survey.pdf
Annex 3: Annex03-E Government 10 questions.pdf
Annex 4: Annex04-telecentre manual.pdf

Figures and Tables

Abbreviations

ACS	Association of Caribbean States
AID Bank	Agricultural and Industrial Development Bank
ASP	Application Service Provider
ASYCUDA	Automated System for Customs Data (UNCTAD)
ATM	Asynchronous Transport Mode
B2B	Business to Business (electronic commerce)
B2C	Business to Consumer (electronic commerce)
BI	Business Incubator
BLS	Bureau of Labour Statistics (U.S. Department of Commerce)
BTA	Basic Telecommunications Agreement (WTO)
CAGR	Compound Annual Growth Rate
CANA	Caribbean News Agency
CANTO	Caribbean Association of National Telecommunications Organizations
CARICOM	Caribbean Community and Common Market
CDB	Caribbean Development Bank
CET	Common External Tariffs (CARICOM)
CIC	Community Information Centre
CLAA	Caribbean Latin American Action
CMM	Capability Maturity Model (Software Engineering Institute)
C&W	Cable and Wireless
DBMS	Data Base Management System
DOC	U.S. Department of Commerce
DOMELEC	Dominican Electricity Services
DOT Force	Digital Opportunity Task Force
ECCB	Eastern Caribbean Central Bank
ECLAC	United Nation's Economic Commission for Latin America and the Caribbean
ECTEL	Eastern Caribbean Telecommunications Regulatory Authority (Dominica, Grenada, St. Kitts/Nevis, St. Lucia, St.Vincent/Grenadines)
EDA	U.S. Department of Commerce's Economic Development Administration
EDI	Electronic Data Interchange
FDI	Foreign Direct Investment
FTAA	Free Trade Area of the Americas
GATT	General Agreement on Tariffs and Trade

GDP	Gross Domestic Product
GNP	Gross National Product
GPS	Global Positioning Systems
GSM	Global System for Mobile Communications
IAS	International Accounting Standards
IBC	International Business Company
ICT	Information and Communications Technologies
IDP	Integrated Development Plan
IDB	Inter-American Development Bank
IEEE	Institute for Electronics and Electrical Engineers
IESC	International Executive Service Corps
-IFC	International Finance Corporation (WB)
IMF	International Monetary Fund
IPO	Initial Public Offering
IPR	Intellectual Property Rights
ISDN	Integrated Services Digital Network
ISO	International Standards Organization (e.g., ISO 9000)
ISP	Internet Service Provider
IT	Information Technology
ITIO	International Tax and Investment Organization
ITA	Information Technology Agreement (WTO)
IT&C	Information Technology and Communications
ITG	Information Technology Group at Center for International Development at Harvard University
ITU	International Telecommunications Union (UN)
Km	Kilometres
LAN	Local Area Network
Mbps	Mega bytes per second
MOC	Ministry of Communications, Works, and Housing
MOE	Ministry of Education, Sports, and Youth Affairs
MFP	Ministry of Finance and Planning
MHz	Mega (million) Hertz (cycles/second)
NTRC	National Telecommunications Regulatory Authority
NDC	National Development Corporation
NDFD	National Development Fund of Dominica, Ltd.
NGO	Non-Government Organization
OECS	Organization of Eastern Caribbean States
PC	Personal Computer
SME	Small and Medium Enterprise
TA	Technical Assistance
TRIPS	Trade Related Intellectual Property System (WTO)
UNCITRAL	United Nations Commission on International Trade Law
UNCTAD	United Nations Commission on Trade and Development
UNDP	United Nations Development Program
UPS	Uninterruptible Power Supply
U.S.	United States
USAID	U.S. Agency for International Development
UWI	University of the West Indies
VAT	Value Added Tax
VSAT	Very Small Aperture Terminal
WB	World Bank
W.I.	West Indies
WIPO	World Intellectual Property Organization
WTO	World Trade Organization

0 Executive Summary

This is the second of three reports comprising the output of the Consulting Services in Information & Communication Technology project. It presents ten ideas for specific projects to give practical expression to the proposed ICT Policy for the OECS region. The ideas have emerged from a study of existing ICT activities, projects and project proposals within member states in the region, as well as the formal regional and national consultation processes and informal discussions with leading role-players.

The first proposal offers a basis for each member state to formulate and implement its own *National ICT Plan and Strategies*. At least one state has already completed this activity and another is well on its way. It is considered essential that all member states complete this process within the agreed framework for an OECS ICT Policy. Closely linked to this project idea is the second one, namely to establish an *OECS ICT Council and National ICT Steering Committees and Management Structures*. The purpose of such structures is to ensure the continuous updating of the Policy itself and to shape, coordinate and oversee the many follow on projects comprising the OECS ICT Strategy. Successful implementation of the ICT Policy demands strong and committed leadership effected through such structures.

There are three proposals for projects to prepare the way for specific use of ICT to stimulate economic growth and diversification. First there is a *Legislative Framework for Electronic Commerce*. Worldwide it is recognised that legislative certainty is needed to encourage businesses to engage in e-commerce and for individuals to trust the electronic environment. This project proposes to adapt and adopt international legislation already in widespread use. One OECS member state is well advanced in this process.

A second preparatory project recommends that each member state carefully evaluate the technical, financial and operational merits of constructing a *National Data Communications Backbone*. Although costly such a backbone will allow the public and private sector and civil society in general to build a wide variety of applications to streamline government, enable e -business and e-learning etc.

The third project in this category stresses the importance of a thorough understanding of the ICT Labour Market, but the lack of such information within the OECS region. It proposes *In-Depth Monitoring and Analysis of the OECS ICT Labour Market* and argues that the resultant information will allow for improved decision-making by policy-makers, business people and individuals exploring career options and will thus be of real benefit to the economy in the region.

A further three project ideas relate to human resource development. With regard to formal ICT training in schools, there is already an extensive programme of work spearheaded by the OECS Educational Reform Unit that has resulted in adoption of an OECS-wide Policy for ICT in

Education. One follow-on project is at an advanced stage of formulation, namely a *Programme for ICT Training of Teachers*. This project should be strongly supported and possibly extended to include the international certification of basic skills acquisition by teachers and their students (e.g. via the International Computer Driving Licence).

A second project idea concerns the provision of access to computers and the Internet to the widest possible proportion of the populations of member states. Specifically the proposal is for communities to determine local needs and *Establish Multipurpose Telecentres* to serve those needs. Such centres have become a very popular and widespread vehicle for providing access and ICT services to rural communities and there are already examples within the OECS region.

Finally in this category is the idea to *Institute Multimedia "Summer Camps."* The starting point is the natural "learning-by-doing" that children carry out. The proposal is to create facilities (possibly as part of multipurpose telecentres) where children and their parents and special groups such as teachers and political decision makers can enjoy a practical and stimulating introduction to ICT and multimedia tools in particular.

The last two project ideas presented in this report cover government and private sector applications of ICT. The government application idea is for each OECS country to identify and implement one or more projects addressing *Government OnLine*. Examples might be maintenance of registries (e.g., births and deaths and land use), services provision (e.g., business registrations), or e-business (e.g., government procurement) that have real potential for e-government. If at all possible such projects should be collaborative across two or more member states.

The private sector proposal is for a project to explore potential OECS sites at which to *Initiate ICT Cluster Development* and to set about creation of such clusters. ICT clusters might comprise inter-related ICT suppliers, such as PC assemblers, software suppliers, systems developers, a telecomm company, ISPs, etc. in close proximity to significant ICT users such as call centres, banks, educational users, or manufacturing facilities. Complementing the supplying and using firms would be educational establishments, other ICT training facilities and local government offices. International experience shows that such clusters can be very effective in building particular economic sectors. The current discussions around ICT Parks within the OECS relate quite closely to this concept, and could be considered within this context.

1 Introduction

The following ten project descriptions reflect different potential outcomes of the recommended ICT Policy for the OECS. If some or all are undertaken, they will give practical expression to the principles contained in the ICT Policy and thereby accelerate the process of economic and social development of the OECS in the Information Age.

