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CANTO
Caribbean Focus... GLOBAL PERSPECTIVE

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Caribbean Focus... GLOBAL PERSPECTIVE

ANNUAL
CONFERENCE &
TRADE EXHIBITION

"Guiding Digital Adoption to Lead the Global Market"

22-25 July, 2018
Hard Rock Hotel, Panama

Premier ICT Event for Latin America & The Caribbean

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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.

f - CANTO   - @CANTO_ICT   in - CANTO Caribbean   - CANTOICT   canto_caribbean

Editorial
(English)

The Telecommunications Authority of Trinidad and Tobago (TATT) has expressed its commitment to building a 'Better Digital T &T' ,and has said it is focused on implementing initiatives to address the inclusion of underserved and unserved communities, including People with disabilities (PWDs).

Another area of their focus is consumer protection in respect of rates, billings and service provided.

ICT And The Financial Sector

The Financial Sector stands as a major player in the diversification of the Trinidad and Tobago economy. It is therefore imperative that their systems are online 24/7 globally. As such many Financial Services are turning to Unified Communications and Collaboration (UCC) and Mobility to transform how they operate and service their customers. This will translate into Increased customer and colleague satisfaction and therefore improved revenues and profitability.

However with Real-time transactions, there is a need for higher levels of cyber-security, as the awareness of the global increase of cyber crimes must be addressed.

CANTO is ever mindful of its mandate to oversee the success of ICT in our Region. Thus our theme -"Guiding Digital Adoption To Lead Global Market", for our 34th Annual Conference and Trade Exhibition to be held at Hard Rock Hotel-Panama from 22nd to 25th July, 2018, where CANTO would champion the discourse in this endeavor.

We expect participation from stakeholders in the ICT industry from 34 member countries.

As a region we are required to embrace the impending universal digital economy. To facilitate our readiness, this year's conference and Trade Exhibition would include a Ministerial Round Table, Panel Discussions which will address topics imperative to Digital Success, such as Cyber-security and Blockchain Solutions. There will also be a Technology Forum.

SPOTLIGHT WOMEN

This year ushered in an international spotlight being shone on Women's Issues and, in particular, the treatment of women in various spheres of employment, and also in the home. We at CANTO are committed to playing our part in fostering international gender equity. To facilitate this agenda, there will also be a Women's Forum at the Conference and Trade Exhibition.

Cognizant of the fact that the ICT Sector is key in Trinidad and Tobago's economic diversification CANTO, as the umbrella body, has taken up its position at the helm.

Teresa Wankin
Editorial Director

With the great strides at which the world societies are being digitized; we in the Caribbean are compelled to increase the pace at which we ready ourselves to be a significant player in the revolutionary ICT transformation.

One of the major topics of discussion among the delegates at our recently held 34th AGM, was the preceding change in position by the Federal Communications Commission (FCC).They removed 'Net Neutrality' rules and thus restored a light touch regulations approach to support Internet Freedom or 'Open Internet'.

Our Chairman Mr. Julian Wilkins, in his welcome address, stressed the positive impact the FCC's change in position would have on our sector. He also "noted with interest" the remarks of the FCC Commissioner Brendan Carr, on the "U.S. View on 5G", at the Etno-MLEX Regulatory Summit held last January in Brussels, Belgium.

Editorial
(Español)

Teresa Wankin
Editorial Director

Con la gran velocidad a la cual las sociedades se van digitalizando; nosotros en el Caribe estamos obligados a aumentar el ritmo al que nos preparamos para ser parte importante en la transformación revolucionaria de las TIC.

Uno de los principales temas de discusión entre los delegados en nuestra recientemente celebrada 34ª Reunión General fue el cambio anterior en la posición por parte de la Comisión Federal de Comunicaciones (FCC). Suprimieron las reglas de "Neutralidad de red" y restauraron un enfoque de regulaciones táctiles ligeras para apoyar la Libertad de Internet o 'Internet abierto'.

Nuestro presidente, el Sr. Julian Wilkins, en su discurso de bienvenida, hizo hincapié en el impacto positivo que el cambio de posición de la FCC tendría en nuestro sector. También "observó con interés" los comentarios del comisionado de la FCC, Brendan Carr, sobre la "visión de los EE. UU. En 5G", en la cumbre de regulación Etno-MLEX celebrada el pasado enero en Bruselas, Bélgica.

La Autoridad de Telecomunicaciones de Trinidad y Tobago (TATT) ha expresado su compromiso de construir un 'Mejor T & T Digital', y ha dicho que se centra en implementar iniciativas para abordar la inclusión de comunidades desatendidas y sin servicios, incluidas las personas con discapacidad (PWD).

Otra área de su enfoque es la protección del consumidor con respecto a las tarifas, la facturación y el servicio prestado.
TIC y el sector financiero

El sector financiero se destaca como un elemento importante en la diversificación de la economía de Trinidad y Tobago. Por lo tanto, es imperativo que sus sistemas estén en línea las 24 horas del día, 7 días a la semana. Como muchos servicios financieros están recurriendo a las comunicaciones unificadas y la movilidad para transformar la forma en que operan y dar servicio a sus clientes. Esto se traducirá en una mayor satisfacción de clientes y colegas y, por lo tanto, mejores ingresos y rentabilidad.

Sin embargo, con las transacciones en tiempo real, se necesitan niveles más altos de seguridad cibernética, ya que se debe abordar la conciencia del aumento mundial de los delitos cibernéticos.

CANTO está siempre consciente de su mandato de supervisar el éxito de las TIC en nuestra Región. Por lo tanto, nuestro lema: "Guiar la adopción digital para liderar el mercado mundial", para nuestra 34ª Conferencia y Exhibición comercial anual que se celebrará en Hard Rock Hotel-Panamá del 22 al 25 de julio de 2018, donde CANTO defenderá el discurso en este esfuerzo.

Esperamos la participación de los interesados en la industria de las TIC de 34 países miembros.

Como región, debemos adoptar la inminente economía digital universal. Para facilitar nuestra preparación, la conferencia de este año y la Exposición comercial incluirán una mesa redonda ministerial, mesas redondas que abordarán temas imprescindibles para el éxito digital, como la cyber seguridad y la cadena de bloques. Soluciones. También habrá un Foro de Tecnología.

From Crisis to Resilience: Strengthening Critical Caribbean Internet Infrastructur

Bevil Wooding, Caribbean Outreach Liaison, ARIN

In 2017, six hurricanes traversed the Caribbean. Ten Caribbean countries, most in the ARIN region, were directly impacted by the most dangerous of these, Hurricanes Irma and Maria. Communications infrastructure in the affected territories took a severe hit, with the islands of Barbuda and Dominica being taken completely offline. Weakness in telecoms networks, gaps in regulatory policy, and the scarcity of skilled technical personnel were all exposed by the storms, and especially in the critical stage of recovery and relief. Drawing from the experience, the Caribbean is now taking steps to ensure that its networks and critical Internet infrastructure are more robust and more resilient.

Caribbean Crisis in Context

The frequency and intensity of the 2017 storms represent a worrying escalation of climate-based catastrophe. It is also profoundly challenging the historic constraints of economy, infrastructure, and human capacity that define small states in the region. By some estimates, relief and recovery efforts alone could cost upwards of US$150 billion.

