CANCION

Dirk Currie

BEST EXHIBIT

Strategic Alliances
for **Sustainable**
Broadband
Development

Contents

Mission

To facilitate the development of ICT solutions for the benefit of members and other stakeholders in the Caribbean region.

Vision

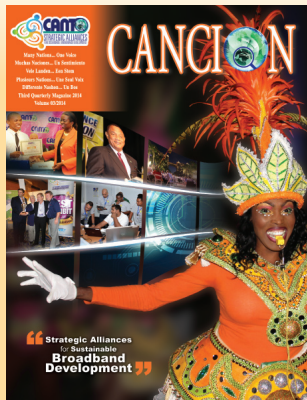To be the leading authority in shaping information and communication in the Caribbean.

Objectives of Cancion

To inform CANTO's membership of information and communication technologies and policy developments taking place in the member organizations of the association.

To reach policy makers of the Caribbean, sharpening their awareness of regulatory developments and technological progress as it affects the region.

To provide CANTO with a literary voice to reach others in the region and internationally, with news, information and analysis of information and communication technology developments in/or affecting the Caribbean.

If you or your organization are engaged in or informed about activities or developments which impact upon Caribbean information and communication technologies please write and let us know.

f - Canto   - @CANTO_ITC   in - CANTO Caribbean   - CANTOICT

Dare to Dream Caribbean Economies ICT Enabled

Editorial (English)

"Dare to dream", a catchy refrain from the feature address delivered by Honourable Perry Christie, Prime Minister of the Bahamas, to the over 500 delegates attending the 30th staging of CANTO's Annual Conference and Trade Exhibition held in Nassau Bahamas August 10 to 15.

In inviting the participants to "dare to dream" the Prime Minister was actually calling them to action, to give life to the theme: "Strategic Alliances for Sustainable Broadband Development". He implored policy makers to define the way forward to reduce the digital divide in individual countries and across the Region as a whole. With access to and the effective use of ICTs he said "the Caribbean can evolve into an ICT mecca of assembly lines, data centres, Internet exchange". In his dream a Caribbean Silicon Valley can be a reality.

At the pearl anniversary, of what is undoubtedly the premier ICT event in the region, CANTO was able to attract a Ministerial Panel of 14 government ministers and or representatives of ICT ministries from across the Caribbean. The question and answer format used for the panel discussion allowed the ministers to share on selected topics. With the currency of the raging debate of the action taken by two regional mobile players to block some applications that allow their Internet customers to make free phone calls over the Internet, the issue of so called "over-the- top" players dominated this session.

Some panellists took the view that Internet users should be allowed to use their internet service to access applications and services of their choosing. This view is based on the idea of the open development of the Internet. Others were more sympathetic to the position of the service providers arguing that over-the-top players operate without a licence, and as such are competing unfairly with licenced network and service providers. Licenced providers invest in the development of the network and ICT infrastructure of these markets, face unfair competition from large global service providers, who take advantage of the new technology and services to offer faced VOIP based services in these markets.

They do not contribute to the development of the sector or the economies for that matter. No concrete solution emerged, except the ministers agreed that a unified Caribbean approach would be the best option.

The Regulators Forum was the first for the conference. Given the success of the Ministers' Panel, CANTO felt it was opportune to have attendees hear from the policy implementers, in conversation with service providers. The panel would have benefitted from greater participation from regulators for the English speaking Caribbean; nevertheless this first attempt was an encouraging start. The overall message was a clear recognition that the complexity of converged ICT landscape requires greater collaboration among all stakeholders, in particular regulators and service providers to ensure the orderly and robust development of the sector. This is particularly so at a time when the economic fortunes and social cohesion of our economies are so inextricably linked with the success of this sector.

In demonstrating commitment to collaboration, one session was dedicated to building awareness of CARICOM's project geared towards the realization of the Single ICT Space. This would support the implementation of the CARICOM Single Market and Economy (CSME) which is expected to increase trade among member countries, improve productivity, and create investment opportunities across the Region. Access to broadband Internet and the impact of digitization now make it more possible to achieve the goals of CSME through the Single ICT Space. Using its unique position as a trade association with all the major telecommunication network operators and service providers counted among its membership, CANTO used the opportunity at the Annual Conference and Trade Exhibition to further the needed public private sector dialogue on the Single ICT Space.

The Broadband Infrastructure and Public Awareness in the Caribbean (BIIPAC) continues to be a major focus of CANTO's efforts to positively impact the ICT landscape

of the Caribbean. The Steering and Technical Committees used the opportunity provided by the conference to hold face to face meetings. On the technical side discussions on the broadband diagnostic and infrastructure development maps, which is the planned output of the first component of the project, underscored the need for standard definitions for terms used in support of the data collection exercise for example. It was clear there is no consistency across beneficiary countries. This points to the need for the region to develop and or adopt common measurements. The implications for a single ICT space are obvious.

Under the umbrella of the Caribbean Women in ICT (CWIC) initiative the spotlight was put on women achievers in the industry. The hope is that by showcasing these achievers, others will be empowered to follow their lead. The inaugural session saw women from both the private and public sectors sharing their unique perspectives on a range of issues, from working their way up in a male dominated industry to balancing family and work life. The featured speaker, Mitzi Miller, Editor in Chief, Ebony Magazine shared her touching life experiences with the audience. The initiative, born out of the collaborative efforts of the Secretary General, Regenie Fräser and Deputy Program Manager at the CARICOM Secretariat, Jennifer Britton is not only a good example of strategic partnership, but humanised the experiences of women in the sector.

Given the confines of an editorial piece, it is not possible to speak to all the many and varied ways in which the conference sought to address and give voice to the theme.

Overall, from the multi- faceted experience, including topical presentations, lively discussions and showcasing of latest technology and services, the conference proved to be an effective rallying point for the various stakeholders and interest groups to discuss the issues in an information rich and stimulating atmosphere.

An interesting take away from CANTO 2014 is the juxtaposition of the aspirational "dare to dream" perspective of the independence generation vs. "ICT sustaining my life" reality of the youth population. This came out pointedly in the short video presentation of 18 year old William Angel Mahler Junior of Belize, who won the CANTO World Telecommunication and Information Society Day - Video Competition. His winning entry clearly demonstrates how the availability of broadband is impacting all facets of his life. Our goal must surely be to make William's reality, that of every Caribbean youth. This way we can realize the dreams of Prime Minister Christie, of the Bahamas and that of the Caribbean people, unleashing creativity and innovation, increasing productivity and transforming the social and economic fortunes of individuals, communities and countries.

CANTO's next major calendar event is the 31st Annual General Meeting scheduled to be held in Suriname, January 25th to 27th 2015. We look for the continued support of members and partners working together to expand broadband development in our region. ◉

Atrévete a Soñar Las Economías del Caribe Habilitado TIC

Editorial (Español)

"Atrévete a soñar", un refrán del discurso pronunciado por el Honorable Perry Christie, Primer Ministro de las Bahamas, cuando se dirigió a más de quinientos delegados que asistieron a la trigésima celebración de la conferencia anual y exhibición de comercio de CANTO, celebrada en Nassau Bahamas del 10 al 15 de Agosto.

Al invitar a los participantes a " Atrévete a soñar " el primer ministro, en realidad, les estaba haciendo un llamamiento a la acción, para dar vida a la temática Alianzas estratégicas para el Desarrollo de banda ancha. Él imploró a los legisladores el definir el camino a seguir para reducir la brecha digital en los distintos países y en toda la región en su conjunto. Con el acceso y el uso efectivo de las TIC, dijo "el Caribe puede convertirse en una meca de las TIC de las líneas de montaje, centros de datos, intercambio de Internet". En su sueño, del valle de silicona del Caribe puede ser una realidad.

En el aniversario de la perla, de lo que es, sin duda, el principal evento de las TIC en la región, CANTO fue capaz de atraer a un agosto Panel Ministerial de catorce ministros de gobierno y representantes de los ministerios o de las TIC de todo el Caribe. El formato de pregunta y respuesta utilizada en el panel, permitió a los Ministros compartir sobre temas seleccionados. En lo actual del cálido debate de las medidas adoptadas por dos jugadores móviles de la región para bloquear algunas aplicaciones que permiten a sus clientes de Internet hacer llamadas telefónicas gratuitas a través de Internet, la cuestión de la llamada "sobre los mejores jugadores" dominó esta sesión.

Algunos panelistas fueron de la opinión que a los usuarios de Internet se les debe permitir utilizar los servicios de internet y acceder a las aplicaciones de su preferencia. Esta opinión se basa en la idea del desarrollo abierto del internet. Otros fueron más comprensivos con la posición de los proveedores de servicios que expresaron que en los mejores jugadores operan sin licencia, y como tal están compitiendo injustamente con los proveedores de redes y servicios autorizados. Los Proveedores con licencia invierten en el desarrollo de la red y la infraestructura de TIC de estos mercados, se enfrentan a la competencia desleal de los grandes proveedores de servicios globales, que se aprovechan de la nueva tecnología y servicios para ofrecer servicios basados en VoIP enfrentado en estos mercados. No contribuyen al desarrollo del sector o de las economías en estos casos. No se llegó a una solución concreta, excepto que los Ministros convinieron en que la mejor opción sería un enfoque unificado del Caribe.

El foro de los reguladores fue el primero de la conferencia. Dado el éxito del Panel de Ministros, CANTO sintió que era oportuno invitar a los legisladores a conversaciones con los proveedores de servicios. El panel se habría beneficiado con una gran participación de los reguladores del Caribe de habla Inglesa, de todas maneras, este primer intento fue un comienzo alentador. El mensaje general fue un claro reconocimiento de que la complejidad del convergido panorama de las TIC requiere una mayor colaboración entre todas las partes interesadas, en particular los reguladores y proveedores de servicios para garantizar el desarrollo ordenado y sólido del sector. Esto es particularmente cierto en una época en la fortuna económica y la cohesión social de nuestras economías están tan inextricablemente vinculados al éxito de este sector.

En demostración del compromiso a la colaboración, se dedicó una sesión a edificar conciencia del proyecto del CARICOM orientada a la realización del Espacio Único TIC. Esto apoyaría la implementación del Mercado y Economía Único del CARICOM (CSME), que se espera que aumente el comercio entre los países miembros, mejorar la productividad, y crear oportunidades de inversión en toda la Región. El acceso a Internet de banda ancha y el impacto de la digitalización ahora hacen más posible lograr los objetivos de CSME a través del Espacio Único TIC. Usando su posición única como una asociación comercial que agrupa a los principales operadores de redes de telecomunicaciones y proveedores

de servicios con que cuenta entre sus miembros, CANTO aprovechó la oportunidad en la Conferencia Anual y Exposición para fomentar el diálogo necesario entre el sector público-privada en el espacio único de las TIC.

La infraestructura de banda ancha y conciencia pública en el Caribe (BIIPAC) sigue siendo un foco importante de los esfuerzos de CANTO para impactar positivamente el panorama de las TIC del Caribe. Los Comités Directivos y técnicos aprovecharon la oportunidad proporcionada por la conferencia para celebrar reuniones cara a cara. En los debates secundarios técnicos sobre los mapas de desarrollo de diagnóstico y de la infraestructura de banda ancha, que es el resultado previsto del primer componente del proyecto, se subrayó la necesidad de definiciones de estándar de los términos utilizados en apoyo a la labor de coleccion de datos, por ejemplo. Estuvo claro que no hay consistencia entre los países beneficiarios. Esto apunta a la necesidad de la Región de desarrollar y/o adoptar medidas comunes. Las implicaciones para un único espacio TIC es evidente.

Bajo la covertura de las mujeres del Caribe en la iniciativa TIC (CWIC) el centro de atención estabo puesto en las mujeres exitosas de esta industria. La esperanza es que con la divulgación de esas mujeres exitosas, otras tendrán la facultad de seguir su ejemplo. La sesión inaugural vio a mujeres de ambos sectores, privado y público compartir sus perspectivas únicas sobre una variedad de temas, desde el tránsito en su camino para alcanzar posición en una industria dominada por los hombres hasta el lograr equilibrar su vida familiar y laboral. La presentadora principal, Mitzi Miller, Editor en Jefe de la revista Ebony ella compartió las experiencias de vida conmovedoras con el público. La iniciativa, que nace de la colaboración de la Secretaría General, Regenie Fräser y Director Adjunto del Programa en la Secretaría de la CARICOM, Jennifer Britton no sólo es un buen ejemplo de asociación estratégica, sino que humanizó las experiencias de las mujeres en el sector.

Teniendo en cuenta los límites de un espacio editorial, no es posible hablar de todas las muchas y variadas formas en que la conferencia trató de abordar y dar voz al tema. En general la experiencia multifacética, incluyendo presentaciones de actualidad, debates animados y lucimiento de última tecnología y servicios, la conferencia demostró ser un buen punto de partida para los distintos grupos involucrados y grupos de interés para discutir los temas en un ambiente rico y estimulante.

Un interesante punto de CANTO 2014 es la yuxtaposición de una perspectiva " Atrevete a soñar" de la generación independencia vs "TIC sosteniendo mi vida" en la realidad de la población juvenil. Esto fue enfatizado en la breve presentación en vídeo del muchacho de dieciocho años de edad, William Ángel Mahler Joven de Belice, que ganó en el Concurso de Video del dia Mundial de Telecomunicaciones y Sociedad de la Información. Su obra ganadora demuestra claramente cómo la disponibilidad de la banda ancha está afectando todas las facetas de su vida. Nuestro objetivo debe ser sin duda hacer la realidad de William, la de todos los jóvenes del Caribe. De esta manera podemos realizar los sueños del Primer Ministro de las Bahamas Christie, y la de los pueblos del Caribe, desatando la creatividad y la innovación, aumentando la productividad y la transformación de las circunstancias sociales y económicas de las personas, las comunidades y los países.

Próximo evento en el calendario principal de CANTO es la trigésima primera Asamblea General Anual que se celebrará en Surinam del 25 a 27 de Enero 2015. Buscamos el apoyo continuo de los miembros y socios que trabajan juntos para ampliar el desarrollo de la banda ancha en la región.

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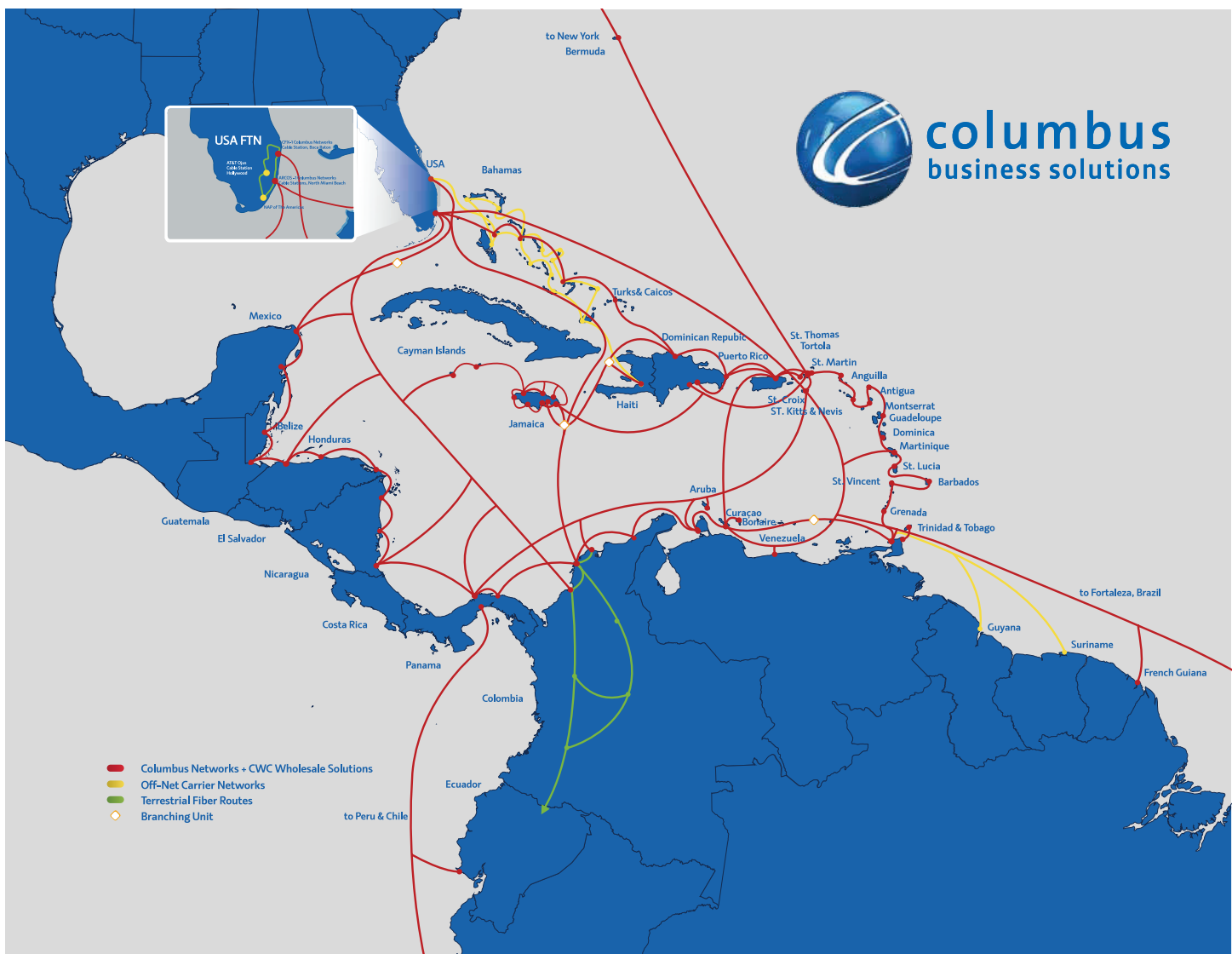
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Map legend:

- Columbus Networks + CWC Wholesale Solutions
- Off-Net Carrier Networks
- Terrestrial Fiber Routes
- Branching Unit

Map labels:

USA FTN, to New York, Bermuda, USA, Bahamas, Mexico, Turks & Caicos, Cayman Islands, Dominican Republic, Puerto Rico, St. Thomas, Tortola, St. Martin, Anguilla, Antigua, Montserrat, Guadeloupe, Dominica, Martinique, Haiti, Jamaica, Belize, Honduras, St. Croix, ST. Kitts & Nevis, St. Lucia, St. Vincent, Barbados, Guatemala, El Salvador, Aruba, Curacao, Bonaire, Grenada, Trinidad & Tobago, Nicaragua, Venezuela, to Fortaleza, Brazil, Costa Rica, Guyana, Suriname, Panama, Colombia, French Guiana, Ecuador, to Peru & Chile

CANTO: Telecomunications Power at Play in the Bahamas

Atlantis Paradise Hotel in the Bahamas was the venue for CANTO's 30th Annual Conference & Trade Exhibition where the organization's pearl anniversary was celebrated in grand style. The Bahamas, land of sun, sea and sand welcomed over 500 delegates on its shores for an action packed agenda from the 10th -15th August. Bahamas Telecommunications Company (BTC) co-hosted the event.

