

# **The Critical Role of Evidence-based Policy & Practice: Enhancing Participation in the Information Society and Citizen-centric E-government in the Caribbean**

by  
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## 1: Introduction: E-Citizenship, Good Governance & Evidence-Based ICT Policy Formulation

**E-citizenship** is the overarching term referring to participation in the information society. A citizen is a member of a community or society who has certain fundamental rights and duties within that community. E-citizenship refers to the process by which a citizen engages in the electronic community and uses the Internet to exercise other citizenship rights and duties in general.

Two sub components of e-citizenship are: **e-democracy** - the two-way online interaction processes between the citizen and another citizen, politician or government agency-; and **e-government** - the process of government services being offered and accessed online (British Education Communications & Technology Agency - BECTA, 2005)

**e-participation**, like e-citizenship, embraces both the demand and supply sides as it refers to the 'quality, usefulness and relevancy of the information and services provided and the willingness of countries to engage citizens in public policy making through the use of the e-government programs'. The goal of e-participation initiatives is to improve the citizen's access to information and public services; and participation in public decision-making (UNDESA, 2004).

It is argued in this paper that in order for e-citizenship to have an empowering and developmental impact on all sectors of a society, the process of citizen participation must begin from the formulation of ICT Policies and Strategies, and not simply at the end stage, characterized by online interaction mediated by computers and Internet-based technologies. Through the use of evidence-based policy and practice, the voices of a broad cross section of citizens can effectively be heard in the formulation of policies and strategies, which in turn guide the use and impact of specific technologies in the information society.

The movement for evidence-based policy and practice and for the use of research evidence in the work of the professions, started in medicine in the early 1990s. It has grown in influence there, and spread across a number of other fields. Building on a tradition of evidence-based medicine this approach is receiving increasing attention in new fields of professional practice like education, social work, criminal justice, regeneration and others (Solesbury 2001; Trinder 2000; Davies et al 2000). The evidence-based policy and practice movement is closely related to increasing demands for 'transparency' and 'accountability' that are characteristic of what has come to be called 'managerialism' in the public sector or the 'new public management' (Hammersley 2001).

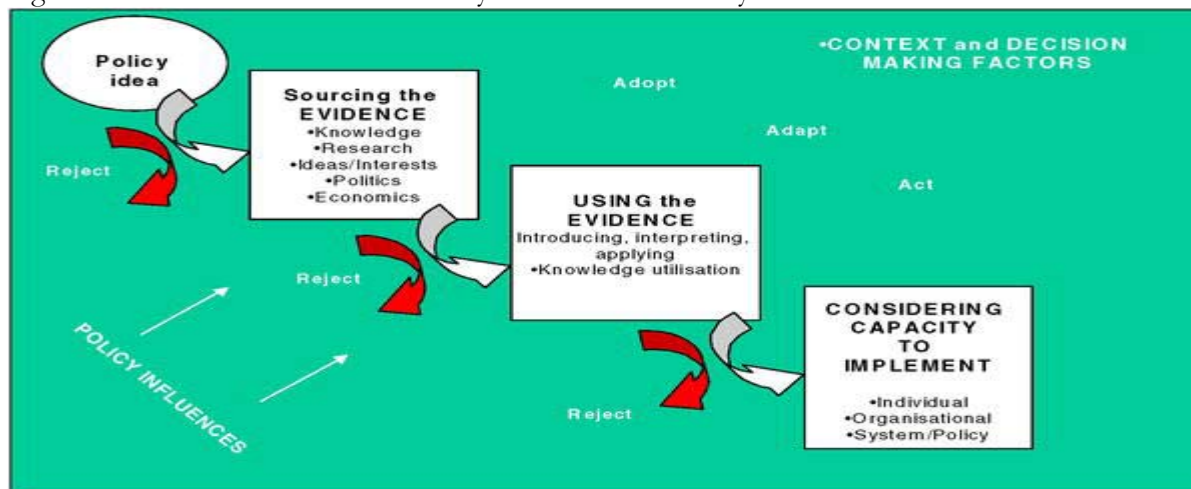
In contrast to the preceding culture of largely 'judgement-based professional practice', there has arisen the notion of evidence-based practice as a means of ensuring that 'what is being done is worthwhile and that it is being done in the best possible way' (Davies et al 2000). The concept of evidence-based policy and practice fits well with a rational decision-making model of the policy process (Nutley and Webb, 2000). Within this rational model the focus is on improving the 'instrumental' use of research and evaluation.

