

Many Nations... One Voice Muchas Naciones... Un Sentimiento Vele Landen... Een Stem Plusieurs Nations... Une Seul Voix Differente Nashon... Un Bos Second Quarterly Magazine 2016 Volume 02/2016



Inspiring ICT Innovations: "Building an Entrepreneurial Ecosystem through Sustainable Strategic Partnerships"

1



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Contents

Mission

Influence the innovation and development of ICT solutions for the benefit of members by developing, navigating and leveraging relationships with all stakeholders. Advocate for policies, legislation and rules which advance the creation of an environment which facilitates the deployment of services and technologies around the region.

Vision

To become the leading authority in shaping information, communication and technology in the Caribbean and the Americas.

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.

Editorial (English)	2-5	Digital Switchover in Suriname	30-32
Editorial (Espanol)	6-11	Improving Coordination on Disaster Risk Management	33-34
Chairman's Message	12-13	ICT can Accelerate Sustainable Development	25.20
CANTO's Code of Practice on Safeguarding the	14-15	Goals	35-36
Open Internet	14-10	IPv6 Deployment in Latin America and the	38-39
Announcing the New Secretary General	16	Caribbean: Where are we now?	
CANTO Visits Cuba	17	Best Telecom Product Management Framework	40-43
		Staying Agile in an OTT World	45
Increasing WIFI Access In Trinidad & Tobago	18-19	Exploit Network Knowledge from all over the	
Communications at the Speed of Now	21-22	world	46
5 keys for LATAM telecoms to successfully launch a UC solution	23-25	Superior Retail Sales and Marketing Strategies to Operators	47-49
Centre Spread	26-27	Best Practices for the Establishment of Take- Back Systems for Mobile Handsets	50-52
Artificial Intelligence and Internet of Things Transforms to "Internet of Intelligence"	28-29	Calender of Events	52



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Editorial (English)

Innovation in ICTs

ANTO continues to be one of the leading agencies in the Information and Communication (ICT) sector. being at the forefront of the development and use of ICTs in the Caribbean region. It interacts with different players in the sector and provides different fora in which all Caribbean ICT stakeholders are able to participate and join in collaborative dialogue for the advancement of ICTs in the region.

ICTs continue to play an important role in the lives of Caribbean citizens and globally they are now seen as the third major utility, after electricity and water. In addition, they are cross-cutting and therefore contribute to the development and management of various other sectors. The ICT sector is a dynamic one, therefore CANTO, through its activities encourages its members, in particular, and ICT stakeholders in general, to be innovative and dynamic. CANTO's proactive involvement in ICTs ensures that the organization remains on the cutting edge of technology and that it continues

to be in a position to influence the development of the ICT sector, especially the rollout of broadband.

In accordance with its Mission Statement, CANTO aims to "influence the innovation and development of ICT solutions for the benefit of members by developing and leveraging relationships with all stakeholders". In the ICT sector innovation is critical, given the role that ICTs play in sustainable development. CANTO's Mission includes, inter alia, the promotion of dialogue, the encouragement of ICT development and promoting ICT innovation.

Consumers, many armed with their smartphones, are now better informed and are aware of products that are available and services that they want to have. This has focused attention on telephone companies and governments to ensure affordable connectivity for citizens and consumer satisfaction.

Telephone companies also have to contend with a reduction in revenue which results in reduced contributions to Universal Service Funds. Over-the-Top operators continue to occupy operators' bandwidth without having to pay licence fees and taxes etc. Telecom operators, with the help of regulators, must continue to protect their businesses and ensure consumer satisfaction. They must seek innovative solutions in order to maintain their market share, identify new opportunities and position themselves for growth. Regulators must ensure that there is a level playing field and create the right environment to promote innovation and creativity.

The Global Recognition of ICT Innovation

In October 2015, The United Nations General Assembly adopted the post-2015 sustainable development agenda – Transforming our World: the 2030 Agenda for Sustainable Development. This Agenda which was adopted unanimously by all participating Governments calls on all sustainable development stakeholders, to seek and implement innovative solutions to existing problems and urges them to create an enabling environment that is conducive to innovation. It also highlights the role of ICTs in this sustainable development process.



According to the ITU, ICT innovation is a key element for promoting economic growth. The ITU further states that "ICT innovation will be a game-changer in enabling emerging economies to sustain economic growth in the future".

It also suggests that innovative ICT solutions can take advantage of mobile phones, mobile Internet access, and social media tools, to ensure inclusion, citizen participation and transparency in mobile applications, improve education possibilities and increase government efficiency.

At the ITU Global Symposium for Regulators in 2016, it was concluded that promoting digital inclusion and closing the 'digital gap' between a handful of highly industrialized economies and the world's many emerging markets and developing economies will require an innovation-oriented mindset that seeks out new approaches to regulation as well as to traditional challenges such as infrastructure funding, service delivery, and the taxation of ICT goods and services.

Role of Governments regulators and service providers

In order to promote the accelerated development of broadband and the implementation of innovative ICT mechanisms, it is important for governments to start by adopting forward-looking ICT policies, promote e-government, encourage broadband usage, provide more services to citizens, increase efficiency and build the capacity of civil servants by implementing innovative ICT solutions. Governments must also ensure that their long-term development objectives are complemented by the use of ICTs and suitable broadband plans are developed and adopted.

Regulators continue to regulate the ICT sector using various aspects of the four generations of regulation. These are the first generation, which is characterized by monopoly utilities; the second generation characterized by partial privatization/liberalization and the introduction of competition; the third generation characterized by full privatization/liberalization; and the fourth generation which involves regulators overseeing an increased range of services delivered over multiple and converged networks. Aspects of all four now constitute the regulatory ecosystem in the Caribbean.

In the fourth stage, regulators have the possibility of creating an enabling environment and also to promote innovation. There must always be a level playing field, introduction of new services, consumer satisfaction, content development and growth.

Regulators must ensure that all competitors are treated fairly thereby ensuring that competition can flourish. They should also ensure that there is room for innovation and that regulations do not discourage new entrants or entrepreneurs. In this regard, CANTO has recently produced the Code of Practice on Safeguarding the Open Internet.

Code of Practice on Safeguarding the Open Internet

The Code is in response to concerns brought forward by operators about consumer rights in accessing content over the internet. The Code seeks to balance consumer rights and responsibilities with the availability of flexible network management tools for operators. The wider objective of the Code is to provide a framework for operators across the Caribbean Region to collectively address the issue of Net Neutrality.

This Code of Practice balances the needs and freedoms of end users and content providers with the requirement of Operators to run their networks and their corresponding freedo to innovate and develop new services and business models.

CANTO and its members support the concept of the open internet and the general principle that legal content, applications and services,



should not be blocked. The Code of Practice for Safeguarding the Open Internet is printed in full in this edition of the Cancion Magazine.

Some Applications of ICT Innovation

Mobile Money

Mobile Money activities are transactions and services which can be undertaken using mobile devices such as a mobile phone or handset. These services include mobile payments, mobile money transfer and mobile banking.

Mobile money provides an alternative to formal financial services for people in the developing world who do not have access to savings to the formal banking system. It should be noted that only about 40% of adults in the developing world have access to a bank account, while most adults have access to a mobile phone. Regulatory and security measures are now needed to ensure the full benefits of this service in the region.

e-Health

The application of ICTs to the development of the health care has long been seen as an important innovative aspect of ICTs. The World Health Organization has estimated that some 400 million persons globally do not have adequate access to essential health care and e-health applications can boost the delivery of health care services. E-Health may be regarded as consisting of telemedicine (applications using video, smart phones), tele-health (using ICT applications for clinical health care and providing health-related education) and health informatics.

e-Agriculture

The 2030 UN Agenda for Sustainable Development highlights the important role of agriculture in achieving sustainable development. It is one of the sectors that could derive significant benefits from ICT innovation. A wealth of information can be provided to farmers to improve their farming practices. However, financial support is also required since most Caribbean farmers generally lack adequate financial resources.

The provision of information sharing systems and the creation of networks that will connect stakeholders in the agricultural sector are important areas where innovations could have a significant impact.

Other areas for ICT innovation

Other areas to be considered are e-education, e-environment, e-science, e-waste and e-business. Given the wide range of issues to be dealt with, it may be time for Caribbean stakeholders, led by Caribbean governments, to start using its intellectual resources to promote discussions on the wide range of issues in ICT that could contribute to the sustainable development of the region.

Advances in Information and Communication Technology (ICT) are also enabling large masses of data to be generated, transmitted and stored. This has resulted in the creation of Big Data, where data sets are large and often complex and cannot be processed by traditional methods. Big Data, however, is useful in a variety of areas including health, transport and science. It is capable of providing an effective, scalable solution to deal with growing volumes of data and uncover patterns or other information capable of making data manageable and profitable.

The ITU recently approved the first ITU standard on Big Data which details the requirements, capabilities and uses cases of cloud-based Big Data. The subject of ICT standards is another area in which ICT stakeholders, especially governments, regulators and operators should become more involved.

CANTO 2016

CANTO's 32nd Annual Conference and Trade Exhibition will be held from July 31st to August 5th at the Sheraton Puerto Rico Hotel and Casino, San Juan, Puerto Rico. Once again this promises to be an informative and interesting conference which will bring together the main ICT stakeholders from the Caribbean as well as other countries. The theme for this year's meeting will be: "Inspiring ICT Innovations: Building an Entrepreneurial Ecosystem through Sustainable Strategic Partnerships". The theme supports global ICT activities including the introduction of innovative ICT activities and the need to utilize ICTs in achieving sustainable development.

Among the highlights of the Conference and Trade Exhibition will be the following:

- Two Ministerial Roundtable during which Ministers will provide updates on policy and developmental issues in their countries, as well as activities at the CARICOM level;
- Regulatory panel discussions;
- GSMA Capacity Building workshop;
- Caribbean Women in ICTs;
- Aligning the Caribbean ICT Agenda;
- Corporate Social Responsibilities of CANTO members in the Caribbean;
- CANTO C.O.D.E 2.0 Hackathon;
- A high-level exhibition showcasing various aspects of ICT technology.

Following the Conference and Exhibition, CANTO will host its 10th Annual HR Forum and its 3rd Annual Sales, Marketing and Customer Care Forum.





Editorial (Español)

CANTO sigue siendo una agencia líder en el sector de la Información y las Comunicaciones (TIC), el cual está a la vanguardia en el desarrollo y uso de las TIC en la región del Caribe. Proporciona diferentes foros en los que todos los interesados en las TIC del Caribe son capaces de participar y unirse en un diálogo de colaboración para el avance de las TIC en la región.

La importancia de las TIC es tal que ahora están siendo vistos como la tercera gran utilidad, después de la electricidad y el agua. Además, son transversales y, por tanto, contribuyen al desarrollo y la gestión de varios otros sectores. El sector de las TIC es un proceso dinámico, por lo tanto, CANTO, a través de sus actividades insta a sus miembros, en particular, y en general a todos los interesados en las TIC, a ser innovadores y dinámicos, lo que asegura que la organización se mantenga a la vanguardia de la tecnología y continúa estando en posición de influir en el desarrollo del sector de las TIC, especialmente el despliegue de la banda ancha.

De acuerdo con su misión. CANTO pretende "influir en la innovación y el desarrollo de soluciones TIC para el beneficio de los miembros mediante el desarrollo y el aprovechamiento de las relaciones con todas las partes interesadas". En la innovación en el sector TIC es fundamental, dado el papel que desempeñan las TIC en el desarrollo sostenible. El sector continúa siendo retado por los diversos desarrollos en el sector, que precisa soluciones nuevas e innovadoras.

Un aspecto importante de la misión de CANTO es alentar y ayudar a sus miembros y las partes interesadas en las TIC del Caribe a ser innovadores. El papel de las soluciones innovadoras también es reconocido a nivel mundial y en este sentido, la innovación es vista como un motor para el crecimiento económico, especialmente en los países en desarrollo. La innovación es importante para el desarrollo de nuevos productos, así como la supervivencia de las empresas, especialmente las compañías telefónicas, en un entorno competitivo.

Los consumidores, muchos de ellos armados con sus teléfonos inteligentes, están ahora mejor informados y son conscientes de los productos que están disponibles y los productos que desean tener. Esto ha agravado los problemas de las compañías telefónicas y los gobiernos que han visto una fuerte disminución de los ingresos, así como la disminución de las contribuciones al Fondo de Servicio Universal (USF) regímenes. Over-the-top operadores siguen ocupando el ancho de banda, mientras que los operadores que prestan servicios que desean los consumidores. Los operadores de telecomunicaciones deben continuar protegiendo sus negocios y buscar soluciones innovadoras a fin de mantener su cuota de mercado, identificar nuevas oportunidades y posicionarse para el crecimiento. Al mismo tiempo, los reguladores deben asegurarse de que existe una igualdad de condiciones. Las necesidades cambiantes de la sociedad significan que las empresas deben proporcionar constantemente nuevos servicios y buscar nuevas soluciones con el fin de satisfacer a los consumidores.