The descriptions are clearly not thoroughly worked out project plans. In one way or another, however, they are strong project ideas that have emerged from discussions with the role-players who have participated with us in the ICT Policy Study. They sometimes reflect more detailed proposals or activities already underway somewhere within the member states of the OECS. As a result we believe the ten project ideas all have a high probability of successful implementation provided that committed champions are found and that the projects receive active endorsement from the highest levels.

The description of each project idea starts with a summary and general motivation. A more specific purpose and objectives then follows along with expected benefits and beneficiaries, principal activities and a rough timeframe, suggested project team and project leader, ballpark cost estimates and potential sources of funding, related existing initiatives within the OECS region and suggested next steps.

Certain project ideas are a direct expression of the recommended ICT Policy. These are

- Development of the National ICT Plans and Strategies needed to translate the ICT Policy into action, and
- The creation of OECS-wide and National Structures to oversee the stated developments.

These projects are essential and immediate outcomes of the current study. Three other project ideas are pre-requisite to realising some of the major benefits of ICT

- Legislation to Support Electronic Commerce,
- Creation of National Data Communications Backbones and
- Gathering Effective Statistics on ICT Labour Markets.

Three others address human resource development, both formal and informal, to prepare the society for the Information Age

- A Programme of ICT Training for Teachers,
- Launching of Multipurpose Community Telecentres in all member states, and
- Design and Implementation of Multimedia Summer Camps for children and adults.

Finally there are two recommendations to tackle ICT applications in the public and private sectors

- Selection and implementation of at least one substantial Government OnLine project in each member state and
- The creation of a so-called ICT Cluster in at least one member state to stimulate SME activity in ICT and enable start-up ICT businesses.

2 Overview on the Proposed Pilot Projects and their Relation to the Overall ICT Policy

Pilot Project Idea for ICT Sector Development	Framework(s) supported
Pilot Project 1.: National ICT Plans and Strategies	
This project offers a basis for each member state to formulate and implement its own national ICT plan and strategies.	Policy Framework
Pilot Project 2.: OECS-wide and National Structures for ICT Policy Formulation and Implementation	
This project will form three inter-related structures throughout the OECS, which collectively form a management framework to formulate and implement agreed ICT projects and programmes throughout the region; a National ICT Steering Committees, a National ICT Executing Agencies, and an OECS Regional ICT Commission.	Policy Framework
Pilot Project 3.: Legislative Framework for Electronic Commerce	
This project is to realise a harmonised legislative environment to facilitate electronic commerce throughout the OECS.	Legal Framework, E-Business Environment Framework
Pilot Project 4.: National Communications Backbone	
This project is to put in place the necessary data communications backbone upon which to build applications serving the public and private sector and civil society in general.	Infrastructure Framework, E-Business Environment Framework
Pilot Project 5.: Government On-Line	
This project should address the ten questions mentioned in the report *Roadmap for E-government in the Developing World* to arrive at real opportunities for e-governance, e-services and/or e-business that have a high probability of success.	Infrastructure Framework, E-Business Environment Framework
Pilot Project 6.: Developing OECS ICT Clusters	
This project is intended to evaluate potential sites for ICT clusters within the OECS region, select one or more for follow on activities, and initiate the process of cluster development.	E-Business Environment Framework, Infrastructure Framework
Pilot Project 7.: Multi-Purpose Community Telecentre Project	
This project is to enable communities and especially rural communities within the OECS to identify real benefits from ICT and to assist them to realise the benefits via the launch of Multi-purpose Community	Human Capacity Framework

Telecentres.	
Pilot Project 8.: ICT for Teachers	
This project comprises several modules aimed at instruction in basic ICT skills within a curriculum tailored to the teaching environment. It also contains a module dealing with ICT integration in curriculum and instruction.	Human Capacity Framework
Pilot Project 9.: ICT Labour Market Statistics	
This project is to collect accurate information on the current ICT labour market to assist in the development of a long-term OECS ICT Human Resources Development Plan and to put in place an ongoing ICT labour market monitoring mechanism for the region.	Human Capacity Framework
Pilot Project 10.:Multimedia Summer Camp Project	
This project is to expose children and their parents to information and communication technology in a relaxed atmosphere. The project also works as a template for similar activities targeting other groups like teachers, government high officials, businessmen etc.	Human Capacity Framework

3 Pilot Project 1.: National ICT Plans and Strategies

3.1 Project Summary

Worldwide, ICT policy formulation and implementation has been the subject of much recent debate. For instance the recommendations of the DOT Force stress that–given the multi-faceted nature of ICT–it is vital for developing countries to create master plans encompassing national ICT for development. For such plans to reflect national priorities and be demand-driven, however, such plans/strategies should involve *awareness raising* at all levels of society, and be *developed in consultation with national stakeholders* and *in partnership with the international community* (international organizations, private sector, bilateral donors and NGOs). Accordingly it is a strong recommendation of this study that all OECS member states proceed with the formulation and implementation of national ICT plans and strategies. In this regard, at least two states, Grenada and St Kitts/Nevis, have their planning processes well underway.

ICT plans and strategies should be grounded in a thorough understanding of the current state of ICT and existing ICT initiatives in the country in question as well as international benchmarks. There have been several prior assessments of ICT in the OECS member states, the most recent being undertaken by the CARANA Corporation in collaboration with EC-TEL under a USAID contract. The present study has updated some of this data. As member states formulate their national plans, they should ensure that the recommendations are based on the most current data available.

The content of such plans has been thoroughly researched in numerous settings and the topics are now well known. It is recommended that OECS member state ICT plans follow a structure such as the following:

- An overall vision for ICT that addresses a country's national social and economic vision
- Explicit policy statements, and goals and objectives to be achieved by the plan
- Specific attention to key areas such as:
- Developing the country's human capacity, including ICT technical and professional capacity, and the formal and informal training and education of the populace in schools, colleges and private training establishments and support for life-long learning.
- Adapting the regulatory and legal framework to remove any impediments to the growth of the ICT sector
- Streamlining the banking sector with regard to electronic banking and fostering ICT entrepreneurial activity
- Modernising government

- Growing the physical infrastructure of ICT hardware and software and telecommunications facilities.
- Designing the institutional and managerial infrastructure to ensure effective and ongoing implementation of the ICT plan
- An Action Plan with recommended follow-on projects. These might cover:
- Education and Training
- Electronic Commerce
- ICTs and Health
- Agricultural Applications
- Maximising Tourism Potential
- Diversification into new Economic Areas (e.g., obtaining outsourced software services contracts)
- Promotion of Internet access and use by the populace (developing the Internet Service sector and creation of public access points such as multi-purpose telecentres)
- E-government (e-governance, e-services and e-business)
- Creation of incentives to encourage local and foreign direct investment in the industry, in particular facilitating small and medium-sized ICT businesses.

3.2 Project Purpose and Objectives

This project offers a basis for each member state to formulate and implement its own national ICT plan and strategies. The member states should:

- Share results of existing initiatives
- Agree a common template for harmonised national ICT plans (to exploit the opportunity for synergy)
- Identify responsible institutions and champions to launch the planning efforts
- Estimate costs of implementation of specific elements of the plans and seek funding
- Review existing assessments of the state of ICT and if necessary update and extend the basic data.
- Complete ICT plans and strategy
- Initiate follow on projects, where possible involving collaborations among two or more states
- Monitor and evaluate benefits

3.3 Expected Beneficiaries, Impacts, Outcomes, and Outputs

It is expected that foreign investors and donors will show increased interest in the region as a result of this project. The beneficiaries will include the public and private sector and civil society in all countries of the region and the OECS as a whole. Collaboration among countries will result in reduced costs and accelerated development and implementation of ICT plans. The ICT sectors in the respective countries will grow more rapidly and specific sectors such as tourism, health and agriculture that are subject to priority projects will enjoy especial benefits.

3.4 Principal Activities and Timeline

The activities will comprise cross-country meetings, desk research, on-the-ground surveys of ICT in the participating countries (only where deemed necessary to supplement or update available statistics), individual and group interviews and report writing.