Evidence-based policy making was recognised as a central element of New Labour's plans for the modernisation of government in the United Kingdom. For example, a United Kingdom Cabinet White

Paper states that: “... policy decisions should be based on sound evidence. The raw ingredient of evidence is information’ (Cabinet Office 1999a).

The overall process for the evidence based policy formulation is illustrated in Figure 1 below:

Figure 1: The Evidence-Informed Policy and Practice Pathway



Source: Bowen and Zwi (2005)

It should be noted that the process of *sourcing the evidence* must be incorporated as an integral part of the policy formulation itself as well. Walker (2001) contends that: ‘...evidence-based policy cannot be limited to the *use* of evidence; policy making has to accommodate the production of evidence’. The evidence-based policy and practice approach is only as good as the quality of the underpinning evidence. The effectiveness of this approach is also based on the integrity of the processes of: sourcing the evidence, interpreting the information and knowledge utilization and the capacity to understand and adopt the evidence, evaluate and adapt it, and apply and act on it.

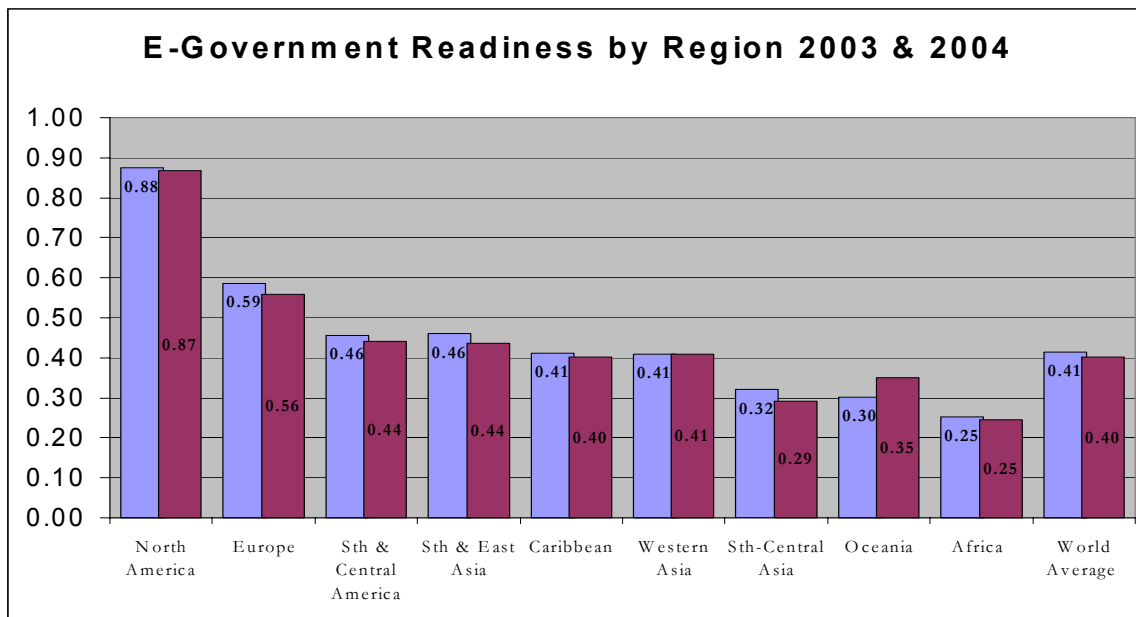
## 2: Use of ICT: Latin America and the Caribbean

The E-Government Readiness Survey 2004 assessed 191 UN Member States to ascertain how willing and ready the governments around the world are to employ the opportunities offered by ICT to improve the access, and quality, of basic social services to the people for sustainable human development. Employing a statistical model for the measurement of digitized services, the UN E-Government Readiness Survey 2004 assesses the public sector e-government initiatives of Member States according to a weighted average composite index<sup>1</sup> of e-readiness based on website assessment, telecommunication infrastructure and human resource/human capital endowment (UNDESA, 2004).