Over a four-day period, delegates engaged in discussions, listened to speeches and viewed presentations by the Prime Minister of the Bahamas, the Hon. Perry Christie, fourteen Caribbean ICT government ministers, three Secretary Generals, and CEOs and directors of several ICT companies.

The popular annual conference and trade exhibition also known as *CANTO 2014* is the Caribbean's premier telecommunications event for industry professionals, academics and regional governments. This year, the theme was *"Strategic Alliances for Sustainable Broadband Development"*.

The opening ceremony of CANTO was chaired by Mr. Leon Williams CEO of BTC. Speakers included: Dirk Currie - Chairman; Regenie Fräser - Secretary General; Helma Etnel; Vice Chair(Ag). all of CANTO; Dr. Earl Suttle, Motivational Speaker; Mr. Chris Dehring; Chairman, LIME Jamaica & Head of Government Relations (Caribbean); Dr. Hamadoun Touré; Secretary General, ITU; the Hon. Dr. Bernard J. Nottage; Minister of National Security and featured speaker the Hon. Perry Gladstone Christie, Prime Minister of The Bahamas.

Hon. Perry Gladstone Christie in his feature address challenged the regional telecoms/ICT sector to 'dare to dream' in making the region a better ICT-enabled environment:

"Dare to dream and provoke us, Policy Makers, on the way forward to reducing the digital divide in our separate countries and in the region as a whole. Dare to dream and provoke policy makers on how we should prepare these small island nations that once depended on the banana and sugar plantations for their survival to evolve to an ICT mecca of assembly lines, data centres, IXPs and become the Caribbean Silicon Valley."

The LIME-sponsored *Ministerial Breakfast Briefing* jump started the conference. The event was a closed forum where government ministers and invited guests were privy to a high level overview of the current ICT affairs within the Caribbean. The keynote speaker was Martin Roos, CEO, LIME who gave an overview of LIME's position in terms of broadband development and infrastructure in the Caribbean. An update on CANTO's current project "Broadband Infrastructure and Public Awareness in the Caribbean" (BIIPAC) update was given by Ayanna Samuels, International ICT and Development Consultant and Technology Policy Specialist.

The Digicel-sponsored *Ministerial Roundtable*, prides itself on developing strategic relationships with all stakeholders in the ICT sector and provides a neutral forum each year, for government ministers to share their successes and concerns and seek solutions from participants which include operators, regulators, industry experts and suppliers. The subjects of debate at this year's forum were over-the-top Operators (OTT) and Voice over IP (VOIP). The ministers in attendance were from Anguilla, Antigua & Barbuda, Dominica, Grenada, Jamaica, Montserrat, St. Lucia, St. Maarten, Tortola (BVI), and Turks & Caicos. The government representatives were from Barbados, Dominican Republic, St. Vincent & The Grenadines and Trinidad & Tobago. The keynotes were delivered by Justin Zhuang of Huawei and Julio Espinoza of Ericsson.

The *Ministerial Roundtable* was divided into two separate panels. Among the issues discussed were the measures needed to accelerate broadband development, successful strategic broadband alliances in the Caribbean, use of USF for broadband development, the effect of OTTs, bypass and possible solutions. There was not always agreement among the panelists. However, Ministers agreed that more efforts should be put into broadband development, including PPP partnerships and the use ▶

of USF. Regarding OTTs, Ministers felt that a unified approach would be the best option, but no concrete solution emerged. Some Ministers felt that governments are losing revenue due to bypass. However, persons in the Caribbean are attracted to VoIP so solutions should bear this in mind.

The *Public Private Sector Dialogue on the Single CARICOM ICT Space* (PPDSICTS) inaugural meeting was also held on Monday during CANTO 2014. This was the first formal meeting of Caribbean ministers of government, senior officials, private sector entities, operators, regulators and independent consultants all with an interest in the Single ICT Space. The meeting demonstrated that there can be positive engagement of the Public-Private-People-Partnership (PPPP) model for the upliftment of all in the region.

This inaugural PPDSICTS meeting had the following objectives:

- *Sharing the proposed elements of the CARICOM Single ICT space with a wide range of ICT stakeholders;*
- *Getting feedback from the broad range of CANTO Stakeholders;*
- *Defining short-term next steps*
- *Adoption of the Nassau Declaration on the Single ICT space as a 'covenant' of partnering as public/private sector.*

The Chair of the panel, Dr. Hamadoun Touré from the ITU, detailed that in March 2014, Caribbean heads of government agreed to a list of priorities for 'fast-tracking' and increasing strategic use of ICTs. These priorities accordingly guided the discussion of the meeting:

A Single CARICOM ICT Space to enhance the environment for investment and production;
Bringing technology to the people and transforming them to digital natives and digital entrepreneurs;
Cyber Security; Mobilization of resources and commitment of member states to invest in ICT;
Developing the CARICOM digital agenda 2025

Various sector leaders then gave contributions to the PPDSICTS dialogue. They were as follows:
Jennifer Britton, CARICOM Deputy Programme Manager for ICT4D; Kenneth Sylvester, CEO, Caribbean Knowledge Learning Network; Dirk Currie, Managing Director of Telesur and Chair of the CANTO Board of Directors; Chris Dehring, Chairman, LIME Jamaica & Head of Government Relations (Caribbean); E J Saunders, General Manager, Digicel Turks & Caicos; and Rhea Yaw Ching, VP Sales & Marketing of Columbus Communications, committed on behalf of the operators they represent, to be on board to work to ensure the success of the CARICOM PPDSICTS.

Isaac Solomon, the Director of ECTEL, then gave perspective from the Regulators' point of view, sharing that further to regulatory consistency efforts which have already taken place across five (5) ECTEL states, there is strong precedent to augur for the success of the PPDSICTS.

A very engaged question & answer session ensued along with the reading by Mr. Leon Williams, CEO of BTC and co-Host of CANTO 2014, of the Nassau Declaration (ND) on the CARICOM SICTS. Hon. James Fletcher, Minister for the Public Service, Sustainable Development, Energy, Science and Technology of St. Lucia asked for more time to assess before moving to adopt the ND and Dr. Touré acquiesced. A short term next step for this initiative is thus for the ND to be adopted.

The Operators/Regulators Roundtable discussion was held on the Tuesday morning. This track addressed the adaption of service providers to the demand for broadband capacity while keeping up with regulatory requirements. The panelist included: Chair, Opal Neil, Columbus Communications; Sebastian M. Cabello, Director, GSMA Latin America; Anil Sadhoeran and Kenneth Muringen of Telesur; Tim Heffernan, LIME; Andrew Gorton, Digicel; Stephen Bereaux, Director of Policy and Regulation, URCA, Bahamas; Ing. Alejandro Jimenez, INDOTEL, Dominican Republic and Dirk Heave of Telecom Authority of Suriname. Dirk Heave reiterated that a new approach being adopted by the Regulators is that:

"The Regulators regard itself as the authority but not authoritarian thus want to change the regulatory requirements from being restrictive to more facilitating without losing sight of the consumers' needs".

CANTO also hosted the recently rebranded Caribbean Women in ICT (CWIC). This powerful and growing session sponsored by Columbus Communication and Alcatel-Lucent has as one of its objectives to empower women in the ICT sector. The event was chaired by Maxine Barnett of Maxine Barnett Consulting and the panelists included: Wendy McDonald, Director, Corporate and Government Affairs, Columbus Communications; Regenie Fräser, Secretary General, CANTO; Rhea Yaw Ching, VP Sales & Marketing, Columbus Communications; Lisa Lewis-Group Projects Director, Digicel; Ingrid Seerattan, Permanent Secretary, Ministry of Science and Technology Trinidad & Tobago; Patricia Walters, VP, Customer Services, BTC; Jennifer Britton, Deputy Programme Manager, ICT4D, CARICOM and featured Mitzi Miller, Editor in Chief, Ebony Magazine. Ms. Miller gave a synopsis of her rise to the top and advised delegates to work arduously, but take time off for family and leisure activities to ensure a balanced life.

CWIC is the brain child of Ms. Regenie Fräser and Ms. Jennifer Britton. Ms Fräser, who is the first female Secretary General of CANTO, stated that CWIC will be a staple in the CANTO agenda:

"In the coming months, we will more concretely define how we will govern this new aspect of CANTO. We received over 50 suggested programmes from the women at the launch and we will convene a committee in conjunction with the CARICOM Secretariat to decide exactly which commitments we will implement."

The trade exhibition displayed the spectrum of communications technologies, offering in-depth information on the latest developments in voice, data, image, and multimedia captured in 62 booths. A J Telecom/Bosch emerged winner of the best booth with their impressive design and knowledgeable staff.

The conference, which was co-located with the exhibition, facilitated discourse on key issues from a panel of experts on topics such as:

- *Transforming the Mobile Network*
- *IPv6 Deployment and the IANA Oversight Transition*
- *Managing the Spectrum Eco-System*
- *The Future of Telco Marketing: Content, Timing and Channels for Success*

The members of the six CANTO working committees met to discuss CANTO affairs in their respective areas and also charted the way forward for even more projects to make the CANTO brand more robust. The working committees are namely, Marketing and Communications; Financial Advisory; Human Resource; Disaster Recovery Planning; Regulation & Emerging Technologies, and Corporate Social Responsibility.

The BIIPAC Project successfully staged its first Technical Committee Meeting on August 12, 2014 and its second Steering Committee Meeting on August 13, 2014 during CANTO 2014. The meetings took an audit across all eight (8) beneficiary countries of the status of the project's only component for which fieldwork has begun, i.e. the Broadband Diagnostic and Infrastructure Maps Component. Key decisions were made which will assist in ensuring all eight (8) countries abide by the same standards and definitions when reporting the needed *Component 1* data. Issues of concern were also ventilated. Beneficiary countries in attendance were Jamaica, Belize, Dominican Republic, Suriname, Barbados and Trinidad & Tobago. Operators present were Cable and Wireless, Digicel and Columbus Communications.

The *CTC Project of the Year* was awarded to St. Vincent & the Grenadines with their project titled: *USF Smart Project*; which involves an agreement between the government and telecom provider LIME, to provide Internet access for 340 households in St Vincent and the Grenadines for a monthly bill of $10. Second place went to the Telesur of Suriname with their project: *"Telesur Bringing Internet to the Interior".* ▶

CANTO is known for serious discourse and intense debate on telecommunication topics, plus action on a multitude of projects. However, when the day turns into night, delegates are treated to a cultural melange allowing all to unwind and network in a relaxed atmosphere while enjoying the cultural offerings of the co-host. CANTO 2014 was no different. Each night, the delegates were treated to plethora of great Bahamian cuisine and were entertained by the versatile local bands and entertainment which included performers re-enacting the local "*junkanoo*"- a street parade with music, dance and costumes.

The Monday night dinner was sponsored by Ericsson. On Tuesday evening, CANTO thanked all its members and sponsors at a special appreciation dinner sponsored by Facey Telecom, Oberthur Technologies and JDSU. The *Closing Cocktail Extravaganza* was jointly sponsored by BTC and Icemobile.

The final two events were the 8th Annual Caribbean Human Resource Forum and the Marketing Forum (14th -15th). The Human Resource forum centred on the theme: *"The New Social Economy: Rebooting HR for the Digital Age"*. The Marketing Forum dealt with new marketing trends and technology in the Caribbean and Latin America (CALA) region.

CANTO 2014 would not be possible without the support of the following sponsors: BTC-co-host; gold sponsors: Huawei and Ericsson; bronze sponsor:- Mavenir; event and item sponsors:- Digicel; Columbus Communications; ARIN; LIME; Icemobile; Oberthur Technologies; Facey Telecom; JDSU; Mitel; ATN; Internet Society; Juniper; Ciena; Cable Bahamas; Cerillion; Alcatel-Lucent; LACNIC; Limitless Mobile; SES; TMCell; TSTT; BTI Systems;BTL;Telesur; Peoplesurv; CMC and TEMPO. Stay tuned for the 31st AGM which will be staged in Suriname and co-hosted by Telesur from 25-27 January, 2015.

For more information on CANTO 2014 and detailed reports on the sessions visit http://canto.org/events-conferences/annual-conference-and-trade-exhibition; Also check for updates on our Twitter, Facebook and LinkedIn. ◉

MEDIA VISION 2020

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CANTO 30th Annual Conference & Trade Exhibition
Keynote Speaker - Prime Minister of The Bahamas

Rt. Hon. Perry Gladstone Christie MP

Theme: "Strategic Alliance for Sustainable Broadband Development."

I wish to thank Mr. Dirk Currie, Chairman of The Caribbean Association of National Telecommunication Organizations (CANTO) and CEO of Telesur Suriname and his Vice Chairman Mrs. Helma Etnel, Chief Executive of TELEM St. Maarten for the invitation to speak at this historic 30th Annual CANTO Conference and Trade Show.

I note with interest that both Telesur of Suriname and TELEM of St. Maarten are one hundred percent (100%) owned by the respective governments of Suriname and St. Maarten.

I also wish to acknowledge Dr. Hamadoun Toure, Secretary General of The International Telecommunication Union. My respect to the Honourable Ministers of Telecommunications, ICTs, Science and Technologies from Anguilla, Antigua & Barbuda, Barbados, Dominica, Grenada, Jamaica, Montserrat, St. Vincent & The Grenadines, St. Lucia, Trinidad & Tobago and the Turks & Caicos Islands.

It seems like yesterday when I spoke to you last at your 28th Annual Conference and Trade Show held in Miami in 2012. Eleven years ago in 2003, I spoke to you at your 19th Annual Conference and Trade Show held in this same hotel.

Much, much water has flowed under the bridge for The Bahamas as well as CANTO over those eleven years.
As I reflect, what is most interesting is, the fact that Mr. Leon Williams our Emcee for today was also the Emcee when I spoke in Miami in 2012 and also when I spoke back in 2003.

I am serving in my third year in my second nonconsecutive term as Prime Minister and Minister of Finance of The Bahamas. Within my portfolio is ministerial responsibility for the electronic communications sector, the development of our electronic communications sector policy, as well as the determination for the method of allocating premium spectrum.

The portfolio responsibilities complement the autonomous regulatory framework administered by the Utilities Regulation and Competition Authority, known more popularly by its acronym URCA. Since I will not be here tomorrow morning for the Ministerial Forum, I thought I should give you an update on recent developments within the communications sector of The Bahamas as well as challenge your thoughts and deliberations.

The Bahamas has been experiencing an interesting period of evolutionary activity in communications. We have privatized our former telecommunications incumbent, BTC; renegotiated the partnership agreement with the majority stakeholder in the BTC so that majority ownership is restored to the Bahamian people; updated our electronic communications sector policy; and positioned our resources to launch the process in short order for the award of a second cellular licence in the Bahamian mobile market.

Negotiations for re-transfer of 2% of BTC shares

On April 6th 2011, Cable & Wireless Communications (CWC) acquired 51% of the shares of BTC for a Cash Consideration of $204 Million.

While in Opposition, I pledged to the Bahamian People during the 2012 General Election campaign that if my Party, the PLP won, we would renegotiate the deal that was made between CWC and the previous administration, now the opposition party.

When I spoke to you in 2012, I shared with you that I was mandated by the Bahamian people to renegotiate the sale of BTC in order for the Bahamian people to achieve Majority Ownership.

Since CANTO 2012 in Miami, I appointed a Committee, Chaired by Mr. Franklyn Wilson, renowned businessman, an accountant by profession and former Minister of the Government; and comprising of Mr. Sean McWeeny, a Queen's Counsel and former Attorney General of The Bahamas; Mrs. Rowena Bethel, a senior barrister-at-law and former regulatory consultant advisor to the Office of the Prime Minister and UN expert in eGovernment; and Mr. Leon Williams, a renowned regional expert in telecommunications. The mandate of this committee was to negotiate with Cable and Wireless Communications (CWC) for the re-transfer of 2% of the shares in BTC, which were owned by CWC, to the Government so that majority ownership in BTC was restored to the Bahamian people. It is worthy of note that this Committee, in its review of the sale of the 51% to CWC has reported that it found no wrong-doing by CWC in the exercise.

