



COMMONWEALTH
TELECOMMUNICATIONS
ORGANISATION

ANNUAL REPORT 2017-18

Partnerships for
development
through ICTs



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Chairman's message



Gilbert Peterson
Chairman

The CTO continues to support its members on ICTs issues and challenges. This is even more important to the CTO given the emergence of new technologies and trends, such as Internet of Things, Blockchains, 5G, Artificial Intelligence and Industry 4.0, just to mention a few.

Over the years, the CTO has provided development assistance support to its members, mainly based on its agility and better understanding the needs of its members. In addition, the CTO continues to ensure that its processes are focused on efficiency, and that its resources are effectively used to deliver value-add to its members through the effective use of ICTs in their social and economic development plans. I am pleased to note that despite the challenges the organization has faced in the last financial year, there has been some notable successes with regards to expansion of membership to delivery of development assistance programmes and ICT consultancy to its members.

The organisation has delivered key consultancy projects, hosted events, trained persons from member countries and co-ordinated ICT related issues across the Commonwealth. These achievements have enhanced the role of the CTO, especially in the international forum such as the IGF, ICAAN, ITU and GCCS. Notably the CTO co-ordinated discussions among Commonwealth ICT Ministers, leading to the Cyber Declaration at CHOGM 2018 held in London, UK,

The CTO continues to support a number of member countries on key strategic areas in ICT including cybersecurity and

cybercrime, broadband, regulation and ICT applications. Notably, the CTO has assisted a number of both commonwealth and non-commonwealth countries to develop cybersecurity capacity, and completion of the OTT study, which was adopted and published in June 2018.

As I come towards the end of my term as CTO chairman, I would like to commend the Acting Secretary-General and the secretariat staff for the hard work and dedication to deliver the strategic plan for the CTO. I would also like to thank members of the Executive Committee for their regular guidance and support over the period of my tenure.

Gilbert Peterson
Chairman

Secretary-General's introduction



Gisa Futai Purcell, Acting Secretary-General. CTO

Dear members and partners,

The 2017-2018 fiscal year has ended and I would like to thank you all for your support during this period. As you well know, one major challenge for any organisation is to remain relevant to the present, no matter how long it has been in existence. Although the CTO has been in existence for over 116 years, it is not immune to this reality and, over time, its main purpose has had to change several times in response to the changing ICT landscape. With each transformation, the organisation became less relevant to some of its members and more relevant to others. One would think that with today's pervasive nature of ICTs and the stakes at play with the emergence of the global information economy and cyberspace, all Commonwealth countries have more in common than before. The current situation is each Commonwealth country is at a different level of ICT development. While other countries are ready to embrace 5G, others have just launched 4G and most are continuing with 2G and 3G. I am personally convinced that this disparity between member countries gives us an opportunity to make the CTO relevant to all Commonwealth countries and beyond.

My vision is to focus our efforts on areas that can make the CTO relevant to all Commonwealth countries, through making the CTO a trusted partner for sustainable development for all through ICTs. Guided by this vision, as well as the newly adopted Sustainable Development Goals, we have focused our efforts on six strategic goals and, one year on, I am also pleased to report that the Secretariat is making very significant and encouraging progress to achieve these goals.

Strengthening membership value

I am pleased to confirm that The Kingdom of Tonga and Tuvalu joined CTO as Full Member Countries and Huawei and CentralNic joined as ICT Sector Members during the 2017-2018 financial year. The CTO Secretariat will ensure that each and every one of our members derives value from their membership of the CTO.

Much efforts will be concentrated in recruiting other Commonwealth countries and affiliated countries to become financial paying members of the CTO and delivering value for the membership.

Enabling conducive regulatory environments

As market forces continue to evolve and new technologies and applications emerge, adopting the right national regulatory environment is a recurring challenge. Through a range of capacity development programmes, technical support and consultancy services and conferences, we have embarked on actively promoting and facilitating the development of modern regulatory frameworks, including for licensing, spectrum management, quality of service, digital switchover and over-the-top (OTT) services, with the aim to create enabling national environments for investment and development.

In February 2018, the CTO partnered with the Ministry of Economic Development, Telecommunications and Gibraltar Saving Bank, HM Government of Gibraltar to deliver the first Commonwealth Data Forum. The forum was held before General Data Protection Regulation (GDPR) was put in effect in Europe, and looked at the latest policy, legal and regulatory issues.

Our well-established Commonwealth ICT Round Table series had another successful year with participation from over 50 appointed board members and executives involved in ICT policy and regulation. Because of the diversity and depth of this programme, and also the growing role and scope of most regulatory agencies in member countries, I have no hesitation in recommending those who are yet to take part to consider doing so soon.

In addition, through other capacity development programmes, including those delivered as part of the Programme for Development & Training, professional training was provided to over 600 regulatory professionals. Topics covered ranged from licensing, costs and tariffs and mobile money regulation to broadcasting content regulation and information security.



