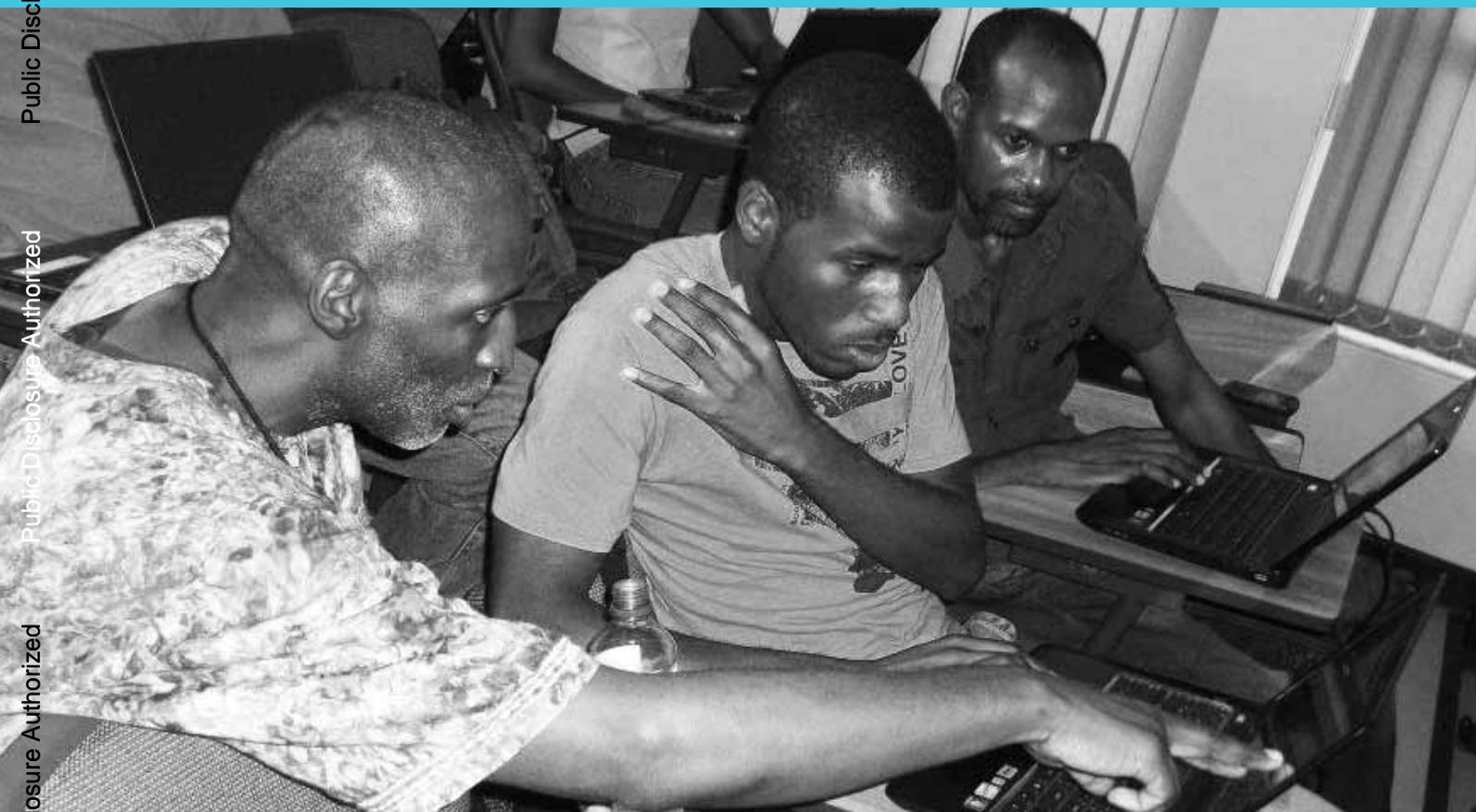


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opportunities for all



Customized ICT Solutions for Caribbean Growth

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Authors: This material has been prepared by Doyle Gallegos, Lead ICT Policy Specialist and ICT Regional Coordinator for the Latin America and Caribbean Region at the World Bank, with contributions from Pau Puig Gabarro, World Bank TWICT Unit.