Of greater significance though, I am delighted to report, the Committee was successful in negotiating an ownership transfer of 2% of the Shares in BTC, which were owned by CWC, to a Trust Foundation setup by the Government of The Bahamas.

The negotiations with CWC took place within a cooperative framework and produced satisfactory outcomes for both CWC and the Government. This, notwithstanding all the ill-informed and speculative talk you may or may not have heard such as, that this was a "Face saving deal," or that an extension to the "exclusivity period" was tied to this. Such comments were and remain utter nonsense.

I can give absolute assurance that the transfer of 2% of the Shares of BTC to the Trust Foundation has no such conditions. The Share transfer stands alone.

It is indeed, therefore, my pleasure to report to you that the People of The Bahamas now have 51% ownership of the Economic Value of BTC. This makes the People of The Bahamas the economic majority owner of BTC. CWC is now the minority owner with Management Control.

I would also like to note that, except for a $10,000 legal opinion, there was no cost incurred by the Government of The Bahamas to accomplish this.

A full report to the Bahamian people on the definitive arrangement for the transfer of the 2% to the Trust Foundation is pending.

An official, public, joint announcement will be made by the Government of The Bahamas and CWC this month.

Changing of the guard at BTC

From January 2013 to present, CWC has had three different Chairmen guiding BTC. In January of 2013, Mr. David Shaw, CEO of LIME was replaced by Tony Rice, CEO of CWC; and in January 2014, Mr. Tony Rice was replaced by Mr. Phil Bentley, CEO of CWC. Notwithstanding these changes, all of these leaders worked cooperatively with the Government's negotiating ▶

team to reconfigure the ownership in BTC so that Bahamians enjoy the economic benefit as majority owners.

I mention this, because I particularly also want to thank and publicly acknowledge Mr. Phil Bentley, the current CEO of CWC, for his boldness, vision and courage in establishing a new direction for BTC.

Firstly, under his direction, the negotiations of the 2% were concluded expeditiously.

Secondly, he was bold enough to appoint a leading Caribbean, Bahamian Telecommunications Expert Mr. Leon Williams as his Advisor just three short months after taking office.

Thirdly, he articulated his vision and courage further, when just six months after taking office, he appointed a qualified, visionary Bahamian as CEO to lead BTC. Selecting Mr. Leon Williams demonstrated much courage on the part of Mr. Bentley.

And finally, Mr. Bentley is committed to ensuring that the majority of BTC's Board of Directors are Bahamians. I believe that he should be applauded for this.

BTC network challenges

It would be remise of me not to mention some of the challenges we faced following privatization related to the degradation of BTC's network. Since the acquisition by CWC in 2011, there have been two national network meltdowns. The first was in 2012 and the second was in April 2014. Both resulted in considerable public outcry for accelerating the introduction of competition in the mobile market.

These meltdowns negatively impacted the economy and posed a national security risk to the nation, not least because the government of The Bahamas' ICT network uses BTC's network for carriage.

I am assured and confident that Chairman Phil Bentley along with his CEO, Leon Williams and their teams, will address these plaguing network issues.

To demonstrate his commitment, on Thursday of last week while he was visiting Nassau, Mr. Bentley approved $65 Million in Capital Development to be spent by BTC this year. This is the largest single year Capital Development Budget to be approved for BTC.

These monies will be spent to address the mobile drop calls, the slow data speeds and fixed lines.

I am also told that BTC will begin its trials on IPTV by Christmas of this year. The Alpha and Beta Testing will begin in the Family Islands with a 2015 Roll out in Nassau.

Award of a second licence

My government is committed to the liberalization of the Mobile Sector. To this end, I have appointed a Liberalization Task Force headed by Ms. Ruth Millar former Financial Secretary of The Bahamas Government and former Chairman of the BTC Privatization Committee during the period 2000-2007. The Task Force also draws heavily on indigenous Bahamian expertise from both our public and private sectors, which in turn is supported by relevant international experts.

The Task Force is in the final stages of finalizing a Request for Proposal (RFP) that will invite potential Bidders for the second mobile license. The RFP will include details of the selection process and criteria to be adopted including:

- Feasibility of business plan
- Roll-out timeframes and coverage
- Quality of service commitments
- Ownership structure
- Technical and financial capability

Track record and experience

At the close of the RFP submission period, a two-phased competitive selection process will take place with Phase 1 consisting of a technical and financial assessment; and Phase 2 consisting of a spectrum auction that will be carried out by URCA.

I would also take this opportunity to note that my Government has the option to consider the issuance of a third Mobile License after April 2016.

The digital strategy

In April 2014, the government released its updated Electronic Communications Sector Policy. My Government is committed to providing a Best-in-Class ICT Infrastructure to the residents and businesses of this archipelagic nation.

The government, recently, through its central information technology department, hosted a mission from the United Nations to assist with formulating a strategic plan that will take greater advantage of information and communications technologies to support a programmer of state modernization.

And so in closing, I challenge the members of CANTO this week during your deliberations to Dare to Dream and tell us how to bring those dreams to reality.

Dare to dream and provoke us, policy makers, on the way forward to reducing the digital divide in our separate countries and in the Region as a whole.

Dare to dream and provoke policy makers on how we should prepare these small island nations that once depended on the Banana and Sugar Plantations for their survival to evolve to an ICT mecca of Assembly lines, Data Centres, IXPs and become the Caribbean Silicon Valley.

Dare to dream and tell us how each national Internet Exchange can be connected within our region so that our ICT traffic can stay in the region and not have to be exported to the world and then reimported to the region enhancing security and speed and reducing cost.

Dare to dream about that day in the future when there will no longer be chalkboards in our classrooms rather Smart Boards and every child attending school starting at kindergarten will have a tablet and Internet access not just in public libraries and at school but also at home.

Dare to dream and tell us the policy makers by what means we should achieve the Millennial Goals of the United Nations by 2015 and prepare for the sustainable development goals beyond that time. Provoke us to help Dr. Touré achieve his vision before he demits office as the first ITU Secretary General of colour.

Dare to dream and tell us policy makers how ICTs can help us all reduce our national debts.

Dare to dream how Caribbean nationals can best benefit from the redefine Maslow hierarchy of needs law where generation X sees those needs as food, and shelter etcetera and generations Y, Z and Alpha sees Maslow's needs as untethered communications, Internet in their pockets and TV everywhere.

Dare to dream and tell us digital immigrants how to better understand the digital natives in our society.

CANTO, you have been inserting the word 'Broadband' in your theme for the last four years and so I challenge you to make your CANTO song a reality 'many people one voice.' You are established in 33 countries with 120 members on 4 continents, as providers of ICTs, in your hands rest the sustainable growth of the 40 million people of this Caribbean region. Their quality of life can be shaped by you.

Dare to Dream!!!
God bless you all in your endeavors throughout the course of this week of conferences. ◉

CANTO Caribbean Round up - Interview with GT&T

Charles Baker

Guyana is one of the last countries in Latin America and the Caribbean to still not fully liberalize its telecoms sector.

Incumbent Guyana Telephone and Telegraph (GT&T), which is 80% owned by Atlantic Tele-Network, enjoys a monopoly of the fixed line and long distance telecoms segment thanks to an agreement with the government in place since 1990.

In the mobile segment, GT&T has competition in the shape of Digicel, which entered the market in 2006 through the acquisition of Celstar U Mobile.Liberalization of the fixed line telecoms industry has been on the political agenda in Guyana for some time.
In August 2011, the government tabled a new Telecommunication Act aiming to increase competition in the industry, however the bill was shelved a month later and debate continues.

In this interview, Mr. Baker talks to Radha Krishna (RK) Sharma, who has been CEO of GT&T since March, 2013, about the liberalization process and GT&T's strategy in the short-to-medium term.

Charles Baker: Guyana is one of the last countries in Latin America to not fully liberalize its telecommunications sector. Do you think liberalization would bring more benefits to the consumer in terms of pricing and quality of service?

Mr. Sharma: Telecommunication is arguably one of the critical infrastructure aspects of an emerging economy. As a vital input in the production chain it is recognized that the growth and deepening of the sector can have a significant impact on efficiency of a wide range of interconnected economic sectors. Naturally the question of pricing and quality of service is inextricably linked to the nature of the market, the role of the regulatory bodies and the demographics of the subscriber base. It is a simplistic assumption that greater competition is the sole or best means of getting better quality of services at lower prices. On the contrary, a crowded market can also have the unintended consequence of inhibiting capital investment which in turn can affect the pricing models. This is especially true in smaller markets. Even in the US one can find markets where competition was supposedly "flourishing," i.e., many competitors exist, yet there is a "market correction" resulting in less competitors in the market.

Charles Baker: Do you feel that the entrance of Digicel has been positive for the market?

Mr. Sharma: The entrance of Digicel in the market did have an effect on pricing but a more in-depth analysis and examination is needed to comment whether there was a net benefit to the Guyanese consumer and the National Treasury. I would like to state that since its inception 23 years ago, GT&T has invested more than 58 billion Guyana dollars (US$282 million) in the development, modernization and expansion of Guyana's telecommunications infrastructure. We have also paid more than 51 billion Guyana dollars in taxes and remitted VAT.

Charles Baker: In 2011, Prime Minister Hinds tabled a new telecommunications act with the aim of liberalizing the sector. That got put on hold in the same year. Why has it taken so long to get the debate back on track?

Mr. Sharma: Questions regarding the timing of proposed legislation should be properly addressed to the Government of Guyana. You ought to be aware that the Public Utilities Commission (Amendment) Bill 2012 and the Telecommunication Bill 2012 were sent in November 2013 to a Special Select Committee of the National Assembly. The Committee has invited and received submissions in relation to these bills from stakeholders and members of the public and, the bills are being actively considered by Parliament.

Charles Baker: Is GT&T pushing for changes or waiting for the government to make a move? Is the company cooperating with the government? Where do things stand at the moment?

Mr. Sharma: Between the year 2000 and now we have collaborated with at least three consultants engaged by the Government of Guyana to propose options for the liberalization of the telecoms sector. We have publicly stated that we welcome liberalization of the telecommunication sector and recognize that the deepening of this important sector is integral to the overall development of our country. In fact from the beginning of these discussions GT&T, and its parent company ATN, indicated a willingness to cooperate with the government to realize the Government's goal to introduce full competition in the provision of telecoms network and services, with the caveat that we expect the new legislation and regulations to reflect a level playing field, the application of international best practices and a minimum of discretionary decision making. Naturally this must be seen within the context of the respect for our contractual rights as embodied in our existing agreement with the government of Guyana, some of which rights may be supplanted by the legislation. Of course support for the liberalization of the sector must also be seen in the context of concerns that we have expressed relative to the draft legislation. With these principles in mind, we have reviewed and commented on iterations of the proposed legislation.

Charles Baker: What speeds of internet is GT&T offering at the moment and what network upgrade plans does the company have?

Mr. Sharma: From a DSL perspective we offer speeds of 1.5 Mbps and above. With the appropriate spectrum allocation GT&T does have plans for 3G /4G rollout.

Charles Baker: According to the ITU, in 2012, mobile penetration in Guyana was 69%, one of the lowest in the region. Internet penetration was 33%. Are these numbers accurate?

Mr. Sharma: The ITU suggested penetration level is wrong based on our own estimates of the market; we think that these numbers are substantially higher. However, it also must be remembered that Guyana is among the least populated in the world (with only pockets of concentration of persons), and is the largest country in the Caribbean region.

Charles Baker: What is GT&T's strategy for the next 2-3 years in terms of mobile broadband and boosting its mobile subscriber base?

Mr. Sharma: Our next deployment will be 3G/4G architecture but like all providers we are dependent on the government to grant the necessary spectrum.

Charles Baker: Many telcos in the region are facing challenges to revenues from over the top players? Is GT&T feeling that pinch? Is the company offering or looking at offering value added services such as mobile wallet, TV, converged services?

Mr. Sharma: Market dynamics and the activity of over the top players do affect revenue. GT&T has established a subsidiary company "Mobile Money Guyana Inc." and last year launched Guyana's first and only mobile wallet service (mobile airtime as an alternative currency). We are considering and actively testing multiple value added network offerings as our network transformation to an all IP converged network is still ongoing. So, like every other telco in the world we are trying to maintain revenue streams. This should be of importance to local governments, which look to ensure that they protect their providers and in turn protect their tax base. As you know, OTT providers typically do not remit any portion of revenues to our respective Caribbean governments.

RK Sharma has been CEO of the Guyana Telephone & Telegraph Company (GT&T) since March 2013.

Before that Sharma served as director of the National Competitiveness Strategy Unit and Support for Competitiveness Programme and also held positions as CEO of the Guyana Bank for Trade and Industry Ltd from 2000 – 2009 and General Manager of Demerara Bank Ltd from 1994 – 1997. ◉

BIIPAC Successfully Staged Meetings at CANTO 2014

Ayanna Samuels - International ICT and Development Consultant and Technology Policy Specialist

BIIPAC Project Technical Committee

The BIIPAC Project successfully staged its first Technical Committee Meeting on August 12, 2014 and its second Steering Committee Meeting on August 13, 2014 during CANTO 2014. The meetings took an audit across all eight beneficiary countries of the status of the project's only component for which fieldwork has begun, i.e. the Broadband Diagnostic and Infrastructure Maps Component. Key decisions were made which will assist in ensuring all eight countries abide by the same standards and definitions when reporting the needed Component 1 data. Issues of concern were also ventilated. Beneficiary countries in attendance were Jamaica; Belize; Dominican Republic; Suriname; Barbados and Trinidad & Tobago. Operators present were Cable and Wireless, Digicel and Columbus Communications. ◉

Gamification During the Telesur/IT Core Hackathon V2.0.14

Simone Beharry, TELESUR

The winner of the Hackathon V2.0.14 - Team Unity in Code

The 2nd Telesur/IT - Core Hackathon was held on 23 and 24 August, 2014, after a successful first edition in the previous year. The purpose of the hackathon was that teams would build a working mobile or web application within 24 hours. The applications were judged on interface, functionality, and commercial or social usefulness. The Telesur/ IT Core Hackathon was first held in Suriname in 2013. This was the result of an open discussion between Telesur, the largest telecom company in Suriname and IT-Core, an association of ICT professionals who want to promote ICT innovation in Suriname.

"Gamification"
The main topic of the Hackathon was "Gamification": simple and fun applications which are made interesting by applying game concepts. The sub topics were:- health;

tourism; education; traffic; transport and agriculture. These were only announced on the day of the hackathon.

Proceeding this day, the "Pre-Meetings" were held during which the participants were given tips and tricks by software development experts. In the Telesur Education Centre (TOC), where the hackathon was held, the necessary arrangements were made and the company made sure that the participants did not lack food, drinks, working space, rest and recreation. Even a fitness training and a live band was present during the event.

During the hackathon, team coaches and software developers were present for assistance.

The winner

Participation was possible for anyone from age 12. The teams consisted of at least three and at most five team members. Seven teams, spread over business and individual classes, had registered for participation. The youngest participant was 12 and the oldest 53 years old.

The big winner of the Hackathon V2.0.14 is Team Unity in Code, Unicode abbreviated. Their application, AgriKari, focused on land management and the creation of a platform for all links in the agricultural sector. "We have built a market place where all farmers could market their products. In addition, they could exchange information regarding everything of agriculture, from purchas-ing prices to diseases which threaten plantings. The farmer has the option of taking a picture of his product and placing it on the market place. He sells before harvesting". According to an explanation of a team member. With this application, farmers could see dimensions of areas and even get information about weather conditions and soil conditions.

The winning team went home with a check of $1500 and the option of producing a commercial product from their application as a "Telesur Project Partner". In addition, Team Unicode will represent Suriname during the first edition of the Caribbean Regional Hackathon competition in Suriname in October 2014. This is a game in which Caribbean countries will face the challenge of developing an application for the agricultural sector. ◉
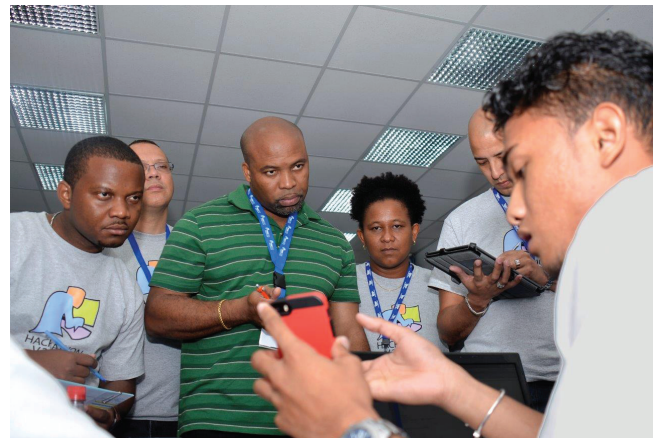
blinklbmobile Foundation Congratulates Gionieva Fraser for placing 2nd in CANTO's Regional Broadband Video Competition

Graeme Suite - (Ag.) Head Public Relations & External Affairs, TSTT

Gionieva Fraser is elated as she checks out one of her prizes received from Charles Carter Corporate Secretary, TSTT and board director of CANTO

An 18 year old Trinidadian was awarded 2nd place in the recently concluded 2014 CANTO World Telecommunications Information and Society Day (WTISD) Video Competition. Gionieva Fraser, who just completed 6th form studies at St Joseph's Convent, Port of Spain, successfully competed against entrants from around the region to emerge 2nd place winner in this annual competition. WTISD is observed annually on May 17th and for the past seven years CANTO, which is based in Trinidad & Tobago, has marked this occasion with an essay competition open to students from the countries of its membership.