Separately, as part of our post-WRC-15 activities, the third Commonwealth Spectrum Management Forum is being planned to take place in the second quarter of 2018 to be held in Mauritius. The objective is to increase awareness of spectrum issues address implementation issues faced by members and to start putting together a common position of a Commonwealth input to WRC-19 and identifying areas of possible Commonwealth Action Plan for WRC-19.

The study on OTT services enhances our understanding of the market dynamics, the policy and regulatory issues of these services, both in the context of their impact on traditional business models and the opportunities for innovation and the potential of these services in stimulating economic growth. The findings of the survey have been shared with stakeholders at regional consultations with a view to developing options for decision making. The report of this study has been published in the second quarter of 2018.

Universal and affordable broadband

With over half of Commonwealth citizens yet to be connected to the Internet, there is a long way to go to achieve universal access, let alone universal broadband access. In many of our member countries, liberalisation and privatisation policies have helped achieve much greater access, but nevertheless they are proving insufficient. More investment conducive policies including public investment are needed. By sensitising our member governments on the need for more innovative investment policies, frameworks and models we developed the first Commonwealth ICT Investment Forum which was held in Dubai 2017 and was attended by top decision makers across the Commonwealth and beyond. I view public investment as one important solution to address the gap in Internet access, and it is my personal hope that this annual forum will help carve a role for government funding in both infrastructure and services.

Safe cyberspace

I am pleased to see frameworks being gradually put in place by our members to address cybersecurity. With the assistance of the United Kingdom, our direct involvement in working with some member countries to develop national cybersecurity strategies and also adopt and promote cyber standards has progressed well. This year, we have conducted work on cybersecurity strategy assessment and development in Tanzania, Malawi, Mozambique,

Bermuda, the Kingdom of Eswatini and Senegal (non-commonwealth country) and Rwanda. We worked in developing cybercrime for Pakistan and Cyberstandards for Trinidad and Tobago, Montserrat, Nigeria, Uganda, Jamaica, Botswana and Cameroon, while conducting cybersecurity strategy development, for Uganda, Cameroon and Botswana, as well as, cybercrime for Bangladesh and Nigeria. Cyberstandards was also conducted for all the above countries. In total we have worked and continue work with 15 countries. I am also pleased to report that, thanks to funding from the Netherlands, we will be reaching out beyond the Commonwealth to work with Senegal on the development of the country's national cybersecurity strategy. In addition to funding from partners and our development assistance programme, we were also able to work directly with Fiji on national cybersecurity strategy development.

Beyond national strategies, fighting cybercrime most effectively to make cyberspace resilient and safe for all requires greater international cooperation, and the CTO was honoured to welcome the Commonwealth Secretary-General, the Rt Honourable Patricia Scotland QC, at the 2017 Commonwealth Cybersecurity Forum held in London. Together, we made a joint call for greater collaboration between Commonwealth countries, but also between Commonwealth countries and the rest of the global community.

With the rise of new and cyberspace-distributed technologies, such as augmented reality technologies, the challenge of keeping cyberspace safer will inevitably grow and become more complex, and so we must not stop until all the necessary bridges are built and extended to facilitate this global collaboration.

Promoting a coordinated Commonwealth for ICTs

As a group of nations, the Commonwealth can give greater weight to its members' position during international treaty negotiations. During 2017-18 we successfully convened Commonwealth meetings around the meeting of: Internet Corporation for Assigned Names and Numbers (ICANN); Internet Governance Forum; ITU global symposium for regulators among others as part of the CTO's mandate to coordinate Commonwealth views during international meetings to ensure the CTO and the wider Commonwealth network of sister agencies fully play their part in achieving the Sustainable Development Goals.

In addition to Commonwealth coordination meetings, I was



privileged to take Commonwealth Action Plan to fora such as ITU Telecom World in Busan, Republic of Korea and GSMA's Mobile World Congress

Linking ICTs to SDGs

Whilst our efforts are targeted at the most pressing challenges, such as universal access or cybersecurity, our ultimate challenge is to see ICTs applied effectively in all areas of social and economic development where they can make a difference. The CTO must continue to engage with Members to establish support beyond ICTs, to keep abreast the possibilities technology offers in areas such as business, health, education and the environment. Naturally, where the opportunity arises to contribute to initiatives by other stakeholders, such as with the Smart Sustainable Development Model initiative led by the ITU's Telecommunication Development Bureau and to which I was appointed as board member.

A more efficient Secretariat for the CTO

Finally, in addition to the above strategic areas, it is clear to our Council that the CTO must continue to adapt to changes in its wider technological, economic and institutional environment. That is why we have embarked on a number of changes, including a change to the Constitution of the CTO to introduce Affiliate Member Country and Academia membership categories. In addition, the appointment of regional advisors

is proving to be a useful means to ensure more regular knowledge of, and also more regular presence in, regions such as the Pacific and the Caribbean.