3.5 Project Team, Project Leader and Key Advisors/informants

This should be the first project undertaken by a newly constituted OECS Regional ICT Council in collaboration with National ICT Steering Committees (see next project idea). The ICT Council should ensure that existing work on ICT planning in the region is incorporated in the initiation process and invite countries in the region to build on that work. An interim ICT Planning Task Force comprising nominees from the relevant countries should be formed to coordinate the work. That Task Force should elect the project leader.

3.6 Rough Costing

The costs will vary depending on the particular country concerned and the prior planning work that has been done. We envisage, however, that the work will best be done by one or more individuals in-country such as appointed central ICT directors and their staffs (discussed in the next proposal) drawing on the expertise of members of the National ICT Steering Committees and others. Such exercises should be completed within approximately three months.

3.7 Potential sources of funding

It is recommended that the planning exercises are conducted in-country by dedicated individuals.

3.8 Related Existing Initiatives

Both Grenada and St Kitts/Nevis have developed well researched ICT Plans and Strategies and have obtained or are seeking endorsement by their governments to proceed with implementation. St Vincent recently invited Grenada to present their ICT plan and strategy as a possible basis for a St Vincent initiative. The two plans already available within the OECS region should be used as a basis for similar projects in other member states.

3.9 Next Steps

Member states are urged to proceed as soon as possible after adoption of the overall OECS policy framework to appoint responsible individuals and commence the preparation of national ICT plans and strategies.

4 Pilot Project 2.: OECS-wide and National Structures for ICT Policy Formulation and Implementation

4.1 Project Summary

To achieve the recommended national ICT plans and strategies referred to in the previous section, and in line with international best practice, certain top-level structures are needed. It is recommended that the OECS form three inter-related structures, which collectively form a management framework to formulate and implement agreed ICT projects and programmes throughout the region:

- National ICT Steering Committees
- National ICT Executing Agencies
- An OECS Regional ICT Council

Each country within the OECS region should create a national multi-stakeholder high-level National ICT Steering Committee that coordinates the actions of all governmental sectors in support of ICT policy and strategy and encourages the formation of industry ICT associations. The steering committee should ensure close collaboration among government, the private and not-for-profit sectors, civil society more broadly and the international community.

Such a body needs strong leadership and participation from all major stakeholder groups including key government officials, academics, representatives of labour and the private sector and must be fully supported by Government in both voice and action. A National ICT Steering Committee could also be instrumental in the formation of private sector ICT Associations. It is seen as pivotal that this body has at least a small core of permanent members, with relevant background, who are well remunerated and of the highest quality.

It is also recommended that each country have a national ICT Executing Agency with linkages to the ICT sections of the Ministries as well as with other ICT-related organizations in the public and private sector. Such a body will among other things have the responsibility for co-ordinating National ICT initiatives and projects; facilitating the implementation of programmes; facilitating the work of the National ICT Steering Committee as well as ICT sections of Government Ministries; providing advisory and technical support services to the National ICT Steering Committee as well to public and private sector organizations. The agency will also have the responsibility for developing National ICT Standards and Guidelines and will have an ICT consultancy role as well as a public awareness and education role in the area of information and communications technologies.

Thirdly it is recommended that the OECS form a supranational regional body to guide and coordinate the ICT activities within the member states

and to design and execute selected projects and programmes common to multiple countries in the region. Typical regional projects could include common legislation governing e-commerce, educational policies and programmes, and gathering and reporting of ICT indicators (e.g., see Annex 1). Such a body–possibly named the OECS ICT Council–would draw its members from the national ICT Committees supplemented by selected other role-players such as chairs of the NTRC's etc.

4.2 Project Purpose and Objectives

The purpose of this project is thus to

- Draft detailed terms of reference for three distinct bodies:
  - A Typical National ICT Steering Committee
  - A Typical National ICT Executing Agency
  - An OECS Regional ICT Council
- Identify the objectives and core functions for each body.
- Identify the most appropriate role players and organizational structures for the bodies and their relationships with public, private sector and universities, including placement within the OECS and national governments.
- Prepare sample business plans, determine operating costs for the bodies and identify sources of operational funds including private sector sources.
- Obtain approval of the OECS Secretariat and National Governments of the member states for the bodies' structures and functions
- Constitute the recommended bodies.

4.3 Expected Beneficiaries, Impacts, Outcomes, and Outputs

Given the over-arching nature of this project, the eventual beneficiaries will include the public and private sectors as well as civil society in all member states of the OECS. The immediate beneficiaries of this project, however, will be the OECS Secretariat and the National Governments of the Member States. Tangible outcomes and outputs will include accepted terms of reference and structures and functions for the proposed bodies, ratification to proceed, appointment of individuals to the required positions, and commencement of recommended tasks and activities.

4.4 Principal Activities and Timeline

The principal activities on this project will be desk research and broadly-based local and international discussions to formulate terms of reference and the other elements described above.

4.5 Project Team, Project Leader and Key Advisors/informants

It is recommended that the national representatives appointed for the present study nominate a small project team to lead this pilot project and serve as a steering committee to provide ongoing guidance and encouragement. The nominated team should choose a committed project leader. Key advisors/informants will be OECS and national government officials as well as stakeholders in the private sector and civil society. Advice should also be sought from international agencies involved with similar activities elsewhere.

4.6 Rough Costing

This project is small scale and should be completed within three months. There will be personnel time, some communications costs and possibly one or two regional meetings to draft and finalise terms of reference, structures, tasks etc.

4.7 Potential sources of funding.

Funding should be sought from the OECS secretariat and national budgets.

4.8 Related Existing Initiatives

There is the existing OECS-wide structure governing telecommunications, namely ECTEL and the associated national NTRC's. Also both Grenada and St Kitts/Nevis have prepared well-researched national plans and strategies for ICT. Both recommend national groups to spearhead their recommended ICT plans and strategies. At the invitation of St Vincent and the Grenadines, Grenada has formally presented its approach to national ICT planning. This project should build on the work already done by ECTEL and the member states mentioned.

4.9 Next steps

OECS Secretariat to approve project, source funds and appoint the steering committee to proceed with detailed project specification.

5 Pilot Project 3.: Legislative Framework for Electronic Commerce

Electronic commerce (EC) can be defined as

"The conduct of commerce in goods and services, with the assistance of telecommunications and telecommunications-based tools."

EC—and more broadly e-business—has revolutionised international trade and touches virtually all aspects of economic and social life within countries. In the process many principles of commercial law have been rendered obsolete and in many instances pose barriers to electronic commerce. For example, difficulties arise when concepts such as "writing," "document" or "signature" are applied to information that is communicated in digital format. Statutory, regulatory and licensing requirements may also form a barrier against online transacting. Other barriers to electronic commerce may arise simply from a lack of uniformity in policies, laws, standards and trade practices in different jurisdictions.

Furthermore, globalisation is driving the standardisation of transactions and countries that do not conform will lose trade. And companies that already trade internationally will become increasingly disadvantaged if their home environment does not provide legislative certainty in the areas of security, privacy, the law of contract, and intellectual property rights, among others.

With very few exceptions, the member states of the OECS have yet to address legislation for e-commerce. It is strongly recommended that this deficiency be put right along the lines of this project proposal. Such a project lends itself to an OECS-wide collaboration, since it is expected that existing legal structures and the needed adaptations will be quite similar across the region.

Fortunately international efforts have addressed the most important policy issues relating to e-commerce and numerous initiatives and regulatory actions have been launched at national and regional levels. In particular the United Nations Commission on International Trade Law (UNCITRAL) drafted a Model Law on Electronic Commerce in 1996 and in 2001 a Model Law on Electronic Signatures. The model laws aim to create a more secure legal environment for electronic commerce by providing tools for states to enhance their legislation as regards paperless communication and storage of information. The issues dealt with include:

Encryption and decryption Lack of security over the Internet is a real threat to the development of e-commerce. Encryption and decryption techniques are thus critical to providing authentication, authorisation, confidentiality, integrity, and non-repudiation services.