Given the high cost of recovery, and the already high debt to GDP burden carried by most Caribbean territories, the region's capacity to rebound diminishes each year. Consequently, the Caribbean enters each hurricane season more vulnerable than the year before.

Focus on Network Resilience

The failure of Caribbean communications networks was a particularly worrying consequence of the recent storms. However, the increasing threat of severe weather events also highlights the urgent need to improve the region's communications infrastructure.

Thankfully, regional organizations like the Caribbean Telecommunications Union (CTU) and the volunteer-based, non-profit Caribbean Network Operators Group (CaribNOG), are focusing special attention on strengthening Caribbean network resilience. They have found solid support from those of us here at ARIN as well as from other Internet organizations such as Packet Clearing House (PCH) and the Internet Society, because of our strong interest and history in supporting critical Internet infrastructure in the region.

ARIN is part of a special Commission for Caribbean Network Resilience empaneled by the CTU to critically examine the region's communications vulnerabilities and come up with recommendations for more resilient infrastructure, technologies, and methods. There is strong support for the Commission from the industry, including IBM, Cisco, and Intel, as well as inter-governmental organizations like the World Bank and Organization of American States. The panel is working to develop actionable recommendations for regional governments, regulators, and communications ministries. It is hoped that these recommendations, expected before the start of the 2018 hurricane season, will help strengthen local and regional network infrastructure and spur the creation of more autonomous networks in the region.

CaribNOG is developing special software applications to address disaster preparedness and response. It is also designing technical workshops targeting network operators and computer engineers to help with the proliferation of autonomous networks and strengthening of critical Internet infrastructure in the Caribbean.

ARIN is collaborating with the CTU and CaribNOG through our ARIN in the Caribbean initiative (www.teamarin.net/caribbean) to help support capacity building efforts targeting the Caribbean's technical community, policy makers, and regulators. We are conducting a series of outreach events targeting countries in the ARIN region. Our most recent activities were held in Barbados and Grenada in February 2018, and St. Lucia and St. Kitts and Nevis in March 2018. These free events feature information

on ARIN and its services, as well as how we can help organizations design, secure, and maintain robust networks and contribute to Internet numbering policy development for the region. This initiative is part of ARIN's long-term commitment to help build capacity as well as support policy development and security for critical Internet infrastructure in the Caribbean.

The scale of the devastation wrought by this season's hurricanes is unprecedented in recent Caribbean communications history. From the crisis, opportunities have arisen for new, unique collaboration efforts to strengthen network resilience in the region. ARIN is pleased to be part of these efforts to ensure that the Caribbean is better prepared for whatever the future brings.

TATT - Building a Better Digital TnT!

In a recent landmark Court of Appeal case, in Trinidad and Tobago an individual was convicted for using radio-transmitting equipment without a licence from the Telecommunication Authority of Trinidad and Tobago (TATT). The Court imposed a fine of $50,000 on the offender; failure to pay same would result in imprisonment for five years.

Section 36 of the Telecommunications Act of Trinidad and Tobago inter alia, prohibits persons from the installing, operating or using radio-transmitting equipment without a licence granted by TATT.

The Telecommunications Act provides that, a person who fails to comply or acts in contravention of section 36 of this legislation, commits an offence and is liable on summary conviction to a fine of up to $250,000 and can also face imprisonment of up to 5 years; and in the case of a continuing offence, to a further fine of $10,000 for each day the offence continues after conviction.

The offender was charged in March 2007 with operating radio-transmitting equipment without a licence following investigations by TATT's Telecommunications Inspectors. TATT pursued the prosecution of the offender through the Magistrates Court (where the offender was initially found not guilty) and subsequently to the Court of Appeal which overturned the Magistrate Court's decision and convicted the offender.

TATT is empowered by the Telecommunications Act to manage the country's telecommunications and broadcasting sectors and this is one example of work done over the years in the areas of monitoring and compliance. TATT's monitoring and compliance initiatives are aimed at preventing and detecting breaches to the Act.

Another key area of TATT's focus is consumer protection. Since the organization's inception in 2004 this activity has increased to match the growing complexity of the sectors which includes providers and consumers of telecommunications services, including persons with disabilities Pwds.

Consumer protection is obligatory as Section 18(1)(m) of the Telecommunication Act mandates TATT to "…investigate complaints by users, operators of telecommunications networks, providers of telecommunications and broadcasting services or other persons arising out of the operation of a public telecommunication network, or the provision of a telecommunications service or broadcasting service, in respect of rates, billings and services provided generally and to facilitate relief where necessary…"

From the very early days consumers were provided with the option to have TATT represent their concerns with providers, towards the resolution of unsolved complaints. The initial facility allowed consumers to lodge complaints with TATT via a process of filling a form, or writing a letter and getting it to TATT via email, post, fax or in person.

TATT's Annual Report, covering the period July 2004 to September 2005, the first fifteen months of its operations, shows one hundred and thirty-eight (138) valid complaints were received and ninety-two (92) resolved within that same period.

The complaint facility has since been enhanced to ensure consumers are aware of its existence and mode of access. This has been undertaken through a number of initiatives, including visits to communities and media advertising, through which TATT has been advising the public about the complaint facility, along with educating consumers about their rights and obligations. Additionally, in 2010 a more consumer friendly process was instituted allowing for the submission of complaints via a toll-free consumer complaint line, 800-TATT.

The primary mode for submitting complaints to TATT is via the toll-free line, however persons may also submit complaints via TATT's website, www.tatt.org.tt. There is also the option to post complaints to TATT's offices at Gulf City Lowlands Mall, Tobago or #5 Eighth Avenue Extension, off Twelfth Street, Barataria Trinidad.

Persons may also opt to visit TATT's offices to submit complaints in person. PwDs should note that both locations are wheelchair accessible.

In 2016, a Customer Relationship Management (CRM) system was installed to electronically manage customer interactions and data throughout the customer complaint lifecycle.

These initiatives, in addition to improving efficiency in the process, has increased awareness of the consumer complaint facility and thereby the number of complaints received. Consequently, during the October 2016/September 2017 financial year, TATT acted upon a total of five hundred and eighty seven (587) valid complaints in relation to mobile and fixed line telephone, Internet and subscription television services. A total of four hundred and sixty-three (463) were resolved as at October 22nd, 2017.

The Telecommunications Act also mandates TATT to "…establish a consumer complaints committee to collect decide on and report on consumer complaints, such reports to be included in the Authority's annual report…"

This Committee was established in June 2008 and chaired by an individual external to TATT and includes members of the Board of Directors and Staff.

During the current financial year, the Committee commenced a series of individual meetings with Chief Executive Officers / General Managers of public telecommunications and broadcasting services, to discuss contemporary issues affecting consumers. These meetings have so far yielded very valuable fruit towards TATT, as well as the providers, better understanding consumers' needs.

TATT continues to astutely manage Trinidad and Tobago's telecommunications and broadcasting sectors, which has experienced phenomenal growth over the last ten years.

Statistics gathered by TATT and recorded in its Annual Market Report and Quarterly Market Reports, reflect substantial uptake of telecommunications and broadcasting services between 2007 and 2017. While the latter part of that ten year period reflected the country's moderate economic activity, overall subscription figures in the mobile phone and Internet markets have been notable.