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This note was prepared to support the participatory policy dialogue in the context of the Caribbean Growth Forum (CGF). The CGF is an initiative facilitated by the Compete Caribbean Program, the Inter-American Development Bank, the World Bank and the Caribbean Development Bank, with the support of the Canadian International Development Agency, the United Kingdom's Agency for International Development, CARICOM Secretariat, the University of the West Indies, the European Union and Caribbean Export. It aims to facilitate a multi-stakeholder dialogue to identify practical solutions for the growth challenge in the Caribbean. To learn more about the CGF methodology and progress in each Caribbean country visit: <http://caribgrowth.competecaribbean.org/>

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Customized ICT Solutions for Caribbean Growth

ICTs as a key element for economic growth

Information and Communication Technologies (ICTs) are seen as a key enabler across many sectors and services (e.g. water, energy, education, health) and a driver of economic growth. They provide key inputs for economic growth and employment, and enhance the effectiveness, efficiency, and transparency of other sectors, and offer new tools to reduce poverty. There is a growing body of evidence on the economic impact resulting from investment made in telecommunications and, more specifically, broadband services¹. Even more important for the overall economy have been the strong long-run effects of ICT applications on productive activities in other sectors. In the last 10 years, through high-speed communication networks and the innovative applications they carry, the impact of ICT as a general purpose technology has enabled fundamental restructuring and innovation of the economy. Governments are becoming more efficient and transparent by offering information and services online (Qiang and Wellenius 2010).

A very diverse region

The CARIFORUM region² is one of the most diverse in the world in terms of economic performance and demography. Economic growth averaging about 2.7% in the last decade (2002-11)³ includes outliers such as Bahamas, Barbados and Haiti with less than one percent growth rate, and the Dominican Republic, Trinidad and Tobago, and Suriname with about 5.5 % growth. The size of the economy also varies widely. In 2011, GDP was US\$55 billion in Dominican Republic US\$0.48 billion in Dominica, with four countries accounting for about 80% of the regional GDP, and the remaining eleven countries

accounting for only 20%⁴. Per capita income ranges from a high of US\$21,970 in the Bahamas to US\$700 in Haiti. Disparity among the CARIFORUM countries is also reflected in the population distribution, with two countries (Dominican Republic and Haiti) accounting for approximately 75% of the population (20 million people).

ICT development in the Caribbean

This diversity is also very much apparent in the different level and sophistication of ICT development across countries, as can be seen by a comparison of key ICT indicators as described below. This diversity implies the need for customized approaches to resolve inter-country and intra-regional disparities in ICT sector development.

A useful snapshot of the level of ICT development across the region is provided by a comparison of the ICT Development Index (IDI). The IDI is a composite index developed by the International Telecommunications Union (ITU) combining 11 indicators into a benchmark measure (See Box 1).

¹ A 10 percent increase in the number of telephones per 100 inhabitants in developing countries was associated with an increase of 0.6 percentage points in GDP growth, and a 10 percentage point increase in broadband penetration was associated with 1.4 percentage points of additional GDP growth (Qiang 2009).

² CARIFORUM comprises the 15 Caribbean countries of CARICOM (i.e., Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago) and the Dominican Republic. Figures through the document do not include Montserrat since it is a British overseas territory.

³ The GDP grew only by 2.64 percent in 2008 as a result of the global financial crisis, contracting by 2.6 percent and 0.26 percent in 2009 and 2010 respectively.

⁴ Dominican Republic, Trinidad and Tobago, Jamaica and the Bahamas account for 45 percent, 18 percent, 12.5 percent and 6.5 percent respectively of the regional GDP.

Box 1 ICT Development Index

The 11 indicators that compose the IDI can also be grouped into Access Index, Use Index, and Skills Index. The Access Index captures ICT readiness, and includes five infrastructure and access indicators (fixed telephony, mobile telephony, international Internet bandwidth, households with computers, and households with Internet). Together, these indicators measure the basic level of access and infrastructure development within the country. The Skills Index captures ICT capability and skills as indispensable inputs for ICT uptake, and includes three proxy indicators (adult literacy, gross secondary enrollment, and gross tertiary enrollment). Together, these indicators reflect the country's human capacity and ability to absorb and take advantage of ICT. The Use Index captures ICT intensity, and includes three ICT and usage indicators (Internet users, fixed broadband, and mobile broadband). Together, these indicators reflect ICT uptake and use, as well as intensity of use.

Table 1 presents all four indices of the IDI for selected Caribbean countries. Across all indices, the same countries are top performers: Antigua and Barbuda, Saint Vincent and the Grenadines, Trinidad and Tobago, and St. Lucia. The one exception is the ranking of the Skills Index where Jamaica is more highly ranked than in its other indices. This clustering of the same countries across all indices is all the more interesting considering that the top positions are dominated by the smaller island countries (less than 200k in population) and in particular those with higher population densities (greater than 200 people per square kilometer).