This year, the competition was changed to a video format and the topic was 'Broadband for Sustainable Development'. Fraser was presented with the 2nd prize sponsored by the blink | bmobile Foundation, of $US500 and a Samsung Note Tab 3. Charles Carter, Executive Vice President Legal, Regulatory & Corporate Secretary Services at blink | bmobile presented the second prize to Fraser and stated: *"The blink | bmobile Foundation extends congratulations to Gionieva and all the entrants. I enjoyed watching Gionieva's video on how a society benefits from the use of broadband. At blink | bmobile we continue to break new ground and lead the way in bringing advanced telecommunications technology to* ▶

Trinidad and Tobago." Charles continued "Our recent launch of exciting new broadband services such as the 4G Wireless service, the Gigabit Community in Lange Park, Chaguanas and the continued expansion of free BLINK Broadband WiFi hotspots across Trinidad and Tobago is all part of our five year broadband plan to ensure affordable access for all."

The WTISD competition was open to students between the ages of 12 - 18 in all CANTO member countries. The video entries must have been the student's own work, in the student's own words and no longer than three minutes in duration. The other top winners were:

- *1st Place William Mahler, University of Belize, who won a trip for (2) to attend CANTO 2014 in the Bahamas plus hotel accommodation, (1) tablet and $USD 1,000*
- *3rd place Allison Arnaez, St. Paulus School*
- *Suriname who was awarded (1) smartphone plus $USD 250 and*
- *4th place Andrea Gutierez, St. Andrews Anglican School, Belize who won a smartphone.*

Speaking about the change in format to video, CANTO Secretary General Regenie Fräser stated *"The objectives of the reformed competition included: (1) encouraging the youth to utilize their ICT tools such as mobile phones, tablets, laptops etc. in a positive way (2) educating the general populace about Broadband, its uses and impact (3) Sharing the mission of CANTO through popular outreach mechanisms such as social networks."*

Tricia Balthazar, CANTO Service Development Manager added *"We were pleased with the winning videos which were well done and of high quality. Gionieva's video came in a close second behind the first place winner. However, all the videos received were very good." Balthazar continued, "To appeal to the youth, we used social media to promote the competition and incorporated a Facebook 'people's choice' into the judging criteria to generate interest in the competition and increase participation."*

Gionieva Fraser flanked by her parents

The experience of making the video was exciting for Fraser. "I learned a lot not only about how broadband contributes to sustainable development but also about videography and video editing." Fraser continued "It also helped me develop perseverance because I almost lost everything due to problems with my laptop. I had to start over and push to finish in time for the deadline". Fraser thanked CANTO and the blink |bmobile Foundation for the opportunity and ended by saying "I would like to encourage other young people to take advantage of opportunities like this. It helped me a lot." Fraser, who is taking a year off before starting a degree in Aerospace Engineering, is no stranger to excellence. She has entered and won several national essay writing competitions and holds academic awards for achievements in CXC CAPE and CSEC examinations. In addition to Fraser's interest in science, engineering and mathematics, she also has a deep love for music, painting and the literary arts. She plays the piano and has written articles for the Trinidad Guardian GIE Network magazine. ◉

A Strategic Approach to Service Assurance

Anand Gonuguntla - Co-Founder and CEO, Centina Systems

Today, operators are facing greater-than-ever challenges to meet customer needs. There is a higher level of competition for both video and broadband, stemming from over-the-top (OTT) competitors, satellite and IPTV, and telco fiber and wireless offerings for business connectivity. As a result, there are new demands on networks, services and technologies to efficiently manage broadband infrastructure and assure network performance. Given this highly competitive market, operators are looking for not only a network performance tool to assure service quality, but a more strategic approach to service assurance that provides detailed analytics to decision makers. A strategic approach to service assurance is what is needed for operators to better understand and optimize their networks, as well as build new models that will ultimately enable them to differentiate themselves in the market and succeed in the long term.

Legacy Service Assurance vs. Strategic Assurance

Our industry is undergoing an important shift in the perception of service assurance, as operators look for more strategic solutions. This new strategic assurance differs greatly from legacy assurance solutions. Most legacy assurance solutions have struggled to transition from patched solutions to business tools. Legacy assurance solutions lack a balance of understanding network performance and the subscriber's view of service performance. They fail to effectively correlate network performance measurement to its implication on customer experience.

Strategic assurance, by nature, aims to continually maintain a holistic customer experience. Strategic assurance solutions are real-time, advanced analytics, driven and predictive. It aligns with CSPs' key business objectives and line of revenue. Strategic assurance is more streamlined and dynamic, taking a single platform approach which intelligently correlates data across network layers to manage and assure real-time services based on the user's experience. Key elements of strategic assurance solutions include reducing operational expenditure, improving time to market and enhancing customer experience through real-time, end-to-end visualization of service performance.

How Strategic Assurance Helps Meet Operator Business Objectives

As we all know, poor network performance can directly impact operators' achievement of key business goals. By reevaluating operators' IT operations and placing a greater focus on service assurance, strategic assurance will enable operators to achieve their key business objectives, including reducing operational expenditure, shortening time to market and enhancing customer experience.

Reduce Opex

Because of today's extremely competitive business environment, operators need to cost effectively keep

customers' business and sell new services. In order to achieve this objective, there is a demand for IT and business process automation, continuous real-time monitoring and advanced analytics that provide contextual intelligence. But today, unfortunately, customer care activity is totally reactive and is only focused on when a customer complaint or inquiry is received by the operator.

To reduce OPEX, there needs to be a more proactive approach to customer care in which operators align customer care with key business activities of customers. This proactive approach requires the use of strategic assurance that provides real-time insight into potential issues that might negatively impact quality of customer experience. That way operators can detect problems before they happen and determine the best way and time to resolve the problem based on customer preferences.

Time to Market

Another major objective of operators is to reduce time to market for new services, which for most operators remains very high – around 6 to 12 months. Time to market of new services can be impacted due to a number of reasons, including siloed IT systems and a fragmented view of the network. Strategic assurance can help speed up time to market by providing a consolidated view of the network, services and customers. Bringing all this data together is a complex task. With strategic assurance, operators can differentiate their services from competition by providing the best Quality of Service (QoS) and customer experience, thus helping to increase revenue and decrease customer churn. Strategic assurance consists of functions that would allow operators to connect service and customer commitments to resources and service delivery. This connection would improve availability and operation of network resources and services.

Enhance Customer Experience

It is no surprise that delivering superior customer experience can help operators win new business, as well as retain current business. To enhance customer experience, operators need to approach customer experience initiatives based on the best business case, profitability of customer, committed SLAs, penalty exposure and maximizing service quality.

This is where strategic assurance solutions come into play. By helping identify where poor performance is impacting business, strategic assurance allows operators to prioritize corrective actions, decrease SLA breaches and minimize customer churn. As it relates to enhancing customer experience, strategic assurance also enables operators to create a progressive strategy that is centered on an ability to anticipate customer complaints and thus proactively prepare for issues that may negatively impact customer experience.

Overall, strategic assurance enables operators to solve major challenges with an out-of-the-box solution that allows operators to focus time and resources on key business goals, including customer satisfaction, customer retention, and new customer acquisition. An integrated and holistic approach to assurance, strategic assurance is aligned with business process improvement. A strategic approach to service assurance provides real-time, actionable intelligence to decision makers that help them better understand and optimize their networks. Ultimately, strategic assurance will give operators the tools to build new business models that will enable them to differentiate themselves and expand their business. ◉

Devices, Devices, Devices Need Capacity, Capacity, Capacity!!!

What to do when data loads exceed your network capacity

Nichole Engle - Director of Marketing, Clearsky

What to do when data loads exceed your network capacity

Since the beginning of time—well, since 1973 when a Motorola VP made the first ever call from a cell phone—the wireless industry's overarching objective has been to deliver excellent coverage to satisfy customers and ultimately sell more devices. More than forty years later, six of the world's seven billion people own cell phones, and the 225 million US subscribers own a combined 354 million mobile devices, according to Wireless Intelligence. While coverage remains the highest priority, the abundance of mobile devices presents another challenge for wireless operators: Capacity.

Even with five-bar coverage, subscribers are still likely to experience dropped calls in areas where their carrier lacks adequate capacity to support dense network traffic. Exponential growth in data traffic combined with the explosion of Internet-connected devices continues to expand capacity requirements and strain carrier networks, so much that some American, European and Chinese providers have discontinued their unlimited data plans. With mobile data traffic expected to double annually, carriers cannot afford to discount the critical need for more precise capacity planning.

Small cells, widely known for their ability to drastically improve cellular coverage, allow carriers to offload up to 80 percent of data traffic from their macrocell network during peak usage hours, according to ABI Research. As ClearSky Technologies emphasized in its recent article, *"2014: The Year of Small Cell Deployment,"* small cells are playing a major role in HetNet expansion. After deploying more than one million residential small cells, and announcing plans to deploy 40,000 non-residential small cells during this year alone, AT&T launched its "Better Network" ad campaign highlighting these in-demand devices.

Carriers can deploy small cells for a small fraction of the cost of expanding their macrocell network, which can reach up to $250,000 per macro cell. In addition to the monetary benefits, small cells provide 89 percent more capacity than macro cells—almost double! A recent telecoms report explains that this extreme difference is due to the logistics of small cell deployment; the devices are mounted low above ground, making them less susceptible to interference, which improves signal quality and throughput, and increases capacity.

According to data collected by Small Cell Forum, placing four small cells in a traffic hotspot delivers a 467% increase in throughput. This increase helps alleviate congestion caused by data-hungry subscribers using bandwidth-hungry devices to stream videos and music (a single video can consume as much capacity as 500,000 text messages).

The theme of this issue, "Devices, Devices, Devices," captures how far the industry has advanced since 1973. Demand for devices and data is greater than ever before, and so is the importance of having sufficient capacity to relieve traffic from the macrocell network and deliver high-quality service to subscribers. From improving indoor and outdoor coverage to expanding network capacity, more and more carriers are learning that there is a big benefit of going small. ◉

Field Force Automation
Optimizing Service Delivery, Operation Saving
Cost and Time

Diksha Technologies

What is Field Force Automation?

Field force automation is the use of mobile devices and networked computers to transmit real time information to and from the field so ground forces can communicate with headquarters and vice versa. It can significantly improve efficiency and provide a method for a company to track ground forces, keeping detailed logs on the projects they complete in the field and how long it takes. Mobile sales are also much easier with this method.

Why Diksha FFA

Imagine having a complete, accurate overview of your entire sales process at your fingertips – whenever you want it. Think of how it would feel being able to instantly cut through the clutter of information that's constantly flowing in. Imagine knowing exactly where to focus your attention so you can make sensible, effective decisions that play a key role in growing your business. And all in real time, so there's no lag while data gets sorted and sifted through the various systems that are in place.

And how about your Field Force? How much more productive would they be if they knew exactly what they needed to do, when they needed to do it and were given immediate feedback on their progress? Sounds like an impossible dream, you say?

Major corporations are using our technology and solutions now and are reaping the rewards as a result of being proactive. When you begin using our solution, you'll have data and technology at your fingertips (literally) that helps you to:

- Achieve your sales targets and see results you never thought possible
- Reduce your operational costs by doing away with clunky old fashioned systems like ordering pads, faxes, and needless phone calls
- Close the gap on what should be happening and what is actually taking place out in the field.

Our Solution:
Achieving efficiency when you have a large number of field workers is a challenge – one you need to meet in order to deliver consistently high customer service and drive down costs. ▶

Shorter Service Cycle
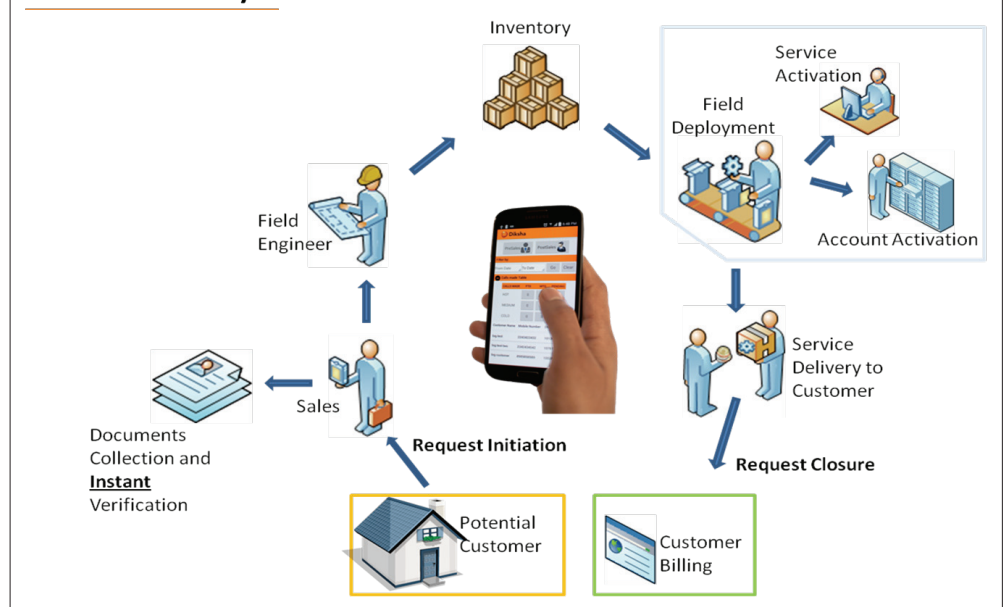
Diksha FFA Features
- Dynamic workflow
- Integration with OSS/BSS
- Integration with payment systems
- Escalations & notifications
- Integration with trouble ticket system
- Geo-tagged signature & photo capture
- Dynamic routing & scheduling of workforce
- Dashboard views with historical data

Dynamic routing & scheduling of workforce leads to higher customer satisfaction:

Enables you to effectively schedule your field force and equipment in the field so you can provide your customers with the right skills in the right place.

Integration with OSS/BSS

Helps you drive costs out of your operations and provide an agile environment for new and innovative revenue-producing services.

Integration with payment systems

Provides remote mobile payment acceptance, integrating with a variety of payment peripherals and processors and mobile data capture where information is gathered in the field and brought back to the office.

Escalations & notifications

Managers can automate their entire incident notifications and escalations procedures, gaining better control over their incident-routing communication.

Integration with trouble ticket system

Allows field technicians to download their latest list of

tasks. The system ties into your existing CRM or database and provides up-to-date information on their tasks.

Geo-tagged signature & photo capture

Our forms are custom mobile business forms you can create without coding and deploy to many different kinds of mobile devices to capture signature, handwriting, diagrams or annotations.

Dashboard views with historical data

Track historical performance, real-time performance and schedule adherence with pre-configured reports and dashboards. Get a single view of all employee data such as group assignment, schedule preference, skills and seat reservations.

Secure login & multi user acess control

FFA platform provides a least-privilege, user-centric security model including tools to control user's login and access controls. Because applications are written once and run everywhere, your user's authentication and access controls are consistent regardless of whether they are accessing it from a Web application or mobile smartphone.

Geographic information systems (GIS)

GIS helps in real time access to field force details and customer information which is useful for tracking statuses using map based dispatching and GPS positions.

Customer alerts and messages

Custom alerting and messaging solution to send notifications regarding critical steps in the accreditation life-cycle process. ◉

ICTs and Community Development

Atiba Phillips – Principal Consultant, INFOCOMM Technologies (ICT) Ltd

There are at least two assumptions that underpin the relationship between the new media technologies and what are collectively presumed to be the 'social good' of access to computers and the internet.

1. It is believed that access to information technologies and the Internet, enables a person of lower income to develop skills that will translate into better paying jobs, hence levelling the economic playing field.

2. It is believed that access is an important way in which underserved communities previously marginalized by geography, infrastructure, the political process or otherwise, might better participate in public life and democracy.

These assumptions however have led most policy attention to center around ensuring _access_ to new technology [e.g. laptops for students]. They do not explicitly flesh out or address how such access is to _result_ in the presumed goals of social good.

T.H. Marshall - a noted sociologist, particularly for his writings on citizenship and social class - suggested that citizenship '_is no longer simply about participation in the political process; it is also about the conditions that allow people to become full members of society at every level_'. As e-government expands, with online public services now extending to registering for a birth certificate and the completing of applications for assistance, access to the Internet becomes increasingly connected with the welfare state. This may necessitate the definition of information and communication technologies (ICTs) as not only a social good but as a social _need_.

What is occurring now, and may happen in the future, for community technology programs is therefore an important subject for those interested in the debate about whether or not the 'digital divide' remains an issue of concern, and one worthy of funding priorities.

Underserved

The concept of the 'underserved' is a multifaceted one. It is a socio-political and socio-economic phenomenon which is neither explained by: race alone; income alone; education alone; geographic location alone; or government policy alone. It is a cross-section of these factors which renders individuals and communities without equal access to resources and opportunities. Further, there are often limitations in know-how and ability to make the most of those opportunities if and when they become available.

While the concept of disenfranchisement has many levels, research reveals that inequalities are heavily influenced by income, and then by other factors such as geographical location (eg, rural and inner-city), education, ethnicity, age and family structure, amongst others.