Separately, and as already reported last year, it is of critical importance that we work with our members to ensure the long-term financial stability of the organisation. I am glad that measures such as the new unit of membership contribution – designed to improve members' financial contributions to the CTO are being implemented, and we are beginning to feel the difference they make to the organisation. Also, we have spent significant time in reviewing and strengthening our internal administrative and financial processes, and new schemes to promote staff welfare and motivation, and I must thank all our members of staff for their regular contributions during this change.

I would like to express my profound gratitude to all members of Council, the Executive Committee and all members for their support over the past year.

Gisa Fuatai Purcell
Acting Secretary-General

About the CTO

The CTO is the oldest and largest Commonwealth intergovernmental organisation in the field of information and communication technologies (ICT). Being fully involved in the development and use of ICTs for social and economic development, the management of the organisation recognise that it must stay at the cutting edge of ICT developments in order to deliver significant benefits to its members. The history of the CTO can be traced back to 1901, while the organisation's present form as an intergovernmental treaty organisation came into being in 1967. The CTO has a diverse range of members including developed countries, developing countries, least developed countries, small island developing states and landlocked developing countries. Therefore policies, decisions and actions must cater to the needs of this wide range of countries, and our programmes are implemented in a manner to reflect the changes in both the Commonwealth as well as the global telecommunications/ICT community.

Our mission

To provide result-focused ICT leadership in the Commonwealth and beyond.

Our vision

A trusted partner for sustainable development for all through ICTs.

Strategic goals

Under our new Strategic Plan for 2016 - 2020 our six strategic goals are:

- ▶ Enhance the value of the CTO membership and expand the CTO's membership base, including through Member Action Plans which define clear programmes and activities for each member.
- ▶ Promote enabling regulatory environments in key areas such as licensing, spectrum management, quality of service and over-the-top operators.
- ▶ Promote affordable universal and high-quality broadband connectivity via enabling policies and regulatory measures that facilitate the rapid roll-out of broadband infrastructure.
- ▶ Promote a culture of cybersecurity and effective cyber governance through the establishment of cybersecurity frameworks, standards and guidelines.
- ▶ Promote the development and use of ICT applications for socio-economic development e.g. e-governance, e-health, e-education and e-agriculture, among others.
- ▶ Ensure effective coordination of Commonwealth countries at international ICT conferences and meetings.

Services to our members

Capacity development and training

With our network of telecom, IT and broadcasting specialists, we assist our members in a variety of ways to suit their specific needs. Services include:

- ▶ Bespoke in-country programmes, delivered in-country or at the CTO Secretariat
- ▶ Over 50 open courses each year
- ▶ A pooled procurement service for training through our Programme for Development and Training (PDT)
- ▶ Fellowships and secondments

ICT research

Through our research services, albeit of smaller scale, we support policymaking and regulatory bodies, specialised agencies and the private sector in understanding the challenges and opportunities new technologies bring and facilitate evidence-based decision making. Recent studies

completed have addressed a wide range of issues, from access, to quality of service, to e-health sustainability.

Technical support, consultancy and advisory services

The CTO undertakes consultancy projects for members and non-members. In recent years, the division has become an invaluable resource for a wide range of stakeholders, including multilateral and bilateral development partners, operators, government ministries, communications regulators, civil society organisations and various industry associations.

Events

The CTO's events and conferences gather ICT policymakers, regulators and operators and their advisers, private sector executives and civil society leaders to help establish environments that are conducive of more effective adoption and uses of ICTs in national development. National and global initiatives in areas such as universal access, cyber governance, privacy and e-applications are presented and discussed in depth, turning each event into a unique learning experience.

Regional Office

The CTO Regional Office for Central Africa was established in 2015 in order to ensure that the CTO is informed of developments in Central Africa, and how these might affect CTO members, and also to ensure that non-CTO members and organisations in the region are informed about the CTO's plans and activities. Among other activities, in the last year, the Regional Office for Central Africa has shared information with the region on the CTO's events and played a strong role in organising the Commonwealth Spectrum Management Forum 2016, which took place in Yaoundé. The office also worked to promote the CTO and its activities in the region.