Además de la innovación, tiene que haber un entorno propicio, en especial un entorno regulador favorable, lo que facilitará la adopción y aplicación de nuevas ideas. Los gobiernos y los reguladores, por tanto, tienen un papel especial que desempeñar lo que facilitará estas acciones. La igualdad de condiciones debe ser creada y esta situación debe ser atendida por los gobiernos del Caribe individual y colectivamente.

A nivel mundial, la innovación en las TIC se ve ahora como una parte integral del desarrollo de las TIC. La innovación es el camino hacia el desarrollo sostenible, especialmente en los países en desarrollo. Teniendo en cuenta el nivel de competencia que existe actualmente, la innovación puede proporcionar los medios para garantizar el crecimiento y la rentabilidad. Esto es reconocido por diversos organismos que promueven un mayor desarrollo de las TIC, en especial el desarrollo de banda ancha, teniendo en cuenta los beneficios que esto puede traer a las comunidades.

Papel de los gobiernos y los reguladores y proveedores de servicios

Con el fin de favorecer el desarrollo acelerado de la banda ancha y la implementación de mecanismos innovadores de las TIC, es importante que los gobiernos comienzan examinado sus propias actividades y su uso de las TIC. Por lo tanto, los gobiernos deberían tomar las medidas necesarias para promover el gobierno

electrónico, fomentar el uso de las TIC y también utilizar los servicios públicos en línea con el fin de aumentar la eficiencia del gobierno, ofrecer más servicios a sus ciudadanos. En este sentido, los gobiernos pueden utilizar medios innovadores para prestar servicios públicos, incluso a través de las TIC. las actividades del gobierno y la eficiencia de los gobiernos se beneficiarán por el mayor uso de las TIC. La intervención del gobierno en la construcción de las capacidades de los funcionarios públicos es importante para la mejora de la calidad, la eficiencia y la transparencia de los servicios públicos.

En el ámbito de las políticas y legislaciones, hay una necesidad de políticas y la legislación a futuro y la creación de un entorno propicio que promueva el desarrollo y fomentar la innovación. Además, los gobiernos también deben estar a la vanguardia del desarrollo de asociaciones público-privadas que son indispensables.

Por lo tanto, los gobiernos deben desarrollar políticas adecuadas y establecer una visión a largo plazo a sus ciudadanos. Esta visión va a depender, por necesidad en el desarrollo de la banda ancha y el uso innovador de las TIC. También será necesario que los países del Caribe para desarrollar planes de banda ancha a futuro adecuados y garantizar que las aportaciones de todas las partes interesadas estén incluidos. Se debe atender a las áreas transversales de las TIC, contribuyendo de este modo a las áreas tales como alivio de

la pobreza, creación de empleo, ayudar a las mujeres y mejorar la atención de la salud.

La Fundación Benton en sus comentarios sobre la Estrategia Nacional de Banda Ancha de Estados Unidos sugirió que una estrategia nacional de banda ancha bien concebido "establecerá un" círculo virtuoso "en el que un aumento del suministro de robusta y económica de banda ancha estimula la creación de aplicaciones que producen amplio y valioso beneficios sociales que luego causan los ciudadanos para exigir aún más robusto y de banda ancha asequibles; que a su vez estimula una mayor inversión en banda ancha más robusto; que a su vez estimula la creación de aplicaciones aún más beneficioso que causan los ciudadanos para exigir aún más robusto y de banda ancha asequible ". Estas son ideas que también podría servir a los intereses del Caribe.

Reguladores, de acuerdo con las políticas de los gobiernos, deben ser capaces de crear un entorno propicio, fomenta la innovación y asegurar que haya una igualdad de condiciones. Una de las principales áreas de consideración regulatoria es la gestión del espectro que es fundamental para el desarrollo de banda ancha. Esto es claramente una de las áreas más importantes para los reguladores.

En cuanto a espectro, es responsabilidad de los reguladores para garantizar que el espectro disponible se



utiliza de manera eficiente y, al mismo tiempo que se fomenta la innovación. Cuestiones tales como el espectro con y sin licencia deben ser consideradas. Hay muchos dispositivos y servicios cuyas necesidades de espectro son tales que el espectro sin licencia podría satisfacer sus necesidades de innovación. Sin embargo, los reguladores deben mantener siempre la capacidad de supervisar e inspeccionar los dispositivos para garantizar el cumplimiento de la normativa y para evitar interferencias perjudiciales.

Otra área de innovación que ahora se examina por algunos países es el uso de los espacios en blanco de televisión que permiten servicios de banda ancha sin licencia para operar en el espectro desocupado en las bandas de televisión UHF (694-864 MHz). Los ensayos han comenzado en países como Jamaica, Singapur y Kenia, mientras que otros países están desarrollando regulaciones del espacio en blanco de televisión. Recientemente, el regulador de la FCC de Estados Unidos ha tomado medidas para permitir que los modelos de acceso al espectro innovadores en los espacios en blanco de las bandas del espectro de televisión digital y en la banda de 3,65 GHz.

Como el Caribe continúa haciendo los preparativos para el sistema digital - transición de la tecnología analógica a la televisión digital terrestre, está claro que una cantidad significativa de trabajo está todavía por hacer en el Caribe.

Las decisiones en este sentido son de carácter político, técnico y reglamentario. Una de las consecuencias de la transición será la liberación de espectro ahora es utilizado por el servicio de radiodifusión y que podría asignarse a otros servicios. Este es un asunto que requiere consideración las decisiones y colectivas por parte de los gobiernos del Caribe. Un enfoque fragmentado podría tener consecuencias negativas para la región, en especial si están de acuerdo en diferentes países diferentes usos para el espectro que se pondrá a disposición.

Los reguladores para regular el sector de las TIC siguen utilizando las cuatro generaciones de la regulación. Estos son la primera generación, que se caracteriza por los servicios públicos de monopolio, la segunda generación que se caracteriza por la privatización parcial / la liberalización y la introducción de la competencia, la tercera generación caracteriza por la privatización total / liberalización y la cuarta generación que implica la supervisión de los reguladores de una mayor gama de servicios prestados a través de múltiples redes y convergentes. Aspectos de los cuatro ahora constituyen el ecosistema de regulación en el Caribe.

En la cuarta etapa de generación de la regulación, los reguladores tienen la posibilidad de crear un entorno favorable y también para poner en práctica mecanismos innovadores que va a crear una igualdad de condiciones, ofrecer nuevos servicios, garantizar la satisfacción de los consumidores, la creación de contenido y de fomentar el crecimiento. También permitirá que el apalancamiento del sector para lograr los objetivos económicos y de desarrollo sostenible.

Al llevar a cabo sus tareas, los reguladores deben asegurarse de que todos los competidores son tratados justamente lo que garantiza que la competencia pueda florecer. También deben asegurarse de que no hay espacio para la innovación y que las regulaciones gubernamentales no desanimar nuevas entradas o empresarios. Los reguladores no deben sin embargo ser tentado por las presiones externas a tener menos regulaciones. Se requiere más madurez en el sector antes de que esto pueda tener éxito en el Caribe.

La cuestión de la neutralidad, de la red es uno que debe ser confrontado por los países del Caribe que actúan juntos. Esto es ahora aún más importante teniendo en cuenta el hecho de que las normas de la Unión Europea sobre la neutralidad de la red entraron en vigor a finales de abril de 2016. Estas nuevas normas prohíben las prácticas de gestión del tráfico desleales (bloqueo y estrangulamiento), lo que debilita la competencia y la posible disminución de la innovación. El EE.UU. también ha implementado normas de neutralidad de la red, aunque siempre hay retos en los tribunales.



Interesados en las TIC del Caribe tendrán que examinar esta cuestión en función de las condiciones existentes en la región, la degradación de las redes y la pérdida de ingresos. Por lo tanto, neutralidad de la red se ha convertido en una cuestión importante que debe ser colocado en el programa de desarrollo de las TIC del Caribe. Para los países del Caribe, se debe reconocer que las redes no fueron construidas de la misma manera que las de los EE.UU., donde se obtuvo un importante apoyo del Fondo de Servicio Universal de Estados Unidos. han, en general, se requiere que los operadores del Caribe para obtener su propia financiación para el desarrollo de la red. USF en el Caribe se han utilizado principalmente para proporcionar servicios en áreas donde hay dificultades como el acceso, terreno, etc.

Asimismo, la UE ha puesto en marcha medidas para establecer un mercado único digital (DSM), uno en el que esté garantizada la libre circulación de personas, servicios y capitales y donde los individuos y las empresas puedan acceder sin problemas y ejercer actividades en línea en condiciones de competencia leal y un alto nivel de consumo y protección de datos personales, independientemente de su nacionalidad o lugar de residencia. Dentro de este programa es la reducción y eventual eliminación de las tarifas de itinerancia en la Unión. La Comisión Europea ha identificado la realización del mercado único digital (DSM)

como uno de sus 10 prioridades políticas. En consecuencia, no es meramente una cuestión técnica, sino también una cuestión política. Tal vez los gobiernos del Caribe deben tener esto en cuenta.

Los reguladores continúan regulando el sector de las TIC utilizando diversos aspectos de las cuatro generaciones de la regulación. Estos son la primera generación, que se caracteriza por los servicios públicos de monopolio; la segunda generación que se caracteriza por la privatización parcial / la liberalización y la introducción de la competencia; la tercera generación que se caracteriza por la privatización total /liberalización; y la cuarta generación que implica la supervisión de los reguladores de una mayor gama de servicios prestados a través de múltiples redes y convergentes. Aspectos de los cuatro ahora constituyen el ecosistema de regulación en el Caribe.

En la cuarta etapa, los reguladores tienen la posibilidad de crear un entorno propicio y también para promover la innovación. Siempre debe haber una igualdad de condiciones, la introducción de nuevos servicios, la satisfacción del consumidor, desarrollo de contenidos y el crecimiento.

Los reguladores deben garantizar que todos los competidores son tratados justamente lo que garantiza que la competencia pueda florecer. También deben asegurarse de que no hay espacio para la innovación y que las regulaciones no desaniman a los nuevos operadores o empresarios. En este sentido, CANTO ha producido recientemente el Código de prácticas sobre la protección de la Internet abierta.

Código de prácticas sobre la protección de la Internet abierta

El Código es en respuesta a las preocupaciones expuestas por los operadores sobre los derechos del consumidor en el acceso a contenidos a través de internet. El Código busca el equilibrio entre derechos y responsabilidades del consumidor con la disponibilidad de herramientas de gestión de redes flexibles para los operadores. El objetivo más amplio del Código es proporcionar un marco para los operadores de toda la región del Caribe para abordar colectivamente la cuestión de la neutralidad de la red.

Este Código de Prácticas equilibra las necesidades y las libertades de los usuarios finales y proveedores de contenido con el requisito de que las compañías mantengan sus redes y su correspondiente libertad de innovar y desarrollar nuevos servicios y modelos de negocio.

CANTO y sus miembros apoyan el concepto de la Internet abierta y el principio general de que los contenidos legales, aplicaciones y servicios, no deben ser bloqueadas. El Código de buenas prácticas para la protección de



la Internet abierta se imprime a todo en esta edición de la Revista de la Canción.

Algunas aplicaciones de Innovación TIC Dinero Móvil

Las actividades de dinero móvil son las transacciones y servicios que pueden llevarse a cabo utilizando los dispositivos móviles, como un teléfono móvil o teléfono. Estos servicios incluyen los pagos móviles, transferencias de dinero móvil y banca móvil. Los sistemas móviles de dinero utilizan Near-Field Communications, que es una tecnología de comunicación inalámbrica que permite la transferencia de datos a través de distancias cortas de hasta 10 centímetros.

El dinero móvil ofrece una alternativa a los servicios financieros formales para las personas en el mundo en desarrollo que no tienen acceso a los ahorros en el sistema bancario formal. Además, sólo el 40% de los adultos en el mundo en desarrollo tienen acceso a una cuenta bancaria, mientras que la mayoría de los adultos tienen acceso a un teléfono móvil. Sin embargo, aún no se han establecido normas y la interoperabilidad comunes. Mientras se está considerando la introducción más amplia de dinero móvil, los países en desarrollo también deben tener la oportunidad de participar más en el proceso de normalización relacionadas, especialmente por la UIT y la ISO.