Digital signatures Similarly, the issues of digital signatures and electronic contracts are relevant in case of dispute between trading partners in an e-commerce transaction. The relevant Model Law establishes a presumption that, where they meet certain criteria of techni-

cal reliability, electronic signatures shall be treated as equivalent to hand-written signatures.

Certification authorities In order to secure electronic transactions, certification authorities are needed to act as trusted third parties to verify information about parties involved in a transaction and about the transaction itself. In order to gain credibility at the international level, Caribbean certification authorities should be in place and take part in the framework for supporting the international interoperability of certification mechanisms and the mutual recognition of certification authorities.

Consumer protection In an electronic market place it is not easy for consumers to identify and localize the suppliers. In order to develop and maintain consumer confidence in electronic commerce, it is necessary to promote protection mechanisms.

Intellectual property rights Securing intellectual property rights (IPRs) is crucial in providing security and trust with respect to investment and trade in ideas and cultural activities and therefore helping commercial returns. Music and cultural products is a key sector where the Caribbean can capture some e-commerce niches. It is essential to protect Caribbean producers in order to unleash this type of activity.

Commercial Regulations and Procedures There are several opportunities here to streamline or eliminate restrictive regulations:

- Eliminate or streamline the process for the actual creation and registration of new Internet-based businesses.
- Reduce or eliminate fees, duties and other restrictive taxes on imported hardware and software required for E-business operations.
- Eliminate or streamline any existing import and export procedures that might hobble the operations of E-businesses.

5.1 Project Purpose and Objectives

The purpose of this project is to realise a harmonised legislative environment to facilitate electronic commerce throughout the OECS. This can be achieved by:

- Carrying out a Due Diligence exercise to identify all existing laws within the region that require adaptation, and legislative gaps that need to be filled.
- Based on the UNCITRAL Model Laws, drafting necessary new laws or amendments to existing laws.
- Presenting the drafts for public comment and subsequently preparing Bills to go before the separate Parliaments.

- Tabling the Bills and ensuring their passage into law.

5.2 Expected Beneficiaries, Impacts, Outcomes, and Outputs

The beneficiaries will be organisations, both public and private and individuals engaging in electronic commerce both locally and internationally. The legislative certainty and harmonisation resulting from this project, within the OECS region and internationally, should serve to boost electronic commerce activity significantly and therefore have a direct beneficial impact on economic activity.

5.3 Principal Activities and Timeline

The principal activities will comprise study of the OECS member states' legal statutes as well as the UNCITRAL Model Laws, consultations between legal experts and ICT experts in the region and drafting of new and amended laws by legal drafters. The work preparatory to tabling of the bills in the respective Parliaments should be done within 3-6 months and passage into law will then depend on the Parliamentary cycles in the member states.

5.4 Project Team, Project Leader and Key Advisors/informants

A suitably qualified legal expert working with OECS and member state Justice Ministries should lead this project. There should be close involvement with the National ICT Steering Committees and the OECS ICT Council.

5.5 Rough Costing

Such a project should fall within the normal working activities of the nominated legal experts.

5.6 Potential sources of funding

Internal to respective Ministries and the OECS Secretariat.

5.7 Related Existing Initiatives

St. Kitts and Nevis have reached an advanced stage in the process of applying the UNCITRAL Model Law on Electronic Commerce to their legal frameworks and should be consulted at an early stage.

5.8 Next Steps

The OECS ICT Council should hold discussions with the ICT Director in the St Kitts Ministry of Telecommunications and seek guidance as to how to carry this project forward.

6 Pilot Project 4.: National Communications Backbone

6.1 Project Summary

Underlying the ICT Policy and strategy embodied in the OECS vision is the desire to make the power of ICT available to the public and private sectors as well as all the citizenry and thereby help to maximise the economic potential and diversification of the economies of its member states. While much of the benefit will derive from the effective application of computer hardware and software, perhaps more important is data communications, within and between islands and the outside world. Of course this is already happening and there are many successful applications in place serving government, businesses, schools, etc. The OECS telecomm liberalisation programme underpins this drive.

Particular countries within this project have, however, recognised that there is specific untapped potential that can be realised once significant changes are made to the physical infrastructure itself. Dominica is exploring a national communications network covering the whole island, St Kitts/Nevis is looking to encourage expansion of its backbone network and especially streamline government communications. Grenada has prepared a detailed proposal to construct a National Network Backbone operated by the Grenada Government and that proposal was approved by the Grenada Government in October 2001.

Here it is recommended that all OECS member states consider establishing national communications backbones to given maximum opportunity for effective data communications within the public and private sectors and to open up opportunities for small businesses and individuals in urban and rural areas to benefit from the power of ICT and the Internet in particular.

Although the Grenada proposal has some elements specific to that country, it contains several valuable insights that are of significance for the OECS as a whole. For instance it notes the worldwide concern and complaints levelled at most governments regarding inefficiencies in providing data and information to the public at large, and the waste of revenue that results. Among the benefits an effective national backbone would yield would, therefore be improved service to the public, greater inter-governmental communications, more efficient information and data flow within government, and establishment of new revenue streams. There would also be benefits for private sector business data communications and access to the Internet for civil society as a whole.

The Grenada proposal identifies the benefits of communication via a secure island-wide backbone and centralised databases to public sector areas such as traffic management, immigration and drug law enforcement. The private sector would benefit by being able to connect their local area networks to the national backbone and give meaning to electronic business and electronic commerce. Public and private educational

providers would be able to explore on-line teaching techniques. Public kiosks, or telecentres could be established to provide civil society with access to information for a variety of purposes including learning and business.

In short, this project encourages member states to carefully evaluate the technical, financial and operational merits of constructing a national data communications backbone.

6.2 Project Purpose and Objectives

The purpose of this project is to put in place the necessary data communications backbone upon which to build applications serving the public and private sector and civil society in general. Towards this end, the following objectives have been defined in the Grenada proposal and have general relevance to other islands within the OECS:

- Assess and evaluate all local area networks within ministries and departments for functionality, expandability, flexibility, software platforms, protocol standards, and security.
- Design and develop a National Backbone with bandwidth capability to incorporate linkages to present functional networks, and accommodate expansion and flexibility to future network requirements with standardised protocols and intrinsic security criteria.
- Engage in a tendering process to allow fair bidding by telecommunication and Internet Service Providers for design and installation of the National Backbone.
- Establish a Local/Wide Area Network deployment strategy.
- Establish and deploy pilot operations with specific benefits and impact to both public and private sector. In particular a tangible outcome would be the provision of email addresses for all public officials and encouragement to use electronic means for communications within government and between government and the private sector and between governments throughout the OECS.
- Develop metrics to determine that all design functionality and criteria are met.

6.3 Expected Beneficiaries, Impacts, Outcomes, and Outputs

Initially the beneficiaries would include ICT suppliers including telecomm providers, Internet Service Providers, etc. Once the backbone became available to users, the benefits would rapidly extend to public sector departments, large and small businesses, the academic community and rural communities.

6.4 Principal Activities and Timeline

Principal activities would include:

- Analyse and design the desired backbone architecture
- Issue tenders
- Choose a supplier ensuring that the supplier can deliver all requirements outlined within an agreed time frame.
- Pursue various sources of funding for the entire project.
- Determine project phases for immediate deployment.
- Develop project management schedule and critical path analyses.

6.5 Project Team, Project Leader and Key Advisors/informants

The respective island ICT Executing Agencies, working closely with the National ICT Steering Committees, should undertake this project.

It is expected that there will be much similarity between the different national needs but that different islands will reach checkpoints and milestones at different times. Therefore there will be significant efficiencies and benefits in close coordination of project activities on the different islands.

6.6 Rough Costing

The costings on the Grenada project state a two-phase capital investment to establish a national backbone plus ten access points of approximately $US1 million. Annual costs to sustain the backbone are estimated at US$450000.

6.7 Potential sources of funding

Funding is contingent on the implementation strategy and path adopted by each government.