The 2004 Survey re-confirms that the countries in the regions of North America (0.88) and Europe (0.59) are the world leaders in e-government readiness. In the rest of the world, the regions of South and Eastern Asia (0.46); and **South and Central America (0.46)** had the highest indices **followed by the Caribbean (0.41)**; Western Asia (0.41); South and Central Asia (0.32); Oceania (0.30 and finally Africa (0.25). The global e-government readiness average is **0.41**.

<sup>1</sup> The Telecommunications Infrastructure Index comprised six primary indices based on basic ICT-related infrastructure indicators: (i) PCs/1,000 persons; (ii) Internet Users/1,000 persons; (iii) Telephone Lines/1,000 persons; (iv) On-line population/1,000 persons; (v) Mobile phones/1,000 persons; and TVs/1,000 persons. The Human Capital Index utilized the UNDP ‘education index’: a composite of the adult literacy rate and the combined primary, secondary and tertiary enrollment ratio with 2/3 of the weight given to adult literacy and 1/3 to school enrollment ratio.

Figure 2: E-government Readiness by Region



■ - 2004

■ - 2003

Source: UNDESA (2004)

The need to improve Internet access and the effective use of ICTs in developing countries has been recognised internationally, by governments and international agencies. In particular, the Web and related technology, along with the management of information and knowledge resources, must be regarded as strategic national infrastructure (Kenney, 1995). Findings from several studies suggest that wider connectivity and the efficient deployment of ICTs within developing countries would improve the overall information infrastructure and thereby promote positive changes in socio-economic development (Adam, 1996; Press, 1996; Panos, 1998).

Countries in Latin America and the Caribbean have made some progress in the advancement of the Information Society, with eleven (11) and eight (8) countries in Latin America and the Caribbean respectively attaining scores above the world average (Table 1 below). However, as in the case of previous development thrusts towards an industrial, and then towards a service (information and knowledge based) society, the ICT revolution is being overwhelmingly driven by countries of the North and more specifically, by multinational corporations, which are 'defining and negotiating the various parameters, priorities, rules and processes of the future information society' (UNESCO: 1996).

Table 1: Countries in Latin America and the Caribbean with Scores above the World Average

|     | Country   | Index  | Global Ranking |     | Country             | Index  | Global Ranking |
|-----|-----------|--------|----------------|-----|---------------------|--------|----------------|
| 1.  | Chile     | 0.6835 | 22             | 11. | Trinidad & Tobago   | 0.4670 | 61             |
| 2.  | Mexico    | 0.5957 | 30             | 12. | Bahamas             | 0.4649 | 62             |
| 3.  | Argentina | 0.5871 | 32             | 13. | Saint Lucia         | 0.4616 | 64             |
| 4.  | Brazil    | 0.5675 | 35             | 14. | Barbados            | 0.4563 | 65             |
| 5.  | Uruguay   | 0.5481 | 40             | 15. | Guyana              | 0.4243 | 71             |
| 6.  | Colombia  | 0.5335 | 44             | 16. | Saint Kitts & Nevis | 0.4231 | 72             |
| 7.  | Peru      | 0.5015 | 53             | 17. | Costa Rica          | 0.4188 | 73             |
| 8.  | Panama    | 0.4907 | 54             | 18. | Belize              | 0.4150 | 76             |
| 9.  | Venezuela | 0.4898 | 56             | 19. | Dom. Republic       | 0.4111 | 77             |
| 10. | Jamaica   | 0.4793 | 59             |     |                     |        |                |