Algunos países del Caribe han empezado a introducir el dinero móvil. Sin embargo, para muchos todavía hay problemas relacionados con los aspectos normativos y de seguridad. Este es un uso innovador de las TIC y los problemas que impiden el lanzamiento a gran escala de este sistema deben ser tratadas con rapidez, en interés de los ciudadanos del Caribe. Seguridad si se trata de dinero móvil debe sin embargo, seguirá siendo una prioridad.

e-salud

La aplicación de las TIC para el desarrollo de la salud ha sido vista como un importante elemento innovador de las TIC. No obstante, y a pesar de su potencial, el éxito de esta aplicación es menos de lo esperado. Esta es la situación a pesar del hecho de que la Organización Mundial de la Salud ha estimado que alrededor de 1,7 personas en todo el mundo no tienen acceso adecuado a la atención de salud esencial.

E-salud puede considerarse como un conjunto de aplicaciones de telemedicina (el uso de vídeo, teléfonos inteligentes), tele-salud (utilizando aplicaciones de las TIC para el cuidado de la salud clínica y la disponibilidad para la salud relacionados con la educación) la informática y la salud.

Todos estos son aspectos importantes del sector de la salud que son importantes para los gobiernos del Caribe. Las TIC podrían proporcionar un impulso significativo al sector de la salud en beneficio de muchas personas que no tienen acceso a servicios de salud adecuados. La situación también sugiere una asociación pública-privada que involucra diferentes partes interesadas, incluidos los gobiernos, las instituciones de salud, proveedores de servicios, la sociedad civil, las instituciones financieras de los trabajadores del sector privado y de salud, entre otros.

e-Agricultura

La Agenda 2030 de las Naciones Unidas para el Desarrollo Sostenible hace referencia a la importancia del papel de la agricultura en el logro del desarrollo sostenible. Es uno de los sectores que podrían derivarse importantes beneficios de la innovación en las TIC. Una gran cantidad de información puede ser proporcionada a los agricultores a mejorar sus prácticas agrícolas podría ser proporcionado. Sin embargo, también se requiere apoyo financiero ya que la mayoría agricultores del Caribe en general carecen de los recursos financieros adecuados.

La provisión de sistemas de intercambio de información y la creación de redes que conectarán a los interesados en el sector agrícola son áreas importantes en las innovaciones pueden tener un impacto significativo. La tecnología móvil es una de las herramientas importantes en servicios de información agrícola, con el



uso de SMS, la información puede ponerse a disposición de los agricultores en técnicas de agricultura, el suelo y las cuestiones de fertilizantes, así como las prácticas y los mercados.

Otras áreas de innovación TIC

Hay muchas otras áreas de las TIC en el que las estrategias innovadoras podrían resultar beneficiosas para la región del Caribe. La Cumbre Mundial sobre la Sociedad de la Información y las reuniones de seguimiento han demostrado muchas áreas en las aplicaciones e innovaciones TIC podrían resultar beneficiosas. Hay casos de aplicación con éxito, pero una vez más se requieren esfuerzos más concertados.

Entre las áreas que deben ser considerados son e-educación, e-medio ambiente, la ciencia electrónica y el comercio electrónico. Dada la amplia gama de temas a tratar, puede ser el momento para que los interesados del Caribe, dirigidos por los gobiernos del Caribe, para empezar a utilizar sus recursos intelectuales para iniciar las discusiones sobre la amplia gama de temas de TIC que podrían contribuir al desarrollo sostenible de la región.

Los avances en la tecnología de la información y la comunicación (TIC) también están permitiendo que grandes cantidades de datos que se generan, transmiten y almacenan. Esto se ha traducido en la creación de grandes

volúmenes de datos, donde los conjuntos de datos son grandes y, a menudo complejos y no pueden ser procesados por métodos tradicionales. grandes volúmenes de datos, sin embargo, es útil en una variedad de áreas, incluyendo la salud, el transporte y la ciencia. Es capaz de proporcionar una solución eficaz y escalable para hacer frente a volúmenes de datos y patrones Descubrir u otra información capaz de hacer que los datos manejable y rentable en crecimiento. La UIT ha aprobado recientemente la primera norma de la UIT sobre grandes volúmenes de datos que se detallan los requisitos, las capacidades y utiliza casos de grandes volúmenes de datos en la nube. Esta es otra área para los interesados en las TIC, especialmente los gobiernos, los reguladores y operadores para empezar a dar una cierta consideración.

CANTO 2016

La 32 ^a Conferencia Anual de CANTO Exhibición de comercio se llevará a cabo del 31 de julio al 5 ^a de agosto en el Sheraton Puerto Rico Hotel & Casino, San Juan Puerto Rico. Una vez más, esto promete ser una conferencia informativa e interesante que reunirá a los principales actores de las TIC del Caribe, así como en otros países. El tema de la reunión de este año será: "Innovaciones TIC Inspirando: construir un ecosistema empresarial mediante asociaciones estratégicas sostenibles". El tema es compatible con las

actividades de TIC globales, incluyendo la introducción de actividades innovadoras de las TIC y la necesidad de utilizar las TIC para lograr el desarrollo sostenible.

Entre los aspectos más destacados de la Conferencia y Exposición de Comercio estarán los siguientes:

- Una mesa redonda ministerial durante el cual Ministros dará actualizaciones sobre la política y las cuestiones de desarrollo en sus países, así como actividades en el ámbito de la CARICOM:
- Una mesa redonda de operadores que explorará estrategias de banda ancha, incluyendo el desarrollo, implementación y comercialización;
- Una mesa redonda de Reguladores donde se examinará la regulación del sector de las TIC en una era de la banda ancha;
- Mujeres caribeñas en ICTs;
- Alineación del Programa TIC del Caribe;
- Responsabilidad social corporativa en el Caribe;
- iCrear CANTO C.O D.E 1.o
- Hackathon;
- Una exposición de alto nivel que muestra diversos aspectos de la tecnología TIC.

Después de la Conferencia y Exposición, CANTO será el anfitrión de su 10º Foro Anual de Recursos Humanos y el 3er Foro Anual de Marketing.

Chairman's Message

Julian Wilkins



CANTO: Who We Are -What We Do

ANTO is the representative regional body for Caribbean Telecommunications Operators. Today, CANTO has more than 120 members in 34 countries making it the leading ICT/Telecoms organization in the Caribbean region. CANTO has been in existence for over 30 years and is well known for facilitating relationship-building and networking with all key stakeholders. CANTO's vision is to be the leading authority in shaping information, communication and technology policies throughout the Caribbean Region and the Americas. Its annual conference and exhibition, held in July/ August, ensures that the vision is achieved!

Conference Details

The CANTO Conference and Exhibition held in Miami, August 2015 can easily be described as the number one ICT/Telecoms Caribbean event which took place that year. For some time now, this conference has been the leading telecommunications forum in the region, attended by key policy makers within the Caribbean. Our CANTO conference is a unique event with a wide cross section of Government Ministers and Officials, Regulators, network operators and equipment suppliers. In addition, several regional organisations such as Caribbean Telecoms Union. International Telecoms Union. CITEL and the GSMA are represented.

A total of 700 delegates are expected to converge on the island of Puerto Rico for this year's Conference and Exhibition, July 31 to August 5. With feature speaker the Prime Minister of Grenada, the Honourable Dr. Keith Mitchell, there will be two Ministerial panels with approximately 14 ICT regional Ministers participating in the panel discussions. Among other events planned are regulatory workshops on Net Neutrality; Convergence; Universal Service Funds.

Discussions will range from telecommunication challenges that are being faced by the ECTEL countries to other regulatory issues within the region. Participants can also look forward to a dynamic and vibrant exhibition with suppliers demonstrating their cutting edge products and technologies. Our annual workshops have continued to be successful and 2016 promises to be no less so; we will host our 10th annual Human Resources Forum; the 3rd Sales, Marketing & Customer Care Forum and the 2nd annual CODE Hackathon.

Code of Practice on Safeguarding the Open Internet.

With the imminent introduction of ECTEL's Communications Bill, CANTO members have expressed concerns regarding the expansive scope of the Bill and the broadening of the remit of ECTEL and the Regulators. CANTO has communicated with the Chairman, ECTEL Council of Ministers, requesting an audience with the Ministers to discuss the draft Electronic Communications Bill. CANTO stands ready to offer advice and guidance to ECTEL thereby ensuring that the new Communications Bill does not stymie investment in the region.

In an effort to provide a solution to this challenge, CANTO has gone one step further by introducing a voluntary code of practice on safeguarding the open Internet. (The Code). This Code will address some of the existing concerns with the ECTEL draft Communications Bill. One such concern was brought forward by operators regarding consumer rights in accessing content over the Internet. The Code seeks to balance consumer rights and responsibilities with the availability of flexible network management tools for operators.

The wider objective of the Code is to provide a framework for operators across the Caribbean Region to collectively address the issue of Net Neutrality.

Open Internet is an important enabler of economic and societal growth. This Code of Practice has been developed to ensure that customers and other stakeholders can have confidence that end users will be able to access lawful content and applications that content providers wish to make available over the Internet. The Code balances the needs and freedoms of end users and content providers with the requirement of Operators to run their networks and their corresponding freedom to innovate and develop new services and business models. Striking this balance will foster the development of a wider range of service offerings from different Operators as they tailor these offerings to meet the different needs of different customers.

CANTO and its members support the concept of the open Internet and the general principle that legal content, applications and services, should not be blocked.

Changes to the USF in ECTEL member states.

ECTEL proposes an increase in the annual Universal Service Fund contribution from 1 percent to two (2) percent over the next four years and the creation of a reserve fund. CANTO has submitted a response to the ECTEL Consultation on 'Proposed Changes to the Universal Service Fund in ECTEL Member States'. In summary, our response indicates that ECTEL has not demonstrated the effectiveness of the management of available funds nor has ECTEL demonstrated the need for additional funding. In fact, ECTEL has not identified the problem that this consultation is intended to resolve. This conclusion is supported by the facts that after seven years of collections, Grenada has disbursed less than one (1) percent of funds; St. Lucia has disbursed four (4) percent; Commonwealth of Dominica 15 percent; St. Kitts & Nevis 15.5 percent and St. Vincent and the Grenadines 76 percent. The full CANTO response can be found on the CANTO website www.canto.org

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CANTO's Code of Practice on Safeguarding the Open Internet

Objective

he Code is in response to concerns brought forward by operators about consumer rights in accessing content over the internet. The Code seeks to balance consumer rights and responsibilities with the availability of flexible network management tools for operators. The wider objective of the Code is to provide a framework for operators across the Caribbean Region to collectively address the issue of Net Neutrality.

Code of Practice

Open Internet is an important enabler of economic and societal growth. CANTO Code of Practice (the Code) has been developed to ensure that customers and other stakeholders can have confidence that end users will be able to access lawful content and applications that content providers wish to make available over the internet.

The Code of Practice balances the needs and freedoms of end users and content providers with the requirement of Operators to run their networks and their corresponding freedom to innovate and develop new services and business models. Striking this balance will foster the development of a wider range of service offerings from different Operators as they tailor these offerings to meet the different needs of different customers.

This flexibility and potential for competitive differentiation will allow the region to become a proving ground for online services. This flexibility to innovate both technically and commercially is itself a differentiator allowing the region to develop a distinct and unique environment to attract technology companies and investment.

With this in mind the signatories have developed this voluntary Code of Practice. The Signatories to the Code provide services to a very significant proportion of customers in the region and this is a practical endorsement of their belief in the value of the Code.

The Code will be administered by CANTO, the regional trade association for telecommunications providers. Those Operators who become Signatories will be registered by CANTO. This Code will give customers confidence that the services they buy will be transparently sold and allow them to have an on-line experience that reflects their individual needs with access being possible to their choice of legal content.

Operators adopting this Code agree to abide by the commitments set out below. These commitments are designed to ensure that their customers can access legal content on the Internet on terms that are transparent and reasonable and that Operators do not target specific applications or content providers in an unfair way.

CANTO and its members support the concept of the open Internet and the general principle that legal content, applications and services, should not be blocked.

To give effect to this position Signatories to this code commit that:

 Within the terms, bandwidth limits and quality of service of their individual service plan, renternitation(K item) throws IllegalArgument/Excern

customers should have access to their choice of legal Internet content, services and applications;

- 2. Any restrictions on use attached to a particular service plan are effectively communicated to customers;
- 3. Save for objective and transparent reasons traffic management will not selectively target the content or application(s) of specific providers within a class of content, service or application;
- 4. They will make available a range of service plans that provide customers with viable choices for accessing legal content, applications and services.