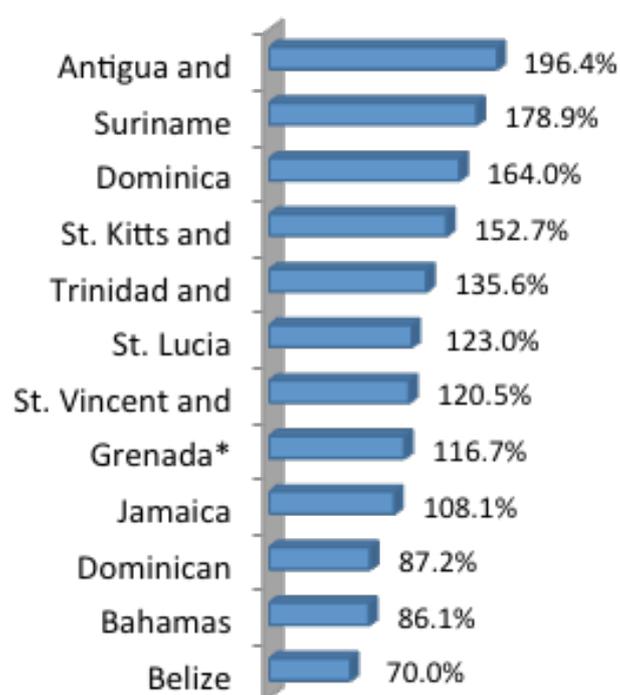
It is therefore not surprising to see that the same cluster of high ranked countries also performs particularly well in the level of mobile subscription penetration (measured as a percentage of inhabitants) of greater than 120% as demonstrated in Figure 1. To the grouping of highest mobile penetration are added Suriname, Dominica, and St. Kitts and Nevis. These high levels of penetration should be tempered to some extent by the fact that mobile services prices remain relatively high and that people often own multiple phones from different service providers in order to take advantage of specific rates and offers, thus "inflating" the number of actual mobile users.

Table 1—ICT Development Index 2011

2010(*), 2011 Indexes by country				
Country	IDI Index	Access Index	Use Index	Skills Index
Antigua and Barbuda	5.75	6.99	3.76	7.17
Saint Vincent and the Grenadines	4.74	6.09	2.15	7.23
Trinidad and Tobago	4.57	5.59	2.52	6.67
St. Lucia	4.49	5.72	2.07	6.87
Suriname*	3.52	4.54	1.22	6.08
Jamaica	3.49	3.96	1.31	6.93
Dominican Republic	3.34	3.37	1.66	6.62

Data not available for the Bahamas, Belize, Dominica, Grenada, and St. Kitts and Nevis. Data for Suriname is 2010
Source: Measuring the Information Society 2012, ITU

Figure 1 - Mobile-cellular Subscriptions per 100 Inhabitants in 2010(*), 2011

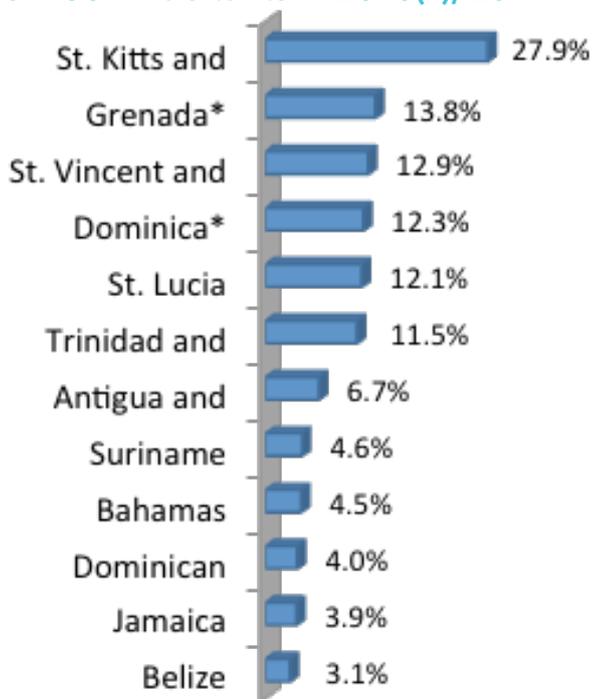


Source: DataBank, World Bank, 2013

Notwithstanding these aspects, the region has developed its mobile services platform and coverage footprint very well. This has been driven primarily by pro-competition policies and regulatory practices (e.g. licensing and spectrum management). This bodes particularly well for the region as mobile platforms that place a phone or smart device in almost every citizen's hand is fast becoming the single largest delivery system of services (e.g. banking, health, education, m-government, etc.) as well as a preferred mode for citizen engagement, with particular benefit to the poor and disabled.