■ - Caribbean Countries

### 3.1 The Use of ICT as an Instrument to Foster Participation and Social Inclusion

The primary challenge to the further development of e-government initiatives and more generally, the advancement of the information society in the Caribbean, is the need to ensure that ICTs are accessible to all sectors of the society and is used to bridge existing socio-economic gaps. Given the relatively low level of online penetration in many Caribbean countries, compounded by the wide disparities in internet access within these societies, strategies for enhancing e-citizenship must have a strong 'off-line' component, focused on awareness and capacity building. Similar to the use of advertising in traditional media by online, pure-play internet companies like Amazon.com, e-citizenship and participation in the information society in the Caribbean must be fostered by the use of traditional sources - radio, television and print media, as well as creative off-line strategies to engender interest and build capacity.

An example of an innovative mix of new and traditional media is illustrated an initiative entitled 'Conversations with the Nation' (a weekly radio address) launched by the Prime Minister of Saint Lucia, Dr. Kenny Anthony, in May, 2004. Citizens are invited to participate in the 'conversation' and to share "issues and....questions or thoughts on subjects that you may wish clarified" via an email address (yourpm@candw.lc). The Prime Ministers' weekly 'conversations with the nation' are also posted online in text and audio format on the government website<sup>2</sup>.

The first conversation with the nation also coincided with another creative mechanism for increasing e-participation in Saint Lucia: Internet Fiesta. Internet Fiesta is an activity which started in Europe about five years ago and has been included in the events calendar of many countries around the world. Four islands in the Eastern Caribbean: St. Lucia, Antigua & Barbuda, St. Kitts & Nevis and St. Vincent, in collaboration with Martinique, participated in the Fiesta for the first time in 2004. The theme for Internet Fiesta 2004 was "Internet for All".

The main objectives of the Internet Fiesta are: to increase awareness of the possibilities of the Internet among the young and the old, and among private and public sector workers in a fun environment; to initiate and expand an electronic network between people across national borders and language barriers and to host an event with a Caribbean flavor, promoting education and training in the usage of the Internet as a valuable resource for economic development and social interaction in an enjoyable way (see: <http://www.internetfiesta.lc/>).

Some activities of the Internet Fiesta in St. Lucia included: computer lab decorating and website building competitions in Schools; technology quizzes on national radio stations and crossword puzzles in newspapers and youth magazines; setting up of internet access points in remote and rural communities with tutors available to conduct orientation sessions for first time computer/internet users; the illustration of technology themes to school children and rural communities through DVD movies on a big screen (for example I-Robot with Will Smith) and technology related dance/drama theatrical performances in Village and Town Centers around the island.

From 2002, the Community Development Department (CDD) in Barbados embarked on a process of implementing the Community Technology Programme (CTP) at various Community Centres across the island. The CTP has been creating an enabling environment for community members of all ages, enabling them to participate and taking advantage of the opportunities that arise in this technological era. Over five thousand (5,000) persons, ranging from ages 7 to 78 years, have received training at twelve (12) Community Resource Centres across the island of Barbados.

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<sup>2</sup> <http://www.stlucia.gov.lc/primeminister/conversations/>

The objectives of the programme are to: make computer training and Internet access more readily available to the masses; provide a linkage and support to the Education - Edutech 2000 programme; strengthen parents' understanding of, and support for the use of computers in schools; increase and improve the technological literacy of community members; provide opportunities for social connections and communication; lessen the reliance on National Assistance grants; and facilitate the development and transformation of regular Community Centres into Community Resource Centres.

