CHALLENGES FOR THE CARIBBEAN
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According to the Association of Caribbean States, the "greater Caribbean" includes its twenty five member states and four associate member states. This view of the Caribbean covers all the countries that border on the Caribbean Sea, including many of the countries known as Central America, and even some from South America. In this greater Caribbean, the major language spoken is Spanish, followed by English, French, Dutch and Kreyol. It is a very complex region.

The Caribbean countries are at a disadvantage in today's global competitive environment because their comparative advantage in cheap labor or natural resource endowments has become outdated in a knowledge-based economy. For example, knowledge is the key to innovations in production that ultimately make products more competitive.

Characteristics of these countries often include:

- Low living standards (i.e. low real income per capita) associated with high income inequality, poor health and inadequate education and limited life expectancy;
- Low levels of productivity; unskilled labour; weak management practices;
- High population growth rate;
- Large-scale unemployment and underemployment;
- A small industrial sector with outdated technology unable to employ large numbers of poorly educated workers.
- Large but neglected agricultural sector and migration from rural to urban areas
- Market inadequacies.
- Limited technology, infrastructure, and social and political institutions.
- Low social capital and social cohesion

Of course, the Caribbean countries vary in terms of these features, but it is useful to look at the commonalities. Barbados, Jamaica, Bahamas and Trinidad and Tobago are the most developed of the English-speaking Caribbean countries, with relatively large and modern manufacturing, up to date technology in some sectors and diversified economies focusing on services. However, there are underdeveloped areas, mainly in health, provision of social services, and bloated Government bureaucracy, as well as a lack of modern infrastructure.

So, how do we develop? We need to look at the areas that are lacking. Developing countries suffer from poor productive capacities and competitiveness. There are weak linkages between manufacturing, services and infrastructural sectors such as telecommunications; insufficiently developed human resources; deficiencies in physical infrastructure; and an inability to generate

adequate resources to invest in reducing economic and social problems in ways that would help to improve productive capacity.

The agricultural revolution and the Industrial revolution of the last centuries focused on natural resources and human resources. Unfortunately, most of the region did not develop sufficiently during these phases as they were mainly used as providers of raw materials to the colonial powers that ruled them. Thus, sugar, agricultural products, crude oil, raw minerals were shipped overseas to fuel the industrial complexes of the empire, and the finished, higher-cost products shifted back to the colonies in the mercantilist model. At the dawning of the knowledge age, these countries were singularly ill-equipped to implement the changes necessary to compete in the global information economy. This is what we need to change. Internet technologies can be used to assist us in making these changes.

General Considerations

The Internet is a collection of packet-switching networks and routers that uses the Transmission Control Protocol/Internet Protocol suit and functions as a single, cooperative virtual network. Internet governance has been defined by the Working Group on Internet Governance (WGIG) as, "the development and application by Governments, the private sector and civil society, in their respective roles, of shared principles, norms, rules, decision-making procedures, and programmes that shape the evolution and use of the Internet." [1] What does Internet governance mean for the Caribbean region?

The Caribbean region would benefit from an international participatory Internet governance system that would harmonize technical and policy issues for the benefit of the global community. This should translate in practical terms to:

- Lower Internet connection costs
- Affordable hardware and software
- Regional Administration of root server system
- National administration of country code top-level domains
- (ccTLDs).

Governments and regional intergovernmental organizations should convene regular consultations with the relevant technical communities and other stakeholders to discuss best practices and relevant solutions. The CARICOM Secretariat and the Caribbean Telecommunications Union have begun this process for the Caribbean by convening the First

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[1] *The Report of the Working Group on Internet Governance* (Geneva: United Nations, 2005), <http://www.wgig.org>

Internet Governance Forum in Georgetown, Guyana, in September 2005. The good start made by this multistakeholder forum needs to be followed up with energy and vigor to ensure that we benefit as a region.

At the National level, governments need to set up implementation frameworks with full and effective participation of civil society and business entities. National development plans need to include information and communication technology (ICT) strategies as an integral part. Plans and programmes aimed at implementing the United Nations Millennium Development Goals need to include ICT as a fundamental focus. Public investment in ICT infrastructure and the fostering of an enabling regulatory environment should be high priorities.

Except for strong trade unions, the Caribbean region has not generally had a robust civil society. Thus, traditional participants in policymaking have been Government, labor and private sector. Unfortunately, the labour movement has not been in the forefront of ICT issues; rather, in many cases, it has actively fought them due to the mistaken belief that ICT takes away jobs. One very important step in the Caribbean region would be to get the strong trade unions on board in the push to join the information society. As well, the current participation mechanisms need to be reconsidered to include other aspects of civil society, such as technical, academic, and nongovernmental organizations, as well as individual and virtual participation.

In short, important steps to be taken for the creation of a vibrant Caribbean information society would include:

- Promote sharing of experiences and cross-border implementation
- Strengthen information and negotiation mechanisms
- Promote multi-stakeholder approaches for ICT4D
- Build on current multi-stakeholder ICT initiatives
- Develop measurement and other statistical systems
- Understand and develop the relevance of standards in ICT[2]

Specific Issues of Concern

The main issues that are of interest to the English speaking Caribbean region include the above, as well as some specific issues from Clusters 1-3 of the WGIG report. Below we consider some of these issues in the Caribbean context.

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[2] Caribbean Seminar/Workshop on The Information Society - Preparing for CHOGM 2005 and the WSIS Outcome Document, St. Kitts and Nevis, April 2005.

