

AN ICT VISION FOR DOMINICA AND THE OECS

by

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Context/Background

For a number of years the formative ideas for enhancing the Eastern Caribbean nations' role in a globalized environment have included Information and Communication Technology (ICT) as an integral component of nearly every comprehensive plan for development. Generally, it is recognized that ICT is critical in assisting small island states to achieve economic and social development opportunities that might otherwise be lost or significantly delayed. The economies of scale afforded by joint and/or facilitated initiatives through the OECS would undoubtedly further the individual and collective agendas of the member and associate states.

The recognition of ICT as a necessary catalyst for the OECS and individual member nations' economic and social sustainability is further articulated, as a single nation exemplar, in the Dominica Government Enterprise Network (D-GEN) feasibility project conducted in 2002. The project explored the potential for a national broadband network as an enabling tool for government, social and community development. It is critical to note that D-GEN is not solely about infrastructure, but rather is about creating a platform upon which to build, strengthen, and sustain human and economic capacity in Dominica. D-GEN is about obtaining universality and consistency of access to voice-data-image capable technologies at a reasonable cost to Dominica and Dominicans. The information contained in the D-GEN document provides both generic and national aspects of ICT as a development tool which will inform and facilitate the type of discussion needed to develop an OECS and member nation ICT trajectory.

This document will provide a brief overview of the Commonwealth of Dominica's feasibility study, followed by a sectoral analysis considering both the Dominican environment and the OECS member state implications of enhanced connectivity.

D-GEN Feasibility Project Highlights - Dominica Specific

- D-GEN is feasible - devoid of any insurmountable technical, legal, administrative, or environmental barriers.
- Implementation of D-GEN could occur over an anticipated 24-month period.
- The anticipated implementation cost of D-GEN is about USD\$7.6M which reflects an integrated infrastructure and comprehensive social development strategy.
- Key aspects of technical and developmental trajectories as outlined in the D-GEN feasibility document including:

- Governance/legal framework
- Network configuration and rollout projections
- Economic and financial analysis
- Social development and integration plan
- Gender inclusiveness plan
- Training plan
- Environmental assessment and monitoring plan
- Monitoring and evaluation process

Sectoral Impacts

Government

Each of the member nations of the OECS may potentially enjoy the benefits of enhanced connectivity as it applies to government as evidenced through harmonization of government programs, responsiveness, and efficiencies (i.e., fiscal and resource related). Through this platform, the governments will generate opportunities to communicate, report, and dialogue with citizens, OECS member nations, and international contacts on a timelier basis leading to increased perceptions of accountability and visibility of government.

Dominican Exemplar

D-GEN, through its enhanced connectivity, is integral to government data capture, processing, and subsequent translation into meaningful and comprehensive public policy direction. In addition, D-GEN will be foundational in establishing and maintaining interagency and international linkages.

Examples of D-GEN's role within Government include, but are not limited to:

- Replacement of many paper-based processes with more efficient ICT mediated processes
- Program and financial management systems as ICT mediated processes
- Interdepartmental data capture and analysis enhancements through ICT
- Internal and external efficiencies through optimization, streamlining, and centralization of core government functions (i.e., licensing functions, registration functions; passports)
- Intra and inter-departmental communications efficiencies · Establishment of a critical mass of knowledge workers within the government and private sector.

OECS Members & Associates Implications

In addition to the opportunities afforded each member nation which are reflected in the D-GEN example, it is possible that the individual member and associate states could enjoy the following opportunities related to enhanced connectivity in the government sector:

- Inter-member and international efficiencies in information and data capture, processing, and sharing from a government to government relationship

- Strengthened cadre of government leaders informed and proficient in the use of ICT-based government models, and mechanisms leading to mentorship, leadership, and excellence in this domain
- Creation of a OECS initiative in ICT and government to support, generate knowledge, and further the ICT agenda in this region
- Potential harmonization of policies to achieve OECS best practice environment.

Agriculture Sector

The OECS members may see enhanced connectivity providing links between and across government departments and nations to support the agriculture sector to identify opportunities, diversify, and possibly rectify current disadvantages (i.e., income security; rural depletion).

Dominican Exemplar

D-GEN provides a potentially critical conduit to information and knowledge for the challenged agriculture sector of Dominica. It is a fundamental requirement to the creation of an ICT aware agricultural sector positioned to be responsive and sustainable into the future.

Examples of D-GEN's role with Agriculture include, but are not limited to:

- Trends analysis, improved crop/marketing projections, insect/disease surveillance reports by government to producers and producer institutions
- Facilitated marketing and niche marketing (i.e., specialty crops) forums and opportunities based on national and international linkages
- Identification and resource direction to alternative agriculture practices for sustainability (i.e., irrigation)
- Provision of training and extension services to develop an ICT mediated agriculture sector.