6.8 Related Existing Initiatives

The primary related initiative is that of Grenada, but there are others Dominica is developing a plan to link not only governmental buildings but also three colleges to create a Dominica College. St Kitts/Nevis is proposing a comprehensive incentive regime to foster the development of the physical infrastructure for ICT.

It is noteworthy that the Grenada approach calls for a government funded and managed initiative, while that of St Kitts and Nevis promotes a private sector project once government has created the appropriate

legal and regulatory climate. Other islands interested in pursuing this project idea should engage in a thorough discussion as to the pros and cons of the alternative philosophies.

6.9 Next Steps

National ICT Steering Committees should spearhead formal and detailed backbone proposals for submission to international donor organisations or local commercial interests or both.

Pilot Project 5.: Government On-Line

It is universally recognised that ICT offers major opportunities for governments to improve their internal processes, simplify the services they provide to citizens and streamline their business dealings. It is proposed, therefore, that member states identify one or more projects addressing these general goals and proceed with rapid development and implementation. Apart from the specific benefits that would be targeted by the selected projects, governments would thereby send a strong signal to their communities that they are serious about adopting and supporting ICT and would be positioning themselves as "model users" of ICT.

E-government can be defined as

"The continuous optimisation of government service delivery, constituency participation, and governance by transforming internal and external relationships through technology, the Internet and new media."

This definition covers the three main components of e-government: e-governance, e-services and e-business. E-governance is the application of ICT to intra-governmental operations, including the interaction between central, provincial and local government. This includes paperless messaging and reporting, electronic document management and archiving, integrated systems of finance, asset and human resource management (including training), as well as systems for real-time collaboration and project management, conferencing, decision support and executive information. E-services involve the use of ICT to transform the delivery of public services from 'standing in line' to 'online' – anywhere, anytime, by any means and in interactive mode. E-business is the means by which government will use ICT to facilitate its dealings with suppliers.

One should not, however, underestimate the challenge of carrying out such projects. A September 2001 global survey of 2288 government websites in 196 countries (including all of the OECS states in this study) studied whether official websites offered publications and databases of information, and online services (See Annex 2).

The survey revealed

- 71% of websites provide access to publications and 41% have links to databases.
- Only 8% offer services that are fully executable online and these are mainly in the developed world. The most frequent services involve ordering publications online, buying stamps and filing complaints.
- 6% of websites feature a one-stop services "portal" or have links to a government portal.

In view of the sensitive nature of citizen information the study looked for visible security and privacy statements to help build trust among potential users. The survey also looked for special efforts to ease access for citizens with disabilities:

- 6% of the sites show privacy policies, while 3% have security policies.
- Only 2% of government websites have some form of disability access

It concludes that some helpful material has been placed online, but that much more work needs to be undertaken by central governments to upgrade e-government. Aside from publications and links to other sources of information, few countries offer online services, describe their privacy and security policies, or provide any type of disability access. In addition, other than email contact information, many nations have been slow to embrace the interactive features of the Internet that facilitate communication between citizens and government agencies.

In looking towards the future, the survey urges that all nations create government portals that serve as the gateway to a particular country's websites and offer a "one-stop" web address for online services.

Clearly, one major problem of e-government is the up-front cost of developing a website and putting information and services online. It is noteworthy that the survey recommends that smaller and poorer countries undertake regional e-government alliances that would allow them to pool resources and gain greater efficiency at building their infrastructure.

Also important for the present study is a recent report: *Roadmap for E-government in the Developing World - 10 Questions E-Government Leaders Should Ask Themselves,* prepared for the Pacific Council on International Policy (see Annex 3). The report examines the following questions and offers vignettes indicating known successes and failures in the developing world.

- Why are we pursuing e-government?
- Do we have a clear vision and priorities for e-government?
- What kind of e-government are we ready for?
- Is there enough political will to lead the e-government effort?
- Are we selecting e-government projects in the best way?
- How should we plan and manage e-government projects?
- How will we overcome resistance from within the government?
- How will we measure and communicate progress?
- How will we know if we are failing?
- What should our relationship be with the private sector?
- How can e-government improve citizen participation in public affairs?

As stated at the start of this section, this study therefore recommends that, mindful of international experience and the various known pitfalls, each OECS country identify one or more projects addressing e-government and proceed with rapid development and implementation. If at all possible such projects should be collaborative across two or more member states.

6.10 Project Purpose and Objectives

The proposed project(s) should address the above ten questions to arrive at real opportunities for e-governance, e-services and/or e-business that have a high probability of success. The objectives of the project would be:

- Identify one or more areas of government activity (e.g., maintenance of registries such as births and deaths, land use), services provision (e.g., business registrations), or e-business (e.g., government procurement) that have real potential for e-government
- Determine technical and organisational implications of applying ICT and carry out cost-benefit analysis
- Seek opportunity for project collaboration across OECS countries
- Make final project selection and identify service providers and sources of funding
- Proceed to implementation.

6.11 Expected Beneficiaries, Impacts, Outcomes, and Outputs

The beneficiaries will depend on the nature of the projects chosen. They could comprise government ministries and agencies that would enjoy greater efficiencies and effectiveness of internal operations; businesses that would be able to access information and conduct government business more effectively; and citizens in general who would be able to obtain information and carry out required transactions online via their homes or public access points. The outputs of such projects would be fully implemented data collection and storage procedures, online transactional systems, interactive websites, etc.

6.12 Principal Activities and Timeline

The principal activities would include:

- Identification and analysis of key government processes
- Preliminary design of e-government alternatives
- Discussions across OECS countries to seek common opportunities

- Preparation of tenders for detailed systems analysis, design and development for selected projects
- Sourcing of funding for proposed projects
- Managing implementation process.

6.13 Project Team, Project Leader and Key Advisors/informants

These projects would be spearheaded by the relevant national ICT Executing Agencies, working with outside contractors where appropriate. For multi-country projects temporary task teams would be necessary. It would be essential for the National ICT Steering Committees and the OECS ICT Council to provide inputs and monitor progress.

6.14 Rough Costing and Timeline

Very dependent on nature of projects identified.

6.15 Potential sources of funding

E-government projects often attract international donor funding. It is recommended that such funding be sought through the OECS ICT Council once a good definition of the desired activity is available.

6.16 Related Existing Initiatives

The islands of Dominica, Grenada and St Kitts/Nevis are actively engaged in e-government initiatives. All islands in this study have websites at varying levels of sophistication.

6.17 Next Steps

National ICT Steering Committees to appoint people to commence identification of project opportunities.

7 Pilot Project 6.: Developing OECS ICT Clusters

An industrial "cluster" is the mutually supporting presence of related firms and other institutions within a given area. While not stated as such, the current proposals and models for ICT Parks within the OECS region represent examples of the wider notion of ICT Clusters; therefore international experience and cluster research should provide useful insights. That research also suggests that the desired outcomes of the ICT Parks being discussed in the OECS region may be achieved in other, possibly less expensive ways.

Michael Porter of Harvard Business School defines economic clusters as follows:

Economic clusters are concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions, such as universities and trade associations that compete but also cooperate. Job creation and wealth creation can be maximized by working with specific clusters to identify common concerns, needs, and building collaborative actions to improve competitiveness.

Silicon Valley is of course the famous example of an ICT cluster, but there are many other, much smaller but very effective ICT clusters around the world[1].

A successful ICT cluster might comprise inter-related ICT suppliers, such as PC assemblers, software suppliers, systems developers, a telecomm company, ISPs, etc. in close proximity to significant ICT users such as call centres, banks, educational users, or manufacturing facilities. Complementing the supplying and using firms would be educational establishments, other ICT training facilities and local government offices.

Clusters can come about and grow quite naturally, or they can be consciously initiated and nurtured. Experience shows, however, that even under favourable circumstances, most clusters require ongoing care and attention. Cluster research has identified eight ingredients for success:

- The recognition of the potential of knowledge-based industries by regional/local leaders;
- The identification and support of regional strengths and assets;
- The catalytic influence of local champions;
- The need to have an entrepreneurial drive and sound business practices;
- The availability of various sources of investment capital;

[1] One of the consultants on this project, Dr J Miller, has conducted research and participated directly in the formation of a successful ICT cluster in South Africa.