Most impressive has been the mobile telephone market in which the subscription figure for 2007 was recorded at 1,509,776. Since then, there was an approximate 35% increase, taking that figure to 2,036,000 at end of the third quarter 2017, in a country with a population of just 1.3 million.

Subscriptions in the pay television and fixed line telephone markets have reflected the global trend of individuals' preference for Internet based services that align with "on-the-go" lifestyles.

Thus, it is no surprise that the Internet market bears a pattern of increase over the years, having jumped from 81,721 in 2007 to 962,900 subscriptions by the end of the third quarter 2017. Of this figure 255,600 were for fixed Internet subscriptions and 707,300 mobile. The fixed Internet market experienced quarter-on-quarter demand declines between December 2016 to June 2017. However, the market experienced a minor increase by the end of September 2017, resulting in 249,000 subscriptions for fixed broadband Internet services.

For penetration levels, this means that approximately 58 out of every 100 households in Trinidad and Tobago had a fixed broadband Internet subscription in the third quarter of 2017.

The increase in fixed broadband Internet subscriptions in the third quarter, albeit small, is welcomed and TATT anticipates this market to rebound in the near future.

As the uptake of ICT services expands, TATT is working steadfastly to implement initiatives for underserved and unserved communities, including PwDs, to ensure digital inclusion.

The current financial year 2017/2018 will see TATT continuing its efforts at "Building a Better Digital TnT!"

For more statistics on the performance of the telecommunications and broadcasting sectors, please read our most recent Quarterly Market Report available at http://tatt.org.tt/ReportsStatistics/QuarterlyMarketReport.aspx.

Value of a Network Operations Centre Ensuring high availability and ROI with network technologies

Scott Argue, VP Customer Services at SaskTel International

Communication service providers (CSP) around the globe participate in demanding and competitive markets. As a result, service providers are continually striving to extract the maximum value out of their technology investments. CSPs have always placed a high value on having a strong return on investment (ROI) with their network technologies and ensuring high availability of services to their customers. To determine true ROI, organizations must consider both quantitative and qualitative aspects. This helps the organization in determining total cost of ownership, which enables a CSP to make appropriate investment decisions. In order to ensure high availability of service to customers, organizations need a real-time snapshot on the state of their network (health, security and performance).

To properly represent the status and value of their network CSPs require the appropriate metrics to do so. The development of a Network Operations Centre (NOC) with solid monitoring capabilities can support CSPs in determining this value and in obtaining high availability by providing the real-time data on health, security and performance the CSP needs. NOC monitoring services can provide standardization and ensure all parts of the organization are following standard processes and using common tools.

Adopting or evolving to a NOC that represents best practices and industry standards will provide insight into operational performance through the data and reports that are continually being generated by NOC personnel. Having this information at your fingertips can provide business intelligence that is meaningful and valuable not only to the network and technology departments, but also to upper management. Understanding the purpose of the NOC is crucial in order to ensure efficiency and engagement from all levels of the company.

This central point of control from the NOC allows the organization to handle access to the network from a change and maintenance perspective in a controlled fashion. This means the CSP has the network "locked down". When change control is coupled with performance, availability and security metrics, a complete picture of the state of the network can be established.
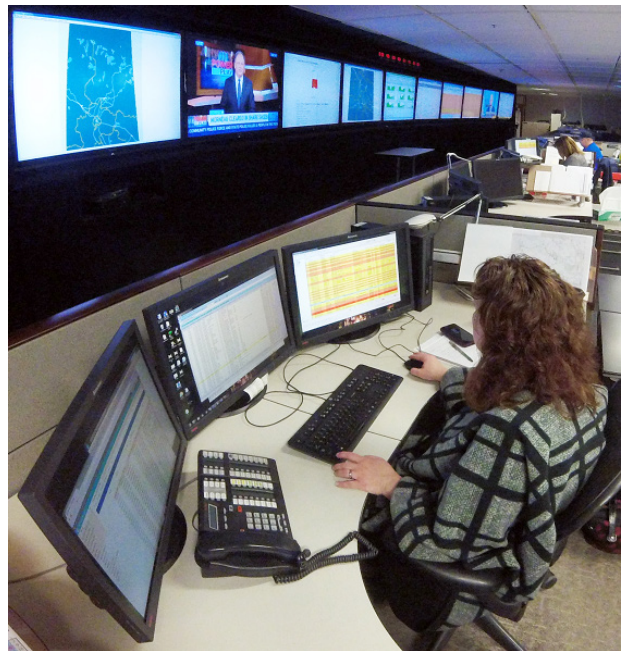
In a time when critical infrastructure and disaster recovery are top of mind for many Caribbean countries, a well-architected and resilient NOC is essential for any network infrastructure. Customers have an expectation that their communications services are always available and are unwilling to sacrifice on quality of service. If CSPs are unable to deliver to the customer expectation, they risk losing business to others that can. An effective NOC will

provide the real-time data that will enable a CSP to react to incidents, track service related assets and address potential service outages before they affect the customer and ensure a high level of availability to meet the service quality their customers expect. In addition to identifying issues and directing the effort to correct problems, the NOC can keep internal and external stakeholders informed of status, ensuring alignment across the organization.

SaskTel International's (SI) parent company, SaskTel, is a CSP with an established NOC that has a history of operational excellence. SaskTel's NOC management capabilities allowed them to make over 13,000 network changes in 2017 while still maintaining greater than 99.999% service level availability for core network services. Across all services, SaskTel's NOC achieved greater than 99.95% service level availability. This level of operational excellence allows SaskTel to dynamically improve their network and service offerings while maintaining an industry leading level of service availability.

Furthermore, SaskTel and SI are governed by Canada's National Plan for Critical Infrastructure and have developed disaster recovery plans that contribute to the overall national plan. As a result, disaster recovery has become a way of thinking that is built-in to the way our networks are designed. The NOC is an extension of that culture, ensuring that the network is maintained, monitored and restored in a manner that is well planned and well measured.

SI's strong tie to our parent company allows us to easily leverage both our own expertise and that of SaskTel's to bring forward a project team of experts with extensive experience in NOC processes and operational support systems to help others in establishing their NOC evolution. In addition, SI employs a tried and true consulting methodology that focuses on the long-term success of our clients. To do so, significant focus is given to creating an engaged project team across all impacted levels of the client organization. This ensures buy-in and continuous input for improvement. Wherever possible, SI also looks to leverage the strengths of existing documentation and processes into the overall consulting engagement. This allows SI to achieve better overall results more quickly and often with less effort and cost to our client.

Furthermore, SI can offer hosted NOC services in cases where clients may not want to manage a NOC themselves. By leveraging SaskTel's established NOC, SI can implement a hosted NOC solution tailored to the CSPs requirements. This can be accomplished by evaluating the CSPs current setup and determining what improvements and changes need to be accommodated to deliver value through a hosted NOC solution.

SI's ultimate goal is to assist our clients in achieving operational excellence with their NOC.