### 3.2 Evidence-based Policy and Practice to Improve Participation, Transparency and Accountability

The process of empirical research and other methods used to gather data and views of citizens in the evidence-based policy formulation approach, inherently results in the broad based **participation** of citizens. The use of empirical research also leads to the establishment of measurement constructs, benchmarks and targets, all of which provide the basis for mechanisms for the evaluation process and holding persons responsible for implementation, **accountable** with respect to e-government initiatives. Policies based on evidence will also enhance **transparency** at the formulation, implementation and evaluation/post-implementation stages as the basis on which policies were adopted, the manner of implementation and determination of the level of success achieved, would all be readily apparent to citizens.

There are many different types of evidence. They include the means of proving an unknown fact, support for a belief, use of testimonies and witnesses. Evidence has to be *independently observed and verified* and there has to be broad consensus as to its contents, even if the interpretation of it is contested (Davies et al. 2000). It has been suggested that other kinds of evidence, which do not necessarily result from systematic investigation may be just as useful and that the contexts in which practitioners and politicians work can be more influential than the evidence itself (Sebba, 2004). Pawson (2001), notes that it is the underlying reasons or resources offered, rather than evidence of the policy itself which influence its impact.

Figure 3: Types of Evidence and How They Are Used in Policy Making

| Types of Evidence                  | Information and Influence on Decision-Making                                                                                                          |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Research</b>                    | Empirical evidence from randomized control trials & other trials                                                                                      |
|                                    | Analytic studies such as cohort or case control studies                                                                                               |
|                                    | Time series analyses                                                                                                                                  |
|                                    | Observations, experiences, and case reports                                                                                                           |
|                                    | Qualitative studies                                                                                                                                   |
|                                    | Before and after studies                                                                                                                              |
| <b>Knowledge &amp; Information</b> | Results of consultation processes with networks/groups                                                                                                |
|                                    | Internet                                                                                                                                              |
|                                    | Published documents (including policy evaluations & statistical analyses)                                                                             |
| <b>Ideas and Interests</b>         | Opinions & views: 'expert knowledge' of individuals, groups, networks (shaped by past personal and professional experiences, beliefs, values, skills) |
| <b>Politics</b>                    | Information relevant to the agenda of government                                                                                                      |
|                                    | Political risk assessment and saleability                                                                                                             |
|                                    | Opportunity                                                                                                                                           |
|                                    | Crises                                                                                                                                                |
| <b>Economics</b>                   | Finance and resource implications                                                                                                                     |
|                                    | Cost effectiveness or other forms of economic evaluation                                                                                              |
|                                    | Opportunity Cost                                                                                                                                      |

Source: Cabinet Office (1999a)

In the context of the Caribbean region, the types of evidence which have the most influence on decision making fall under 'politics' and 'economics', in particular 'political risk assessment and saleability' and 'finance and resource implications' respectively. The use of the first three types of evidence: 'research', 'knowledge and information', and 'ideas and interest', however, would be more representative of the broader viewpoints of citizens and constitute a more participatory approach to the development of e-government in the Caribbean region.

#### 4. Analysis of Evidence-Based Policy Approach

Even politicians are now articulating the merit of sources of evidence beyond the 'political' sphere: "good government is thinking government... rational thought is impossible without good evidence... *social science research* is central to the development and evaluation of policy"<sup>3</sup>. Blunkett (2000) argues that for government to develop relevant and sustainable 'overall strategies' for good governance, efforts must be based on 'sound evidence', as opposed to the 'muddling through' which characterized the policy making processes of the past.

An excellent example of the application of the evidence-based approach is Australia. A comprehensive study was done in response to the National Office for the Information Economy's (NOIE) request for a review of the demand for and benefits of e-government. It was intended to be used to provide input to "future ***evidence-based policy formulation***, to determine the benefit/cost ratio for e-government programs and to develop demand and evaluation methods for use by agencies".

With the further expansion of e-government initiatives, it was felt that government agencies needed new mechanisms for estimating and measuring demand and value to ensure their investment in e-government ***satisfies real needs***, stimulates further uptake of online services and delivers benefit to all stakeholders. In July 2002, the National Office for the Information Economy (NOIE) asked DMR Consulting to review the demand for and benefits of e-government to provide input to ***future evidence-based policy formulation***.