What this means for customers

Commitment 1) means that when customers enter a contract for the supply of services then the Operators will not put additional restrictions that aren't in the contract on how the contracted services are used.

Commitment 2) means that customers will understand what they are contracting for.

Commitment 3) means that Operators will not single out specific on-line applications that are otherwise permitted with a service plan unless there are valid reasons to do so. This supports fair competition.

transforms from Entity list to DTO list

Commitment 4) means that Operators will have a sufficiently wide portfolio of service plans with different features that customers will be able to find one that meets their individual needs at a price that reflects the value of the service.

The signatories recognise that Operators must have the flexibility to run their networks, to innovate and to reach appropriate commercial agreements. The Code does not limit an Operator from:

- managing congestion on its network
- safeguarding the security and integrity of its network
- blocking services if required to by law or by a Court
- offering service plans which support the delivery of managed services
- making sure that customer contract terms are honoured

Making sure that the Code is followed

Where a signatory has registered its adoption of the Code, a customer, operator or regulator who believes that the Code has been breached should in the first instance raise this with the relevant Operator. Where the issues have not been resolved to the satisfaction of the customer, operator or regulator the matter can be escalated to CANTO, the Code Administrator, as a dispute. (Email: Open_internet_code@ Canto.org).

CANTO will only accept matters where the issues have previously been raised with the Operator but remain unresolved. Where CANTO finds that a signatory has wilfully breached the Code it may remove them from the register of signatories.

This document is primarily based on practices and principles of self-regulation by Operators. CANTO does not enforce this Code. On the contrary, Operators self-regulate both themselves and other Operators in the region.

The role of CANTO is principally that of an administrator of the Code. In furtherance of this, CANTO will do as follows:

- Keep a register of signatories to the Code.
- Initiate measures to have disputes resolved, when required and as agreed upon.
- Keep a record of deviations from the Code
- Promote adherence to the Code
- Provide disclosures to the Regulators

Announcing The New Secretary General

Mrs. Teresa Wankin



he Board of Directors of CANTO is pleased to announce the appointment of Mrs. Teresa Wankin to the post of Secretary General of CANTO with effect from 1st April, 2016.

The first Secretariat employee to serve as Secretary General, of CANTO, Mrs. Wankin is a champion for organizational and people development with a deep sense of respect for and commitment to our stakeholders and the delivery of service to our members.

Born in the small village of Granville, Cedros, Trinidad, Mrs.Wankin brings a great mix of leadership, inspiration, operational experience, and passion for service to the association.

When asked about her new role, Mrs. Wankin replied that she is excited and honoured to serve in this new capacity as it will allow her to focus on serving the stakeholders which is the only way to stay relevant in this industry and achieve success. She says she intends to direct her attention to the delivery of services to members ensuring that their needs are met in a relevant and timely manner.

Teresa joined CANTO in 2001 as a Research Officer and has held several strategic positions at CANTO. She has extensive experience in the organization having led the Technical, Sales, Publications, Member Services and more recently, Operational Departments. Join us in welcoming Mrs. Wankin in her new role as Secretary General.



CANTO Visits Cuba

The ETECSA delegation comprised Reinaldo Lazaro Rodriguez, First Vice-president; Hilda Areas Pérez , Central Director of Mobile Service; Luis Adolfo Iglesias Reyes, Central Director of Fix Service; Raúl Castillo Simón, Central Director of Business; Ignacio Guerrero López, International Relationship Director; Osmel Pérez Castillo, Central Director of Human Resource; Dunia Rivera Quintana, Business Specialist Estrella Clara Rubié Alvarez, International Relationship Specialist

he Chairman of CANTO, Julian Wilkins, Secretary General, Teresa Wankin and Finance and Administrative Manager, Jimmy Rodrigues met with the First Vice President of ETECSA and members of the ETECSA Executive on Wednesday 18th May, 2016 in Havana, Cuba.

The visit sought to strengthen the relationship between CANTO and ETECSA, one of the founding members of CANTO; to dialogue on the services provided by CANTO and examine ways in which both organizations can collaborate on projects.

The visiting team also got the opportunity to tour a commercial centre of ETESCA and had a first-hand view of Cubans accessing the Internet at an Internet Centre in Havana using a NAUTA account.



The CANTO Board of Directors also met for the 130th Board of Directors Meeting in Cuba. Directors were impressed with the Cuban hospitality and creativity which was demonstrated throughout the visit. ETESCA hosted the Board meeting ensuring that Directors got a glimpse of the various synergies in Cuba via the cuisine, craft and architectural beauty of the country.



Increasing WIFI Access In Trinidad & Tobago

Telecommunications Authority of Trinidad & Tobago (TATT)

lobal leaders consistently pursue initiatives towards securing greater connectivity and narrowing the digital divide by ensuring their citizens have increasing access to affordable, cutting edge Information and Communication Technologies (ICTs), in particular the Internet.

It has become common place for persons to keep in contact with their children; friends and colleagues using the Internet and Internet based applications as well as for keeping abreast with the news, conduct research and remain entertained while on the go. Students and professionals from public and private sector organizations constantly remain connected, perusing reports, writing memoranda and preparing emails. This increased productivity augers well for expanding output from private and state sectors alike, particularly those with revenue generating and infrastructural development capacities.

Widespread access to the Internet will facilitate increased communicating on the go. This is particularly important in the current era, when wealth producing sectors require close management and timely injections of innovation and invention. Wider access will be particularly beneficial for those persons with difficult financial circumstances, or for those who reside in underserved areas.

In Trinidad & Tobago the Government announced measures in its 2015/2016 budget presentation that will commence a process towards further narrowing the local digital divide, with the implementation of a Free National WiFi Initiative, throughout the country. The Honourable Colm Imbert, Minister of Finance stated: "We cannot improve our productive capacity and create a vibrant and competitive economy without a nationwide high-speed broadband network - the centerpiece for creating a knowledge-based and innovative society".

The Free National WiFi initiative therefore moves in the direction of ensuring all citizens have access to ICTs in keeping with the GORTT's National Universal Service Policy, the aim of which is:

To promote Universal Service for all citizens by facilitating the orderly and systematic provision of telecommunications services throughout Trinidad and Tobago taking into account the needs of the public, affordability of the service, and advances in technology. Realization of this policy will create a thriving, digital economy and knowledge-based society with opportunities for accelerated growth and investment in the Information and Communication Technology (ICT) sector¹

This initiative will be implemented in three phases starting with phase one, the provision of WiFi service on some of the country's buses.

¹From "Universality Policy of Trinidad and Tobago," by Ministry of Public Administration



Phase two will allow citizens access at specific transportation hubs and hospital waiting rooms and Phase three will cover other specified public spaces.

The Telecommunications Authority of Trinidad & Tobago (the Authority) will be significantly involved in this initiative, as Phase two of this project will be implemented via Universal Service. The Authority is responsible for promoting Universal Service in Trinidad & Tobago as prescribed in Section 28 of the Telecommunications Act which states:

28. (1) In accordance with the policy established by the Minister, the Authority shall determine the public telecommunications services in respect of which the requirement of universal service shall apply.

Thus the free public WiFi will be deployed in accordance with Section 28 of the Telecommunications Act which mandates that in accordance with the National Universal Service Policy the (3)... "Authority shall periodically determine the manner in which a public telecommunications service or value added service shall be provided and funded in order to meet the requirements of universal service for that service, including the obligations, if any, of the providers and users of the service. (4) The Authority may, with the approval of the *Minister, require that closed* user group services, private

telecommunications services and value added services as well as the users of such services and all telecommunications services generally, contribute to the funding of universal service".

The (Telecommunications) Universal Service Regulations 2015 includes specified mandatory universal service initiative for providers of telecommunications services in Trinidad and Tobago, either on a reimbursable or nonreimbursable basis.

The Universal Service Regulations seek to:

- i. Facilitate the provision of affordable and accessible basic telecommunications services to everyone especially population groups within the access gap and persons living in underserved areas such as one hundred per cent of the population would have access to basic telecommunications services;
- Ensure that the deployment of essential ICT infrastructure in key geographical areas such that there is universal geographic coverage of basic telecommunications services throughout Trinidad & Tobago
- iii. Implement a Universal Service Funding mechanism that would require that concessionaires and

other entities as may be required to contribute a percentage of their gross annual revenues to the cost of providing basic telecommunications services (except public mobile telephony services) to communities and population groups that fall within the access gap.

While a significant section of the population can afford and/ or have access to the Internet as well as other ICT services, coverage has not yet reached the desired 100%.

The Authority's Quarterly Market Update for Quarter 4, 2015 shows the level of Internet usage by the country's 1.3 million population:

- Fixed Internet subscriptions –penetration rate of 65.4%
- Mobile Internet Subscriptions – penetration rate of 47.8%

Roll out of the Free National WiFi initiative will result in widened access to the Internet to citizens, inching this country closer to achieving 100% coverage.

Greater access to technologies has proven to be of benefit not only to individuals, but also at the national level. If used wisely, ICT has the capacity to leap-frog Trinidad & Tobago out of financially challenging waters and bring the country into developed nation status.

Momentum

noun - moh-men-tum

: strength or force gained by motion or by a series of events



100% Government focused, **iGovTT** is your trusted provider in the design, development and deployment of advanced ICT solutions.

Our unique position allows us to provide tailored solutions that improve operational efficiencies, deliver value to citizens and increase the **momentum** to move our country forward.



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Communications at the Speed of Now

Elhum Vahdat, Vice President Applications Marketing, Dialogic



here is no doubt that the world we live in today is moving faster than ever before, and communications is at the forefront of enabling this speed. Which is why SMS/MMS (texting) has become so popular globally, irrespective of border, culture, religion, wealth, age, and gender. We all want to be in touch now, and want to be touched back at that same speed. This growing appetite for "communications at the speed of now" is exactly why Network Operators around the world need to jump back into messaging with both feet. This would enable them not only to increase their messaging revenue (or at least preserve their existing revenues), but to also seriously compete with over-the-top (OTT) messaging applications like WhatsApp, Viber, Skype, and Facebook Messenger.

Currently, the best option Network Operators have to accomplish this is to embrace Rich Communications Services, or RCS. At a very high level, RCS is essentially SMS/MMS that can work over IP networks and can enable presence and location, and sharing of media. It uses the IP Multimedia Subsystem (IMS) infrastructure to deliver enhanced communications beyond basic voice and SMS. These include group messaging, content sharing, Voice over Internet Protocol (VoIP), Internet Protocol (IP) video calling, file

transfer, social networking, and more. RCS brings to operator messaging the next-generation messaging features it's been lacking due to the fact that current operator messaging is based on the old SMS protocol dating back to before networks could carry internet data.

Now, RCS is not a new technology, as the industry initiative was originally formed in 2007, and in February of 2008 the GSMA officially became the project's "home". Unfortunately, RCS lost out to OTT apps immediately for a number of reasons, including trying to over-standardize everything and trying to capture requirements from two different groups -RCS and RCSe (later combined under the Blackbird standard version). Additionally, the fact that RCS is still only backed by one organization (GSMA) is a concern, or that moving to an IMS infrastructure is an expensive proposition, especially for smaller network operators, which can seriously delay



its global acceptance. Not to mention, the iPhone has no RCS support, nor does Apple intend to provide it as the company has its own proprietary solutions— Facetime and iMessage.

That said, the promise of RCS was, and even today still is a valid one, as it has been proven to be valid through the success of the OTT players noted above. Here are few reasons as to why Network Operators should embrace RCS ...

- 1. Enables delivery of services across devices and on any network (a.k.a. cross operator interoperability) with the caveat that the phone must support RCS
- 2. Ties subscriber's identity to a telephone number and not an app, so no need to download, install, or register another app
- Increases levels of security and Quality of Services (QoS) that only Operators can provide
- 4. Eliminates "closed community" limitations

as RCS will be available to all mobile subscribers, independent of handset

5. Shares the same IMS investment and leverages the same IMS capabilities as VoLTE and video calls over LTE.

Additionally, a couple of analyst reports specifically on RCS note the following when it comes to market size...

- Markets and Markets (August 2104) – expected to grow from \$775.4 million in 2014 to \$5,749.6 million in 2019, at an estimated CAGR of 49.3%
- <u>ABI Research</u> (March 2016) – projected to grow from \$23.6 billion in 2015 to \$40.1 billion in 2021

What is interesting about these numbers is not the potential, but the vast difference between the two analyst's projected market size. Again, RCS is not a new technology, but there doesn't seem to be enough "real" data for a completely accurate market size projection because not too many have been installed. Either way, both analysts numbers point to a healthy future for RCS, even if it does end up as a niche technology. As ABI Reseacrh noted, "Mobile network operators are still not too convinced with the benefits of RCS, but for those who deployed VoLTE and IMS, it is a natural progression for service upgrade."