By having a NOC that embodies best practices and industry standards, it will position a CSP to realize the full value of their networks and ensure high availability of service that customers have come to expect. As the NOC becomes the central point of control for a CSPs network, it will ensure that the required data is available to allow the business to remain efficient, agile and adaptable in the fast-paced communications world.

The battle for home and business high-speed access: Fiber to the Home (FTTH) or Fixed Wireless Access (FWA)

John Lombardi

I have been in many meetings over the past two years promoting FWA solutions to service providers of all types in the Americas and quite frequently, the conversation between FTTH versus FWA seems to always weave into the conversation, sometimes self-initiated and sometimes customer or prospect injected.

Most recently, I have had an opportunity to present approximately 100 telco executives and government officials at a Caribbean conference focusing on disaster recovery and ICT. My presentation was focused on using FWA in disaster recovery. I was the second presenter presenting in a grouping of four presenters that kicked off the morning technology discussions.

Without knowing as I stepped on the stage and took my seat on the panel, I was to be the second presenter after a gentleman who came from a fiber company who was extolling the value of FTTH as the future of high speed access to the home or business. As I sat listening, I started to mentally prepare for my presentation, reviewing each of the slides in my head but also listening to the perceived benefits of FTTH. Some of which were highlighted as speed and latency of providing high speed bandwidth to consumers and the growth of aerial and trenched fiber around the globe.

As the first presentation closed and I prepared to move towards the podium, I thought, is this an "either or" argument or could both technologies co-exist to happily serve the future needs of "fiber-fast" broadband? I also thought of how access technology has evolved over my 25 plus years in the industry when I first started selling and marketing 19.2 kb leased line modems that would sell for close to $20,000 for ATM banking applications and then came the advent of 28.8 kb dial-up modems and

shortly thereafter 56k modems, followed by ever increasing speeds using 100-year-old copper-based DSL and 50-year-old hybrid-fiber-coax cable (CMTS) networks.

Were we at market inflection point where FTTH and FWA would eclipse these staple, tried and true long-term access technologies. My answer, "we absolutely are!". Both DSL and Cable modem technologies are quickly reaching the end of their usable life where service providers will need to decide, do they continue evolving their networks with a FTTH/B or FWA or both approach.

Back to my presentation, I arrived at the podium and immediately couldn't help thinking and actually stated to the audience that after the first presentation, I felt like I was on a game show entitled "Battle of the Technologies, the battle for home and business high-speed access." Now, I understand that if an operator has major investments in fiber and if the fiber is close enough to the customer, say less than 250 meters, and the OpEx and CapEx of finishing off the circuit is justified, then by all means continuing pulling fiber.

On the contrary, if the fiber pull is in excess of 250 meters, then a quick cost-benefit analysis of using FWA needs to take place. For example, a typical FTTH cost per clients runs between US $1,200 - $3,000 in the US and Europe and $500 - $1,000 per home and business in emerging markets like Latin America, Asia Pac and Africa. Now, given current competition pulling down pricing for fiber and FWA to US $0.75 to US $1.00 per Mb of broadband speed provided per month, the big question or questions that come to mind are, "Is there a cost/technology advantage of deploying FWA instead of FTTH?", and the answer to that question is overwhelmingly and unequivocally a big "yes".

You see, FWA offers many flexibilities in costs and deployment that FTTH just can't compare. Some of these flexibilities are easy and speed of installation, flexible licensed and unlicensed spectrums options, a CapEx of 10-25% that of FTTH and an ongoing OpEx that could be as low as 5-10% of FTTH, especially when a natural disaster or even a human error hits. In addition, FWA can now provide backhaul speeds today of up to over 1 Gb speeds in Point-to-Point configurations over very long distances and access speeds today of up to 250 Mb per user in Point-to-Multipoint configurations. Future speeds to the home will be in excess of 1 Gb.

If the true value or metric of using one of these two services, what is the return-on-investment or ROI in months to generate a profit considering all CapEx and OpEx costs looking at the total cost of ownerships over the potential life of the service? Is that number 3, 6, 12, 18, 24 months or even longer?

To continue the thought of disaster recovery and whether to use FWA versus fiber, if we consider that 75% or higher of fiber deployments are aerial versus trenched or ducted fiber and a disaster hits, be it a hurricane, earthquake, tornado, tsunami or fire, the question to ask is how long would it take to get services back up and running, not only for mission critical first responder services and operator

backhaul networks, but also for monthly paying home and business "last mile" customers. Is that number a week, two weeks or much longer, and what is the impact of your own business or your customers businesses the longer your service takes to be restored? Can you get your service restoration teams to the outage sites quickly and safely?

In using FWA, you have less points of possible error to worry about versus physical fiber plant outages. FWA also provides fiber-fast speeds that are deployed in hours versus days or weeks without having to get local municipality permissions for rights of ways.

Given the current on-average global home and business broadband speeds of 20 Mb or less per Akamai's quarterly state-of-the-internet reports, which we know will quickly grow due to the Internet of Things (IoT), new killer applications such as virtual reality gaming, artificial intelligence and higher speed-required for HD or Super HD applications, Fixed Wireless Access technology has all the benefits of fiber and more and is a resilient wireless technology that can quickly adapt to spectrum interference and multi-user applications. FWA also helps service providers and customers future-proof their investments and services for many years and perhaps decades to come. The global fixed wireless access market is expected to grow to US $10 billion over the next 4-5 years.

NINE BLOCKCHAIN OPPORTUNITIES THAT TELECOMS OPERATORS SHOULD EXPLORE

ENRIQUE VELASCO-CASTILLO
Senior Analyst, Research

"Vendors should take the lead and explore novel blockchain solutions for telcos."

Companies in a variety of sectors are already exploring the potential of blockchain (the technology behind cryptocurrencies, such as Bitcoin) to make common transactional processes cheaper, faster and more transparent.[1] Telecoms will be no exception, and operators should consider how blockchain could impact their business and the opportunities it could present. Next-generation blockchains, which include smart contracts and lower computational requirements, are likely to have an impact on telecoms operational areas and digital services, including billing, eSIM provisioning, number portability databases and mobile money.[2]

Figure 1: Nine areas where telecoms operators could deploy blockchain technology

Source: Analysys Mason
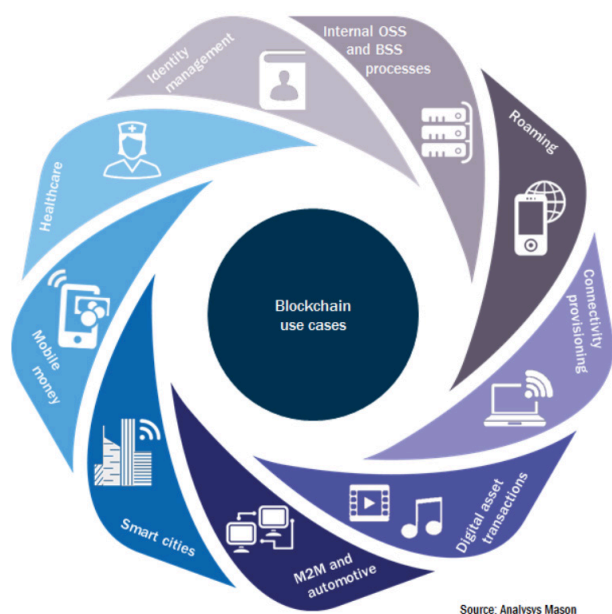
Interest in novel blockchain applications is no longer restricted to finance

Until recently, blockchains were exclusively associated with cryptocurrencies and were thus primarily of interest to financial institutions, regulators and enthusiasts. However, the new breed of 'programmable' blockchain platforms, such as Ethereum, has broadened the applicability of this technology beyond financial services and cryptocurrencies. Some of the new features introduced by second-generation blockchains include 'smart contracts' – agreements formalised in code – and private, or permissioned, blockchains.