Technology a potential amplifier of inequality

While technology has the potential to act as a great leveller of opportunity, it can also be a dramatic amplifier ▶

of inequality. Even when public access to the Internet is *not* a barrier in remote communities, there are social and cultural structures that prevent people from exploiting these opportunities. The ability to maximize access to new technologies many times depends on the assets with which the user comes to the interaction– i.e. education, family background, socialization patterns, age, social networks, peers and occupational experiences.

Among the social groups who experience limited access are the ageing populations, not necessarily due to socio-economic or educational status, but to lack of patient training opportunities, fear of embarrassment and cultural restrictions. As a researcher and consultant on a recent ICT in Caribbean Agriculture Value Chains Project, I had the opportunity to meet with a group of thirty (30) odd farmers from the Parika area in Guyana. We talked about technology and their perspectives on its use and applicability to agriculture and farming. The lead spokesman of the group, an elderly man, yet still strong and bright-eyed said plainly. "We do see the need for the technology and how it might be able to benefit us to get better information on growing techniques, and also to find new buyers beyond the municipal market. However, all the cyber-cafés which do training are in Georgetown [i.e. in the capital which is much too far away] and also we would be kind of embarrassed siting to learn about technology amongst all those young people."

The comment from this accomplished farmer is instructive. It indicates the very surmountable barriers that exist which currently prevent those in communities from accessing the benefits of better information and technical skills. It also shows a willingness on their part to learn if the policy interventions are customized enough to cater to their needs.

Sample benefits of technology for communities

As per the discussion with the Parika Group, there are a number of potential ways in which leveraging the power of ICTs, can assist communities, both socially and economically.

Use ICTs to Promote the Formation of Producer Groups - ICTs can enable and empower small businesses or entrepreneurs in communities to form groups to get

the benefits of scale. Through networked technologies, the virtual aggregation of producers' output across multiple geographies, can be achieved to deliver on large buyer opportunities. The requirements as set out in order requests can be distributed to a number of businesses hooked up to the system who can each indicate their ability to contribute in terms of quantity, quality and timing. This information can then be assembled and sent to the buyer. Once terms have been agreed, the technology can then also be used to coordinate delivery through a central point of contact or physical centre.

ICTs a valuable tool to help inner-city youth: Youth are already attracted to technology. Why not use the same technology to help them create powerful on-line content? To give them a voice and help them move in positive directions? Due to the highly adaptive nature of young people with regard to technology it is noted that, with the right environment, coaching and guidance, even youth who are not scholastically inclined can excel in areas such as digital photography, graphic design, animation, web and mobile applications etc. These are all skillsets of which possess positive and increasing levels of economic demand in the career marketplace. As such even those who don't have formal academic education certification can become experts in ICT-related fields and thus contribute positively to their communities, families and the wider society. The work of the Trinidad-based Community HUB Corporation (*www.mycommunityhub. org)* is instructive in this regard.

ICTs can help even those without access to the Internet

Alternatively, key information can be encoded into video and reproduced in the form of DVDs/CDs to facilitate farmers and other groups who may not have internet access or skills. This means that videos, presentations documents and other media on good agronomic practices, health and safety requirements, market information, government policy and other information can be widely disseminated while reducing the budget and effort spent on extension services.

If we take the time to look, and craft appropriate interventions we will find that there are a plethora of ways in which ICT can be used to improve the situation of communities of various kinds around the Caribbean.
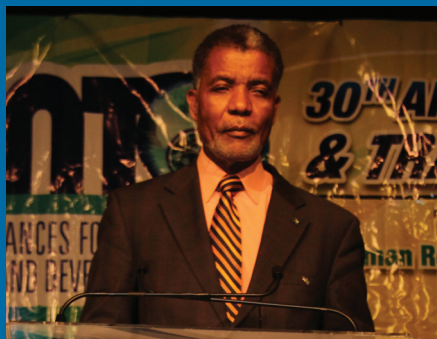
MC - Mr. Leon Williams
Chief Executive Officer, BTC Bahamas

Reverend Ranford Patterson
The Bahamas Christian Council

Dr. Earl Suttle
Motivational Speaker

Mr. Chris Dehring, Chairman LIME Jamaica &
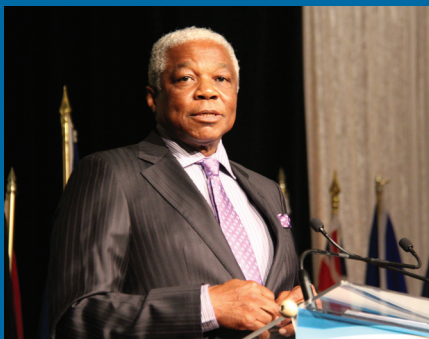Head of Gov't Relations (Caribbean
Cable & Wireless PLC

Ms. Regenie Fräser
Secretary General, CANTO

Mr. Dirk Currie
CANTO Chairman

Dr. Hamadoun Touré
Secretary General, ITU

The Hon. Dr. Bernard J Nottage
M.P. and Minister of National Security

The Rt. Hon. Perry Gladstone Christie
M.P. and Prime Minister, The Bahamas

Her Majesty Prison Band of The Bahamas

Cross section of delegates

Ms. Helma Etnel
CANTO Vice Chair Ag.

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Dirk Currie
CANTO Chairman

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Anguilla

Hon. Ambrose George
Commonwealth of Dominica

Hon. Phillip Paulwell
Jamaica

Hon. Charles Kirnon
Montserrat

Hon. Dr. James Fletcher
St. Lucia

Dr. Jerrold Thompson
St. Vincent & The Grenadines
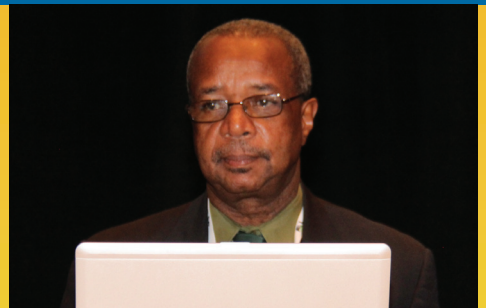
Ing. Alejandro Jiménez
INDOTEL

Tracy Hackshaw
Trinidad & Tobago

Hon. George Lightbourne
Turks & Caicos

Hon. Alvin DaBreo
Grenada

Reginald Bourne
Barbados

Hon. Melford Nicholas
Antigua & Barbuda

Julian Wilkins
CANTO Director

Highlights of CANTO 2014 – The Bahamas
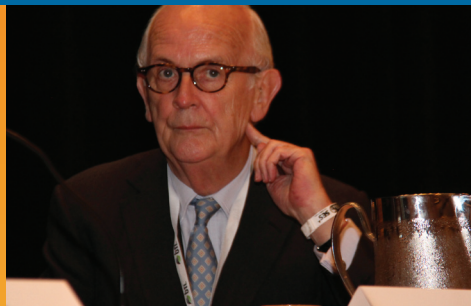

Julio Espinoza
Ericsson

Justin Zhang
Huawei

Charles Carter
CANTO Director

P.J. Mora
Digicel Board Director

Mitzi Miller
Editor in Chief, Ebony

Panelist at Media Briefing

Martin Roos
CEO, LIME

CWIC Panelist

Delegate asks question
at CWIC session

Panelist at Marketing Session

Gold Sponsor Ericsson

Gold Sponsor Huawei

Bronze Sponsor Mavenir

Co-host BTC

Cross section of delegates at session

Highlights of CANTO 2014 – The Bahamas

A J Telecoms/Bosch
Winner- Best Booth Award

Gov't of St. Vincent & The Grenadines
Winner – CTC Project of the Year

Delegates in polos sponsored by
Columbus Communications

Junkanoo at BTC/Icemobile Closing Cocktail

Lunch sponsored by MITEL, Facey Telecom,
Oberthur Technologies

K. Meiman (center) flanked by guest at Oberthur
Technologies & Facey Telecom M&S dinner

CANTO 2014 desserts

Delegates at the Ericsson sponsored dinner

P. Torres center poses with delegates at
the Ericsson sponsored dinner

Columbus Communications recognized
at *M&S dinner

JDSU/Facey Telecom and Oberthur
Technologies at *M&S dinner

BTC recognized at *M&S dinner

ATNI recognized at *M&S dinner

L. Parker and D. Currie at closing cocktails

Team CANTO recognized at closing cocktails

* M & S - Member & Sponsors

CANTO in Action

Delegates visit
Extreme networks/Traeger Brothers Booth

Cocktail sponsored by LACNIC and ARIN

Delegates at the Opening Ceremony

HR Forum delegates

M. Harris, Trainer at Marketing Forum

Delegates at CANTO's Marketing Forum

W. Mahler Jr. winner of WTISD
receives award from CANTO

G. Fraser 2nd place WTISD   receives award
from TSTT

A. Arnaez 3rd place WTISD receives award
from TELESUR

A. Gutierrez 4th place WTISD
receives award from BTL

Team CANTO 2015 meets with team Hyatt Regency,
in Miami

Participants & trainers at 3rd Digtal Literacy Program
sponsored by Microsoft, SIPOS and CANTO

CANTO and Internet Society sign MOU
From Left T. Wankin, R, Fräser of CANTO and
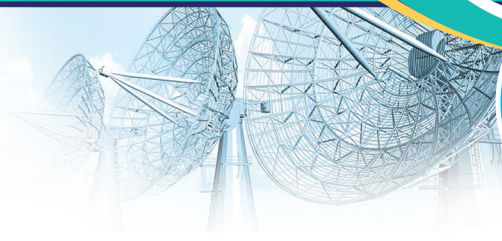S. Bellagamba and S. Osepa of Internet Society

L. Ali-Shah of CARIRI and R. Fräser of CANTO
sign MOU

R. Fräser of CANTO and T. Fitz, of Laureate
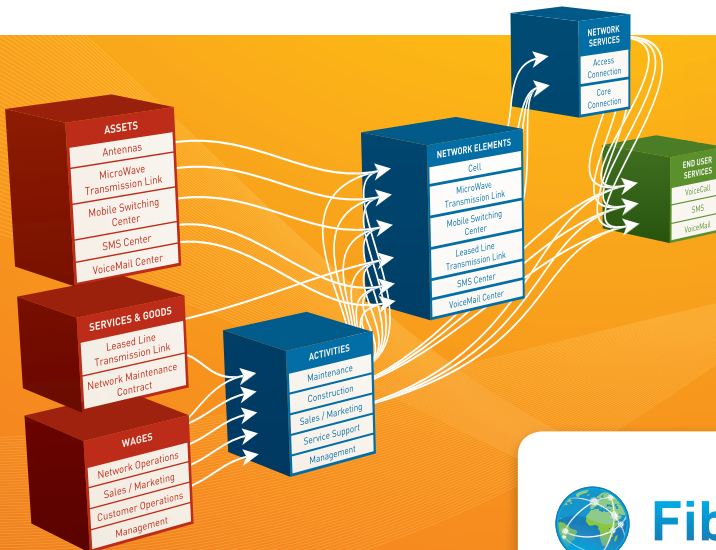Online Education discuss MOU

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Empowering Wireless Evolution

Joel Duguid - SaskTel

When it comes to wireless communications, change (and rapid at that) is the only constant. Data hungry devices, applications, services and their demand for improved data speed and exponential bandwidth place a strain on service provider's networks and their ability to deliver. The new wireless market dictates that communication service providers (CSPs) who cannot keep pace risk jeopardizing quality of service and customer experience, or worse - losing business to competitors who can deliver.

CSPs must consistently invest in the continued evolution and optimization of their wireless network and infrastructure. As the subsidiary of a CSP who has pioneered wireless technologies for over 25 years, SaskTel International (SI) is familiar with the challenges that the influx in mobile broadband brings to modern day CSP's around the globe. Since 1986, SI's parent company, SaskTel has been delivering wireless services to the province of Saskatchewan, Canada.

Launching with an AMPS (Advanced Mobile Phone Technology) analog network in 1989, SaskTel was the first provider in Saskatchewan to offer cellular service, and would be the only provider building infrastructure for cellular networks in the province for well over a decade. Over the years, the network was optimized through the implementation of CDMA (Code Division Multiple Access) and EVDO (Evolution Data Optimized) networks. Further evolution saw the introduction of 3G network technologies.

Recent years have seen the implementation of 4G and 4G LTE technologies within the territory. This has included roll outs in not only large urban centers, but also numerous rural locations. In fact, SaskTel's success with wireless technologies has enabled the CSP to provide wireless coverage to over 98% of the population within its operating territory, a largely dispersed geographic area encompassing some 250,000 square miles. To provide coverage to this rural territory, SaskTel leverages a variety of infrastructure options to enhance wireless service based on usage patterns and demands. In addition to traditional towers being constructed across the territory, SaskTel is also increasing capacity and coverage by deploying other options when traditional towers are not feasible due to space or other limitations. These include installing carrier antennas to increase coverage strength inside of building, streetlights, rooftops, wooden and stealth poles, as well as installing new cellular sites such as towers or cellular on wheels (COW) in various locations. SaskTel has also utilized the addition of sectors and carriers to increase network capacity by adding more radio frequency channels.

In conjunction with SI, SaskTel has managed the 4G LTE and other network enhancement projects in their entirety. This unique relationship means that SI has direct exposure to the latest wireless technologies and access to the expertise, industry firsts, lessons-learned and resources of an industry leading operator. Through these capabilities, SI markets a specialized blend of communications services built by a service provider for service providers. With respect to wireless services, SI's portfolio includes the planning, design, build, deployment and integration of wireless networks. With support from SI, CSPs can envision and create networks aligning with their needs for capacity, coverage, cost and quality of service.

Supporting our mandate of 'connecting the world', SI's wireless capabilities have proven themselves on an international scale. Whether providing strategic cellular assessments in Honduras or leading the turnkey implementation of wireless networks in Mozambique and the Philippines, SI has empowered connectivity throughout the global marketplace. This experience has not only provided undisputed competence in wireless and mobile technologies, but also the ability to deliver solutions customized to the unique needs and geographic environment of the customer. ▶

Although rapid change in today's wireless and mobile communications industry is not without its challenges, such evolution also presents opportunities for CSPs to differentiate themselves through high levels of service and increased customer experience. With SI, leverage the proven expertise of an actual operating CSP who's been there before.

SaskTel 4G/LTE Monopole Tower

SaskTel Stealth Tower

SaskTel 1980's Rural Microwave Tower

SaskTel 3G Wireless Tower

SaskTel Stealth Streetlight Tower

SaskTel Portable Cell on Wheels (COW) ◉

THANK YOUs

I would like to express my deep appreciation to all of you for making my short stay in the Bahamas for the CANTO event a very notable one. The warm reception by Regenie Fraser and her dedicated staff and all the receptions.

It was indeed a great time for me and I will for sure come back to the Bahamas.

Thank you all very much and God bless.

Shola Taylor
Independent Consultant

It was an honour to sponsor CANTO's Ministerial Breakfast Meeting at the 30th Annual Conference & Trade Exhibition (CANTO 2014). Thank you for affording LIME the opportunity.

We look forward to being a part of the 31st Annual Conference & Trade Exhibition (CANTO 2015) in Miami in July 2015. We will be in touch closer to the time to discuss our continued sponsorship.

Best wishes

Martin Roos
CEO, LIME

It is with much admiration that I write to congratulate you on yet another successfully executed CANTO conference! You continue to surpass the bar of excellence set at each conference! Upon celebrating your 30th year, I encourage you to take pride in the fact that you have solidified your reputation as the respected authoritative fertile ground, to which all ICT stakeholders can come to both engage in fruitful networking with the region's key industry champions and immerse themselves in the industry's topical issues.

I am beyond honored and privileged to continue to be associated with CANTO and I wish you many more fruitful years to come!

Sincerest regards,

Ayanna Samuel
IICT Consultant and BIIPAC Regional Coordinator

First, let me thank you once again and congratulate you and your team for hosting a tremendously successful conference in the Bahamas. The event was truly at a very high level. Well done.

Cleveland Thomas
Area Representative
ITU Area Office for the Caribbean

I congratulate you, CANTO board members, and your team for holding an outstanding and very successful conference.

The interest of the Caribbean ICT sectors are represented competently by CANTO and deserve commendation.

I wish you furture continuing success.

Dr. Hamadoun I. Touré
Secretary General -ITU

Again thank you for a great 2 days and hopefully we will see each other next year in Miami.

Alvin Korkie
BTC

Thank you to the CANTO team for the opportunity to speak at this year's CANTO Conference(HR Forum). I am truly grateful to have been able to facilitate this.

Thank you and wishing you continued success.

Leah de Souza
Workplace Training, Development & Performance Consultant
STAR Management System© Trainer & Certified Mastermind
Executive Coach©

I want to thank you again for the opportunity to participate in the 1st Marketing Forum. I learned valuable lessons regarding ICT Marketing efforts in the Caribbean and truly enjoyed the interactive nature of the Forum, especially after three days of PPT.
Cheers,

Eduardo Wiewall
Territory Sales Manager
ORACLE

Once again thanks for a great training experience at the CANTO Marketing Forum. Hope we will meet again next year in Miami.

Best regards,

Ulrich
BTC

CANTO Caribbean Round Up - July 2014

Charles Baker

Acquisitions, controversy and investment prospects are just some of the top telecoms stories in the Caribbean.

Mobile operator Digicel has had a busy couple of months. The Irish company has just announced an agreement with Telstar Cable Limited to acquire its cable and fibre network in Jamaica.

The move would be Digicel's fourth Caribbean cable acquisition in the last number of months and increase its cable footprint to six markets.

In April, Digicel acquired WIV Cable TV in the Turks and Caicos Islands and its broadband service provider sister company, TCT.