- The cohesion provided by both informal and formal information networks;
- The need for educational and research institutions; and most importantly;
- The need to have “staying power” over the long term.

Evaluating a potential site for an ICT cluster (or, for that matter, an ICT Park) then requires analysis of strengths and weaknesses in relation to each of these elements. Typically the results are presented in a “spider diagram” such as that shown below which happens to compare two potential sites. Each dimension is rated from 1=very low marked near the centre to 10=very high marked at the periphery. Interpretation yields the overall potential of an area, highlights aspects that need special attention for success and enables comparisons of two or more different locations.

The recommendation is therefore for a project to explore potential OECS sites at which to initiate ICT cluster development and, if a promising site is identified, to set about creation of the cluster.

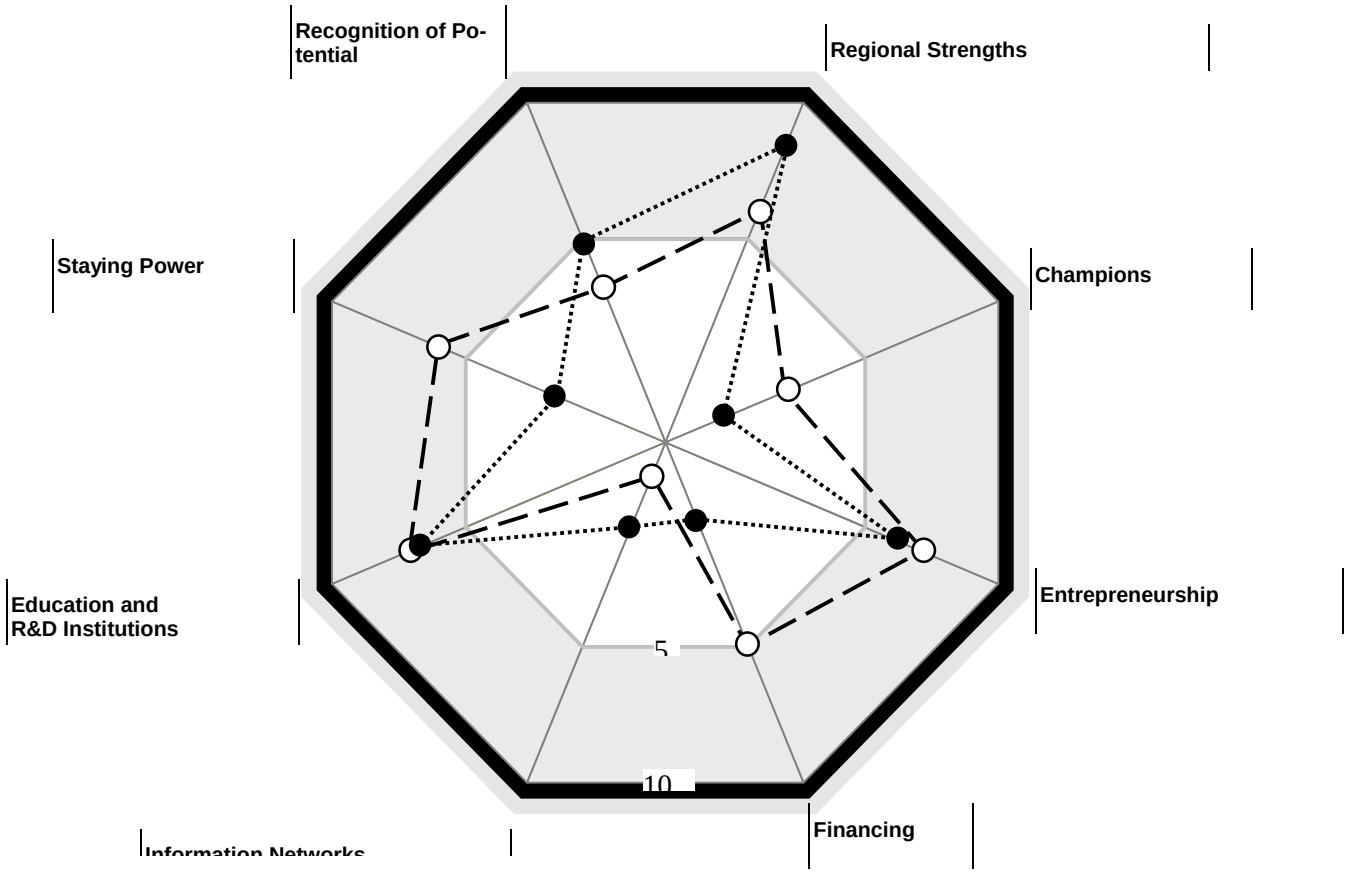

Figure 1: Example of an ICT Cluster Analysis Comparing Two Sites

7.1 Project Purpose and Objectives

This project is intended to evaluate potential sites for ICT clusters within the OECS region, select one or more for follow on activities, and initiate the process of cluster development. Such sites may lend themselves to the creation of a specialised ICT Park, or simply call for coordination of existing firms and other institutions. Therefore the exact nature of the development process must await the outcome of the first phase of the project.

The objectives are:

- Identify one or more promising locations for country ICT clusters within the OECS.
- Evaluate the potential of each for successful cluster development
- Determine the nature of follow on activities required
- Prepare an appropriate business plan
- Seek high-level support, funding for implementation and a coordinating body
- Proceed to implementation.

7.2 Expected Beneficiaries, Impacts, Outcomes, and Outputs

The beneficiaries will be local firms, local government, educational institutions, firms using ICT and entrepreneurs seeking to establish ICT businesses. The outcome of the project will be an objective assessment of the potential to grow the ICT sector in specified locations within the OECS through the mechanism of ICT clusters. The outputs will be formal cluster assessments, business plans, a coordinating group and recommended steps to implementation.

7.3 Principal Activities and Timeline

The principal activities will include desk research and interviews to assess ICT cluster potential, consultations to develop business plans and formal presentations to seek support for implementation activities.

7.4 Project Team, Project Leader and Key Advisors/informants

The OECS ICT Council and the National ICT Steering Committees should coordinate this project. They should consult with National Development Councils and other private sector concerns such as Chambers of Commerce, and appoint analysts (possibly from Colleges of Education on the islands) to carry out the work. The analysts should seek concrete input from as wide a range of ICT suppliers and user institutions as possible.

7.5 Rough Costing

This study might require one or two analysts working more or less full time for a couple of months. Funding should be internal.

7.6 Potential sources of funding

Internal

7.7 Related Existing Initiatives

There is a valuable concept plan already produced for an ICT Park at Hewanorra, St. Lucia as well as a short description of ICT Parks in general produced by the Caribbean Development Bank. These documents and their drafters should provide a valuable start to this project.

8 Pilot Project 7.: Multi-Purpose Community Telecentre Project

The OECS has a clear objective to bring the benefits of ICT to all its citizens. This can be seen in the establishment of a Universal Service Fund in the Telecommunications Acts, the emphasis on raising awareness of ICT among people in rural areas, the desire to adapt cultural attitudes towards ICT and to find ways in which ICT can be applied in areas of indigenous knowledge like music and art.

A very popular way to open up ICT to all segments of a population, in both developed and developing countries, is via so–called multipurpose community telecentres (MPCTs). Some islands in the OECS have indeed started providing public access via school computer labs for instance, and are exploring other MPCT models. The MPCT "movement," however, appears to be at a very early stage. This project aims to accelerate the process and offer a well-defined way for all islands to establish viable MPCTs serving the widest possible spectrum of their populations and especially rural communities.