One more noteworthy piece of information is the recent announcement at Mobile World Congress that Google and some of the world's largest and leading network operators are aligning behind RCS. The likes of América Móvil, Bharti Airtel Ltd, Deutsche Telekom, Etisalat, KPN, Millicom, MTN, Orange, TeliaSonera, Telstra, Turkcell, VimpelCom, and Vodafone along with Google announcing their support of RCS may not make it a success, but it sure will get RCS noticed as a contender for Network Operators around the world interested in offering advanced messaging services... which should be every single one.



5 keys for LATAM telecoms to successfully launch a UC solution

Jonathan Reid Managing Director APAC & CALA Regions, BroadSoft

he Latin America IP telephony and Unified Communications & Collaboration (UC&C) market reached 785,000 users in 2015, a 33.8% growth rate compared to the previous year, according to Frost & Sullivan. As businesses across the region seek to meet the communications and collaboration needs of their increasingly mobile workforces - while also seeking the flexibility, scalability and cost benefits that the Cloud can deliver – a strong business opportunity exists for Latin America telecom providers able to rapidly bring UC solutions to market.

For telecom providers seeking to launch competitive unified communications solutions in the Latin America market, there are several key strategies to consider:

Develop a Differentiated Offering

One-size-fits-all may work in the clothing industry, but when it comes to business unified communications offerings, differentiation is critical. While a growing number of telecom providers have made unified communications a core component of their business offerings, UC services have, to date, been one-size-fits-all and horizontal in nature. As a result, the burden has been on telecom providers to adapt an offering to the specific needs of customers of all sizes and across all verticals.

Customization has developed a negative connotation around time to market, cost, etc., but the cloud model is upending that assumption and enables telecom providers to rapidly develop and launch customized UC offerings. To do so successfully, telecom providers should first gain a thorough understanding of how target markets (micro/small business, mid-market, large enterprise) communicate and collaborate and what their unique pain points are.

For example, Latin America small businesses will value advanced mobility capabilities such as Fixed Mobile Convergence (FMC), one number and native dialing, dual personas, a mobile-first optimized user experience and personal calling functions such as Selective Call Forwarding, Hunt Groups, Simultaneous Ringing, and dial-by-name. SMBs will also look for flexibility and on-demand scalability that can be delivered affordably to meet business needs as they evolve.

Midmarket businesses will seek offerings with a more robust set of unified communications capabilities typically reserved for larger enterprises, such as mobile voice and video, presence and a consistent user experience that can extend across a business user's preferred mobile and desktop devices. Finally, large enterprises most likely will be looking for a full UC suite of services that includes hosted PBX and UC, contact center, and SIP trunking. Both of these segments will also value superior multi-site support, the ability to meet the needs of mobile and remote workforces, as well as on-demand scalability.

Deliver a superior user experience

The future of unified communications rests squarely on delivering a superior user experience, and service providers should launch UC solutions that have a unique and differentiated experience, and create custom end user experiences based on business requirements. As traditional modes of communication (technologydriven, voice-centric, point-to-point, locationdependent, communicationfocused, pay-per-use) give way to new communication models (experience-driven, multimedia-driven, multiparty, location-agnostic, affinity-focused), custom user experiences – mobile-centric

user experiences in particular – are going to become more important.

Service providers must also be mindful that businesses evolving to UC still seek advanced telephony features integrated with the unified communications experience. For example, many SMBs still value key system capabilities for the user to determine line usage, so rather than replacing this functionality the telecom provider can add advanced IP-based unified communications services like call conferencing, dedicated number and extension support, voice mail accounts and on-line provisioning for adds, moves and changes. As a result, SMBs will be able to keep their existing departmental structures, eliminate expensive line rental charges and enjoy unlimited local and national calling.

Consider vertical market approach

In addition to delivering superior, customized UC offerings by market size, businesses are increasingly looking for unified communications solutions tailored to the unique requirements of their vertical, whether its hospitality, education, government, financial services, etc.

For example, businesses in the hospitality industry are actively seeking cloud-provided communications services to replace their aging PBX solutions and align with their corporate IT cloud migration strategies – as well as easily integrate with Property Management Systems. Rather than try and offer hospitality businesses such as hotels and resorts a horizontal solution, telecom providers may be better served delivering a bundled offering (including connectivity, minutes, unified communications and property management system data integration) that easily allows hospitality properties to create customized communications services using dynamically targeted pricing, packaging, service authentication and digital content presentations.

Furthermore, by leveraging the right unified communications software, telecom providers can also eliminate the capital investment, special knowledge and operational standards required to support the unique requirements of each vertical market.

Communicate cloud and mobility benefits

By 2020, millennials will form 50% of the global workforce, and as our recent global business survey confirmed, UC and mobility are becoming synonymous in order to meet the communications and collaboration needs of the mobile-first, geographically dispersed and millennial workforce. The ability for an individual to, for example, start an IM Chat from their mobile device, escalate it to a call with a single click, then seamlessly move to a videophone or Chromebook and expand the session to a multiparty video conference is the type of seamless mobility millennials demand.

While Latin America businesses reside at different points of the cloud and mobile adoption curve, cloud UC can be a key differentiator for telecom providers as it can drastically reduce capital expenditures, simplify the IT environment by reducing complexity, support resources for deployment and management, and enable new collaboration, teamwork, and mobility productivity applications for workers all while offering necessary security requirements. We are already seeing UCaaS adoption move upstream from SMB to midmarket and large enterprises.

Leverage sales enablement programs

A successful UC offering doesn't end at launch; telecom providers in Latin America should seek out vendor sales enablement programs that include proven, ready-made market offers that address the needs of each market segment, sales training & enablement tools, proven marketing campaigns and best practices for customer fulfillment.

Sales enablement programs can include:

- Access to sales and marketing tools online so that telecom provider sales teams can more quickly achieve productivity;
- Digital demand generation that reflects business buyers are 70% of the way down the buyer's journal before they even call on a vendor;

- Superior education collateral such as eBooks, TCO calculators, white papers that can advance businesses down the buyer's journey once engaged;
- Joint marcomm opportunities with UC vendors that can include press releases, events and media outreach.

Sales enablement can also be aided by service providers that implement the UC services in their own offices; to be successful sales teams need to use the UC platform every day as part of their working tools. This is the most effective way to understand how business customers can maximize the benefits of unified communications.



Activity Collage



CANTO Chairman & Secretary General chat with executives of Huawei Trinidad



CANTO shows off phones from TSTT



Workshop



CANTO meets with S. Mc Millan & C. Reddock-Downes of TATT



CANTO pays visit to MPA Ministry From left: Hon. Minister M. Cuffy, T. Wankins & J. Wilkins

Chairman presents at 40th PURC/World Bank International Training Program on Utilities Regulation & Strategies



130th Board of Directors Meeting in Cuba



CANTO celebrates Admin. Assistant Day

Team CANTO visits TSTT, From left: C. Carter, T. Balthazar, T. Wankin & R. Walcott

Standard TDI al altiD to atodarad Offer alti 27th 2016 April 27th 2016 At Bislop Centenary College



Artificial Intelligence and Internet of Things transforms to "Internet of Intelligence"

Fernando Velazquez Chief Information Officer CNBG Marketing, LATAM

he concept of Internet of Things is not new. It was started in the 80's. Today's conception is completely different from the past. In the past the IoT only considered the connection between machines and the way they can talk. Today, the interaction includes humans in some cases and redesigns the model of connection from M2M (Machine to Machine) to H2M (Human to Machine) or M2H (Machine to Human).

In the 80's, it was very difficult to imagine how many machines will be connected considering that the population at that time was close to three billion people. Today is different; the connections expected by 2020 will be around 100 billion and population is expected to be around 10 billion.

But beyond connections, the data to be used was not clearly defined/understood in the past. For example, we've been thinking about the Internet of Things all wrong.

• Big Data analytics for IoT software revenues will experience strong growth; reaching \$81 billion by 2022 says Strategy Analytics

- Smart Cities will use 1.6 billion connected things in 2016 says Gartner
- By 2025 IoT will be a \$1.6 trillion opportunity in Healthcare alone says McKinsey
- 50 billion + connected devices will exist by 2020 says Cisco
- Data captured by IoT connected devices will top 1.6 zettabytes in 2020 says ABI Research
- There are 10 major factions fighting to become the interoperating standard for IOT

When we think of the IoT, we usually think of the familiar devices around us -- the PCs and Smartphones that form the backbone of our digital lives. That's a mistake. The devices that go into our light bulbs, door locks, and the arrays of sensors we're building are much more like that single-board. They're not 'smart' as we think: they are devices that don't have operating systems, have very little processing power, and even less memory. When people talk about the Internet of Things (IoT), they tend to think about big data technologies like Hadoop, where petabyte size datasets are stored and analyzed for both known and unknown patterns. What many people don't realize is that many IoT use cases that only require small datasets.

What is small data, you ask? Small data is a dataset that contains very specific attributes. Small data is used to determine current states and conditions or may be generated by analyzing larger data sets. When we talk about smart devices being deployed on wind turbines, small packages, on valves and pipes, or attached to drones, we are talking about collecting small datasets. Small data tell us about location, temperature, wetness, pressure, vibration, or even whether an item has been opened or not. Sensors give us small datasets in real time that we ingest into big data sets which provide a historical view.

The problem for IoT and managing the amount of data from people and devices is that we are left in the hands of a branch or subset of A.I. rather than the intelligence itself. Artificial intelligence (AI) is the intelligence exhibited by machines or software. It is also the name of the academic field of study which studies how to create computers and computer software that are capable of intelligent behavior.

Major AI researchers and textbooks define this field as "the study and design of intelligent agents", in which an intelligent agent is a system that perceives its environment and takes actions that maximize its chances of success.

Like I stated above, artificial intelligence is no longer just an academic field of study. If you look at the contextual awareness displayed by simple assistants such as Siri, Cortana, Google Now, you begin to understand the sentence above which talks of a system that perceives its environment and takes actions that maximize its chances of success.

Only by investing in artificial intelligence, rather than stopping short at machine learning platforms and algorithms (remember; algorithms are self-contained and can therefore by definition never be intelligent or truly adaptive to its environment to maximize success) will organizations and the world of the Internet Of Things realize the full potential. Even the current darling of analytics, predictive analytics, just isn't enough to harness the information deluge, providing basic automated actions within processes based on correlation.

In an IoT context, and at the mercy of algorithms and machine learning, the paradox can be rewritten as "The relevance paradox occurs because algorithms seek only information that it perceives is relevant to it." because ultimately humans are writing the code, and therefore we are still interpreting what is relevant and what is not into the algorithm itself. It's even apparent in the Gartner statement: based on our algorithms...There is a fundamental lack of clarity around the future infrastructure required to handle this level of analytics from the analysts at the moment.

There is one more thing. An outsider perspective. The games industry has been playing with A.I. and procedural generation for years. Procedural Generation, for example, "is a method of creating data algorithmically as opposed to manually. In video games it is used for creating items, quests, and level geometry. Advantages of procedural generation include smaller file sizes, larger amounts of content, and randomness for less predictable game play." Organizations and vendors would do well to seek out talent in this industry.

In summary

• The Internet of Intelligence is the new wave that goes beyond connecting machines and will gave us the possibility, with minimum data to make decisions



- Artificial Intelligence will emerge as the standard way of managing, interpreting and acting on IOT
- Machine learning, algorithmic platforms will fall short of producing results by the hallowed 2020
- Major software vendors will have to embark on an A.I. acquisition trail to keep up with consumer technology, and this needs to happen now, not tomorrow
- A truly emergent A.I. will come from a consumer technology company, not academia, and it'll happen sooner that we think, creating another kind of platform war called "Internet of Intelligence"
- The API definition as we know it will be replaced by the Artificial Intelligence Programmable Interface (AIPI)

Digital Switchover in Suriname

The Telecommunications Authority Suriname (TAS)

1. Introduction

hroughout the world, countries are in various stages of switching over from analogue to digital terrestrial broadcasting. The process of migration or "switchover" from analogue to digital techniques can take many routes, each with its own advantages and disadvantages in terms of rapidity, the players involved, and the degree of government intervention. Switchover implies more than a technical migration as the role of TV and radio in modern societies is economic, social and political. (ITU, 2015). Suriname is also making the switchover. Currently 24 free-to-air TV licenses are issued. Before the switchover started there were 18 free-to-air TV stations. The Telecommunications Authority Suriname (TAS) is entrusted by the Telecommunications Act with the management of the frequency spectrum and in this regard is facilitating the switchover process.