Governance

Executive Committee



Gilbert C Peterson SC
Chairman, Trinidad & Tobago



Shivnesh Prasad
1st Vice-Chair, Fiji



James M Kilaba
2nd Vice-Chair, United Republic of Tanzania



Professor Umar Garba Danbatta, FNSE
Executive Vice-Chairman, Nigeria



Mrs Jamiilah Linton-Anane
Chairperson of the CTO's Programme for Development and Training (PDT)



Philémon Zo'o Zame
Development Partners Representative, Cameroon



David Harmon,
Industry Partners Representative, Huawei

Management



Shola Taylor
Secretary-General



Gisa Fuatai Purcell
Acting Secretary-General



Dr Martin Koyabe
Manager, Technical Support and Consultancy



Robert Hayman
Manager, Events



Nikisha Joshi
Manager, Finance and Pensions



Dorothy Elangot
Deputy Manager, HR and Admin



Fargani Tambeauk
Deputy Manager, Technical Support and Consultancy

CTO Celebrates Second Biennial Commonwealth ICT Awards

Originally established as the Pacific Cable Board to manage the Pacific telegraph cable connecting Australia and New Zealand with Canada and hence the British Empire, the CTO has undergone a number of transformations to become the technical knowledge sharing organisation it is today. Focusing on the provision of training and the exchange of knowledge and experience in the management of telecommunications, the CTO is now focused on sharing experience and expertise as

telecommunications revolutionize to ICTs with the development of the Internet and cloud technology posing new challenges and opportunities for CTO members and the international community. What remains unchanged over the last 117 years is the CTO's focus on connecting the unconnected. Following the official launch of the first celebrations in January 2016, the second ICT Awards took place in June 2018 in London, UK.

Commonwealth ICT Awards 2018

The second biennial Commonwealth ICT Awards 2018 took place in the evening of 18 June 2018, at the prestigious Lancaster House London, graciously hosted by the Foreign Commonwealth Office, the Government of United Kingdom and Great Britain and Northern Ireland. The Commonwealth ICT Awards are intended to recognise major achievements in ICT's by member countries and organisations and to share knowledge amongst stakeholders in key areas.

Safaricom won an award for outstanding *Wireless Broadband Initiative* for Rural Star, a project where Safaricom partnered with Huawei to reduce the total cost of building and running a mobile network site by up to 70 per cent. Through this solution, operators will for the first time, get the opportunity to construct low cost sites and in so doing, provide connectivity and digital services to more people living in rural and remote areas.

Safaricom's second award was given for best cybersecurity initiative for Hakikisha service. Hakikisha, which means "to confirm or verify" in Swahili, ensures customers no longer lose money as a result of erroneously entering the wrong numbers when transferring funds. This service enables subscribers to confirm a recipient's name before completing a transaction to avoid errors and mishandling of online money transfers.

The awards night also recognized three other awards. The awards went to the Ministry of Public Administration & Communications of Trinidad & Tobago for best application e-learning for their e-Based Competency Development Programme and the award for best fixed broadband initiative was awarded to Liquid Telecom. The final award was given to BharatNet India for best universal access initiative.





Coordination of Commonwealth efforts: a push for investment and safety



Continued evolution in technology and market forces calls for new agreements in a range of areas, from standards and spectrum management to Internet governance. Achieving international consensus is often painstaking and time-consuming, and the coordination and promotion of Commonwealth views during international negotiations can be critical in ensuring that the CTO and the wider Commonwealth network of sister agencies fully play their part in supporting member countries in their participation at these negotiations.

In April 2018, Commonwealth Heads of Government adopted a Commonwealth Cyber Declaration which signifies the largest inter-governmental commitment on strengthening cybersecurity. Cyberspace has had a positive influence on economic and social development within the Commonwealth and provides a platform for expressing the diversity and our rich culture.

The Declaration has a strong focus on capacity building and commits to:

- ▶ A cyberspace that supports economic and social development and rights online
- ▶ Build the foundations of an effective national cybersecurity response
- ▶ Promote stability in cyberspace through international cooperation

While there is recognition of the role cybersecurity plays in achieving the United Nations Sustainable Development Goals, there is also recognition that Commonwealth countries, especially developing, less developed and small island developing states face severe challenges in building capacity on cybersecurity and implementing the necessary policy, legal and technical frameworks required to exploit the benefits of cyberspace in a secure, open and free environment.

The still CTO continues to support its members on ICTs issues and challenges. In the last financial year, the CTO has been involved in coordinating the Commonwealth perspective on ICT in a number of international forums including Internet Corporation for Assigned Names and Numbers (ICANN), Internet Governance Forum (IGF) and the International Telecom Union (ITU).



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Governmental Advisory Committee of the Internet Corporation for Assigned Names & Numbers

ICANN meetings are held three times each year in different regions to enable attendees from around the world to participate. ICANN meetings provide an opportunity for face-to-face discussions and airing of opinions for a stable and secure operation of the Domain Name System (DNS). They are often preceded by workshops and working sessions led by volunteer members of ICANN's supporting organisations and advisory committees. These meetings include ICANN's Government Advisory Committee meetings which provide advice on public policy aspects of ICANN's responsibilities with regard to the DNS. The South Africa meeting in June, as with such

previous meetings, the CTO convened a meeting of Commonwealth interested parties to the a Commonwealth Government Advisory Committee (GAC) to discuss the implications of Internet governance for Commonwealth countries, with specific focus on capacity building. The CTO participated in another GAC meeting at the ICANN62 meeting in Panama. The meeting discussed the plans for CHOGM 2018 and cyber security capacity building programme, Global Data Protection Regulation (GDPR) and other key issues.