Recently UNESCO commissioned the preparation of *The Community Telecentre Cookbook for Africa - Recipes for Self-Sustainability* and it was published in April 2001 (see Annex 4). This cookbook is directly relevant and applicable to the OECS and should form the basis for any projects in this area. In the preamble it states:

> "There are many kinds of Telecentres. Telecentres may be independent individual agencies or enterprises, part of a franchise, or perhaps a project of a national agency. All Telecentres aim to stimulate and respond to the demand for information and communication services, yet each Telecentre is likely to have its own unique qualities that match the needs of the community. Of course, all Telecentres believe that they are relevant to the community they serve. An important indicator of the success of any Telecentre is the degree to which it becomes an integral part of the community it serves.
>
> Telecentres often start out small and expand their services in response to demand. People need access to telephones, faxes, photocopying machines, e-mail and Internet services to strengthen them personally and professionally, as well as for community development. If they have a sense of ownership of the Telecentre, and they or their representatives are involved in the set-up and running of a successful Telecentre, their self-confidence will be boosted, negativity about effecting change will be banished and many other positive benefits for development in the community will result."

The primary focus of the Cookbook is on *community*, MPCTs owned by the communities themselves, because of their potential to address the needs of people in a way that most empowers the communities they serve. The cookbook continues:

> "MPCTs are generally seen as structures that can encourage and support communities to manage their own development through access to appropriate facilities, resources, training and services. Telecentres may be used to provide access to distance education, employment opportu-

nities, training and business enterprise. Telecentres allow entrepreneurs and business people to plan and prepare their arrangements and to communicate with partners and potential clients from a distance. Through the Internet students and educators can register with educational institutions anywhere in the world; access archival material or receive online instruction from central national services. Telecentres can also serve distance education students by providing educational software packages on site and upgrading them as new educational packages are produced. Specialised services can be offered to healthcare workers, enabling them to use telediagnostics programs, order supplies, pass on public health information, and to obtain specialist advice for complex health problems

Telecentres can operate as businesses. Although they may start off with funding or a grant, and may rely to a large extent on volunteer support, the aim is always to generate sufficient income through the provision of services to become self-sustainable. To realise this aim MPCTs need to be managed well and provide services for which there is a demand. Even MPCTs which have a 'not-for-profit' legal identity need to be financially viable to be successful."

8.1 Project Purpose and Objectives

The purpose of the project is to enable communities and especially rural communities within the OECS to identify real benefits from ICT and to assist them to realise the benefits via the launch of Multi-purpose Community Telecentres. The purpose will be expressed via objectives that include: gather specific information on existing efforts to establish MPCTs in the OECS—including successes and failures to date; encourage each member state to identify real community needs; and facilitate the early launch of at least one MPCT per country.

8.2 Expected Beneficiaries, Impacts, Outcomes, and Outputs

The main beneficiaries will be members of local communities, including children, adults, local business people, schoolteachers, etc. The general outcomes could be increased business activity, enhanced learning and knowledge acquisition and participation of hitherto computer-illiterate children and adults in the information age. The outputs of the project would include visible and fully equipped and staffed multi-purpose telecentres offering needed services in defined communities.

8.3 Principal Activities and Timeline

Activities will include

- A preliminary assessment and critique of existing MPCT efforts within the OECS
- Setting up groups responsible for identified MPCT opportunities

- Engaging the respective communities via for instance town meetings
- Developing Business Plans
- Fundraising
- Management and Start-up Activities

Assuming existing buildings could be adapted, a full-service MPCT could be up and running within 6-12 months of launching the idea.

8.4 Project Team, Project Leader and Key Advisors/informants

Each Telecentre project will require a permanent Steering Committee**,** responsible for guiding the process of starting the Telecentre and then, on a long-term basis, for ensuring its continued success and development. The Steering Committee will normally consist of members of the community who have a keen interest in the project. One of the Steering Committee's first tasks will be to identify the information and communication needs of the community and to appoint a Management Committee, which will be more involved in the start-up and day-to-day running of the Telecentre.

National ICT Steering Committees and the OECS Council will have oversight of the local activities and provide guidance and input as required.

8.5 Rough Costing

This project should give careful consideration to the application of an Open Source Software policy. Assuming further that existing buildings will be adapted for the project, the initial capital costs of furnishings, computers etc. would be approximately US$25000. Annual operating costs would be of the order of US$20-30000, which would eventually have to be fully recovered through sale of services. Initially subsidies or donations would probably be necessary.

8.6 Potential sources of funding

As mentioned above, initially funding would be sought via subsidies, and local and international donations, although at an early stage it would be expected that services such as ICT training, office services, email accounts, web access etc would be sold.

8.7 Related Existing Initiatives

St Kitts and Nevis are offering public access to computers and the Internet via school computer laboratories.

8.8 Next Steps

National ICT Steering Committees should seek expressions of interest in MPCT projects from local communities.

9 Pilot Project 8.: ICT for Teachers

The OECS is already well advanced in addressing one of the critical issues in ICT, namely ICT in schools. The OECS Educational Reform Unit published a Model ICT Policy Document for the Education System in June 2001, and the recommended policy has been adopted by OECS Member States. An OECS ICT Education Committee is in place. Recently the OERU coordinated the design of a course entitled “Information and Communication Technology for Teachers of the OECS Region” with contributions from IT teachers and lecturers from all nine member states. The Draft document notes that the training programme is intended to help to support the adoption of the OECS ICT Policy guidelines that are the subject of the current study.

The specific proposal to create an ICT course for teachers can be seen within the broader context of the Model ICT Policy, which highlights

- Goals of student computer literacy, use of ICT in subject instruction, and the use of the Internet
- Goals of professional development for teachers, including access to education information, distance education, networking educators and ICT in the teacher certification curriculum
- Development of an Educational Management Information System for administration purposes

The proposed ICT for Teachers course comprises several modules aimed at instruction in basic ICT skills within a curriculum tailored to the teaching environment. It also contains a module dealing with ICT integration in curriculum and instruction. This approach is in line with international opinion that teachers need to feel comfortable and competent in basic computer skills before they will be prepared to incorporate ICT into their teaching methods.

The OERU proposal highlights the need for formal certification of teachers’ competence in ICT and proposes regional certification in conjunction with a university in the Caribbean region. It is recommended that this proposal be considered in relation to a particular international certification in basic ICT skills that is already available and widely adopted throughout the world. This is the International Computer Driving Licence (ICDL), which offers a syllabus covering seven basic skills modules through an extensive worldwide network of country licensees, and accredited training and testing centres. There are several advantages to aligning with the ICDL, but there could be disadvantages as well, so a careful analysis is needed.

The governing body for the ICDL is the European Computer Driving Licence Foundation (ECDL-F) in Ireland. We understand from the ECDL-F that a Working Group has been engaged for several months in an “ICDL for Teachers” syllabus.

It should be noted, however, that the ECDL-Foundation offers a syllabus, certification of training and testing centres and it endorses certain online testing procedures. Individual establishments create their own training materials in light of the ICDL syllabus.

OERU has already commenced discussions with the sole ICDL licensee in the Caribbean region, namely the Bermuda Computer Society, and may well come to an agreement to work with the BCS to offer ICDL certification to OECS learners in general, i.e., students, teachers, office workers etc.

Here it is recommended that the proposed OECS ICT Council and the respective National ICT Steering Committees strongly support the OERU initiative and do what they can to speed up the process of teacher training and certification.

9.1 Project Purpose and Objectives

This caption and the others in these project proposals should be left to the OERU/ICT Education Committee to complete, should they wish to have formal endorsement from the OECS ICT Council.

10 Pilot Project 9.: ICT Labour Market Statistics

Worldwide there is a growing shortage of ICT workers, whether computer technicians, systems analysts, electronics engineers, web designers or project managers. Many country governments are meeting the challenge by stimulating the growth of their ICT training sectors, and by providing tangible incentives to firms to encourage ICT training of their workforces. More significantly countries are relaxing immigration requirements so that incoming foreign individuals with ICT skills can more easily seek employment and so that local and foreign investors can freely source their ICT workforce wherever they choose. Of course this fluid international labour market adds to the so-called “brain drain” that is affecting all countries.

There are several examples of significant ICT-related vocational training initiatives within the OECS. The Antigua and Barbuda International Institute of Technology trains some 300 students a year in a wide variety of professional areas including software engineering, project management, professional certifications, etc. Community Colleges offer A+ training for computer technicians and Dominica is about to launch a regional CISCO academy to impart networking and Internet skills. St Kitts and Nevis are proposing concrete programmes to offer A+ and Network+ training to aspirant computer technicians. There is a Government-driven IT Training Fund on St Lucia administered by the Bank of St Lucia. We also understand that immigration laws are undergoing change to allow free movement of workers within the OECS and ease regulations regarding foreign workers.