Vendors, such as IBM and Microsoft, are already providing blockchain solutions to a number of industries. We may see the first telco-specific solutions in activities such as M2M, IoT, smart cities and automotive in late 2016. In fact, some operators are already exploring applications of blockchain technology, as described below.

- In August 2015, Verizon Ventures invested in Filament, a start-up developing connected modules to allow industrial assets to act as autonomous agents. These agents can then communicate via long-range, decentralised mesh networks and transact data using blockchains and smart contracts.

- Orange launched its ChainForce initiative in June 2015 with the intention of encouraging established companies and start-ups to explore new blockchain technologies and use cases. Orange Digital Ventures also invested in US-based start-up Chain, which is developing enterprise-grade blockchain solutions for the financial industry and other transactional services, in September 2015.

- In May 2016, du announced a pilot programme to facilitate the secure transmission of electronic health records

(EHRs) in the UAE. It intends to do this through a blockchain-based solution in partnership with the Global Blockchain Council, which is itself a partnership between industry and government. Additionally, du has established partnerships with Dubai Tourism and Loyyal to provide blockchain-enabled loyalty solutions for tourism (Dubai Points).

Blockchains are suitable for any kind of digital data where shared write access for a number of parties is necessary. In these instances, trust (authentication) and consensus about data integrity are often important, but the existence of a trusted third-party provider may be either undesirable or too costly. Blockchain provides a solution to this problem.

Smart contracts on blockchains enable autonomous transactions between machines. For example, an electric car could 'pay' an autonomous charging station for power or on crossing a tollgate. These autonomous devices and networks may provide opportunities for operators willing to remain at the forefront of new technologies.

Blockchain solutions can help telcos cut costs and make their digital services more competitive
Several areas of operators' activities could be improved through the implementation of blockchain-based solutions, which may be public, private or a hybrid of both. Some example use cases for telecoms operators include their own internal processes, as well as digital value-added services, as detailed below.

- **Internal processes:** OSS and BSS processes (such as billing, eSIM provisioning and number portability databases) can benefit from hybrid blockchains, which have both public and private (intra-firm) facets.

- **Roaming:** hybrid blockchains with permissioned and public components could facilitate the implementation of databases that usually require costly integrations and trusted access settings. One possible example is databases used for subscriber authentication during roaming.

- **Connectivity provisioning:** public Wi-Fi authentication and payments could be made more cost-effective through autonomous blockchain-based transactions between devices and access points.

- **Digital asset transactions:** the extremely low transaction costs enabled by blockchains (compared to those of credit or debit card transactions, for example) make them amenable to micropayment-based business models for digital assets, including music, mobile games, gift cards and loyalty points.

- **M2M and automotive:** it is likely that some of the first applications of blockchains to telecoms will be in M2M and automotive, as described in the examples above.

- **Smart cities:** public blockchains are particularly suited to use cases where high levels of transparency and auditability are required, such as smart city initiatives. Blockchain-enabled smart charging stations are being explored by German utility RWE, while South African start-up Bankymoon allows smart meter users to pay for electricity with Bitcoin.

- **Mobile money:** distributed ledgers and cryptocurrencies could enable more cost-effective international remittances between subscribers of an operator's opcos in different countries. Blockchains could also reinvigorate direct carrier billing by significantly reducing the costs of micro-transactions.

- **Healthcare:** secure EHR storage and transmission on permissioned blockchains.

- **Identity management:** Microsoft is developing a blockchain-based identity management platform to enable authentication across devices, apps and organisations. Operators could develop similar solutions, or partner with organisations developing them.

Operators that are embarking on the process of transitioning to IP-based and virtualised networks should consider the potential of blockchain-based solutions. These could both facilitate the integration of their systems and make their internal, as well as client-facing, processes more cost-effective.