ITU Telecom World

Taking part in a high-level discussion on "*lifelong learning and skills development in the digital era*", Acting Secretary-General Gisa Fuatai Purcell highlighted critical factors that must be considered by governments and policymakers to extend for the development of ICT skills in the Commonwealth and beyond.

The panel discussed the emerging technology trends related to the digital transformation, such as artificial intelligence, machine learning, IoT, and big data analytics, that have profound implications for skills required for the evolving digital economy. The notion of how lifelong learning has emerged as one of the key strategies for job security and employment in

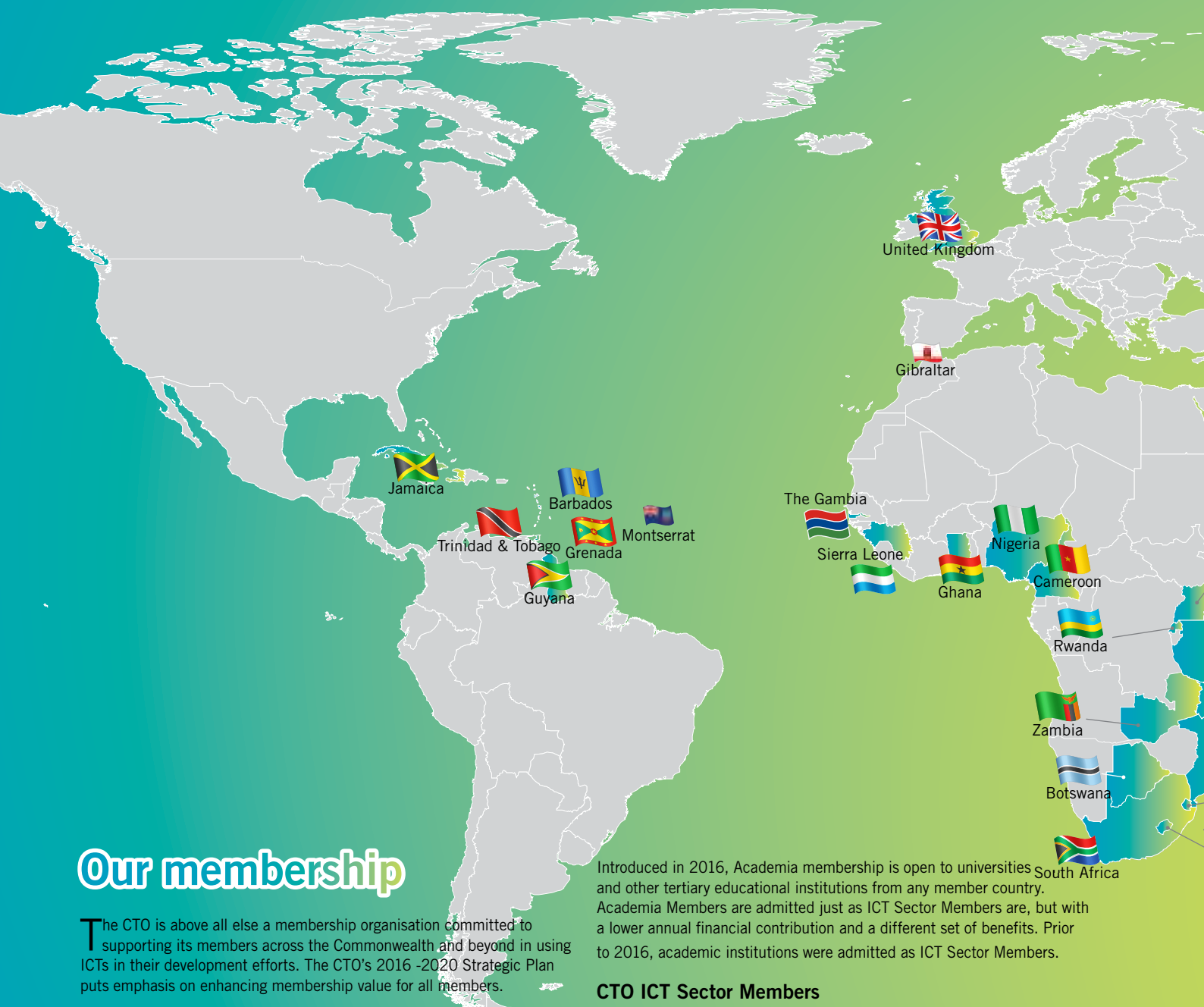
the digital era was looked at and discussions around ways the CTO is empowering Members to develop these skill sets within their countries was discussed.

Conversations on how educational institutions and training providers can address these skills gaps were raised. The CTO provided an overview of recent developments on the debate on digital skills and lifelong learning and present concrete case studies on projects and activities that have been implemented to members to address the emerging skills gap.