2. Making the case for Switchover

The available frequency space for TV broadcasting is not infinite. With a significant number of non-operational licensees and the growing applications annually there was little to no space left for the issuance of new licenses. The TAS was desperately in need for a solution. That solution came at the World Radio Conference 2007, where it was decided that the upper part of the TV band must be made available for broadband services. This was to be realized through the introduction of digital broadcasting. Digital broadcasting has a better spectrum efficiency compared to analogue broadcasting and has a better quality of experience with HD broadcasting.

3. Actions undertaking by the TAS in the course of the Introduction of Digital Broadcasting in Suriname

The first activity of the TAS was the launch of information sessions on the switchover in 2009 for various stakeholders, including: TV operators, consumer organizations, ministries, business organizations, youth parliament, womens' organization and the Supervisory Board of the TAS.



Mr. Jai Udit of the TAS conducting a session for government officials

In October 2010, a workshop was organized for television licensees and other stakeholders to inform them about the switchover and digital broadcasting standards (ATSC, DVB-T2 and ISDB). The ITU and the standards organizations were invited to Suriname for this workshop.



Mr Istvan Bozsoki from the ITU giving his presentation

Following the workshop it was the intention that the licensees would recommend a digital standard for Suriname. Unfortunately, opinions were divided, and as a consequence no recommendation was made.

To meet the switchover target date of 17 June 2015, set at the World Radio Conference 2007, a dedicated workgroup was established in January 2012. The need to do so was threefold:

- Regulating the frequency band.
- This would be accomplished through the introduction of two Multiplex operators¹. They would operate a digital pay-TV platform but would be obligated to carry the existing analogue license holders' content.
- Eliminating cost for analogue license holders by giving them the option to deliver their content to the Multiplex operator for a minimal fee
- To overcome the digital standard dilemma by leaving the choice to the Multiplex operators

A Public Call was held and on the basis of a comparative test two MUX operators were selected. Both have chosen to adopt the DVB-T2 standard.

4. The Vision of the Government on the Digital Switchover

Some licensees have expressed their concerns to the government with regard to content delivery to the MUX operators and argued the choice of the ATSC - standard as a logical step for three reasons:

- Most households already have a television set in their living room with a built-in ATSC receiver
- The existing transmitting devices are NTSC compliant, which can be converted to the ATSC standard
- o Retaining their brand

The government argues that the cost for the viewers and the analogue TV station should be included in the introduction of digital broadcasting. It has taken into account the fact that television sets on the Surinamese market are bought in the US and are already in the living room of many households. These sets support the American ATSC standard and in order to minimize the cost for the viewer it is logical to choose the ATSC standard. Choosing the DVB-T2 standard would impose costs for the viewers because they would be obligated to purchase a set–up-box.

With respect to the provision of content, the government believes that no obligations should be imposed on the current license holders. This means that they are not required to deliver their content to the MUX operator. The government agreed that full control should be given to the operators over their content.

The government supports efficient use of the frequency spectrum. In this context, frequencies of non-operational license holders will be revoked, since they have not complied with the license conditions, which state that they should be operational within a year.

¹The streaming of all the digital data within a single physical channel carrying one or more services or events

5. Resolution Council of Ministers

At the meeting on Tuesday, March 4th, 2014, the Council of Ministers decided that the ATSC and the DVB-T2 standards will be used for the distribution of television signals via digital networks. It also cited that the digital dividend will be used for broadband services and that the TAS would be responsible for developing a detailed plan for the transition.

6. Frequency Plan and Transition

To support this decision there should be a separation in the current band. The government has agreed that this separation will be at channel 37 (6 MHz) which is allocated to Radio Astronomy Services. Channels 7 to 36 will be used for free-to-air digital broadcasting according to the ATSC standard. Channels 38 to 51 will be used for pay-TV digital broadcasting according to the DVB-T2 standard. The ATSC-band will have a channel width of 6 MHz, while the DVB-T2-band will have a channel width of 8 MHz. The "digital dividend" band extending from channel 52 to 69 should be released for LTE. The existing operators will make a gradual switchover. Depending on where they are located on the band will determine whether or not they will migrate as they are scattered across the band.

7. Information Campaign

An information campaign was launched for the general public and existing operators. The general public was informed by a press release, providing information in news programs and an infomercial.



In collaboration with a supplier, a workshop was organized dedicated to existing operators. The workshop provided them with all the ins and outs of the digital broadcasting value-chain.

8. Summary

The switchover in Suriname can be characterized as a gradual cut, that is to say there is no switch off date set. In this way analogue license holders have full control over the costs. On the other hand, viewers have the time to purchase an ATSC compatible TV set. Before the switchover started there were 18 free-to-air channels and 18 video programs. Currently, there are 24 free-to-air channels and 33 video programs. As can be seen below, the increase in channels is 133% which gives an increase of 183% in the number of video programs.

	Pre-switch	Post-switch	% change
Allocated broadcast channels	18	24	133
Video program channels	18	33	183



Improving Coordination on Disaster Risk Management

Bobby Williams Associate Information Management Officer ECLAC

he Economic Commission for Latin America and the Caribbean (ECLAC) has been working with CANTO to improve coordination between telecommunications companies and disaster management offices. Based on its research, ECLAC has devised the following list of recommended areas in which enhanced cooperation can help to improve public safety and streamline disaster response efforts.

The list is divided into the four phases of a popular model for understanding disaster risk management: mitigation, preparedness, response, and recovery. The list is still under development, and is open for comment – please send any feedback on this list to <u>robert.williams@eclac.org</u> ECLAC Caribbean's work in Disaster Assessment and ICT for Development can be found at <u>http://vrb.al/disasters-eclacpos</u> and <u>http://vrb.al/ict4dev-eclacpos</u>.

Mitigation

- Telecommunications companies should make effective use of knowledge resources available through the national disaster office, including instruments such as hazard maps, as part of the planning process for the development of resilient network infrastructure.
- Disaster offices and telecommunications companies should work together to develop a policy addressing the tradeoffs associated with preventing network congestion in a post-disaster environment.
- Agreements for the sharing of capacity between telecommunications operators during an emergency situation should be in place.
- Disaster offices can help telecommunications companies build political support for aggressive law enforcement action to prevent cell tower vandalism.

Preparedness

- Disaster offices need insight into the disaster response and business continuity management plans of telecommunications companies.
- Disaster offices need GIS map overlays of telecommunications infrastructure.

- Telecommunications companies should inform national disaster offices of planned service outages.
- There is a need for the establishment of geographically-targeted mobile-phone based early warning systems.
- There is a need for technical cooperation on co-location of emergency telecommunications equipment on or within telecommunications company facilities.
- Emergency telecommunications facilities should be regularly tested, and telecom companies should be integrated into national disaster drills.

Response

- Elevated network priority must be granted to disaster response related communications.
- There is a need to establish a streamlined reporting mechanism to enable telecoms to efficiently provide disaster offices with regular updates on network status and projected restoration time frames.
- Telecommunications crews in the field are often well positioned to report on local conditions, for example to provide information about whether a given road is passable. Disaster response activities would benefit from integrating their observations into the information stream.
- Disaster offices should be able to influence the placement of Cell site-On-Wheels (COW) facilities to locations with the greatest need, such as in proximity to shelters for displaced persons.
- Telecommunications companies and disaster offices should coordinate on the dissemination of public information notices and other outreach activities.

Recovery

- Telecommunications companies need to be more effectively integrated into the post-disaster needs assessment (PDNA) and damage and loss assessment (DALA) processes.
- Disaster offices can help to ensure that equipment used in the restoration of telecommunications infrastructure is granted the same import duty exemption available to other goods used in the rebuilding process.

CONSTRUCT TO ALLOT

ICT can Accelerate Sustainable Development Goals

Ericsson

F ricsson has published its 23rd annual Sustainability and Corporate Responsibility Report, which details the company's performance in 2015 in three areas: responsible business; energy, environment and climate change; and communication for all.

The report also highlights how Information and Communications Technology (ICT) can enable all 17 of the United Nations Sustainable Development Goals (SDGs) and even has the potential to accelerate their achievement.

Hans Vestberg, President and CEO, Ericsson, says: "The SDGs lay out a clear path to a more sustainable world, and ICT is a powerful lever to make that happen. We intend to build on our momentum from 2015 so everyone can benefit from the opportunities afforded by the Networked Society."

Responsible business highlights Conducting business with integrity and transparency is at the heart of Ericsson's commitment to sustainability and corporate responsibility. The report shows that 99 percent of active Ericsson employees have acknowledged the company's Code of Business Ethics. In 2015, the Ericsson Compliance Line – which enables secure reporting of suspected violations – was reinforced to support industry anti-corruption best practices.

Demonstrating its commitment to respecting human rights, Ericsson reported according to the UN Guiding Principles for Business and Human Rights framework for the second year in a row, and continues to be the only ICT company to do so.

Energy, environment and climate change highlights According to Ericsson research, ICT solutions can help reduce greenhouse gas (GHG) emissions by up to 15 percent by 2030, more than the current carbon footprint of the EU and US combined.

In 2015, Ericsson met the target to offset twice the amount of CO_2 from its own carbon footprint with solutions such as smart grids and intelligent transport. In addition, Ericsson exceeded its goal to reduce CO_2 e emissions per employee by 30 percent – two years ahead of schedule. This amounted to a 42 percent reduction compared with the 2011 baseline.

For customers, hardware platforms like the Ericsson Radio System, new software and rural coverage solutions are all designed to help customers optimize energy performance.

Volvo Bus Latin America and Ericsson signed a partnership agreement in 2015 for localization and customization of Volvo's ITS4Mobility intelligent transport system in order to address the needs of the Latin American market. The real-time traffic management and passenger information system increases the efficiency of urban transportation systems, thereby contributing to enhanced mobility.

Communication for all By the end of 2015, an estimated 20 million people had been directly impacted by Ericsson's Technology for Good[™] initiatives.

Connect To Learn, a global education initiative by the Earth Institute of Columbia University, Millennium Promise and Ericsson, has now been launched

in 22 countries, where it is benefiting over 76,000 students. In 2015, Connect To Learn was deployed in Myanmar, India, Tunisia and Sri Lanka. In Latin America, Connect to Learn has active programs in Mexico and Chile.

Mobile financial services can be a game changer for advancing financial and social inclusion. In 2015, Ericsson supported ASBANC, Peru's National Bank Association, in an initiative to provide next-generation mobile financial services to 2.1 million Peruvians – about 7 percent of the total population – within five years.

The employee volunteer program Ericsson Response marked its 15th anniversary during the year. Ericsson Response has so far supported 40 relief efforts in 30 countries, and was deployed in locations including Iraq, Nepal, Sierra Leone, South Sudan and Vanuatu in 2015.

Other programs, such as partnerships with the Whitaker Peace and Development Initiative in Mexico and audiovisual workshops with Rede Cultural Beija-flor in Brazil, aim to equip participants with tools that can transform society and support the UN Development Goals.

Carla Belitardo, Vice President, Strategy & Sustainability and Corporate Responsibility, Ericsson Latin America, says: "By embedding sustainability and corporate responsibility into our business, we have a strong platform for progress and positive impacts. We will continue to work in public-private partnership and advocate Technology for Good to drive change for the better."

For more information, visit: <u>http://www.ericsson.com/sustainability-report-2015</u>



Forest Whitaker and Elaine Weidman during a Whitaker Peace & Development Initiative youth training session in Tijuana, Mexico. As the technology partner to WPDI, Ericsson provides ICT equipment for the youth based on Connect To Learn.



Ericsson's committment to Technology for Good leverages our technology and the expertise of our employees to meet global development challenges. Sustainability and corporate responsibility are central to Ericsson's core business and our aim is to create positive impacts for our stakeholders and our business whilst carefully managing risks.

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IPv6 Deployment in Latin America and the Caribbean: Where are we now?

Kevon Swift Head, Strategic Relations and Integration, LACNIC



ome people might consider IPv6 to be the "new protocol on the block" but for many of us in the telecoms/Internet industry this is indeed old hat. IPv6 has been around since the early 90s, in the days of yore when AOL was still fresh and the idea of the Internet being a global public resource was still in its infancy. So, fast forwarding twenty odd years, why has IPv6 re-entered the tech narrative in such a highly visible manner? To be extremely honest, it never really disappeared from the spotlight. The Internet Engineering Task Force (IETF) has been advising organisations to switch over to IPv6 for years. However, no one really anticipated that the mass commercialisation and globalisation of the Internet, the mobile revolution, and now the extraordinary Internet of Things would have catapulted us to a deeply interconnected reality that had only been theorised by the Internet's early architects. More importantly, IPv4 is almost completely over!