The review was undertaken in three phases: 1: Demand for e-government; 2: Measuring the benefits of e-government: benefits realised and how best to measure benefits in the future - for citizens, business and government and 3: Determining the return on investment for government. The key research elements in the review were: an analysis of baseline historical data on trends in household and business/government use of computers, the Internet and e-government; extensive surveys on e-government programs; case studies and an analysis of citizen and business surveys (for both users and non-users of e-government services).

The application of the evidenced-based policy approach to e-government and ICT for Development in the Caribbean must be grounded in the broad spectrum of e-government as outlined in Figure 4 below. In this regard, three key areas or pillars are recommended, in which empirical research should be conducted: i. Central Government/Public Sector (G2G); ii. Private Sector and Non-Governmental Organisations (G2B/B2B/B2C); and iii. Citizens (G2C and C2C).

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<sup>3</sup> David Blunkett (2000) UK Minister for Education, Influence or Irrelevance: Can Social Science Research Improve Government? Secretary of State's ESRC Lecture Speech.

Figure 4: Government to Business to Consumer Online Spectrum

|            | Government | Business   | Consumer   |
|------------|------------|------------|------------|
| Government | <b>G2G</b> | <b>G2B</b> | <b>G2C</b> |
| Business   | <b>B2G</b> | <b>B2B</b> | <b>B2C</b> |
| Consumer   | <b>C2G</b> | <b>C2B</b> | <b>C2C</b> |

OECD (2000) E-commerce: Impacts and Policy Challenges

#### Central Government

Expanding and integrating information technology in Public Administration requires a clear understanding of the present situation with respect to the deployment and utilization of hardware, software, networks and IT personnel across the Public Service. This would require the execution of a comprehensive Information Technology assessment for the Public Sector. In the case of Saint Lucia, this was done by way of a 'walk-through' audit of computer resources (hardware, software, etc.) across the entire Public Service. The process also included the labeling of all computers and peripheral devices inventoried and the entry of the information collected into a database.

Some key benefits of such an exercise would be with respect to the evaluation of the viability of software enterprise wide license agreements, planning for the integration of networks and hardware and the rationalization of the process of allocation of computer resources across the public service.

#### Private Sector and Non-Governmental Organisations

A survey to assess the use of Information Technology (IT) in businesses and non-governmental organizations would be the basis for the formulation of *sector specific* ICT policies and strategies to increase the adoption and integration of computer technology in the non-governmental sectors. In addition, these findings would inform the policies and strategies for the online delivery of information and services to businesses by public sector agencies.

Specific objectives of such research would be to determine: the extent and patterns of adoption and use of Computers/IT; the level of Internet penetration; the level of Electronic Commerce: online buying and selling; the extent of web presence/use of web sites and e-mail; barriers to use of Computers; the Internet & Electronic Commerce; and priority areas for the development of Government to Business (G2B) online services, Business to Consumer (B2C) and Business to Business (B2B) e-commerce activities. Trinidad and Tobago and Saint Lucia<sup>4</sup> have completed such studies.

<sup>4</sup> Trinidad and Tobago: National ICT Benchmarking Study (2003) and National E-Commerce Secretariat's (NeCS) Surveys on E-Commerce Usage and Awareness among Businesses and Households (2003); Saint Lucia: Business IT Survey (2004).

## Citizens

The impact of ICT on socio-economic development has been the source of debate and interest in many countries around the world. The advancement of the 'ICT for Development' agenda, e-citizenship or e-participation, to a large extent, is dependant upon the ability and willingness of persons to use the technology in various aspects of their lives. It is essential, therefore, that the level of penetration of computers and the internet among the general population be assessed and used as the basis for ICT and e-government policy formulation.

This would increase the likelihood that ICT would have a meaningful impact on socio-economic development and specifically address any existing disparities in access to information, services and ultimately to opportunities for income generation and wealth creation within respective communities and societies across the region. Again, studies and analysis undertaken by Trinidad and Tobago and Saint Lucia are good examples of this approach<sup>5</sup>.