This forum also facilitates Commonwealth countries contribution to the GAC, through updates on ICANN and other Internet governance developments and by providing a means for the Commonwealth to contribute its unique collective voice to the deliberations.

Gisa Fuatai Purcell, ICANN 2017

PHOTO CREDITS : ITU Flickr



Our membership

The CTO is above all else a membership organisation committed to supporting its members across the Commonwealth and beyond in using ICTs in their development efforts. The CTO's 2016 -2020 Strategic Plan puts emphasis on enhancing membership value for all members.

The CTO has four broad categories of members: Full Member Countries, Affiliate Member Countries, ICT Sector Members and Academia.

Full Member Countries are member states of the Commonwealth that have given an undertaking to make an annual financial contribution to the CTO; other Commonwealth countries, simply referred to as Member Countries, are all other member states of the Commonwealth not currently contributing financially to the CTO; these can still take part in CTO activities, but they have no voting right within the CTO Council.

Affiliate Member Countries are self-governing states linked to Commonwealth member states, including their overseas territories, and that join the membership of the CTO in order to benefit from the Organisation's programmes.

ICT Sector Members include the following:

- ▶ Regulatory agencies (telecommunication and broadcasting regulatory agencies and commissions) from any country;
- ▶ Specialised national agencies (universal access, IT, and cybersecurity agencies) from any country;
- ▶ Industry (carriers, fixed/mobile/data network operators, manufacturers, service providers);
- ▶ Civil society (professional membership bodies, industry associations, advocacy groups);

Introduced in 2016, Academia membership is open to universities and other tertiary educational institutions from any member country. Academia Members are admitted just as ICT Sector Members are, but with a lower annual financial contribution and a different set of benefits. Prior to 2016, academic institutions were admitted as ICT Sector Members.

CTO ICT Sector Members

Regulatory Agencies

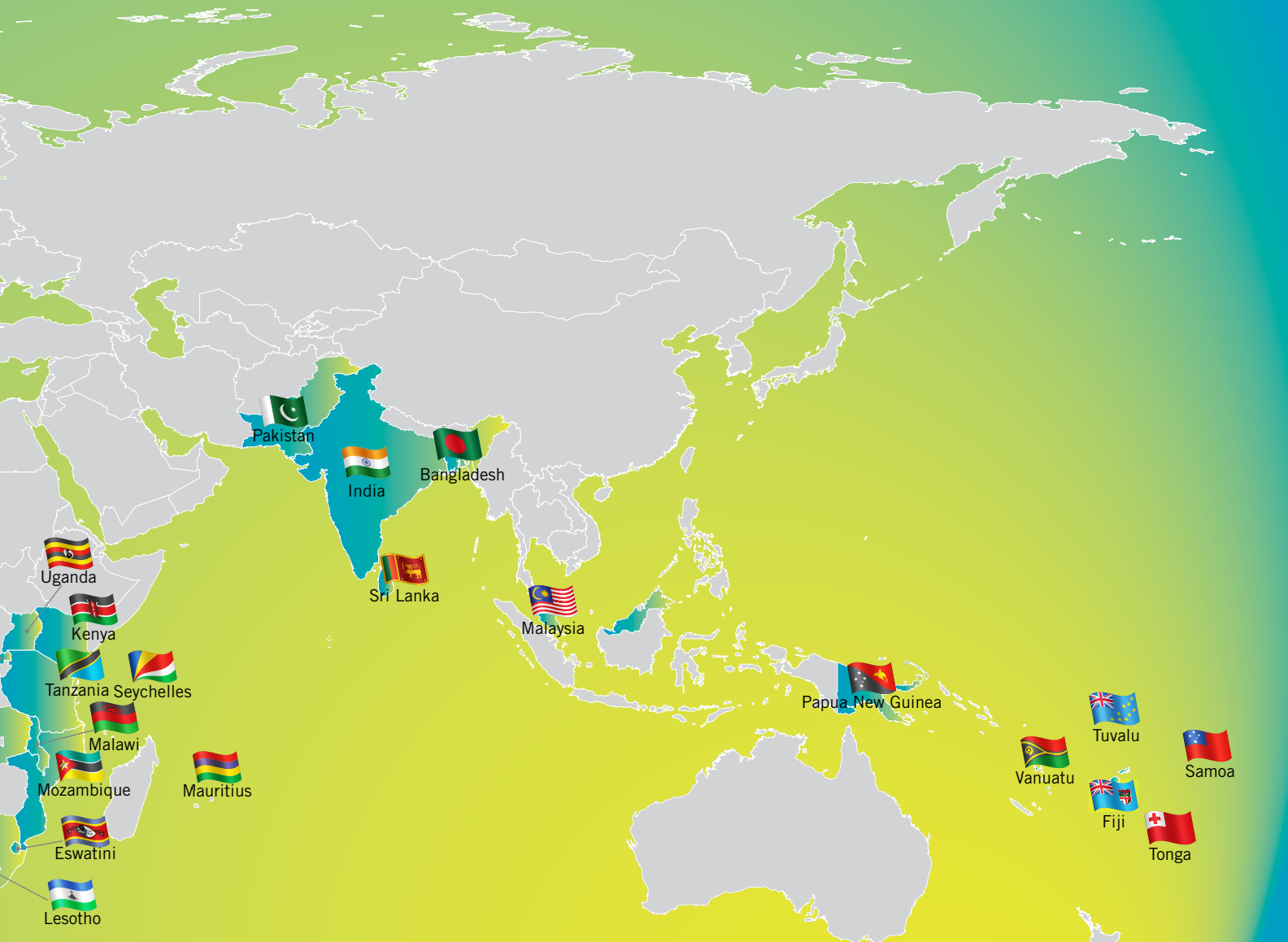
- ▶ Postal and Telecommunications Regulatory Authority of Zimbabwe
- ▶ Communications Regulatory Authority of Namibia