OECS Member and Associates Implications

In addition to the opportunities afforded each member nation which are reflected in the D-GEN example, it is possible that the individual member and associate states could enjoy the following opportunities related to enhanced connectivity in the agriculture sector:

- Through this mechanism, the members and associates will potentially enjoy a more rapid identification of trends; opportunities to strategize, mitigate, and ameliorate threats to this sector in a unified manner
- Opportunities for program and education initiatives that create a collective expertise in agriculture for the OECS
- Potential harmonization of policies to achieve OECS best practice environment
- Enhanced cooperative marketing initiatives within and beyond the OECS.

Service Sector

Within the OECS there is a wide gradient of service knowledge, practices, and

direction. It is recognized, that enhanced connectivity will permit each member state to select from a menu of ICT mediated service programs/initiatives. The overall benefit is likely to be seen in the potential links and strengthening of this sector for the economic and fiscal good of individuals and nations alike.

Dominican Exemplar

D-GEN is seen as integral in re-building and re-configuring the Dominican service sector (i.e., industry; business; tourism). Through D-GEN, it is anticipated that government will work collaboratively with this sector to identify, dialogue, and create opportunities for the benefit of all Dominicans.

Examples of D-GEN's role with the Service Sector include, but are not limited to:

- Enhancing and profiling Dominican based initiatives and opportunities in the global market place potentially enhancing investment, linkages, and business opportunities
- Trends analysis, improved marketing projections by government to interested individuals and groups
- Facilitated marketing and niche marketing (i.e., eco-tourism) forums and opportunities based on national and international linkages
- Enhance government interactions, transactions, and direction with the various financial institutions (i.e., banks; cooperatives; insurance companies)
- Provision of training and extension services to develop an ICT mediated service sector.

OECS Member and Associates Implications

In addition to the opportunities afforded each member nation which are reflected in the D-GEN example, it is possible that the individual member and associate states could enjoy the following opportunities related to enhanced connectivity in the service sector:

- To identify and respond to existing and emerging opportunities to introduce, utilize, or maximize ICT within the service sector
- Opportunities for program and education initiatives that create a collective expertise in service sector for the OECS
- To maximize virtual service environments, such as technical advice, coordination of tourism programs within the OECS
- Potential harmonization of policies to achieve OECS best practice environment.

Civil Society

Civil society in each OECS member and associate state has the potential to experience significant opportunities for linkages and efficiencies unavailable in the current environment.

Dominican Exemplar

D-GEN is instrumental in the strengthening of the civil society fabric of Dominica.

As noted in the 2001/2002 budget address, adopting a community development approach (with its implicit inclusiveness) ensures meaningful development and capacity building. Through D-GEN, civil society will experience an increased level of access to timely and extensive information from government. This improved connection between individuals/institutions and government is essential to creating and augmenting collaborative efforts of this sector with government.

Examples of D-GEN's role with Civil Society include, but are not limited to:

- National and regional network capacity facilitating linkages and information sharing
- Consensus building forums facilitated through D-GEN system
- Assessment, evaluation, and program feedback mechanisms to government through D-GEN system
- Creation of email, list serves, e-publications, and web based newsletters to enhance communications between government and civil society
- Identification, creation, and maximization of human capacity through an ICT mediated environment.

OECS Member and Associates Implications

In addition to the opportunities afforded each member nation which are reflected in the D-GEN example, it is possible that the individual member and associate states could enjoy the following opportunities related to enhanced connectivity in the civil society sector:

- To identify, facilitate, and respond to extant and emerging opportunities to introduce, utilize, or maximize ICT within the civil society sector
- Opportunities for program and education initiatives that create a collective expertise in civil society sector for the OECS
- To coordinate and maximize ICT mediated opportunities to ensure the promotion and sustainability of the core competencies (i.e., leadership; mentorship) with the civil society environment.

Education

Enhanced connectivity has significant potential for all OECS members in the education realm. Whether considering formal, professional, technical, or social learning, the ICT enriched environment potentially provides all citizens with the opportunity to benefit.

Dominica Exemplar

Perhaps the most important aspect of D-GEN in terms of the future of Dominica rests upon its potential impacts within the education sector. Through D-GEN's capacity, the education system will be enabled to assess, plan, deliver, and evaluate the training and education needs for all of Dominica. It would enable the creation of curricula and delivery models responsive to evolving market trends, best practices, and current research findings. Connectivity, as proposed under D-GEN, would enable

alternative instructional techniques, access to expertise, and universality in access to education and training.