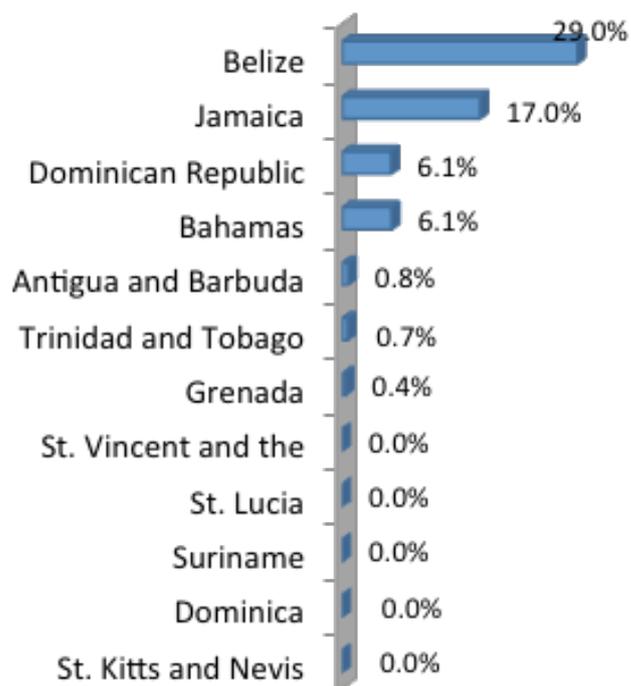
However, if the region is going to be effective in accelerating growth and competitiveness, it must focus on enabling the use of broadband services across every income level and geographic presence of its citizens. Herein lays the major challenge for the region as broadband markets in the region are very much underdeveloped. Figure 2 presents the penetration level of fixed broadband services in selected Caribbean countries.

Figure 2 Fixed Broadband Subscriptions per 100 Inhabitants in 2010(*), 2011



Source: DataBank, World Bank, 2013

Figure 3 Mobile-broadband Market Penetration in 2012



Source: Wireless Intelligence, 2013

Two clusters and one outlier are visible. Specifically, half the countries are below the 7% mark while the other half are above (12-14%), with St. Kitts Nevis surpassing all others by far (28%). According to the ITU, the average penetration levels for the World, Developed, and Developing countries in 2011 were 8.5%, 25%, and 4.9%, respectively.

The hope and expectation of many policy makers is that much of this lag and digital divide can be quickly overcome with new broadband wireless technologies (both, fixed - WIFI, and mobile - 3G and 4G). As demonstrated in Figure 3, in this aspect the region still has a long way to go with only Belize and Jamaica showing levels of mobile broadband penetration greater than 17%, the Dominican Republic and Bahamas at 6%, and all others at less than 1%. According to the ITU, the average penetration levels for the World, Developed, and Developing countries in 2011 were 15.7%, 51.3%, and 8%, respectively.

In general, low broadband penetration rates are caused by a number of factors, including lack of infrastructure, weak or minimal competition, and high level of prices for services and devices. In the Caribbean region, low penetration is also due to these factors but more specifically because the liberalization agenda remains to be fully completed. Monopolies or partially competitive ICT sub-sectors continue to exist in countries such as Antigua and Barbuda, Bahamas, and Trinidad and Tobago.

While the region is served by several fiber optic submarine cables and in many places overcapacity exists, there is no effective competition in the provision of international services. In most countries, the former incumbent operators still control international facilities and many of the cables are not subject to open access regulatory regimes. Similar challenges exist at the national transmission level where there are few competitors. The result is relatively high prices, limited access and slow growth of broadband services and uptake.

The result of such major gaps in ICT infrastructure and high prices is that the region is ill prepared to compete in the global economy. Without access to affordable and reliable ICT infrastructure and services, the countries of the Caribbean are also limited in their options to improve their competitiveness, productivity and diversify their economies through knowledge- and information-based services.