Despite recent studies, however, such as those reported by CARANA, it has not been possible for this Consulting Team to obtain a reliable picture of the state of the professional ICT resource within the OECS. There are ITU statistics that suggest that each island has 200-300 telecommunications workers and that that number is declining year by year as the incumbent operator seeks greater efficiencies. But how many computer technicians are there? Are they independent operators or employed by computer firms? What is the extent of the web design and Internet workforce? How many programmers and systems people are available? More importantly is there a shortage or expected shortage of ICT professionals in the region? What types of professional are most in demand and are there imbalances between islands? About the most definitive statement regarding ICT professionals in the OECS is that there are very few ICT people and very few ICT jobs!

This apparent lack of accurate insight as to the ICT workforce within the OECS is very serious, especially given the current focus on ICT and the potential of the pilot projects presented in this report. It is important to monitor the ICT labour markets and produce accurate, timely information because individuals and organisations make important decisions, often with significant cost implications, based on perceptions about work and employment trends, job vacancies, compensation levels and related factors. When they are effective, labour market information systems can

continuously generate the information needed to link government policies, in areas such as taxation, social payments insurance and immigration to actual conditions in the labour market. Monitoring systems can deliver important signals to education and training institutions and help guide their decisions about enrolments, curriculum development, faculty recruitment and investment in physical infrastructures. These systems also allow employers to adopt a more strategic approach to recruitment, retention, training and other human resource management challenges. Finally, accurate information about labour markets is vital for individuals, students and workers, who must plan their own learning and make realistic career choices.

Presently all role-players within the ICT arena are of course making policy decisions, business decisions and personal decisions related to jobs and skills and will continue to do so. This project proposes, however, in-depth monitoring and analysis of the OECS ICT labour market and argues that the resultant information will allow for improved decision making and be of real benefit to the economy in the region.

10.1 Project Purpose and Objectives

The purpose of this project is to collect accurate information on the current ICT labour market to assist in the development of a long-term OECS ICT Human Resources Development Plan and to put in place an ongoing ICT labour market monitoring mechanism for the region. The project will provide direct and indirect support to a large number of other ICT strategy implementation activities as detailed in the reports of this study.

The objectives would include

- Determine the relevant statistical data and information that is needed by the ICT Sector, ICT enabled sector, government departments and other stakeholders to assist in developing the necessary human resource pool to grow the ICT Sector.
- Collect and report on the ICT labour market information collected.
- Integrate this data with the regular collection of statistical data so that the ICT labour market information can be collected on a regular basis and used by decision-makers.

10.2 Expected Beneficiaries, Impacts, Outcomes, and Outputs

The beneficiaries will include OECS and National Government policy makers, suppliers and users of ICT, the ICT training sector, and citizens making personal career choices. The outputs would include a standard questionnaire to gather relevant data; a resultant database; and a report interpreting the current state of play and expected trends in the ICT labour market. The outcomes of the project would be ongoing, accurate

and easily accessible information about ICT employment supply and demand patterns, training needs, indicators for basic education in the school and tertiary system, and deeper insight into desirable actions to develop the ICT human resource.

10.3 Principal Activities and Timeline

- Conduct research to understand the scope of the issue and what information is readily available.
- Develop initial questionnaire
- Carry out survey in all member states
- Prepare analysis and report to the OECS ICT Council

10.4 Project Team, Project Leader and Key Advisors/informants

The OECS ICT Council should identify a project leader who in turn should assemble a team to carry out the work. This work can benefit from similar labour market studies carried out in other parts of the world, including the UK, New Zealand, Australia, South Africa and elsewhere. Key advisors would be the OECS Council Members and the National ICT Steering Committees as well as government statistical authorities, the ICT training sector, Chambers of Commerce, etc.

10.5 Rough Costing

A small team could carry out this work over a period of three months.

10.6 Potential sources of funding

This work could be funded internally.

10.7 Related Existing Initiatives

The various recent studies of ICT within the OECS and CARICOM regions are relevant, although, as stated earlier, there appears to be little concrete information on ICT labour market statistics.

11 Pilot Project 10.: Multimedia Summer Camp Project

Around the world in all societies children are the fastest acceptors of new technology. The biggest advantage children have over adults is the lack of fear of breaking the computer, of losing data and most importantly lack of fear of not understanding how to operate the new technology. The natural way children approach a new technology is through play and by trial and error. The idea behind this project is to use this approach to introduce children and their parents as well as specialist groups to ICT.

Topics should be attractive to all ages and might include 'How to make music with a PC', 'What can be done with digital photography', 'How to customize own videos by using the computer' etc. In an open and relaxed environment of a "summer camp" lasting perhaps a week some reservations and fears will be conquered, especially if kids work with adults.

11.1 Project Purpose and Objectives

The purpose of the project is to expose children and their parents to information and communication technology in a relaxed atmosphere. Both age groups will get the opportunity to play with the technology and thus overcome fears and reservations. Special attention would be paid to gender-related imbalances.

11.2 Expected Beneficiaries, Impacts, Outcomes, and Outputs

The main beneficiaries would be members of local communities, including children, adults, local business people, schoolteachers, etc. Indeed the idea might evolve into summer camps targeted at specific groups such as schoolteachers, politicians, etc. The general outcomes could be participation of hitherto computer-illiterate children and adults in the information age. The impacts of the project would include bringing families together, levelling the knowledge of ICT within the families and opening the new technology to people who are normally not exposed to it.

11.3 Principal Activities and Timeline

Project activities would include

- Structure the proposed events
- Identify locations with the relevant technology (e.g.', multipurpose telecentres) or where the technology could be easily installed temporarily
- Identify skilled trainers and summer camp tutors
- Engage the respective communities or schools

- Develop the training programmes, like 'Digital Photography', 'Digital Music', 'Digital Video'.
- Fundraising, like cultural sponsoring.

Assuming existing locations could be used for the camp, the first Multimedia Summer Camp could be up and running by the summer break of 2003.

11.4 Project Team, Project Leader and Key Advisors/informants

Each summer camp project will require a permanent Steering Committee**,** responsible for guiding the process of starting the summer camp and then, on a long-term basis, for ensuring its continued success and development. The Steering Committee will normally consist of members of the community or school who have a keen interest in the project. One of the Steering Committee's first tasks will be to identify the location, the technical needs and to appoint a Management Committee, which will be more involved in the organisation of the summer camp.

National ICT Steering Committees and the OECS Council will have oversight of the local activities and provide guidance and input as required.

11.5 Rough Costing

This project should give careful consideration to the application of an Open Source Software policy. Assuming further that existing locations will and can be used for the period of the summer camp project, the initial capital costs of furnishings, computers, digital cameras etc. would be approximately US$25000. Running costs will include consumables like colour ink for printers, special photo paper, and blank CDs for music storage and might amount to US$2000-3000 per summer camp, depending on the number of participants. Some of the consumables could be introduced as donations. Initially subsidies or donations would probably be necessary.

11.6 Potential sources of funding

As mentioned above, initially funding would be sought via sponsoring from local and international commercial enterprises. The participants to such a summer camp would also be asked to pay fees. For a one-week camp, without overnight facilities, the rate might be US$50. Local businesses could offer a scholarship for the summer camp to children with outstanding performance throughout the school year.

11.7 Next Steps

National ICT Steering Committees should seek expressions of interest in the Multimedia Summer Camp from local communities or schools or other specialist groups, like teachers, government high officials etc.

Annex 1

List of eEurope Benchmarking indicators

Annex 2

GLOBAL E-GOVERNMENT SURVEY

Annex 3

Roadmap for E-government in the Developing World

10 Questions E-Government Leaders Should Ask Themselves

Annex 4

THE COMMUNITY TELECENTRE COOKBOOK FOR AFRICA