Vendors should take the lead and explore blockchain solutions for telcos
R3 is an industry consortium of over 40 banks, including BBVA, Credit Suisse and J.P. Morgan. Its aim is to research and develop blockchain technology for financial applications beyond cryptocurrencies and
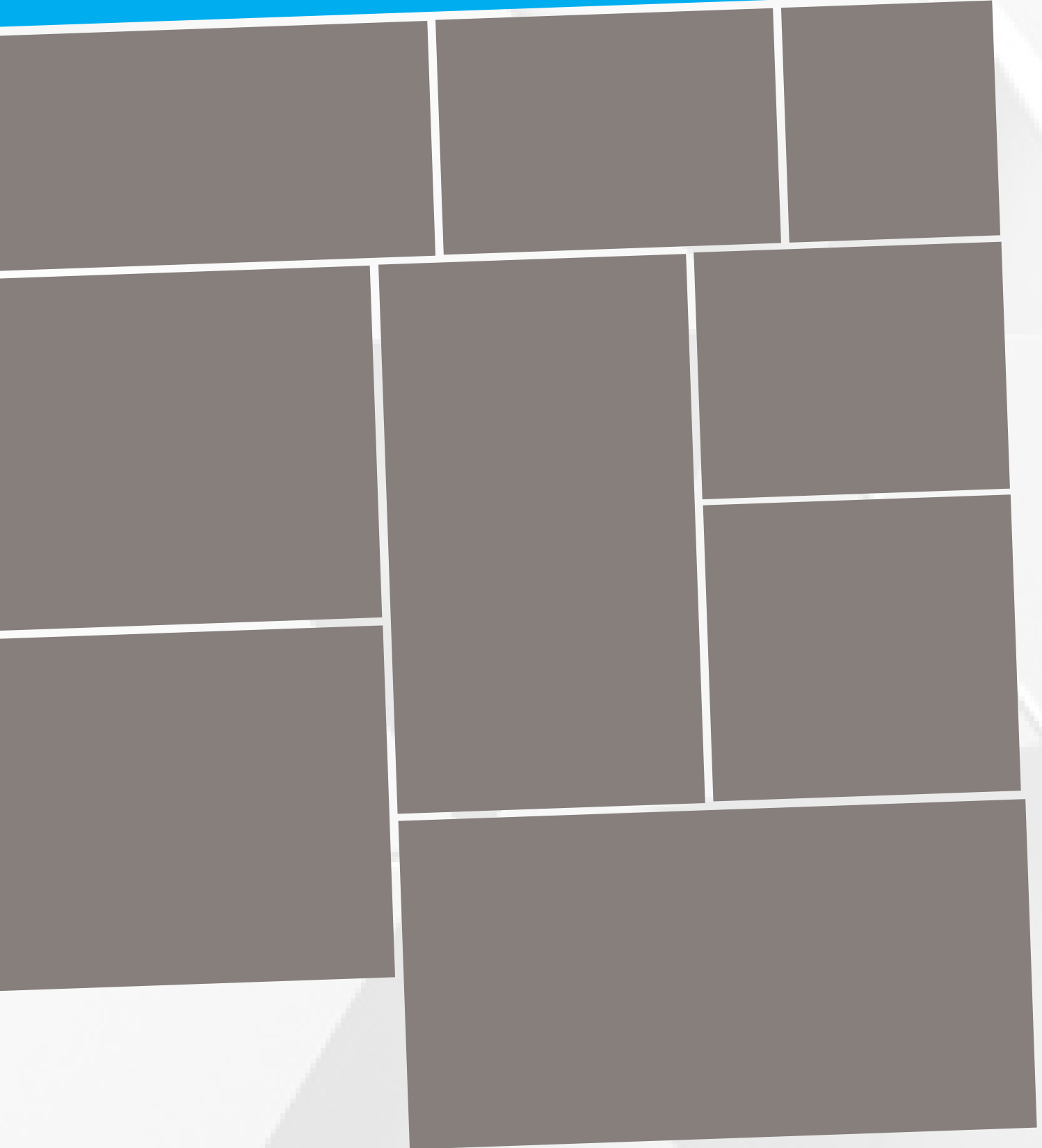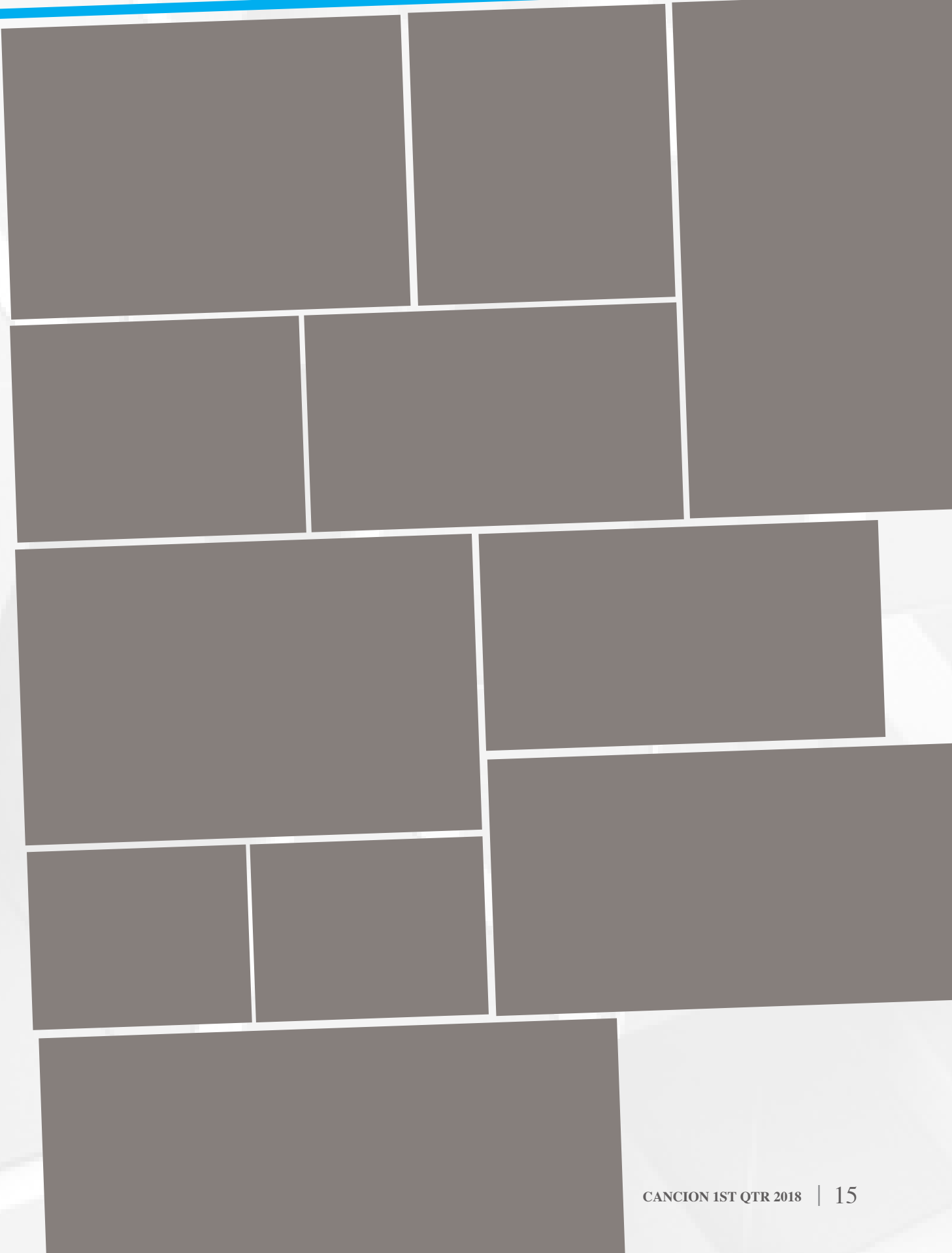
invest in promising early-stage initiatives. Through its work, the financial industry has identified use cases where blockchain solutions can provide value by making interoperability between internal systems easier, as well as by lowering infrastructure and regulatory compliance costs.

Similarly, telecoms applications of blockchain technology are ripe for innovation. Vendors could be instrumental in leading this transformation by developing solutions that make the most of their operator clients' virtualised, IP-based next-generation networks. These networks can be coupled with the capabilities of blockchains to enable cost-effective, distributed, resilient and transparent transactional processes.

Analysys Mason is experienced in advising on all aspects of technology strategy. We can assist telecoms operators and vendors in identifying the most attractive opportunities presented by blockchain for both internal processes and digital services. For more information about our services, please contact Enrique Velasco-Castillo at enrique.velasco-castillo@ analysysmason.com.

Why Upselling and Cross Selling Are Key To Customer Satisfaction

Is it possible to use upselling and cross-selling in ways that help your customers? Yes! It all comes down to how you do it.

H1: Why Upselling and Cross Selling Are Key To Customer Satisfaction

In the movie Glengarry Glen Ross, there's an iconic scene in which Alec Baldwin, playing the role of lead salesman, tells those under him (edited to remove expletives):

Because only one thing counts in this life: Get them to sign on the line which is dotted.
> You hear me? A-B-C. A-Always, B-Be, C-Closing. Always be closing. ALWAYS BE CLOSING. A-I-D-A. Attention, Interest, Decision, Action. Attention - Do I have your attention? Interest - Are you interested?...You close or you hit the bricks.

Baldwin plays the classic role of arrogant, rude, cocky salesman who only cares about getting people to sign on the bottom line. He doesn't care about the customer. He doesn't care about his reputation. All he cares about is the cold, hard, cash. You close or you hit the bricks!

If you're in the e-commerce business, it can be easy to take Baldwin's hardcore, ABC approach. You do everything in your power to get that initial sale. Yes, you care about taking care of your customers, but ultimately you need to make money to keep your business going.

But what if there was a way to combine the two? What if you could simultaneously make more money and take care of your customers? This isn't some sort of "Made For TV" offer that will expire if you don't act now. This can be done and is done by the biggest, most successful businesses in the world.