5

The Internet's exponential growth has been and continues to be hungry for one thing: connectivity! This is far from being an issue of connectivity for connectivity's sake. The Internet is becoming increasingly entrenched in our daily lives. Transport networks, financial markets, security, manufacturing - we are becoming smarter in the way we do things and reaping the attendant rewards. Connectivity is foundational to all this. What's more, IPv6 presents a unique opportunity to ensure that the Internet will continue growing in a stable and secure way. As for IPv4, on 3 February 2011 the Internet Assigned Numbers Authority (IANA) made its last global allocation of /8 blocks (16M IPv4 address space) to the five Regional Internet Registries (RIRs). Subsequently, in June 2014 IPv4 address space reached exhaustion phase in the LACNIC region. What did this exhaustion mean? Had the number of IPv4 addresses reached absolute zero within LACNIC? This is not the case, but existing LACNIC Community policy has reduced IPv4 distribution to a trickle compared to its former days.

IPv4 demand was traditionally driven by justified business needs, i.e. growth in residential and business Internet access markets or needs of specific end users such as universities or Internet Exchange Points (IXPs). The IPv6 paradigm goes beyond access and contemplates patterns such as increased cloud and content service providers, more sophisticated end user applications and devices and e-commerce trends in general where digital offerings per Internet community are shaping a new form of digital divide. Indeed, these patterns have an impact on the traditional telecoms sector and have disrupted the lens through which telcos and ISPs view IP addresses. Suffice to say, we no longer enjoy periods of speculation and analysis. IPv6 migration has become much more of a requirement than a desire.

In the Caribbean, some folks have stated that there are either enough IPv4 addresses to maintain current business for a while and/or the costs of doing a full IPv6 switchover are way too exorbitant to tackle the issue at the moment. In reality, the IPv6 discussion is not limited to national market borders. What is certain is that oftentimes business leaders lack comprehensive data to fully inform their decisions. For this reason, LACNIC in collaboration with CAF, the Development Bank of Latin America - recently conducted the first ever study on IPv6 deployment in Latin America and the Caribbean to better understand the region's preparedness for the new frontier and provide a compendium of guidelines to deploy IPv6. Conducted over a 10-month period, the study also includes an IPv6 KPI with sub-indicators measuring different activities of the Internet value chain, and an IPv6 economic impact assessment.

The study compiled data from thirty-three (33) economies in Latin America and the Caribbean and contains ten in-depth country case studies including the Dominican Republic and Trinidad and Tobago from the Caribbean. In order to provide well-rounded views on IPv6 deployment, interviewees for case studies included, inter alia, ISPs, content providers, governments, regulators, and universities/academic research networks. As the first detailed analysis of its kind in the region, the study revealed some stark findings, including:

- Roughly only four (4) countries have more than 1% of users ready for IPv6 (Bolivia, Brazil, Ecuador and Peru). Most ISPs are still not offering IPv6 to end users (residential, mobile) but most have IPv6 deployed in their network core
- 30% of organisations in the region are thinking about deploying IPv6 in 2016
- Most commonly, the transition strategy adopted is Dual Stack with native IPv6 & private IPv4 + CGN44
- Almost no one is expecting to deploy other transition strategies like NAT64, 464XLAT, MAP (not even in data centers!)
- Countries with large Internet penetration are the most delayed in IPv6 uptake (lower growth rate, IPv4 stock still enough for their needs)

Some successful models highlighted a key trend: deployment has been significant in countries where there is a mix of proactive government and public policy (especially regarding public infrastructure requirements), along with strong business decisions from telcos. Additionally, since the close of the study there were significant surges in native IPv6 traffic in Belize and Trinidad and Tobago.

Undoubtedly, the study can be considered the most authoritative document on IPv6 for Latin America and the Caribbean at this time. With more than 50% of content on a global scale being available in IPv6, there are certainly greater considerations at play when speaking about migration. Therefore, at your fingertips you have: regional statistics and trends, best practices, economic models, an IPv6 KPI with sub-indicators measuring different aspects of the Internet value chain, and an economic impact analysis. Be sure to go through our IPv6 portal for more information and see the entire report by going to: http://portalipv6.lacnic.net/en/

Best Telecom Product Management Framework

Managing Director, Parcus Group



any telecom organizations, large and small, and in both developing and developed countries are frequently presented with the challenge of finding the most suitable structure and approach to product management and product development.

Only last week we were in several meetings with organizations where the topic of Telecom Product Management Framework was brought up, and followed by a passionate discussion.

Broadly speaking the conversation starts with a division of stakeholders into two camps:

- 1. What we will call 'highly structured' or as some would say 'waterfall' approach, and
- 2. What is commonly referred to as agile, which its proponents claim speeds up product development and delivery.

Although we are broadly using names of 'project management approaches', let us explore both of these scenarios and, in conclusion, try to revert back to, what in our opinion, is the most optimal framework model for telecom product developments.

Our suggestion, as with any analysis is to take an informed approach and review both the approached independently.

Waterfall is a structured, sequential approach where each particular task in the project is done in phases. Tasks can be serial or parallel but generally once the phase finishes, the project moves onto the next phase. The number of phases varies depending on the type of a project.

Agile is a framework where phases (requirements/design/build/test) required to complete a project are generally done in parallel and with iteration. There are several Agile approaches but most have the same structure where tasks are broken down into small tranches (planning cycles). Requirements and solutions are continually evolving and based on priority and discipline.

In the first table below is our initial analysis around the key advantages and disadvantages of each methodology.

	Advantages	Disadvantages
Waterfall	 Easy complete project planning Measurable progress in phases Target dates and deliverables Stakeholders can focus on delivery of their own tasks 	 Change in scope can impact the whole project Errors in early stages of the project can impact later tasks Dependencies and delays can jeopardise the whole project
Agile	 Easy to change requirements given short planning cycles Daily team communication via 'stand-up routine' Easy improvements from one task to next 	 No clear overall project planning Heavy engagement of product manager required at all stages All team members must be skilled on the Agile approach Easy to miss documentation deliverables after 'product' has been delivered

While the above is not an all-exhaustive list of characteristics of the approaches, it should be sufficient to provide us with some high-level understanding and guidance.

The second step is to apply the above to a range of the most common telecom product development projects of different types and shapes, to determine which approach makes the best sense for each type of development, as per the table below.

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Telecom Project Example	Requirements Characteristics	Impact
Complex Product (eg. New fibre IP VPN network required)	High CAPEX spend, lots of planning & design required, strong product management, vendor and engineering engagement required.	Suggest use of traditional waterfall framework and workflows with stages and approval gates and dedicated project management resource.
Simple Product (eg. Change of CPE model on ADSL service)	Low CAPEX, small amount of planning and design, some vendor and engineering engagement required.	Use waterfall framework for the overall project while applying agile for specific project tasks or sub- tasks such as development of new CPE test plan, CPE testing, and documentation.
Product Feature (eg. New online product reporting portal functions)	Low CAPEX, some amount of planning and mainly IT design, some vendor and IT engagement required.	Use agile based workflow given software product component and IT systems impact. Overlay with gating stages to ensure quality and consistent documentation of deliverables.
Product Pricing Papers (eg. change to Broadband Internet price plans)	No CAPEX, no planning & design and no engineering or external vendor engagement. Finance approval may be required.	Due to relative simplicity of the task and non-iterative nature of tasks, a simple waterfall workflow would be sufficient to cover all the tasks and gate approvals.
Product Exit (eg. exit legacy ATM product)	No CAPEX, some planning & and low amount of engineering or external vendor engagement. Very significant impact on existing customers.	Simple tasks but requiring precision around execution due to customer impact. Waterfall workflow would work best led by an experienced project manager to ensure minimal customer impact.
Product Lifecycle (eg. ongoing management of a living product)	Some lifecycle CAPEX, limited engagement of engineering, IT & vendors. Senior management high visibility.	Considering repetitive nature of lifecycle tasks such as monthly reporting, forecasting, market reviews etc a simple agile workflow can be used.

From this table, it is clear that a one-size fits all approach does not apply in terms of how to deliver Telecom Product Management projects. So where to from here?



At this point the framework selection, assuming this is even put up to a consideration, usually gets decided by the management power of wills, sometimes arbitrarily or simply by each individual product manager who follows whatever steps he/she deems most suitable, based on their experience or background.

But this will not do. Our view is that a 'structured flexible' approach is most suitable. While we recognise this may sound like somewhat of a contradiction, let's explain it a little further.

Due to the nature of telecom products, a considerable amount of structure is required even around 'pure agile' project such as software feature changes given the complexity of corporate IT systems, OSS/BSS interdependencies and the significant possibility of negative customer impacts caused by insufficient product quality and pre-release testing.

Thus the starting premise of the framework is that it needs to be 'structured'. On this basis our steps are:

- 1. Identify the most common types of product management projects and activities, similar to the list in table 2. Try to limit this list to 10 types of projects.
- 2. As a second step, your organization needs to develop workflows which would apply to each of the different project types. Each of the workflows needs to be reasonably detailed to capture all the activities and tasks required for particular project type. This activity will require a great amount of cross-business-unit collaboration.
- 3. To each workflow you should add required documents, tools and templates. For example for the business case task, add a business case template and document the deliverables required of project participants.
- 4. Once the workflows designs are finalised, it is critical that the department's heads provide agreement that such steps will be followed.

But structure isn't enough. In competitive markets like telecommunications, players also need agility and flexibility.

Before your jump to step 4 and seek approvals, review the workflows carefully. Seeking input from colleagues with different opinions to your own in reviewing is important as it helps improve, not to simply endorse the workflow.

For example, if your background is structured project execution, insist on gathering feedback from colleagues with different backgrounds in Agile and software development. Ask them to review each workflow and to identify which tasks or 'sub-components' of the overall flow can be structured into small agile tranches. From there you should be able to end with a selection of 'structured flexible' workflows which have been custom developed for your own business. And this would be a starting foundation of your own telecom product management framework.

In closing, let me also clarify that many operators may wonder if such framework is really beneficial or will only add to the complexity of product development. In our experience the positives are overwhelmingly greater than any negatives.

Every time your company has created a product and the launch was late, such a framework would have helped. Every time you created a product with quality that was not acceptable, customer support processes not finalised, or operational staff not trained properly, the framework would have helped. And any time you developed a product and your ROI was insufficient, the framework would have helped.

Finally, a word of caution: The framework is only the first step. It is up to you and your organisation to adhere to agreed steps, tasks and flows as in the long run this will be the true test of success. So changing culture is equally important through effective change management and organisational communication.

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- **INCREASE REVENUE**







Indrajit Chaudhuri, SVP, Product Management & Technology Office, TECNOTREE

'ith the arrival of OTT content providers, the way we use our phones has undoubtedly changed; with Facebook, WhatsApp, Viber and Skype dominating the communications markets and new services being launched with increasing rapidity, operators have found themselves with eroding profits and now face the question of how to become better service providers in order to keep up with these digital disruptors. Recent reports from Pyramid Research have also predicted that paid OTT revenue in emerging markets, including Latin America, is set to expand to US\$6.0 billion in 2019, no doubt causing some anxiety within the boardrooms of many mobile operators.

Recent research^{*} conducted by Tecnotree amongst global operators confirms that the industry is aware that change is required in order to bridge the increasing gap between OTT competitors and CSPs. The research also revealed that 75% of respondents had noticed increased average revenue per customer (ARPU) related to digital services over the past 12 months.

The demand for digital services appears to be on the rise; over a third of mobile operators surveyed believe that LTE has increased consumer data spend worldwide, while another 36% say LTE has fundamentally changed how consumers use their mobile phones. In order to benefit from this increase in usage, operators must reinvent their service offering to ensure data remains in their networks, while also ensuring that new services are rolled-out quickly to ensure they do not lag behind their speedy competitors. An overwhelming 89% believe that OTT providers can deliver new products in 1-6 months, whereas 30% of the questioned participants believe it takes a year for CSPS to do the same.

One of the biggest hurdles is in Business and Operational Support Systems (BSS/OSS). OTT competitors have run away with large segments of market share, mainly due to the inability of major operators to quickly and efficiently update their legacy BSS/OSS infrastructures, with 50% of operators needing to update their systems and 79% needing to move to fully integrated billing functions within their digital product set.