Affordable and Universal Access

One of the basic issues is access to the Internet for everyone. This will include access to the telecommunications infrastructure. This is generally a matter of national policy. In some cases, the market-based solution has made the access gap worse. In small markets such as the Caribbean islands, it may not be cost-effective or feasible for competition to drive access. The cost of infrastructure development for a small market may create a situation in which the provider cannot recoup the capital expenditure at a price point that allows any but the well-off to afford the service. In cases like these, one option is for the Governments to implement the infrastructure, as a public good, and allow competition in goods and services on top of this public telecommunications infrastructure. In some US cities, WiFi networks are being deployed in this manner.

Backbone Deployment

There is a lack of local and regional backbone infrastructure in the Caribbean region. One solution to this can be the development of regional traffic hubs to more efficiently utilize the expensive international lines. This should be considered as a public infrastructure issue, and may be implemented with a public/private investment mechanism. The lack of adequate national and regional backbone may reflect market/public policy failure and require public policy intervention both in terms of funding and policy reform. There is a role for donor funding as well in terms of this development. There is also a need for the establishment of national telecommunications policies that provide an environment conducive to the establishment of network access points in the region by backbone providers.

Education and Human Capacity Building

Capacity building is vital to allow the Caribbean states to take their place in the policy discussions at the international level. With less than seven million people, we do have fourteen votes via the Caribbean Community (CARICOM) in international forums. This is a good position to be in, but unfortunately we lack the capacity to take full advantage of it. There is a need to ensure that all stakeholders have the ability to participate. It is necessary to strengthen developing countries' participation in international ICT decision-making.

Internet Leased Line Costs

This is an issue that is common to almost all the developing countries. Internet service providers (ISPs) must purchase transit services from a Tier 1 backbone provider. In addition, if the backbone provider does not have a network access point (NAP) in the country, then the ISP must purchase international connectivity to the NAP based on the "full-circuit" model; as

a consequence the ISP bears the full costs of both inbound and outbound traffic. Some of the issues with regard to costs to the local and regional ISPs are:

- International transport costs are much higher than Internet port charges
- Peering arrangements are scant or non-existent
- Strong international content demand drives up costs
- "Sender Keeps All" IP settlement paradigm creates imbalance – global carriers benefit to the detriment of local and regional ISPs
- Local traffic subsidizes costly international traffic (leased lines are distance based)[3]

There is a need to measure the traffic patterns in the region. The problem cannot be solved if it is not first measured. When we have a better idea of the way that our regional traffic flows over the Internet, we can develop better intra-regional traffic management plans and local or regional Internet Exchange Points. A shift towards a "peering" regime between regional ISPs also would help. This would help reduce the high cost of the international component and encourage better optimization in the use of international bandwidth, thereby lowering the overall cost of Internet access.

Local Content and Cultural and Linguistic Diversity

A public-private partnership approach could be employed, with the support of intergovernmental organizations and the donors, in the establishment of the sub-regional clusters of exchange points and liberalization of the telecommunication industry to lower costs of international connectivity.

It is clear that access to the telecommunications infrastructure and the equipment necessary to utilize it is not all that is needed in the Caribbean region. The information is useless if it is not available in languages that people can understand.

There is also the issue of disabled access to the information. More tools are being built to allow full access to Internet information for blind people for example, but much more still needs to be done. Content that is hosted on websites is often inaccessible. More use of the global usability standards such as the World Wide Web Consortium standards for website design is necessary.

Development of local content also encourages the development of local business and entrepreneurship, as well as reduces the imbalance in the data transfer traffic patterns. An

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[3] Brian Jahra, Presentation "An ISP Perspective On Internet Governance", CARICOM/CTU Internet Governance Forum, Georgetown, Guyana, Sept 2005. <http://www.caricom.org/jsp/projects/An%20ISP%20Perspective%20on%20Internet%20Governance%20-%20Brian%20Jahra%20AIISP.pdf>

increase in local content also works to redress the imbalance in the intellectual property rights holding, of which most IP patents and copyrights reside in developed countries.

Free and Open Source Software

Free/Libre Open Source Software (FLOSS) is a broad term used to describe software developed and released under an "open source" license that allows for the inspection, modification and redistribution of the software's source without charge. The term also encompasses the Free Software movement, which releases software under similar terms to the Open Software movement, but with one important distinction: the derivative works must be made available under the same non-restrictive license terms.[4]

FLOSS offers a number of advantages for developing countries, including in the Caribbean region. For example, the upfront cost is usually lower than normal. The additional costs involved in implementing and administration of a FLOSS based system can also be considered as an investment in the human resource of the country. However, FLOSS is not a silver bullet, and each project should look at FLOSS as well as proprietary solutions and evaluate each according to strict criteria. Moreover, the ability to access the source code is an opportunity for programmers in developing countries to learn from the Open Source community, and also to custom-tailor the code for their own local situations. This works towards building local capacity in ICTs, such as programming.

Conclusion

Internet governance is a major international issue. The Internet is becoming more and more central to the global economy. There are many roadblocks to Caribbean access to this resource, and as the governance issues are being worked out in the International forums, the Caribbean needs urgently to realize that these policy negotiations affect us in very basic ways. Caribbean countries need to participate fully in these negotiations and make sure that the decisions taken do not impact negatively on our development.

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[4] *Report of the Working Group on Internet Governance* (Geneva: United Nations, 2005) www.wgig.org.