In February, Digicel acquired SAT Telecommunications, which provides TV, telephony and broadband Internet services to residential and business customers in Dominica.

In November 2013, Digicel acquired Caribbean Cable Communications Holding Ltd, a cable TV and Internet service provider in Anguilla, Nevis and Montserrat.

Digicel has also been investing heavily in greenfield fibre build-outs in Barbados, Haiti, Jamaica and Trinidad & Tobago to complement the company's on- going focus on business solutions, which has seen 40% year on year growth in revenues.

In a move to deliver multimedia content as well as improve offerings for mobile data services and business solutions Digicel has secured sub-sea fibre bandwidth.

In December 2013, Digicel entered into a share and asset purchase agreement with Global Caribbean Fibre to acquire submarine fibre assets in the Eastern Caribbean region, a deal which will provide Digicel with a wholly-owned submarine fibre optic cable network of approximately 2,100km providing capacity from Trinidad to Guadeloupe.

Controversy

Caribbean telecommunications Ministers and operators failed to agree on how best to deal with Voice over Internet Protocol (VoIP) platforms such as Viber. Telecom providers have been complaining about the loss of earnings, arising from VOIP operations in the region. Providers, such as Digicel and LIME, have said VoIP users utilize their data resources without paying. As a result, in some markets, access to these services through cellular data has been blocked.   The matter was discussed at the CANTO conference in the Bahamas.

CWC is due to conclude a share deal with the Bahamas government in which it will pass a 2% economic interest in the Bahamas Telecommunications Company (BTC) to a new charitable organization, the BTC Foundation.

The agreement was reached in January and stemmed from an election promise of Prime Minister Perry Christie where he stated that he would recover control of the former state-owned telco: a 51% stake which was sold to CWC in 2011.

Under the arrangement a 2% share not containing voting rights would be passed on to a new foundation meaning that on paper, CWC and the government would have equal shares of 49% each, but in reality CWC would retain board control.

Internet

Mexico was the only major Latin American country to meet the global average internet connection speed of 3.9Mbps in the first quarter of this year, as measured by internet content delivery network specialist Akamai.

Apart from Mexico, only Caribbean islands met or surpassed the global average, including Bahamas (6.3Mbps), Grenada (4.9Mbps), Jamaica (4.9Mbps), Trinidad & Tobago (4.5Mbps) and Barbados (3.9Mbps).

Puerto Rico was listed as part of the US and had a 11Mbps average connection speed. Falling under the average were St. Lucia (3.2Mbps), Haiti (2.8Mbps) and Cuba (672kbps).

Jamaica is expected to launch an Internet Exchange Point (IXP) in August. The Minister for Science, Technology, Energy and Mining, Julian Robinson, said the ministry is currently working with Packet Clearing House and that the initial design is "already done."

Enhanced data transfer speeds, reductions in latency and decreased costs due to circumvention of international or third-party networks are some of the benefits said to be offered by the IXP infrastructure.

Elsewhere in the Caribbean; St. Lucia; Dominica, the British Virgin Islands and Grenada have already launched IXPs.

Global satellite services provider O3b Networks successfully launched on July 10 four new satellites from French Guiana bringing its total to eight in orbit. The company plans to launch another four satellites in 1Q15.

O3b, which stands for the "other 3 billion" people on earth who do not have access to broadband, believes it can provide cheap voice and data connectivity to operators by using spacecraft flying in the medium-earth orbit (MEO) at 8,000km, a quarter of the distance from the earth than that of geostationary satellites, which means reduced latency.

In Latin America, O3b already has contracts with Ozônio Telecomunicações for Brazil's Amazon region, Skynet Colombia for the Colombian Amazon, Royal Caribbean Cruises and Quark Guyana.

Cuba Investment Prospects

A new law for foreign investment came into effect in Cuba at the end of June, allowing foreign firms to invest in all areas of the Cuban economy except for the health, education and military sectors.
The law offers international investors tax breaks and stronger legal protection than in the past.
It is hoped the new law will lead to the transfer of more advanced technology to the island.

Coinciding with the news, Google Executive Chairman Eric Schmidt and other Google executives visited Cuba with the goal of "promoting the virtues of a free and open Internet."

Only 3-4% of Cubans have Internet access in Internet cafés and certain universities, and many are forced to use unlicensed versions of Windows since the US does not allow them to be purchased, Schmidt wrote.

The information presented and opinions expressed herein are those of the author and do not necessarily represent the views of CANTO and/or its members. ◉

CANTO Discussion Paper 2014/2 OTT Services - Balancing Innovation, Investment and Competition

CANTO Regulatory & Emerging Technologies Committee

Executive Summary

In view of the current developments in some domestic markets where Caribbean network operators have blocked the use of some Over-The-Top (OTT) services, CANTO has, in this document, provided a context for understanding this latest development.

CANTO is a trade association representing Caribbean network operators, service providers and vendor partners in the region. CANTO has over one hundred and forty-one (141) members from thirty-five (35) countries spanning four (4) continents. CANTO partners with regional and international institutions such as ITU, CTU, ECTEL, CARICOM, IDB, UWI, ECLAC and others to meet shared objectives.

CANTO proposes the following Call to Action to address the current issues in domestic markets:

CANTO's Call to Action to Caribbean Regulators and Ministers on OTT Providers & Services:

i. Licence OTT providers;
ii. Licence condition must include interconnection where services will be terminating on or originating from a domestic telephone number, however configured;
iii. Payment of relevant taxes, fees and Contributions by OTT providers; and
iv. Recognition of right of network operators to block any OTT service that harms its network, or causes the network to be vulnerable to viruses or denial of service attacks.

Caribbean operators call upon Ministers of Government and ICT regulators to find paths to balancing innovation, investment and competition. Each must bear its fair share of costs.

1. What are OTT Services?

1.1 Over-the-top (OTT) is a general term used for services that a customer may use which rides on top of a network to which the customer is connected. These services are referred to as "over-the-top" because they ride on top of the service that customers already have from their providers. Many of these OTT providers have not entered into any agreements with the customers' service provider to provide the services to the customer, notwithstanding that they must use a network that they did not build. Some examples of OTT services are Skype, Viber, Whats App, Netflix.

1.2 Throughout the Caribbean, operators are making huge investments in providing networks that will be data intensive. OTT services ride on these networks without making any contribution to the sustainability of the network. Digicel, Flow, LIME and other operators have invested in.

1.3 In the Caribbean, voice and message apps usage is large. Rather than pay for an SMS message or a phone call, people may use Skype, WhatsApp, Viber, Voxer or some other OTT service to send messages and videos or make VOIP calls for nothing. A data charge may still be incurred but with Wi-Fi access even those charges may be avoided. In the case of one (1) domestic network operator the number of minutes of traffic for a relatively new OTT voice service grew almost 300% in a three (3) month period.

2. Characteristics of OTT Providers in Caribbean Markets:

i. Do not pay, for the most part, to terminate traffic on a mobile or fixed network, where the service is actually terminated on the local network of the fixed or mobile provider. That is they make no contribution to the sustainability of the network on which they must rely;

ii. are providing services in markets in which t h e y are not licensed to provide the services;

iii. do not pay taxes to any Caribbean governments or contribute to any Universal Service Funds, which funds are used to develop the ICT infrastructure in the countries;

iv. provide services which deplete the Quality of Service on both mobile and fixed networks because such service uses increasing amounts of network capacity and bandwidth;

v. some OTT services by nature of their architecture, like Viber, can result in Denial of Service attacks on domestic networks;

vi. who provide video services specifications to their traffic so that most video traffic adapts to network congestion by shifting to lower bitrates and quality, which impacts the subscriber experience on broadband. When capacity is increased, adaptive video simply upshifts to a higher fidelity and fills the new capacity. Therefore no network operators will ever be able to build enough capacity to satisfy bandwidth hungry video. The alternative is to force network operators to augment their networks to keep-up with the growth in video traffic on which they earn very little. This is unsustainable; and

vii. cheap, innovative services.

2.1 The impact of OTT on local domestic networks and economies have reached crisis proportions.

3. Characteristics of Domestic Caribbean Networks-Fixed, Mobile and Broadband:

i. are licensed to provide all the services that they provide;

ii. pay taxes to the governments in the Caribbean;

iii. pay regulatory fees;

iv. contribute to Universal Service;

v. invest in their networks;

vi. pay for all the resources, including spectrum, that are required to make networks operational; and

vii. provide services at increasingly competitive prices

3.1 The further result is that there is a troubling disparity between the costs incurred by domestic, Caribbean network operators and those incurred by OTT. Caribbean domestic network operators incur all the cost. OTTs incur none of the cost. Accordingly OTT services are cheaper because they evade legitimate costs which are being borne by the domestic operators – resulting in domestic operators being less competitive than OTT providers. This is discriminatory.

3.2 Ultimately Caribbean operators invest in networks that they will struggle to maintain and upgrade because significant portions of revenues are being siphoned off by OTT operators. This is an unsustainable position for any commercial operator. Caribbean operators reject any notion that they should exert no control over their networks, have no rights, no responsibilities and no claim on how their networks are used.

4. Fallacious Arguments

4.1 OTT services are embraced because they they are perceived as innovative and cheap. However, this perception is not reality as the cost of the service, has been shifted to Caribbean network operators and to Caribbean governments. Just as OTTs evade bearing their fair share of legitimate costs for using domestic networks so it is they evade paying taxes to Caribbean governments and hurt the ability of the poorest citizens' access to technology because they also evade contributing to Universal Service Funds. The Caribbean telecommunications industry simply ask that policymakers require OTT providers to legitimately embrace the costs for operating in Caribbean markets, including entering into commercial interconnection agreements, where their services terminate on a telephone number on a domestic network.

4.2 Caribbean operators have been told that they must become more competitive and offer OTT type services. Yet Caribbean operators do offer OTT type services, however even on these OTT type services Caribbean Operators have to pay licence fees, taxes and Universal Service contribution.. But this commercial approach to what is a fundamental issue of discrimination ▶

is not effective. As long as OTT operators do not bear their fair burden of costs, Caribbean operators will not be able to effectively compete with OTTs. Nor will USFs generate the amounts of revenue that they could, as there will be less and less tax funding from the local telecommunications revenue as larger and larger portions of these revenues will migrate to OTTs who make no investment in Caribbean economies.

4.3   Regulators and policy makers tend to tout the innovation that OTTs bring while slow to recognize that revenues to domestic operators are shrinking and affecting taxation revenues and universal service funding.

4.4   Caribbean operators embrace OTT services, provided that they are not harmful to domestic networks and bear their fair burden of costs. Operators are happy that customers are purchasing smart phones and using data services to play games, watch videos and relate on social networks, as well as to make calls and send text messages.

5.   Response of Caribbean Operator to OTT Providers since June 2014

i.   blocked select OTT services that evade payment of Universal Service Levy – Haiti and Jamaica;
ii.   blocked OTT services that are harmful to the network, in that their architecture allows them to function in a Denial of Service Mode;
iii.   blocked OTT providers who do not have any interconnection agreement with domestic service providers or who refuse to honour such agreements; and
iv.   blocked OTT providers who are not licensed to provide service in the domestic market.

6.   Response of Regulators to Blocking

In dialogue with Network Operators:
i.   raised the issue of the breadth of action being taken by Caribbean network operators and impact on technology industry;
ii.   raised issue of anti-competitive and discriminatory behavior; and
iii.   referenced the concept of Network Neutrality.

7.   CANTO's Call to Action to Caribbean Regulators and Ministers

i.   licence OTT providers;
ii.   licence condition must include interconnection where services will be terminating on or originating from a domestic telephone number, however configured;
iii.   payment of relevant taxes, fees and contributions by OTT providers;
iv.   recognition of right of network operators to block any OTT service that harms its network, or causes the network to be vulnerable to viruses or denial of service attacks; and
v.   in the alternative Caribbean regulators/policymakers should relieve Caribbean operators from paying fees and contributions for services similar to those provided by OTT providers.

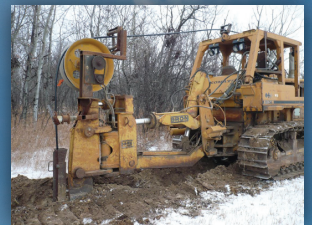## 7.1   Caribbean operators call upon ministers of government and ICT regulators

i.   to find paths to balancing innovation, investment and competition. Each must bear its fair share of costs. ◉

Best Practices for the Environmentally Sound Management of Mobile Handsets and Equipment

CANTO Corporate Social Responsibility Committee (CSR)

Chair of CSR Committee J.Wilkins (right) presents committee report to CANTO Board of directors, left Helma Etnel, Ag. Vice Chair

Executive Summary

The CSR Committee was convened in response to the increasing desire by stakeholders in the dynamic and ever evolving ICT market to achieve a balance between business and social responsible interests.

This paper is the first output from the CSR team and its objectives are to raise awareness and recommend best practice solutions to the environmentally sound disposal and management of end of life mobile handsets and equipment. It draws heavily on the environmental standards established under the Basel Convention, to which many Caribbean countries are parties. The Caribbeann mobile market space continues to grow bringing with it increasing e-waste products. It was determined that there was little immediate focus on the issues surrounding the environmentally sound management of end of life mobile handsets and euipment.

Providers generally rely on third party disposal but few clear policies are in place to manage this going forward. The team recommends that a common regional approach should be developed, promoted and adopted. This would include increasing awareness of the potential hazardous implications of e-waste and the development of best practices facilitating additional steps such as collection and channeling of mobile handsets and equipment to environmentally sound management facilities within the region. CANTO and its CSR Committee, alongside the Basel Convention Regional Centre for the Caribbean, stand ready and willing to assist and collaborate with regional stakeholders to develop sustainable solutions for the ICT sector.

For more details go to http://canto.org/wp-content uploads/2014/09/CANTO-CSR-Committe-Final-Paper.pdf

Transparency of Regulators' Budgets CANTO Policy Paper 2014/03/No.1 To Improve Accountability of Regulators

CANTO Regulatory & Emerging Technologies Committee

Principles

1. Regulators should publish their budgets annually and consult on the budget at least two (2) months before the new financial year begins, where the budgets are directly and substantially funded by the telecommunications industry.
2. The budgetary details provided must be sufficiently granular to enable the public to identify the cost drivers.
3. Regulators' budgets must be supported by a workplan for the financial year.
4. Regulators must account for monies spent in the previous financial year and offset any regulatory fees for the new financial year against any surplus funds carried forward from the previous year.
5. Regulators should respond publicly to issues raised in response to consultations on budgets.

Basis for Positions Taken

All players in the telecommunications sector should be held accountable - ministers, regulators and operators.
The telecommunications sector makes a significant contribution to GDP and is a key facilitator of the workings and advancement of society and industry as a whole. Therefore legally mandated contributions from the industry for the purposes of regulation have to be spent wisely.

Regulators must be seen to, as well as act with, scrupulous fairness to build confidence in investors that the sector will be regulated fairly and transparently.

The way to ensure that legally mandated contributions are spent wisely is to make transparent how the funds are being spent and what the results of that expenditure are vis-à-vis the stated objectives for that expenditure. This maximises public scrutiny and the ability of stakeholders to suggest improvements.

The Position Now

Currently, limited information or no information is provided in some Caribbean jurisdictions with respect to regulatory budgets and how those budgets are spent. Even where information is provided, regulators may not respond to questions from stakeholders about budget expenditure.

This frequently leaves stakeholders outside government/ regulatory circles unable to see what is happening to contributions from the sector.

This means that these stakeholders (including consumers);
- have less prospect of using their knowledge of the sector to suggest improvements to the way in which monies are used to regulate the sector.
- have little prospect of assessing whether expenditure by regulators on regulatory activities is logical or justifiable;
- are unable to hold regulators accountable for budgetary spend;

The incongruity of this is highlighted by the fact that, in contrast, operators provide large amounts of financial and market information to regulators.

Regulators are therefore sometimes seen to be operating behind a partial veil when it comes to expenditure. This conflicts with their position as bodies paid by and serving the public which should be transparent in their dealings.

How to Improve Regulatory Expenditure and Effectiveness

The publication of, and consultation on, sufficiently granular regulatory budgets, will afford stakeholders the opportunity to make the case for improvements to the management of the sector which could lead to greater ▶

success and greater benefits for society. The detail provided must be sufficient for the public to determine the cost drivers and to see how much is being spent on each project or ongoing activity.

Publication will also enable the public to hold regulators to account for budgetary spend. The public should be in a position to determine whether or not the country is obtaining value for money from budgetary expenditure and, where they disagree, to be able to say why and make the case for changes. Bringing expenditure under the public gaze will encourage a more thorough analysis and consideration by regulators with respect to whether expenditure can be justified or is properly directed.

What Needs to Be Done

In order to enable the full experience and contribution of stakeholders to be brought to bear, and to ensure that money is spent wisely, it is necessary for regulators;

- to consult publicly on budgets and workplans which are sufficiently detailed to enable meaningful analysis and contributions by the public;
- to be willing to engage in debate about budgetary spend, to answer questions and take in to account what stakeholders have to say;
- to be open-minded and to be prepared to consider new ideas;
- to account fully for monies spent from year to year. The governing principles are itemised at the beginning of the paper. ◉

Consultative Documents – Rules of Thumb

Julian Wilkins – Director Telecoms Public Policy – Digicel Group
Andrew Gorton – Group Head of Regulatory Affairs, Digicel Group

Introduction

In this paper we call on regulators to avoid overburdening the telecommunications sector with lengthy consultative documents and parallel consultative processes which do not provide stakeholders with a reasonable opportunity to respond meaningfully. This is a topic that we have partially touched on before. The paucity of time permitted by a few of the Regulators in the region is impacting significantly on the workload of stakeholders, and stretching resources to the limit. Regulators should not publish several consultative documents simultaneously to stakeholders, while demanding responses within deadlines that are close and unachievable. We address this issue in this paper clearly outlining the risk involved, and offer some recommendations and guidelines on the way forward.