Examples of D-GEN's role within the Education Sector include, but are not limited to:

- Enhanced data capture, analysis, and trending regarding status, needs, and directions for education, training, and development initiatives
- Local, regional, national, and international benchmarking for educational and training achievements · Potential for providing universal and quality comparable education and training programs throughout Dominica
- Streamlining and program planning based on ICT mediated enrollment mechanisms, student records, and program tracking
- Customized on line programs to assist in creating a culture of a digitally literate school and workforce
- Augment professional and paraprofessional education and continuing education through ICT mediated formats
- Exploration and generation of a best practices based education and training environment utilizing ICT mediated opportunities
- Development, delivery, and evaluation of alternative programs and delivery modes (i.e., distance learning) to meet the education and training needs of Dominicans
- Facilitate professional links (i.e., teleconferencing; multi-disciplinary conferencing) through ICT mediated environment.

OECS Member and Associates Implications

In addition to the opportunities afforded each member nation which are reflected in the D-GEN example, it is possible that the individual member and associate states could enjoy the following opportunities related to enhanced connectivity in the education sector:

- Extensive expansion of tertiary and quaternary education with a potential emphasis on centers of excellence in areas such as indigenous studies and security/protective services training
- Provide access to the most current information via books and journals on line through a collective membership
- Increased exposure and ICT mediated access to experts in education at all levels in a cost effective and concerted manner to bring all member states to a best practices level
- Opportunities for joint education and training offerings facilitated through an ICT mediated environment achieving economies of scale and broadening the linkages within and beyond the OECS
- In terms of professional development the ICT augmented environment is essential for curricula development, manpower strategizing, and continuing education initiatives such as vocational education certification.

Health

Enhanced ICT is essential in the OECS members desire to improve quality, access, and management of the health sector. Through opportunities for enhanced information and data capture, manipulation, and dissemination, this enhanced platform promises to provide the health sector with an essential capacity to be more responsive and evidence based in resource and personnel decisions.

Dominica Exemplar

Examples of D-GEN's role within the Health Sector include, but are not limited to:

- Enhanced data capture, analysis, and trending regarding health status, indicators, and variances in health of Dominicans
- Local, regional, national, and international benchmarking for health surveillance, status, and risks
- Creation of management information systems in an ICT mediated environment which generates economic and fiscal efficiencies, augments information sharing, and establishes minimum data sets for all areas of health
- Augment professional and paraprofessional education and continuing education through ICT mediated formats
- Exploration and generation of best practices and clinical practice guidelines through ICT mediated opportunities
- Consideration of telehealth and e-health modes of delivery and direction to meet the emerging health challenges of Dominicans (especially those in rural/remote locales)

OECS Members and Associates Implications

In addition to the opportunities afforded each member nation which are reflected in the D-GEN example, it is possible that the individual member and associate states could enjoy the following opportunities related to enhanced connectivity in the health sector:

- Extensive expansion of tertiary and quaternary health services with a potential emphasis on centers of excellence in areas such as primary health care
- Increased exposure and ICT mediated access to experts in health care at all levels in a cost effective and concerted manner to bring all member states to a best practices level
- ICT mediated data capture, management, and dissemination network for all OECS members to facilitate rapid, responsive health care actions.

Security and Emergency Preparedness

ICT can provide mechanisms whereby relevant security and emergency preparedness information can be made available on a real time basis. Through an enhanced ICT environment, member states can potentially benefit in areas such as, but not limited to, immigration/customs/excise, hurricane surveillance, law enforcement, marine and aviation safety, data hotels, and seismographic monitoring. In addition, an

ICT enabled environment can provide a high level of encryption thereby further augmenting national and international security parameters.

Indigenous Peoples (The Caribs)

The role of D-GEN for the Caribs is one of significant potential. Beyond the various sectoral benefits previously delineated, the Caribs, as a traditionally underserved community, may use the D-GEN to ground their efforts to promote and communicate their social and cultural development initiatives. D-GEN potentially provides a platform to initiate discussions and generate interest in the Carib Territory. It links them to other aboriginal and marginalized groups globally seeking to improve and move beyond.

Examples of D-GEN's role with the Caribs include, but are not limited to:

- Creation of networks nationally and internationally to explore and address issues of cultural and linguistic reclamation
- Facilitated marketing and niche marketing (i.e., eco-tourism; aboriginal crafts) through an ICT mediated environment
- Build e-sites and networks capturing and featuring Carib and aboriginal content
- Exploration and generation of best practices for physical environment sustainability
- Enhance the Carib historical and archival collection in an electronic format to be shared within and outside Dominica.

Next Steps

The Government of Dominica has successfully begun the process of 'Connecting Dominica' through its support and active participation in the feasibility study. Further its endorsement of the report findings as integral to moving the fiscal and social agenda of Dominica are clearly articulated.

There is recognition that, in light of Dominica's current economic malaise, there is an imperative to act expeditiously and strategically on the D-GEN initiative. With a decision and commitment to D-GEN, the Dominican government and its partners would convey a strong message of future-oriented, ICT mediated change for the country. This would clearly be a positive messaging to the citizens of Dominica and the international community.