What exactly am I talking about? Upselling and cross-selling.

Both tactics are outstanding ways to increase your bottom line, sell more products, and give your customers exactly what they want.

It's the ultimate win-win situation.

So let me break down the details of upselling and cross-selling and show you how you can use them to serve your customers.

What's The Difference Between Upselling and Cross-Selling?
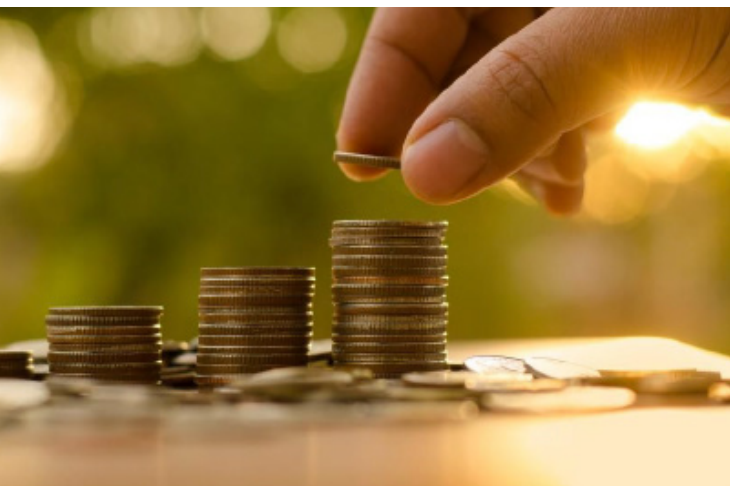
It's not complicated. Upselling is when you convince a customer to purchase an upgraded or more expensive version of what they're already purchasing. So, for example, if a customer buys a toothbrush from you, you can upsell them a fancier electronic toothbrush which spins, vibrates, and predicts the stock market. You're trying to persuade them that they need a better, upgraded toothbrush.

Cross-selling is when you try to sell additional, supplementary products and services based on the initial purchase. When you purchase a mobile phone and they want you to buy a protection plan in case your drop the phone in the toilet, that's cross selling.

Amazon is all about upselling and cross-selling.

The moment you click on a product, they also show you more expensive versions of the product as well as additional things you might want.

Clearly, this works. Not only do the biggest businesses use upselling and cross-selling, the data suggests it works as well. In the book *Marketing Metrics*, the authors state, "The probability of selling to a new prospect is 5-20%. The probability of selling to an existing customer is 60-70%."

In other words, the odds of upselling and cross-selling are much higher than making the initial sale.

Upselling and Cross-Selling Don't Have To Be Slimy

Some sellers feel that upselling and cross-selling are shady tactics, like something a polyester-clad, loudmouthed used car salesman would use. And they can be that if done improperly. If you are trying to take advantage of your customers by selling them something they have zero use for, it's a bit slimy. If you're deceiving customers into thinking they need something that they don't, that's also slimy.

But if you use upselling and cross-selling to give customers truly useful upgrades and additional items, that's helping your customers. You're trying to give them a better experience.

For example, let's say you sell mobile phone cases. As an upsell, you could offer them a more protective case, which may be exactly what they want. Or you could offer them a screen protector, which they may have been considering anyway. You're not taking advantage of them or trying to trick them into a purchase they don't need.

As Len Markidan of GrooveHQ says:

If you can make your customer feel like an upsell is helping them win, then you'll both win.

Here's another example: a few months ago, I checked into a hotel on a weekend trip with my wife. As we were checking in, the clerk offered me an upsell: would I like to add breakfast for two — normally $49 — to my room rate for "just" $29? I accepted without hesitation, and I was happy to do so. At $20 cheaper than the standard rate, I felt like taking the upsell offer was an easy win.

The key here is making your customer feel like they're also winning in the upsell or the cross-sell. You want them to feel like they are getting something of great value. If you're not doing this, you probably are doing something slimy and shady.

Simple Ways To Use Upselling and Cross-Selling

Now that your conscience feels at ease with upselling and cross-selling, here are some simple, yet effective ways to implement them in your ecommerce business.

Cut Down On The Options

It can be tempting to think that if you give customers dozens upon dozens of additional options, you'll increase the amount of sales you make. But that's not the way it works. I can tell you this both from personal experience and the experts.

I've waded through page after page of upsells before I was allowed to finally make my purchase. It's not fun.

The experts support my feelings. Brenda over at WooCommerce notes:

The truth is that product recommendations' performance depends on how and when you display them. And not everyone gets this right. Cross-selling and upselling are the bane of many customers just because they're so often done poorly, with the focus put on the business's aim of selling extra stuff instead of the customer's aim of making sure the extra stuff will actually benefit them.

Don't throw everything at the customers. Only present the most relevant items to them - items that will help them win. Combine your upselling with customer service.

Use Those Bundles

Bundling items together is a great way to sell more products and meet your customers needs. Going back to the mobile phone example, bundling a case, a screen protector, and a charger allows your customers to get everything they need in one purchase.

And if you offer a slight discount on the bundle, you may be able to increase your overall number of sales.

Give Your Customers What They Want

Keeping track of customers past purchases allows you to customize upsells and cross-sells based on what you know they already like. For example, after I purchase an item on Amazon, they begin recommending similar items every time I log on. I don't consider this to be an annoyance. Rather, they know what I gravitate toward and then point me to others similar items.

Keep tabs on what your customers purchase and then guide them toward similar items in the future. Or, if a new, related item comes out, alert them to that release. This can increase their satisfaction and your revenue.

Keep The Price Increases Limited

If someone is buying a $40 pair of shoes from you, don't recommend a $200 pair of calf leather loafers. It smacks of trying to take advantage of your customers. Generally speaking, upsells and cross-sells shouldn't be more than 25% more expensive than what they're already purchasing.

If you stick to this range, you'll stay in the range of what they're already purchasing. However, if you go outside this, you risk alienating and frustrating your customers. If they wanted to spend a lot of money, they would have made that initial purchase larger.

When They Win, You Win

You don't have to be 'Always Be Closing' in order to run a profitable business that makes your customers happy. It's possible to upsell and cross-sell in a way that serves your customers rather than bleeds them dry.

Again, to quote Len Markidan:

Even if we know that upselling can be extremely valuable, many of us, scarred by scammy upsell offers in the past, still don't feel "right" doing it.

But with the right timing and upselling techniques, those unpleasant upsells are actually very easy to avoid.

It all comes down to when and how you upsell...

Do you feel offended when a McDonald's employee asks, "Do you want fries with that?" Probably not. If you do it right, your customers won't be turned off by your upsells and cross-sells.