Consultative Documents

We believe regulation of telecoms/ICTs should focus on encouraging investment and enabling competition to occur in a timely manner and avoid excessive and counter-productive bureaucracy. In a few jurisdictions in the Caribbean, we have observed an alarming and significant increase in the number of consultative documents being issued within a short time frame without allowing sufficient time to respond. For instance, operators in one jurisdiction in the region were recently asked to provide feedback on several hundred pages of consultative documents in the space of a few weeks: this is an unreasonable timeframe. Recently another Regulator sent out four (4) consultative documents to telecoms service provider's over a period of three (3) weeks.

Regulatory Resources

It is becoming increasingly difficult for operators to respond to regulatory demands or to have regulatory resources available to deal with a large number of documents in a short space of time. In many of our smaller markets there are no dedicated resources to deal with regulatory matters. Further, non-regional operators do not even have a potential opportunity to share resources. Regulatory resources are being stretched to the limit. Two major factors need to be taken in to consideration (a) the limits on resources, especially in the Caribbean given comparatively small population sizes and (b) consequential practical limits on the size of the regulators and operators and what can reasonably be afforded. Regulators have to bear in mind that the more money they spend on regulatory administration, the greater the burden they impose on stakeholders who are required to respond to or implement any regulation mandated.

Complexity of Regulatory Issues

In addition, the complexity of the regulatory issues driven by Regulators requires an expertise in economic, legal and technical regulatory issues which does not always exist entirely within the operators or regulators - leading to the need for all parties to engage expensive consultants. This can increase costs to unreasonable levels in relation to the size of the market, and the benefits that can be obtained. The regulatory and business overhead is disproportionately larger for small economies and the operators providing services in them.

Rules of Thumb for Consultative Documents

In order to achieve meaningful responses to consultations:
  (a) the number of consultative documents needs to be minimised;
  (b) Regulators should attempt to steer clear of complex processes that lead to unwieldy and lengthy documents where possible; and
  (c) allow sufficient time for responses by stakeholders -eight weeks to respond per consultative document is probably a reasonable length of time for most thirty page documents; ▶

(d) Regulators should avoid burdening stakeholders with concurrent consultative processes;

(e) Regulators should also on a practical note issue 'Microsoft Word' amenable versions of documents to save time for stakeholders who wish to respond; and

(f) on another practical note, for second drafts of consultative papers e.g. Telecoms Acts - marked up versions highlighting the Regulators' changes should be provided thereby ensuring that operators do not have to read the second version from scratch.

Conclusion

In conclusion, Caribbean regulators need to behave reasonably when consulting. Excessive and concurrent consultative processes which provide very short timeframes for response can lead to disproportionate and unmanageable work burdens being imposed on stakeholders.

Many aspects of telecommunications regulation are complex and therefore time consuming to consider and respond to meaningfully. Regulators should avoid the trap of being rendered less effective through becoming bogged down in the production of overly detailed consultative documents which may deliver negligible or negative net benefit. Caribbean regulators should lead the way in terms of a pragmatic approach to regulation which recognises what will be of most net benefit to the region.

The Rules of Thumb recommended in this paper would allow for more meaningful responses, reduce costs for stakeholders, lead to more productive outcomes from Regulation, and improve stakeholder collaboration with the Regulatory Authorities. ◉

CANTO 2014 - My Experience

William Mahler Jr.

Hi, my name is William Mahler a.k.a the broadband man, and I am the winner of CANTO's 2014 World Telecom Information Society Day Video Competition. My video titled, "How Broadband Sustains Me", won me a trip for two and hotel accommodation to attend CANTO's annual conference along with a tablet, and a $1,000 US!!!

This year, CANTO held its 30th Annual Conference and Trade Exhibition in the beautiful island of the Bahamas. With a membership of approximately 35 countries and a 140 members, CANTO's conference was well attended by hundreds of people from around the world. Sponsored by companies such as the Belize Telemedia Ltd, BTC, LIME and Ericsson, CANTO's conference was more than a business event. I had the pleasure of interacting with business personnel on a more personal level. From elegant dinners to parting on the dance floor, CANTO had it all. Entertainment was out of the question. No one was too old, too shy or felt too important. The atmosphere was just one of love, humility and respect.

On a more business and informative level, CANTO focused on the theme "Strategic Alliances for Sustainable Broadband Development". Various sessions were held on a daily basis where intellectual speakers spoke about solutions to various issues facing the world today. Many great ideas were sparked due to fruitful discussions. Government officials such as the Prime Minister of the Bahamas, Hon. Perry Christie, spoke at the opening ceremony. Ms. Regenie Fräser, Secretary General of CANTO, shared how CANTO had grown over the past years and how its success in the Caribbean was due to all its members working together as one to achieve many goals.

Now you may ask the question, but William, in what ways has this conference inspired you to improve sustainable broadband development in your country? I answer this question by saying that my country is still in the developing stage and a lot of work is yet to be done, but as small as I am, I returned back home with a greater knowledge and a greater passion to educate my people to strive towards a much more sustainable world. There is so much more to say but time would not permit but with that said, I am looking forward to seeing you at CANTO's conference next year in MIAMI and trust me, you don't want to miss out! ◉
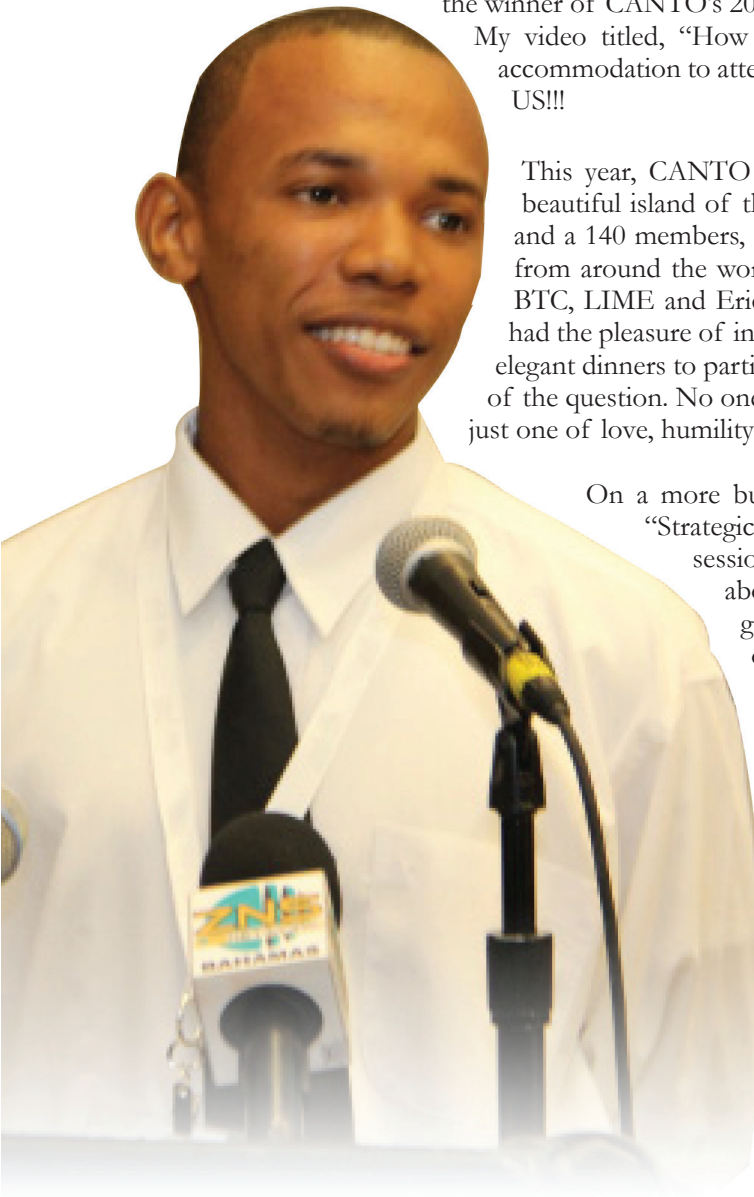
TATT/UWI Launch Cyber-Safety Awareness Project

The Telecommunications Authority of Trinidad and Tobago (TATT)

"We need to consider that our children are growing up in a world where according to the head of Google there is no such thing as delete!" This said Mrs. Alicia Hoyte, Clinical Psychologist and keynote speaker at the launch of the Telecommunications Authority of Trinidad and Tobago (TATT) and The University of the West Indies' (The UWI) (St. Augustine Campus), Cyber Security project on Wednesday, July 23, 2014.

The primary objective of this project is to improve the safety of children in Trinidad & Tobago by educating both children and their parents of the risks associated with the inappropriate use of Information and Communication Technologies (ICTs), including the Internet.

A Memorandum of Agreement was signed in this regard. Signing on behalf of TATT was Mr. Cris Seecheran, Chief Executive Officer, and Principal of The UWI, St. Augustine Campus, Professor Clement Sankat, signed on behalf of the university.
Providing advice on how children can be protected Mrs. Hoyte stressed "we need to change the dialogue we have with our young people".

Applauding The UWI / TATT initiative Mrs. Hoyte told the audience that today's technology cannot be compared with what existed years ago and the model of forced compliance will not meet the need for teaching how to navigate the dangers of overuse and misuse of modern technology.

In his opening remarks, Mr. Selby Wilson, Chairman of the Board of TATT told the audience that according to ITU statistics "by the end of 2014 there will be almost three billion Internet users. This figure accounts for approximately 40% of the world's 7 Billion population".

Mr. Wilson said Trinidad & Tobago stands solidly within that mix. He quoted statistics released by TATT a few weeks ago which reveal that approximately 51 out of every 100 persons in Trinidad & Tobago had either a fixed Internet subscription and/or a mobile Internet subscription at the end of 2013.

Also addressing the opening was Mr. Shiraj Mohammed, Manager Transformational Projects and Commercialization at The UWI. He said that cyber safety and the appropriate use of the Internet should be of utmost importance to all of us, but particularly our young people who may be considered the most vulnerable in our society.

Noting that young people spend "an overwhelming amount of time on the Internet everyday" Mr. Mohammed pointed out that while in cyberspace some young people "post personal information and pictures that strangers can view, some enter chat rooms and speak to people they do not know". He said some young people add individuals they do not know as friends on different social networking sites.

The project was developed by The UWI's Campus Information Technology Services (CITS) Department and is spearheaded by Mrs. Claire Craig, Senior I.T. Officer, Enterprise Applications Support Manager, at The UWI.

TATT and The UWI will work in conjunction with CyberSafeTT on the project. CyberSafeTT is an organisation that already promotes cyber-safety awareness in South Trinidad.

TATT's involvement in Cyber security commenced in 2009 with this organization's commemoration of World Telecommunication and Information Society Day. The theme for that year was "Protecting Children in Cyberspace". WTISD is an annual themed event observed by many ITU signatory bodies globally.

In 2009, TATT developed a range of related audio visual and print material including a 45 minute video titled "Cyber Danger". This video continues to be a valuable source of online protection information for children, parents and guardians.

Since then, TATT's staff have been involved in conducting cyber security seminars for children and teenagers upon requests from a wide variety of entities including schools, libraries and youth groups. ◉

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Ministerial Roundtable – Report

By Philip Cross

CANTO's 30th Annual Conference and Trade Exhibition (CANTO 2014) was held at the Atlantis Resort, Paradise Island, Bahamas from 10 to 13 August, 2014. CANTO 2014 saw the staging of another extremely successful Ministerial Roundtable, based on the conference theme *'Strategic Alliances for Sustainable Broadband Development'* Given the large number of representatives, the Ministerial Roundtable was divided into two panels, with ministers and ministerial representatives providing a range of responses to questions asked. This provided clarity and much needed information on the actual situation in various countries in respect of broadband development and various related issues.

First Panel:

- Keynote: Clouding the Networked Society, Julio Espinoza Ericsson
- Hon. Mr. Evan Gumbs, Minister of Infrastructure, Communications, Utilities, Housing, Agriculture and Fisheries, Anguilla
- Hon. Mr. Ambrose George, Minister of Information, Telecommunications and Constituency Empowerment, Commonwealth of Dominica

- Hon. Mr. Phillip Paulwell, Minister of Science Technology Energy & Mining, Jamaica
- Hon. Mr. Charles Kirnon, Minister of Communications & Works, Montserrat
- Hon. Mr. James Fletcher, Minister for Public Service, Sustainable Development, Energy, Science & Technology, Information & Broadcasting, St. Lucia
- Dr. Jerrold Thompson, Director of Telecommunications, St. Vincent & The Grenadines
- Ing. Alejandro Jiménez, INDOTEL, Dominican Republic

Ministerial Roundtable – First Panel

The keynote address was given by **Mr. Julio Espinoza, Consultant, Ericsson Region Latin America and Caribbean.** He spoke of the merit of cloud computing and how this technology was reducing previous barriers to innovation by creating a rich and growing service ecosystem. He further indicated that the global community is moving towards a networked society in which the cloud will play a major role. He also predicted that in the next few years some 50 billion devices will be connected to the cloud.

Four questions were asked of the Ministerial Panel and the following were their responses.

1. *How should Caribbean governments, regulators and operators work together to ensure that citizens enjoy sustainable broadband, ie, enough bandwidth, at an affordable price?*

Ministers were in general agreement that greater broadband development was needed in the Caribbean and more serious efforts must be made to accelerate this process.

They indicated that although there has been some progress there is a clear need for greater efforts. In addition, statistics are also needed to show the exact situation. In order to derive the full benefits of broadband, governments need to understand the role of broadband in economic development. Among the important points mentioned are the following:

- Educate Caribbean people on the benefits of ICTs and how they can be incorporated into their productive lives;
- Establish a regional broadband commission involving all major stakeholders and establish policies and strategies;
- Obtain correct statistical information on broadband penetration and ensure that correct data is transmitted to relevant agencies including the ITU;
- Provide concessions to telecoms operators in order to encourage 4G coverage, while increasing indigenous content;
- Use Universal Service Funds to support broadband rollout.
- Include consumers in broadband dialogue.

2. Which policies and/or incentives should be adopted in the Caribbean to accelerate the adoption of broadband?

Panelists indicated that governments had worked with operators to create a favourable environment for broadband increase and it may not be feasible to continue in this direction. Among the specific answers given were the following:

- Generous incentives and tax reductions have already been made to telecoms operators;
- Having received incentives, broadband growth and global rankings must now be seen;
- Additional incentives may not facilitate broadband growth;

- Large areas of population are still not accessing bandwidth mainly because of lack of coverage and affordability;
- Policies needed in relation to public service, content development, new technologies and public education;
- Broadband take-up could be increased by producing more culturally relevant content;
- Consider adopting the US policy of selling phones at reduced rates when combined with a data/voice plan;

3. Should the same rules, obligations, fees and taxes apply to all parties involved in providing telecommunications services to customers including those providing Unlicensed Voice over IP (VoIP) services?

This question was asked during both panels and the combined responses are provided. There were different views on the subject of OTTs and the way they should be treated. There was general consensus however that OTTs contribute to network congestion, offer the possibility of bypass and they provide no revenue to Caribbean countries. Views from the panelists included the following:

- The same rules should not apply;
- Revenue was being lost to governments because of OTT operators;
- Caribbean operators have made significant profit since investing in the Caribbean and new VoIP service providers have forced telecoms operators' prices down;
- Contributions to USF in different countries is being reduced and this could slow the growth of broadband;
- Operators and governments were losing revenue;
- There is a demand for VoIP services, especially with the high cost of international calls and perhaps local Caribbean alternatives should be sought; ▶

- The number of OTTs continue to grow and in many cases legislation does not allow them to be blocked;
- CANTO's document on VoIP is being studied;
- Most countries do not have policies to deal with VoIP and OTTs.

4. *What activity is currently taking place in your country to create an ecosystem to support the growth of innovation, especially as it concerns mobile apps and content development?*

Ministers felt that innovation and entrepreneurship were important for the Caribbean, especially in the development of content. Most participants indicated that there were innovative activities in their countries, including activities in conjunction with regional and international partners. Participants also expressed the view that the Caribbean should become a net exporter of content. The main areas would be e-books, music and culture. Ministers also felt that creativity exists in the Caribbean and more measures are needed to enhance this creativity.

Examples of activities in relation to this subject as well as suggestions for further actions included the following:

- The Caribbean Regional Communications Infrastructure Program (CARCIP), operational in the Eastern Caribbe (SVG, St. Lucia and Grenada), funded by the World Bank is seen as aproject that is creating the right conditions for innovation and entrepreneurship. It provides broadband, fosters innovation and assists entrepreneurs;
- The SMART project in St. Vincent and the Grenadines is funded by USF and is aimed at growing the entrepreneurial base;
- Jamaica has implemented a Minister's Innovation Award which is helping to promote innovation

- Jamaica has also embarked the upon Microsoft Imagine competition with Microsoft and the Start Up Jamaica Initiative funded by the World Bank;
- The Caribbean needs to become a net exporter of content;
- Develop national broadband strategies, improve the broadband infrastructure, use USF to develop infrastructure, solicit more inputs from financial institutions, educate consumers about the possibilities that broadband provides.