Governments and Government Agencies

- ▶ Cameroon: Agence Nationale des Technologies de l'Information et de la Communication
- ▶ South Sudan (Republic of): Ministry of Telecoms and Postal Services
- ▶ Uganda: National Information Technology Authority – Uganda

Industry

- ▶ Avanti Communications Group
- ▶ Bitek
- ▶ BOFINET
- ▶ CentralNic
- ▶ Digital Bridge Institute
- ▶ Eutelsat
- ▶ Facebook
- ▶ Galaxy Backbone Limited
- ▶ Gibtelecom
- ▶ Huawei
- ▶ Promethean
- ▶ Safaricom
- ▶ Sentech
- ▶ SES



Industry Associations

- ▶ GSMA

PDT Partners

Governments and Government Agencies

- ▶ Ministry of Communications (Ghana)
- ▶ Ghana Investment Fund for Electronic Communications
- ▶ Ministry of Communications (Nigeria)
- ▶ Universal Service & Access Agency of South Africa
- ▶ Botswana Fibre Networks Ltd (BoFiNet)

Operators

- ▶ Botswana Telecommunications Corporation
- ▶ Gambia Telecommunications Company
- ▶ Vodafone Ghana
- ▶ BSNL (India)
- ▶ Malawi Telecommunications Limited
- ▶ Mauritius Telecom
- ▶ Telecomunicações de Moçambique
- ▶ Cable & Wireless Seychelles
- ▶ Sierra Leone Telecommunications Company
- ▶ Telkom South Africa
- ▶ Eswatini Posts & Telecommunications Corporation

- ▶ Telecommunications Services of Trinidad & Tobago
- ▶ Uganda Telecommunications
- ▶ Telecom Vanuatu
- ▶ Zambia Telecommunications Company

Regulators

- ▶ Bangladesh Telecommunication Regulatory Commission
- ▶ Botswana Communications Regulatory Authority (BOCRA)
- ▶ Telecommunications Regulatory Board (Cameroon)
- ▶ Office of Utilities Regulation (Jamaica)
- ▶ Communications Authority of Kenya
- ▶ Information and Communication Technologies Authority (Mauritius)
- ▶ Nigerian Communications Commission
- ▶ Independent Communications Authority of South Africa
- ▶ Tanzania Communications Regulatory Authority
- ▶ Telecommunications Authority of Trinidad & Tobago
- ▶ Eswatini Communications Commission (ESCCOM)

Suppliers

- ▶ Modern Concepts Consultancy Services Inc (Canada)
- ▶ Eagle Photonics (India)
- ▶ Development Consulting Centre (Trinidad & Tobago)
- ▶ Local Consulting (Cameroon)
- ▶ BSNL (India)
- ▶ Sri Lanka Telecom
- ▶ Telkom SA (South Africa)

Technical support and consultancy

During 2017-18 the CTO completed specific in-country programmes, the majority of which were in the key areas of regulation, universal broadband, cybersecurity and applications.

Projects featured in this section:

17 Regulatory environments

- 17 Eswatini
- 17 Nigeria

18 Cybersecurity

- 18 FCO National Cybersecurity Strategy Projects
- 18 Senegal
- 18 Eswatini
- 19 Bermuda

19 Cyber Standards for SMEs

19 ICT Applications

20 National Cybercrime

21 Over-The-Top Study





Regulatory environments

Eswatini - Development of ESCCOM Strategic Plan

In 2017-18, the Eswatini Communications Commission (ESCCOM) commissioned the CTO to provide technical assistance in the development of a five-year strategic plan for the period 2018 to 2022. The project called on the CTO to; review the current situation of Eswatini's ICT/telecommunications sector; review the existing legal and regulatory frameworks for Eswatini's ICT sector; review the current situation and past activities of ESCCOM; undertake an institutional diagnostic review of ESCCOM; identify and evaluate all opportunities, impediments, bottlenecks, and others factors relevant to ESCCOM's mandate and activities, and propose a series of recommendations in the final strategic plan for ESCCOM. The main activities of the project are divided into three main phases (1) development of strategic plan: goals, mission, objectives, (2) development of strategic plan: institutional aspects and (3) development of annual action plans. The project has now been completed with a presentation made to both the ESCCOM staff and board members.