So, what is being done to overcome these challenges? Operators have taken action in the form of an alliance of nine mobile operators to bring digital or digital content to consumers quicker. Similarly, EE recently partnered with MTV for a new music service called TRAX and AT&T's DirectTV, which provides on-demand and live programming, is also now an OTT service. But along with providing these bundles, CSPs will have to build and plan for uncertainty within their infrastructure. While it is unrealistic to predict the future, the dawning of new technologies such as IoT with countless possibilities, CSPs will need to be flexible and agile with their BSS/OSS systems, in order to be responsive and adaptable to changing market demands.

Exploit Network Knowledge from all over the World

Advertorial



Lars Moltsen, Chief Science Officer, 20perate





Mobile networks in the Caribbean are becoming more and more complex, like they are in the rest of the world. Subscribers on the move expect services to continue running smoothly, while devices jump between 2G, 3G, and 4G depending on coverage. In pure 2G networks things were fairly simple because there was only one type of handover (2G-to-2G). When adding 3G, the number of different types of handovers to configure and monitor was suddenly four, and with LTE it was nine.

Operating a network of such comlexity demands a strong technical organisation. Relying on human skills alone, however, will be too costly and not future-proof at all. Instead, network operators must start looking for methods to automate operational processes.

Diagnose network incidents automatically

2solve is an innovative new tool for discovering and diagnosing network problems using smart algorithms and captured expert knowledge. The solution already has a track record from large, European operators and is now also becoming available in the Caribbean market.

The underlying concept is adopted from the medical domain, where advanced algorithms developed around 1990 together with knowledge bases of symptom-disease associations enabled automated human diagnostics. Just like the human body, a mobile network exposes a range of observable symptoms in the form of alarms, counters, and KPIs. 2solve is configured to provide automated diagnostics on network elements based on these inputs.

Increase network understanding and visibility

2solve supports a number of use cases: It enables non-technicians in Customer Support to diagnose network elements and pass them effectively to the right expert in Back Office for repair. It also supports engineers to quickly scan the entire network for quality degradations, automatically high-lighting most likely root causes.

2solve increases network understanding and visibility in the network operator organisation. Traditional OSS tools enable only around 10-20 engineers to look at the network, 2solve makes everybody an expert troubleshooter.

2solve helps to find the right technical expert faster.

2solve is provided by 2operate, a young European solution provider who will be present at CANTO 2016.

MARKETING

& SALES

Superior Retail Sales and Marketing Strategies to Operators

Melissa Harris, CEO Telecom Training Corporation



Retail Sales Evolution

elecom Training Corporation has worked with the retail distribution channel of the telecommunications/wireless industry since its birth in the mid- to late 1980s and have witnessed the radical transformation of this sales channel.

Company-owned and agent-owned retail stores provide the majority of revenues for most telecommunications and wireless operators. Retail store strategies introduced more than 5 years ago are now out of date due to new consumer research, technology, and innovative market leaders.

Superior Retail Sales Experience

Most telecommunications operators want to provide a superior retail customer experience to increase sales, customer satisfaction, and reduce churn. They want their retail associates to provide the same type of experience provided at the world's top wireless retail stores.

Marketing Alignment with Retail

Operators also want to ensure that their marketing teams are consistently aligning their strategies regarding promotions, social media, website, chat, collateral, etc. to complement the in-store retail sales experience.

Increasing Net Promoter Scores (NPS)

Many fixed line and wireless operators also want to increase their Net Promoter Scores. New retail sales and marketing strategies support this focus on enhancing the customer experience.

Retail Sales Consistency with Call Center Upselling / Cross Selling

In addition, call center/customer service departments are increasing their focus on upselling /cross selling and retaining customers. Their sales processes also need be consistent with the customer focused approaches used by marketing and retail sales.

Company-Wide Decisions Made from the Customer's Perspective

To go even further, this type of customer focused approach needs to permeate all functional areas of the organization, from engineering to tech support to billing to collections. In other words, everyone in the organization should be making their decisions from the "eyes of their customers" instead of what is more convenient and effective for a company's own MARKETING

internal processes. One of the biggest predictors of a positive customer experience and associated high Net Promoter Scores is a consistent experience at <u>all</u> customer journey touch points.

Six Step Customer Focused Retail Sales Process

The following is an example of a six-step customer focused retail sales process and associated steps of the customer experience based on our years of research and training with leading telecommunications, wireless, and cable television operators:

]	Retail Sales Process	Steps of the Customer Experience
1.	Greet	 Provide a warm, sincere, and friendly greeting within 10 seconds of the customer's arrival and within 10 feet of entering the shop With a smile, introduce yourself by first name and ask the customer's name Ask the purpose of the customer's visit and assure them you can help
2.	Build Trust	 Address the customer by name, maintain eye contact, & give them your undivided attention Show enthusiasm, demonstrate an attitude of genuine caring & exhibit a desire to help Ask questions and actively listen to discover their specific needs Confirm understanding of & empathize with their needs
3.	Recommend Value-Based Solutions	 Offer relevant features & benefits to address their needs (even those they are not aware that exist) Use the appropriate approach for the customer's personality & technical knowledge Build value before discussing price
4.	Gain Agreement	 Look for verbal & non-verbal signals to know when to summarize your recommendation Listen carefully and ask questions to clearly understand objections, respond appropriately, and check for acceptance
5.	Prepare & Set Expectations	 Set up the equipment (social networks, voice mail, email, transfer contacts) from old device Demonstrate how to navigate device & use preferred applications & favorite features Tell them about on-line resources for more details Summarize key information to avoid surprises (proration, billing cycles, pricing after promotions expire, installation dates, termination fees, etc.) Check to see if the customer is comfortable concluding the transaction
6.	Appreciate and Close	 Ask if there is anything else you can help with Give the customer your business card so they can contact you with questions Ask for referrals and to please submit a rating of 10 on an email survey they will shortly receive As you walk the customer to the door, use their name and thank them for being a valued customer

10 Tips for Retail Marketing and Sales Success

To be successful, this type of customer focused retail sales process must be:

- 1. Championed by the C-Level team of an organization
- 2. Aligned with the company mission, vision, values and marketing strategies
- 3. Reinforced by knowledgeable and experienced Retail Supervisors/Managers in daily/weekly sales meetings and one-on-one coaching sessions
- 4. Led by retail sales managers/supervisors who have effective leadership skills such as:
 - Setting specific, measurable, actionable, realistic, and timely goals
 - Frequently providing positive and corrective feedback
 - Leading effective one-on-one coaching sessions
 - Having counseling meetings when performance does not meet expectations
 - Providing quarterly performance review updates so that there are no surprises during the annual performance review meeting
- Supported by clear processes and procedures to empower retail sales associates to resolve customer issues during one customer interaction instead of escalating to management

6. Sustained by the annual, monthly and daily sales objectives and results

& SALES

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- 7. Embedded in the job description and annual performance review plan affecting commission and bonus reward systems
- 8. Incorporated in training new retail sales associates
- 9. Ingrained in the existing retail sales team
- 10. Supported by other parts of the organization (e.g., engineering, tech support, billing, collections, etc.) who have a committed sense of urgency and accountability in responding to requests to resolve customer issues in a timely manner

Benefits of Implementing a Customer Focused Retail Sales Process:

- Increased New Sales and Upsells/Cross Sells
- Improved Net Promoter Scores (NPS)
- Enhanced Customer Satisfaction
- Reduced Churn
- Increased Employee Productivity And Engagement
- Reduced Employee Turnover And Associated Hiring Costs





Best Practices for the Establishment of Take-Back Systems for Mobile Handsets

Executive Summary

he CANTO Corporate Social Responsibility (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. In doing so, the Committee was established to achieve several objectives, which included the following:

- To identify and address CSR issues related to telecoms/ ICT and trends globally and within the region;
- ii. To research, identify and promote CSR best practices among the CANTO membership; and
- iii. To highlight existing and identify prospective CSR projects in region.

The Committee's first output was its paper on Best Practices for the Environmentally Sound Management of Mobile Handsets and Equipment, prepared in 2014. This policy paper sought to raise awareness and recommend best practice solutions to the environmentally sound disposal and management of end-of- life mobile handsets and equipment. It also allows for the dissemination of environmental standards established under the Basel Convention, to which many Caribbean countries are Parties.

Added to this, the Committee decided to advance this initial work in order to provide added support to the Caribbean telecoms industry as it seeks to safely dispose of its electrical and electronic wastes. This has been deemed necessary given the thrust to expand the sector at the regional level. Hence, the Committee decided to further explore the area of safe handset disposal in order to add value to this topical area in the interest of the telecoms operators and governments here in the Caribbean.

The present paper, which constitutes the Committee's second output, builds upon the previous paper by addressing the subject matter of the formation of take-back systems. These systems have already been established in one form or another by various organisations and governing bodies the world over, but their existence in the region remain limited. The result of this is a lag in the implementation of the Extended Producer Responsibility (EPR) principle in Caribbean countries.

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In this the CSR Committee's second policy paper, the core elements of a take-back system are broached. These can guide the development of such a system within an organisation or among a group of like-minded bodies. In addition, the generalised obligations of producers and marketers of mobile handsets during the roll-out of a take-back system is also itemised within the paper. This will further ensure that the roles and responsibilities of the key players in the system are well-established with the EPR principle at the fore.



As we continue to press forward, the team remains firm in its recommendation that a common Regional approach to the sound management of mobile handsets and technologies should be developed, promoted and adopted. This will include the enhanced collection and channelling of mobile handsets and equipment to environmentally sound e-waste management service providers within the region. CANTO, its CSR Committee and its partner in this regard, the Basel Convention Regional Centre for the Caribbean (BCRC- Caribbean), continue to uphold the pledge to support the development of sustainable yet practical e-waste management solutions within the Caribbean ICT sector.

1.0 Definitions

Basel Convention – The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal has as its overarching purpose the protection of "human health and the environment against the adverse effects of hazardous and other wastes". To date there are 183 Parties to the treaty, including all of the Central and South American countries as well as the following Caribbean countries: Antigua & amp; Barbuda, Bahamas, Barbados, Belize, Cuba, Dominica, Dominican Republic, Guyana, Jamaica, St. Kitts & amp; Nevis, St. Lucia, St. Vincent & amp; the Grenadines, Suriname and Trinidad & amp; Tobago.

Key among its objectives is to control the transboundary movement of hazardous wastes and ensure their environmentally sound management or disposal. The Mobile Phone Partnership Initiative (MPPI) was developed and implemented under the Basel Convention to fulfil the objectives of the Convention with respect to the environmentally sound management of mobile handsets.

End-of- Life (or EoL) Mobile Handset (or Phone) – A mobile handset that is no longer suitable for use, or may not be up to the required specification, and is destined for disassembly and recovery of spare parts, material recovery and recycling or for final disposal. These handsets constitute a sub-category of the electrical and electronic equipment waste stream (WEEE / e-waste).

Environmentally Sound Management (ESM) – Taking all practicable steps to ensure that used and EOL products and wastes are managed in a manner which protects human health and the environment.

Equipment / Components

- This refers to parts or items removed from used mobile handsets, which may include batteries, chargers and any additional mobile handset accessory or equipment which permits the mobile handset to function or further enhances the device.

Extended Producer Responsibility (EPR) – EPR is

a policy principle that requires product manufacturers, or those with first responsibility for the imports of the respective equipment, to accept responsibility for all stages their product's lifecycle, including end-of- life management of the product.

Marketer – Any natural or legal entity in charge of wholesale or retail distribution of electrical and electronic equipment for commercial ends.

Producer – Any natural or legal entity that manufactures, imports, assembles, introduces or remanufactures electrical and electronic equipment, regardless of the sales technique(s) used.

2.0 Problem Statement

Across the world, several countries and organisations have sought to address the e-waste problem through the establishment of national and external systems that recoup the wastes generated by the electrical and electronic products placed on markets. Such schemes are limited in the Caribbean countries, where mobile phones and similar technologies are significant contributors to the e-waste stream and where great scope exists for the development these systems.

3.0 Objectives

This paper is intended to:

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- Present the key elements that must be considered in the setting up and roll-out of a system for the take-back of mobile handsets and similar technologies;
- Outline the primary obligations of producers and marketers in performing the take-back of such equipment; and to
- 3. Promote the environmentally sound management (ESM) of mobile phones

in a manner that assures sustainable development across the region

3.1 Target Audience

This document is aimed at providing advanced support to **Telecoms Providers**, **Governments** and **Regulatory Bodies** as they seek to implement strategies to soundly manage used and EoL mobile handsets in the Caribbean.

For a comprehensive report on CANTO CSR Best Practices for establishment of take-back system for mobile handset go to:http://canto.org/wp-content/ uploads/2013/02/CANTO-CSR- Committee-Paper- 2-Final.pdf

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