Given the initiative of Dominica in this area it is possible that the OECS member states and associates could look to the D-GEN initiative as a test bed for ICT enhancements in the region. Through mutual support and a concerted effort on the part of all parties, it is possible to move the ICT agenda rapidly, efficiently, and cost effectively throughout the OECS, with Dominica as the pilot.

At this time, extensive efforts to secure funding for the ICT initiative must be undertaken. Preliminary discussions to date have yielded positive response and

potential opportunities. These efforts must now move to commitments, both moral and fiscal, for the future of all OECS members and their respective citizens.

Frequently Asked Questions

1. **What is D-GEN?** D-GEN is the Dominica Government Enterprise Network, which is an essential tool for the future economic and social development in Dominica. Essentially D-GEN ushers in the era of connectivity and an ICT mediated environment for the prosperity and sustainability of all Dominicans.

From a technical perspective, D-GEN is the Government of the Commonwealth of Dominica's broadband data communications network. It is the platform upon which all government offices and institutions will be linked in an effort to use 'connectivity' for the benefit of the country at large.

2. **Is D-GEN simply about infrastructure and connectivity?** To construct or conceptualize D-GEN as simply a technical endeavor would be erroneous and limiting. D-GEN's greatest strengths lie in the potential utility and creativity of Dominicans to maximize the system's applications.

D-GEN, through the feasibility study, was demonstrated to be technically possible, environmentally sound, and socially as well as economically desirable. It is the potential of D-GEN to build human capacity and to take Dominica into the global environment, electronically speaking, which is imperative for the nation's development. Hence, the proposed D-GEN infrastructure and connectivity without people to utilize and maximize opportunities would fall short of its potential.

3. **How will Dominicans benefit - individually, sectorally, nationally?** The benefits to the people of Dominica are diverse and multi-leveled. The projected uses of the D-GEN platform are limited only by the creativity and perspectives of those accessing the system. Individually, Dominicans will potentially achieve increased access to information, computer literacy, and opportunities for personal/professional growth and development. D-GEN will provide a platform for universal and virtual access to ICT with links to programs, services, and initiatives. Individuals may gain benefits in areas such as accessing information on child care, healthy lifestyles, and family budgeting.

Sectorally, Dominicans will potentially experience improvements in programs, services, and initiatives in the various sectors. D-GEN may lead to economies and efficiencies in government services thereby leading to more responsive and innovative offerings. Opportunities for intersectoral collaborations (i.e., government-civil society) can be mediated on the D-GEN platform. Dominicans may experience growth and development opportunities in sectors such as agriculture and tourism. Education and training, through a D-GEN, will likely generate a quality, 'best practices' ICT enabled environment.

The Caribs are a specific group which may benefit from D-GEN through expanded linkages to other aboriginal groups and evolving ICT mediate opportunities.

Nationally, through D-GEN, Dominicans may establish new linkages, strengthen partnerships, and diversify in collaborative efforts. D-GEN will potentially remove distance and cost barriers that presently limit national and international collaborative efforts. The D-GEN platform allows the incorporation of a national and international perspective for data collection, analysis, trending, and programming which is not currently readily achieved.

- 4. What are some of the risks associated with not proceeding with D-GEN?** To forego the D-GEN project would result in a preservation of the status quo. Such a stance would further challenge Dominica's abilities to advance and succeed in the global environment. The absence of D-GEN would perpetuate selective ICT utilization and abilities within the country, thereby further marginalizing some Dominicans.

Dominicans see D-GEN as catalyzing social development through increased entrepreneurship, and generation of ICT enabled citizens. Hence, without D-GEN the opportunities and creativity would, at best, be delayed and, at worst, be foregone.

Failure to be proactive in moving the D-GEN agenda within Dominica will predictably result in other islands moving into an ICT mediated environment thereby leaving the country in a position of 'playing catch up'. This situation will potentially reduce the niches and roles, which Dominica may have pioneered and will relegate us to 'picking up the remains'.

- 5. What is needed to make D-GEN happen?** The greatest need at this point is to obtain support for the initiative. The support from the government of the Commonwealth of Dominica has been clearly articulated in its endorsement/acceptance of the feasibility report recommendations. The support from CIDA has taken the form of endorsement of the feasibility report and ongoing interest in discussions and subsequent initiatives derived from the study.
- 6. How can D-GEN link to the OECS?** The relationship between D-GEN and OECS is mutually beneficial and supportive.

The D-GEN project is clearly a template or test bed for an expansive and comprehensive OECS initiative related to ICT. D-GEN, like the sub-projects in each of the member states, will have a unique blend of autonomy and inter-relatedness in its approach.

D-GEN will provide a structured, functional working model of the various elements and potentials of the ICT enabled environment. It will provide a framework and suggest a manner in which to proceed with the ICT initiative.

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