As noted in the eInclusion Report (2004) with respect to the assessment of 'eInclusion and eAccessility' across Europe: "...development of effective strategies for policy interventions requires an understanding both of the extent and genesis of the challenges ahead. Benchmarks for inclusive online provision need to be established and suitable indicators developed that can be applied in the context of regular monitoring activities..."

A key finding of the Report came out of the recognition that the population segments usually regarded as 'vulnerable groups' are not at all homogenous groups as regards their 'ICT-related aspirations and requirements'. It was therefore considered essential to 'apply concepts of user-related segmentation of target groups for policy intervention not only with respect to the society as a whole but also internal to particular at-risk groups'. Within each of these groups, 'sub-groups need to be identified that share particular characteristics in relation to online services and for specific types of targeted actions'.

## 5. Conclusions and Recommendations for Further Research

Notwithstanding the developments in a few of the Caribbean islands with respect to the use of the evidence based approach to ICT and e-government policy formulation, the application of such a rigorous analytical approach may be challenging in the context of the Caribbean. Not only are the types of evidence relied upon for decision making typically 'politics' and 'economics', as noted earlier, but reservations about the willingness of government officials to embrace this perspective has been expressed in the following view: "...there is nothing a government hates more than to be well-informed; for it makes the process of arriving at decisions much more complicated and difficult" (John Maynard Keynes).

In a similar vein, Masch (2003) asserts that: "social scientists need, first of all, to recognize that there are powerful forces that are extremely active participants in contemporary public policy debates whose goals and objectives are fundamentally antithetical to the promotion of evidence-based policy formulation. These forces are ideologically-motivated advocates and lobbyists for narrow special interests". Further, he contends that: "...advocates and lobbyists proceed from a completely different premise than the principled academic social scientist. Their goal is not the open-minded promotion of knowledge or truth. Their goal is to successfully secure fixed, predetermined outcomes". Building trust and transparency in the policy formulation process itself are therefore critical considerations in the advancement of any policy related research agenda.

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<sup>5</sup> Trinidad and Tobago: NIHERST Utilization of ICT by Households (2001); Saint Lucia: Core Welfare Indicator Survey (2004)

Another problem which needs to be overcome in the context of the Caribbean e-government agenda is that elected officials and policy makers oftentimes operate according to the 'calendar of political imperative', which may not coincide with the researchers' calendar. In other words, public officials will tend to address issues and formulate policy positions when these issues come into the public domain and generate some level of interest in the electorate, 'even if there is no evidence available, and even if research is underway but is not yet complete and publicly available' (Masch, 2003). It may be argued that this is sometimes quite necessary and positive to some extent as there is often a need to 'demonstrate leadership and maintain public confidence' that requires public officials have '...a position on every pressing issue they are required to confront, whether or not any sound, unbiased evidence is available to guide their process of policy formulation'.

Consequently, in addition to the obvious considerations of 'politics' and 'economics', other types of evidence, such as, 'knowledge and information' (results of consultation processes with networks/groups; the Internet and published documents - including policy evaluations & statistical analyses) and 'ideas and interests' (opinions & views: 'expert knowledge' of individuals, groups, networks - shaped by past personal and professional experiences, beliefs, values, skills) would have to be used to inform the decision making process in the advancement of e-Government in the Caribbean.

### Further Research

Three critical areas are identified for further research with respect to the advancement of the e-government agenda in the Caribbean:

#### 1. E-Government and Organisational Change

Various governments in the Caribbean have embarked on ICT projects over the last decade. Computer technology plays an increasingly significant role at the operational levels of many government Ministries and Departments. However, the benefits of the strategic deployment of Information Technology can best be derived when implemented in tandem with broad organisational change initiatives: process analysis and process reengineering activities, and the review and redesign of organizational structures, workflows and procedures. Research on the extent to which ICT implementation initiatives have been accompanied by the broader organisational change dimensions, as outlined above and the best approach which should be adopted, needs to be undertaken.