Ministerial Roundtable – Second Panel Panelits:

- Keynote – Justin Zhang, Huawei
- Tracy Hackshaw, Deputy National Chief Information Officer, Minister of Science and Technology, Trinidad & Tobago
- Hon. George Lightbourne, Minister of Government Support Services, Turks and Caicos
- Hon. Alvin DaBreo, Minister of Communication, Works, Physical Development, Public Utilities, ICT and Community Development, Grenada
- Mr. Reginald Bourne, Telecommunications Officer, Barbados
- Hon. Melford Nicholas, Minister of State Information, Broadcasting & Telecommunications, Antigua/Barbuda

Mr. Justin Zhang from Huawei gave the keynote address prior to the start of the second session; his presentation entitled "Sustainable Broadband for a Better Connected World". He explained that sustainable broadband was needed for a better connected world. He further emphasized the wide reach of broadband which he referred to as an essential part of the modern economic infrastructure which also plays a major role in social development and the entertainment industry. He further stated that the sustainable development of broadband will lead to the sustainable development of society, technology and innovation.

5. Are there any examples you can share of successful strategic broadband alliances in your countries?

While this subject has been discussed in most Caribbean countries, not everyone has been able to undertake successful initiatives. However, the subject is under discussion in many countries. Among the successes in this area are the following:

- In Trinidad &Tobago, ICT Access Centre Programme has been launched with inputs from Columbus, TSTT, Fujitsu and Microsoft. So far three centres have been successfully rolled out and there will be an additional 38.
- In Antigua & Barbuda, the GATE initiative (Government Assisted Technology Endeavour) is seen as a successful initiative across government agencies and this is leading towards the development of a government portal. This facility allows the processing of various government documents online

6. Is there still a level playing field and what about the fact that one has no recourse in respect of poor Quality of Service (QoS) when utilizing OTT services?

There was a common view that it is very difficult to deal with QoS as far as OTTs are concerned, especially in the light of the important issue of jurisdiction. OTT operators are not within the jurisdiction of Caribbean countries, therefore are not subjected to the laws in the Caribbean as they stand. Other views expressed include:

- Encourage local entrepreneurs to establish similar OTT services;
- Not all OTTs are the same;
- Encourage competition on a level playing field;

7. Are governments willing to allow existing operators who provide VoIP services to exist without having to pay taxes or USF charges?

- Once again ministers referred to the question of jurisdiction. Governments can only deal with operators within their jurisdiction. The view was also expressed that governments have a strong interest in collecting taxes. Some ministers were also of the view that operators simply want to make more money and they want governments to give more concessions to them. Panelists felt that government and consumer interests must be taken into consideration in future discussions on this subject.

8. How should we go about structuring the strategic dialogue moving forward in the Caribbean and also in preparation for next year's CANTO conference?

There was general agreement that a multi-stakeholder forum, including all regional ICT stakeholders, would be useful and this could be within the framework of a Caribbean Internet Governance initiative. Over-the-Top (OTTs) Operators were seen as successful businesses, with very high stock valuations, yet little or no infrastructure. In this regard the question of a single Caribbean ICT space should be further developed, in which cost among Caribbean countries would be reduced. The HIPCAR project was mentioned as a shining example of a multi-stakeholder model that has worked for the Caribbean. Discussions with OTTs would also be another option. ▶

Conclusions

The Ministerial Panel at CANTO 2014 provided important information for participants in respect of various activities related to broadband development in the Caribbean. One of the most important subject that was discussed was the Over-the-Top operators and how they should be dealt with. There were differing views on this matter, but everyone indicated that it was an important subject that must be dealt with expeditiously. With respect to broadband rollout, ministers gave an update of what was happening in each country and in all cases they stated that this rollout needs to be accelerated. There were several suggestions on how this could be done, including Public Private People Partnerships in relation to broadband. It was clear from the discussions that Ministers were in favour of regional Caribbean approaches in respect of issues related to the development of broadband. Reference was made to a CANTO document on OTTs, but ministers felt more time was needed to study this document. ◉

CANTO 2014 Report on Public/Private Sector Dialogue on CARICOM Single ICT Space

By Philip Cross

The public private sector dialogue on the CARICOM Single ICT Space (SICTS) was held on Monday August 11, 2014 during CANTO 2014 in the Bahamas.

Panelists:
- Chair: Dr. Hamadoun Touré, ITU Secretary-General
- Ms. Jennifer Britton, Deputy Programme Manager for ICT4D, CARICOM Secretariat,
- Mr. Kenneth Sylvester, CEO, Caribbean Knowledge and Learning Network
- Mr. Dirk Currie, Chairman, CANTO
- Mr. Chris Dehring, Chairman, LIME Caribbean
- Mr. E.J. Saunders, CEO, Digicel, Turks and Caicos Is.
- Ms. Rhea Yaw Ching, VP Sales and Marketing, Columbus Communications
- Mr. Isaac Solomon, Director, Eastern Caribbean Telecommunications Authority

Introduction

This was the first formal public private sector dialogue involving Caribbean ministers of government, senior Caribbean government officials, private sector entities, regulators and other ICT stakeholders; aimed at developing strategies for the CARICOM Single ICT Space (SICTS) which is one element of the CARICOM Regional Digital Development Strategy (RDDS). The RDDS was approved by CARICOM in 2013 and two key elements are:

1. the CARICOM Single ICT Space (SICTS);
2. the CARCOM Digital Agenda 2025.

Dr. Touré introduced the session, during which he highlighted the importance of the Single ICT Space and the Digital Agenda 2025 for the Caribbean. He made reference to the HIPCAR project which had assisted Caribbean countries in harmonizing policies, legislation and regulations. He highlighted the following five priorities for fast-tracking and developing strategies for the RDDS which could only be achieved through public, private, people partnerships:

1. a Single CARICOM ICT Space to enhance the environment for investment and production;
2. bringing technology to the people and transforming them into digital natives and digital entrepreneurs;
3. cybersecurity;
4. resource mobilization and commitments of member states to invest in ICTs;
5. developing the CARICOM Digital Agenda 2025.

Dr. Touré also mentioned that 67% of the world's population is off-line and there will be huge traffic jams if the Caribbean does not invest in additional ICT infrastructure. The Single ICT Space, he said, would allow for important economies of scale and efficiencies. The main purpose of the session was to have People, Public, Private Partnership (PPPP) discussions on the Single ICT Space and propose future actions. ▶

Ms. Jennifer Britton - CARICOM

Ms. Jennifer Britton, speaking on behalf of the CARICOM Secretariat indicated that it was necessary to have partnerships in order to ensure the success of the Single ICT Space in the Caribbean. She stated that the CARICOM region under consideration consisted of 15 full members, 5 associates and encompassed a total of 15 million people. She then made reference to the Treaty of Chaguaramas, which established CARICOM and the Treaty of Basseterre which established the Organisation of Eastern Caribbean States (OECS) and the importance of these treaties for ICT cooperation in the Caribbean.

With respect to CARICOM activities, she stated that the CARICOM Single Market and Economy (CSME) was the flagship programme and it was intended to create a single seamless economic space. The SICTS would support the advancement of the CSME and would provide a solution to the present barrier of the region's difficulty in achieving economies of scale in all endeavours of economic and social development. A SICTS would also bring benefits to the public sector, entrepreneurship and new business development, research and development and new ICT products and services. Caribbean Heads of Governments have agreed to facilitate the collaborative process needed to achieve the objectives of the RDDS and its various components.

Regarding ICT statistics, she said that there was a message within them and there was a particular challenge regarding content. There were many consumers and few providers. ICT investment, she further stated, was not providing the promised returns. Heads of Government in the Caribbean had agreed to a CARICOM digital economy, with specific goals. This was included in the Regional Strategic Plan for the period 2015 – 2019. In this regard there were specific requests to CANTO to assist in moving this agenda item forward. She suggested that CANTO should support a RDDS Technical Working Group which would include important Caribbean organizations involved in ICTs, ITU, UNESCO and CIVIC (civil society virtual group).
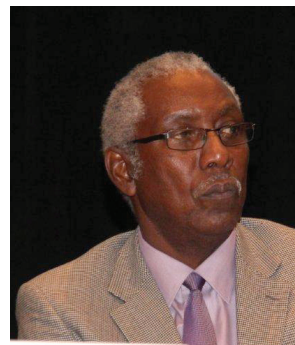
Mr. Kenneth Sylvester - CEO, Caribbean Knowledge and Learning Network (CKLN)

Mr. Sylvester explained that C@ribNET, a research and education network came about as a decision of Caribbean governments and was implemented by the CKLN. It was necessary to have such an entity since the Caribbean was left out of the global education and research network. C@ribNET links the Caribbean to similar networks, globally. C@ribNET uses Caribbean fibre, which was implemented by the CKLN and was built in collaboration with Caribbean operators including LIME, TSTT, BTC and Belize Telemedia Ltd. The bulk of the infrastructure was provided by LIME. Through C@ribNET, the CKLN is able to provide regional and international connectivity through a closed network for members only. It provides a single virtual space which connects educational, health and security institutions.

The CKLN allows members to share resources and participate in collaborative activities and is well-positioned to be the region's knowledge centre. Countries participating in C@ribNET must nurture the development of National Research and Development Networks (NRENS). All countries are able to build national networks which would be connected to all other participating networks. So far there are 13 Caribbean countries and 40 institutions that are members.

Phase one of the build-out has been completed and the next phase will involve community schools. One of the main barriers is the high cost of bandwidth (compared to other regions). A PPP approach would be suitable and in

this regard the involvement and assistance of CANTO could help to move the project forward.

Mr. Dirk Currie, Chairman, CANTO

Mr. Currie expressed the view that CANTO was pleased to be associated with this CARICOM initiative and he pledged the support of CANTO in future activities. He indicated that CANTO had contributed to the CARICOM discussion paper on SICTS in which CANTO had outlined possibilities for accelerating the rollout of Caribbean national broadband plans.

He stated that CANTO would be happy to partner with the CKLN as requested, as well as other stakeholders. However, the financial aspects in respect of expenses that would arise would need to be clarified.
Following his comments, the ITU Secretary-General stated that the ITU would assist in activities related to SICTS as well as in getting partners together. He also stated that where there is a good project, funds would be found. Therefore, the Caribbean should focus on developing bold new projects.

Mr. Chris Dehring, Chairman LIME Jamaica & Head of Gov't Relations (Caribbean Cable & Wireless PLC

Mr. Dehring used the analogy of the 2007 Cricket World Cup (CWC) which was held in several Caribbean venues. In this regard, he said that a single Caribbean space was created for the event. Consequently a blueprint for a single space in the Caribbean actually exists and may be of use in developing the SICTS.

As far as LIME is concerned, Mr. Dehring stated that there was support for the SICTS. He also supported the idea of a unified regulator as well as no roaming charges in the Caribbean. In order to deliver on the promises for ICT development, a suitable platform must be established, since it is difficult to have any real achievement when the goal post is constantly moving.

Regarding content, he stated that there were difficulties in the Caribbean in raising funds for this purpose. Therefore, banks need to better understand intellectual property and content matters. He indicated that should it be decided to establish a fund for the purpose of achieving the SICTS then LIME would be interested in contributing.
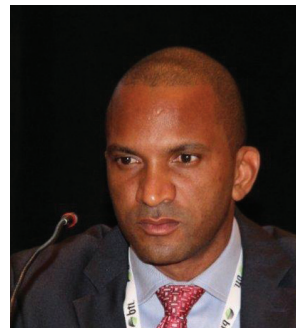
Mr. E.J. Saunders, CEO, Turks & Caicos Is.

Mr. Saunders gave examples of various activities which were important for the development of content. In this regard, he referred to CANTO's iCreate Mobile Apps competition, which he said could help to develop young talents in the region. He also made mention of Verizon's powerful answers competition and the significant prize money which it provided.

He then mentioned the situation in the Turks & Caicos Islands and the connectivity programmes provided. Government offices were upgraded with data speeds of up to 10Mbps. At the moment schools in that country were being connected to broadband and virtual classroom desktop software was being provided. He was in favour of higher data speeds in the country and he wanted to see an important role for Digicel in the achievement of the SICTS. ▶

Ms. Rhea Yaw Ching, VP Sales and Marketing, Columbus Communications

Ms. Yaw Ching stated that Columbus Communications was ready to work with all stakeholders in order to make sure the SICTS becomes a reality. She mentioned that her company had made significant investment in the development of broadband in the Caribbean and they had also established successful partnerships with both Digicel and LIME.

She also mentioned that Columbus had supported mobile app. development through Caribbean workshops. They were also involved in e-music, which was a part of the development of local digital content.

She suggested that the SICTS should be established on the basis of openness. In this regard she further suggested that there should be an open Internet and open collaboration with no boundaries. Consequently, the SICTS should be built on a foundation of openness. She also mentioned the collaboration between the CKLN and Columbus. In this regard, the Caribbean Examination Council (CXC) approached Columbus with a view to obtaining suitable bandwidth for their activities. A project was agreed and Phase one has already been completed. A CXC Digital Media Syllabus was established in six months. This project with the CXC helped that organization to reduce their costs.

Mr. Isaac Solomon, Director, Eastern Caribbean Telecommunications Authority (ECTEL)

Mr. Solomon stated his appreciation for the positive energy in the room regarding the implementation of the SICTS. He mentioned the activities of ECTEL, a Caribbean regional regulator, stating that ECTEL had been successful as a regional organization which has undertaken a significant amount of work in respect of regulating the ICT sector. With reference to the SICTS, his view was that it should not be compared to the Cricket World Cup (CWC) since it does not have a timeline like CWC did.

He went on to state that a single regulatory body needs harmonized policies and processes. In the case of ECTEL there are many similarities between the countries, yet differences remain. Consequently one may have harmony without harmonized legislation. Nevertheless, the ECTEL model works.

He closed by stating that ECTEL was willing to work with other countries and stakeholders to create a SICTS.

Discussion

The first question concerned the managing of personal data.

Dr. Touré stated that cybersecurity should be taken seriously and emergency centres are needed in the Caribbean. Also, police training schools should be included in cybersecurity and forensic matters. If cybersecurity is adequately dealt with, he said, this will bring confidence into the ICT processes.

Mr. Sylvester stated that peering exists with other major networks and the same level of security is required for all these networks. He then said that the CKLN has met international security standards regarding the protection of data.

The Grenadian ICT Minister lamented the high cost of bandwidth in Grenada, especially in comparison to Trinidad & Tobago. This cost in Grenada should be reduced, he said. He also stated that for the SICTS to be successful, a level playing field is required.

In the general discussion there were many suggestions that there have been some reduction of bandwidth costs.

Ms. Yaw Ching indicated that they have very competitive broadband costs in the countries where Columbus operates, following a general fall in broadband prices.

Dr. Didacus Jules, Secretary-General of the OECS stated that the ICT Single Space exists at two levels – CSME and OECS. He then referred to bandwidth as oxygen. He further stated that when he was with the Caribbean Examination Council (CXC), he got very little cooperation from LIME and the CKLN when the CXC needed assistance in implementing an e-learning platform. This resulted in the CXC forming a successful partnership with Columbus. ◉

CANTO 2015

"STRATEGIC ALLIANCES FOR SUSTAINABLE BROADBAND DEVELOPMENT"

Calendar of EVENTS

CANTO 31st
Annual General Meeting
Co-hosted by: TELESUR
Torarica Hotel,
Paramaribo, Suriname
25-27 January, 2015

CANTO 31st
Annual General Meeting
Co-hosted by: TELESUR
Committee Meetings
Torarica Hotel,
Paramaribo, Suriname
25 January, 2015

Youth Forum
Co-hosted by: TELESUR
Torarica Hotel,
Paramaribo, Suriname
27 January, 2015

Review of Legal & Regulatory
Framework; Awareness & Capacity
Building (BIIPAC) Workshop
Co-hosted by: TELESUR
Torarica Hotel,
Paramaribo, Suriname
27-28 January, 2015

CANTO 9th WTISD
Regional Video Competition
17 May, 2015

4th Edition of CANTO's
Regional i-Create e-Content
Mobile App. Competition
30 May, 2015

CANTO 31st Annual
Conference & Trade Exhibition
Hyatt Regency, Miami
26-29 July, 2015

9th Annual Human Resource
Leadership Forum &
2nd Annual Marketing Forum
Hyatt Regency, Miami
30-31 July, 2015

Telecommunications
Authority
of Trinidad and Tobago

Celebrating 10 years of Regulating

Trinidad and Tobago's
Telecommunications and Broadcasting Sectors !

10th
Happy Anniversary
Telecommunications Authority
of Trinidad and Tobago
2004 - 2014

The Telecommunications Authority of Trinidad and Tobago (TATT) is an independent regulatory body established by the Telecommunications Act Chap 47:31. TATT became operational on July 1st 2004.

Since then, we have continuously striven to create and nurture optimal conditions for development and growth within Trinidad and Tobago's telecommunications and broadcasting sectors.

We have made significant progress in liberalising and transforming these sectors into ones that encourage competition and investment.

We are committed to protecting the interests of our stakeholders, remaining responsive to their needs, even as we recognise their differing interests.

As we move towards another ten years of dedicated service, we commit to continuing the process of developing the telecommunications and broadcasting sectors in a progressive, fair and fearless manner, that will redound to the benefit of all citizens of Trinidad and Tobago.

Mr. Selby Wilson
Chairman of the Board of Directors

Mr. Cris Seecheran
Chief Executive Officer