Box 2 The Caribbean Regional Communications Infrastructure Program (CARCIP)

CARCIP provides targeted solutions for Caribbean countries to benefit from the developmental and transformational potential of ICT. First, CARCIP provides opportunities for the CARIFORUM region to bridge the remaining gaps in regional and domestic broadband communications infrastructure, including submarine cable infrastructure and landing stations, domestic backbone networks and cross-border links and national and regional internet exchange points (IXPs). Second, CARCIP aims at creating an enabling environment that leverages this regional and domestic infrastructure to foster employment and economic growth. This includes the support of policies and regulatory frameworks to further increase market competition, as well as support to develop innovative regional IT and ITES industries, applications by the private sector and, e-government and m-government services. Specific skills development programs target women and youth to improve employability and bridge the gender gap in access to, and use of ICT. Finally, CARCIP aims at supporting institutional development and capacity building that enhances the effectiveness of the regional institutional ICT framework.

The program ultimately seeks to contribute to the higher strategic objectives of regional and global integration, green growth and competitiveness of the Caribbean region. CARCIP is expected to contribute to the CARIFORUM regional integration strategy by fostering economic growth, generating employment, supporting poverty reduction plans, enabling rural integration and enhancing the regional and domestic competitiveness of each of the member countries.

CARCIP Phase 1 was approved by the WB Board on May 22, 2012 with Grenada (\$10m IDA), St. Lucia (\$6m IDA) and St. Vincent and the Grenadines (\$6m IDA) as participating countries. The CARCIP program is also supported by three regional institutions (via a US\$ 3 million regional grant), including the Caribbean Telecommunications Union (CTU), the Caribbean Knowledge and Learning Network (CKLN) and the Eastern Caribbean Telecommunications Authority (ECTEL).

Customized approach to ICT development

Given the large disparity in ICT development across Caribbean countries, there is no single solution, or “cookie cutter approach” to address the region’s weaknesses and threats. Rather, a customized approach, strategy (e.g. national broadband strategy), policy and regulatory actions, and implementation plan should be developed for each country according to its level of ICT development, specific challenges, and sector development goals and objectives.

In some countries, an emphasis on updating the legal, policy and regulatory enabling environment (e.g. implementation of pro-competition policies and regulations) may be all that is needed. In others the emphasis may need to be on greater access (i.e. supply) at lower costs and higher quality, on stimulating demand (e.g. e-government services, ICT skills training and applications and content development), or a combination of all the above.

However, such an approach does not minimize the need to consider the regional context or to integrate into a regional strategy. Quite the contrary, the potential spillover effects of ICT make it a critical sector for stimulating growth, competitiveness and diversification in the region. The region’s prosperity depends on how well it is integrated into the global economy. ICTs, particularly high-speed Internet, are playing an increasingly central role in this - enhancing trade, facilitating cross-border payments, increasing investment - all key components of economic growth/diversification and poverty reduction. ICT investments in one country can generate positive externalities for other countries and for the region as a whole. Further coordination of national strategies, policies and initiatives can only strengthen outcomes.

Over the past ten years the focus of policy makers has been to introduce competition, transform incumbent operators, revamp policy and regulatory frameworks, build regulatory capacity, and - when required - make catalytic investments in infrastructure in the form of Public Private Partnerships (PPPs). Development of the sector has required that countries not only continue at an accelerated pace to address the fundamentals (i.e. supply) but also begin initiatives to address uptake and use of ICTs for jobs growth, business development and innovation (see Box 2).

Conclusion

The Caribbean has significant opportunities to benefit from regional efforts to use information and communications technologies (ICTs) to facilitate and jumpstart policies and initiatives across all sectors and services. Yet, while the region has seen an overall expansion of mobile cellular use, variations in the prevalence and use of ICTs across countries remain. These variations are due to different income levels, location, and human capital. Addressing the disparities in ICT sector development across countries in the Caribbean will more effectively support the expansion of ICTs in the region.

Policy makers can more effectively utilize ICTs to accelerate and solidify their economic and job growth objectives across all sectors and services. But before being able to benefit from all that ICTs can offer, they must take an inward look and

assessment of their own ICT policies, strategies and objectives. While the mobile services segment has advanced significantly, bottlenecks and challenges exist in the supply and demand of high quality low cost broadband services.

There is no single best practice or solution, but examples exist to guide policymakers in designing policies and strategies that address specific market dynamics and the goals and objectives of all stakeholders. Taking into consideration the specific development level of the sector and government's goals and objectives, customized solutions must be designed and implemented. Renewed partnerships between the private and public sectors can catalyze the necessary investment and innovation. Governments will play a role in creating the right enabling environment, policies, strategies and objectives, and under the most challenging conditions, may need to lead.

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