This article originally appeared here at https://www.floship.com/upselling-cross-selling-to-customer-satisfaction/ and has been republished with permission from https://www.floship.com

DSS RELEASES GRAPHING TOOL FOR ICIJ DATABASES

New York City, 19th March 2018 – Domus Semo Sancus (DSS) today announced the release of its "Visualize Connections for ICIJ Databases" link analysis graphing tool. The International Consortium of Investigative Journalists (ICIJ) is a global network of investigative journalists and media organizations who focus "…on issues that do not stop at national frontiers: cross-border crime, corruption, and the accountability of power." Their databases contain information on more than 785,000 entities that are part of the Panama Papers, the Offshore Leaks, the Bahamas Leaks, and the Paradise Papers investigations. The data covers nearly 80 years up to 2016 with links to people and companies in more than 200 countries and territories.
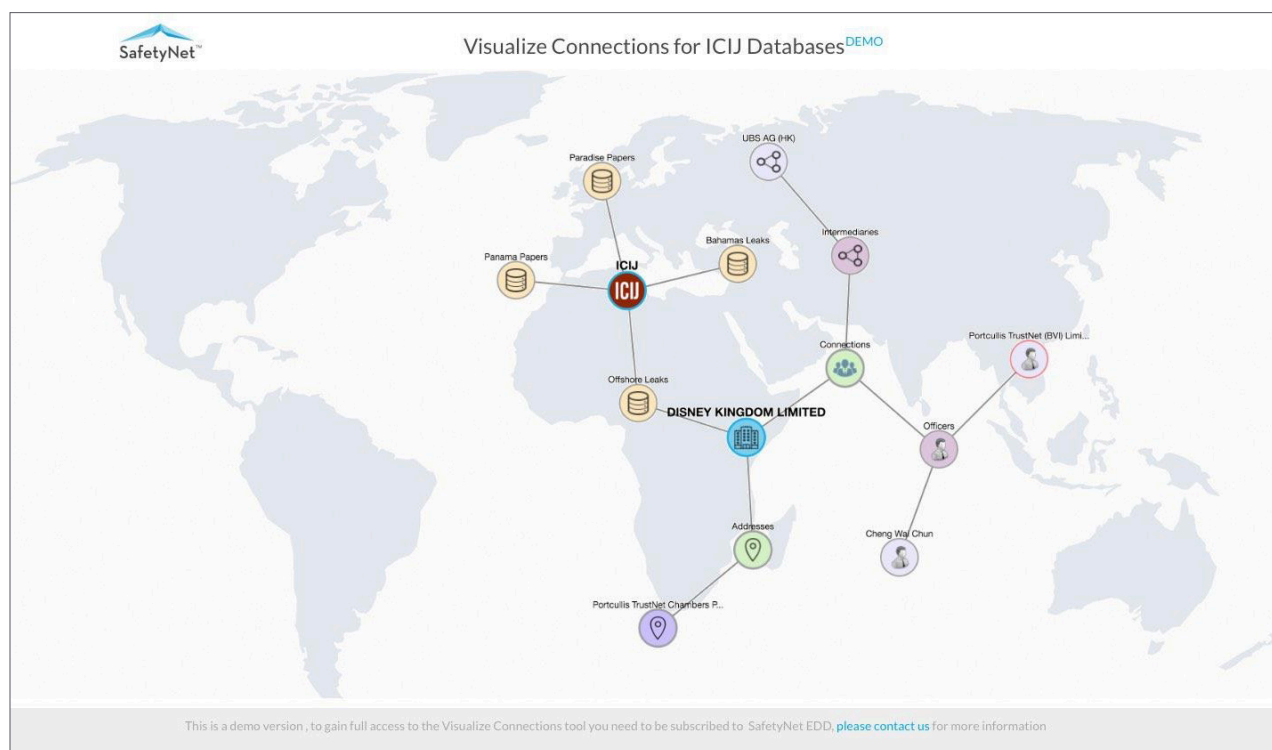
Visualize Connections for ICIJ Databases is a customized version of Visualize Connections, DSS' cognitive link analysis tool that can graphically display relationships between entities found within structured and unstructured data. It can graph the data within the ICIJ Databases within seconds, and with "one click", while not requiring the end-user to download the data or install the application. Visualize Connections for ICIJ Databases is fully integrated with SafetyNet.ai, DSS' award-winning Enhanced Due Diligence (EDD) cognitive search tool. Through this integration, end-users can quickly and seamlessly cross-reference data from within the ICIJ databases with internal files or data found on the internet.

During a SafetyNet search, it scans global sanctions lists, Politically Exposed Persons (PEPs) lists, and Persons In Public Life (PIPs) lists; and utilizing Artificial Intelligence tools from IBM Watson, Amazon, Google, and Microsoft, along with custom proprietary code; it conducts multilingual scans across the Internet (surface web, deep web, and dark web). Some of the datasets that SafetyNet searches are: court cases, criminal registries, government records, curated news sources, image files, and more.

"Visualize Connections is a very powerful, but user-friendly graphing tool, that greatly increases our clients' ability to manage risk, and I'm happy that it's now being made available across most of our plans" states Piyush Dubey, Lead Developer of Visualize Connections. Commenting on the release, Chairman and CEO of DSS, E. Jay Saunders stated "As the information within the ICIJ databases are now in the public domain, some of our clients want to know if they contain anything that they should be aware of, or that could help them, or their clients, better manage risk. With Visualize Connections, our clients can quickly and easily see the connections between the data within the ICIJ databases, and if needed, use SafetyNet to seamlessly and securely cross-reference that data with their own internal company data and/ or data from across the internet."

Visualize Connections for ICIJ Databases is available free of charge to all subscribers to SafetyNet's EDD (or higher) plans.

A live demo of Visualize Connections for ICIJ Databases can be found at www.safetynet.ai and safetynet.ai/vc4icij_demo/.

About Domus Semo Sancus (DSS)

Domus Semo Sancus (DSS) Ltd, founded by E. Jay Saunders in November 2014, is a financial technology company that is building tools to encourage financial inclusion and bridge the e-commerce divide.

SafetyNet.ai is DSS' award-winning enhanced due diligence (EDD) cognitive search and crime prevention tool. It helps companies comply with KYC and AML rules and regulations by utilizing an artificial intelligence engine to help companies spot and mitigate risks before they become threats. SafetyNet.ai is cloud based and is offered in the following subscriptions: Lite, EDD (Enhanced Due Diligence), EDD Enterprise, Safe City, and Developer.

For more information on Domus Semo Sancus (DSS), visit: www.semosancus.com. For more information on SafetyNet.ai, visit: www.safetynet. ai. For more information on Visualize Connections for ICIJ Databases, visit: safetynet.ai/vc4icij_demo/ #DSS #SafetyNet #Risk:Managed #KYC #AML #FinTech #RegTech #ICIJ #PanamaPapers # OffshoreLeaks # BahamasLeaks #ParadisePapers #AI #artificialIntelligence #MachineLearning

CALENDAR OF EVENTS

Event	Date
CANTO 34th Conference & Trade Exhibition Hard Rock Hotel, Panama	**22nd-25th** July 2018
CANTO Regulatory GSMA Workshop Hard Rock Hotel, Panama	**24th** July 2018
Caribbean Investment Forum/ **Match Making Session** Hard Rock Hotel, Panama	**24th** July 2018
CANTO 34th Conference & Trade Exhibition Hard Rock Hotel, Panama	**22nd-25th** July 2018
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Caribbean Investment Forum/ **Match Making Session** Hard Rock Hotel, Panama	**24th** July 2018
6th Caribbean Women in ICT (CWIC) Forum Hard Rock Hotel, Panama	**25th** July 2018