#### 2. Capacity Building and the Information Society

The *provision* of e-government services does not guarantee that citizens will have the capacity, interest or skills required to effectively participate in the online society and knowledge economy. In addition to the 'informal' capacity building initiatives in the Caribbean, such as the Internet Fiesta in St. Lucia and the Barbados Community Technology Programme, ICTs need to be more fully integrated in the formal education system. Information and communications technologies (ICTs) are radically changing the face of education. It has been argued that the transformation of education may be the most important of the many practical revolutions sparked by computer technology. Just as computers are about to replace books (some would argue this has already happened) as our main repository of information globally, computers will come to occupy the central position in education once occupied by books<sup>6</sup>.

In terms of the traditional factors of production - land, labour and capital -, most island states in the Caribbean rely primarily on the *labour* component of this mix as the basis for competitiveness. Indeed, our very survival in this emerging era of trade liberalization and expansion and the relentless forces of

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<sup>6</sup> Robertson, D.S. (2002). 'The New Renaissance: Computers and the Next Level of Civilization'. Oxford University Press.

globalization<sup>7</sup> will be inextricably linked to the *quality* of our human resources and ability to adapt and innovate. Consequently, the role of *intellectual* capital will become much more significant in this new environment.

In this regard, the role of the education sector in preparing the foundation for the human resource capacity that is required for social and economic development and growth in the Caribbean is critical. The development of cutting-edge *knowledge and capabilities* required for the Information Society and Knowledge Economy can only be achieved with a workforce and populace equipped with the basic levels of *education and skills*. Knowledge-based industries require an educated labour force of computer-literate individuals who themselves understand and can harness the power of ICT. In response to the demands for producing such a labour force, many countries have changed the objectives of their education system and have directed much of their attention to the development of ICT skills in schools.

It is critically important, therefore, that a coherent approach be used in the integration of ICT in the education system in Caribbean countries. A policy framework and action plan for the use of Information Technology in the education sector is critical. In this regard, empirical data on the use of Information Technology by Secondary School Teachers, Educational Administrators and students needs to be collected and analyzed.

### 3: ICT in Key Sectors of the Economy

The development of the Information Society and Knowledge Economy in the Caribbean will require the integration of ICT in key sectors of the economy. The use of ICT in the tourism sector in the Caribbean, for example, needs to be further developed. The overall estimate for the Caribbean region is that tourism industry provided over three (3) million jobs, generated US\$37.4 billion in economic activity in 2001, and was responsible for thirty one percent (31%) of the regions' gross domestic product (GDP), making the Caribbean the most tourism dependent region in the world (World Travel and Tourism Council, 2002). In some Caribbean countries, the tourism sector's overall contribution is as much as seventy-four percent (74%) to eighty-nine percent (89%) of the GDP (CTO, 2002).

While most tourism related services are provided and controlled by the private sector, the public sector has a crucial role to play in providing the necessary policy guidelines, and the environment, infrastructure and management needed in both the economic and non-economic spheres of the industry (Elliot, 1997). Future research in this area should focus on the assessment of the levels of success of Internet marketing by public sector agencies, referred to as National Tourism Organizations-NTOs, responsible for the marketing and promotion of the destination.

Some dependent variables or indicators of success can be: the extent to which the decision making process of visitors to the NTO web sites are influenced, the level of satisfaction with NTO online sources of information. This data should be analyzed in light of visitor arrivals from the various sources markets in order to establish correlations or causality in the relationship between these variables. Efforts should focus on the use of online surveys, linked to the NTO web sites, and the adjustment of the relevant questions on Visitor Exit Surveys to allow for a clearer indication of the role of the NTO web site in the decision making and pre-trip planning process.

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<sup>7</sup> World Trade Organization; ACP-EU Arrangements; FTAA; Caribbean Single Market & Economy-CSME.

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