Uganda - Gap Analysis of the Policy, Legal and Regulatory Framework for Uganda's ICT Sector Project

In 2017-18, the CTO was awarded a contract by the Ministry of Information and Communication Technology and National Guidance (MoICT&NG), Uganda and the National Information Technology Authority-Uganda (NITA-U) to conduct a gap analysis of the policy, legal and regulatory frameworks of Uganda's ICT sector. The project aimed to identify any policy, legal and regulatory hindrances to achieving the broadband connectivity

and e-government development objectives of the Government of Uganda. As part of this ongoing project, the CTO will review and assess the existing National ICT policies, strategies, legislation, standards and regulatory frameworks to identify gaps, weaknesses as well as any notable inconsistencies with regional commitments and frameworks and propose measures for addressing these gaps. The CTO will also review and assess the existing policies, strategies and laws in the key sectors of justice, law and order sector; health; agriculture and education to identify any gaps and impediments to the adoption of e-Government in those sectors and propose measures and strategies for addressing the identified gaps. The CTO will identify and recommend new ICT policies, strategies and legislations in order to provide a conducive enabling environment for, among others, the development of e-government. The project will also review and assess the existing ICT institutional framework to enforce the ICT sector's legal, policy, strategy and regulatory framework to identify gaps and weakness as well as the associated consequences and make recommendations, measures and strategies for strengthening the institutional framework. This project is ongoing and is expected to be completed by the 3rd quarter of FY2018/19.

Nigeria - Developing a Licensing Framework For Mobile Virtual Network Operators

In 2017-18, Jaeno Digital Solutions Limited (JDSL) in partnership with the Commonwealth Telecommunications organisation won an open tender by the Nigerian Communications Commission (NCC) to develop a licensing framework for mobile virtual network operators.

The project is ongoing and is expected to be completed by the end of Q3 2018-19



Delegates at the Validation workshop - Senegal November 2017

Cybersecurity

FCO National Cybersecurity Strategy Projects

Based on the CTO's track record of the work conducted in 2015-16, The UK Foreign Commonwealth Office (FCO) approved seven national cybersecurity strategy projects for the CTO with a total budget of £283,115 for 2016-17, which was later extended 2017-18.

In 2017-18, the CTO continued to support Malawi, Mozambique and Tanzania to develop new national cybersecurity strategies, based on the CTO's model national cybersecurity strategy. During the project delivery, each beneficiary country was encouraged to own and develop its national cybersecurity strategy based on the needs and priorities of the individual countries, as these needs and priorities varied from country to country. In all of these projects:

- ▶ The cybersecurity maturity assessment was completed and final reports submitted to the beneficiary countries for their approval
- ▶ The national cybersecurity strategies have been completed for each beneficiary country and are awaiting adoption and implementation.

The CTO also delivered capacity building workshops on critical information infrastructure protection (CIIP) in an effort to enhance the cybersecurity capacity of these nations. In addition, similar support was extended to Rwanda where the CTO carried out a cybersecurity maturity assessment and conducted a workshop on critical information infrastructure protection (CIIP).

Developing the National Cybersecurity Strategy for the Republic of Senegal

In the second quarter of 2016, the Government of the Netherlands, through the Ministry of Foreign Affairs, approached the CTO to assist the Republic of Senegal to develop its national cybersecurity strategy. The agreement for this project was signed in the first quarter of 2017-18 between the CTO and Government of the Netherlands. The agreement involved the CTO assisting the Republic of Senegal to identify cybersecurity gaps based on a cybersecurity maturity assessment for Senegal that had been conducted, prior to developing the national cybersecurity strategy. The strategy has been developed, validated and submitted to the Republic of Senegal for adoption and implementation.

Developing the National Cybersecurity Strategy for the Kingdom of Eswatini

In the first quarter of 2017-18, the International Telecommunications Union (ITU) approached the CTO to assist the Kingdom of Eswatini to develop its National Cybersecurity Strategy. The agreement for this project was signed in Q2 2017-18 between the CTO and ITU. The agreement involved the CTO experts assisting Eswatini to conduct a cybersecurity maturity assessment, prior to developing the national cybersecurity strategy. The strategy has been developed, validated and submitted to the Kingdom of Eswatini for adoption and implementation.

Developing the National Cybersecurity Strategy for the Government of Bermuda

In the last quarter of 2017-18, the Government of Bermuda approached the CTO for technical support to develop the national cybersecurity strategy for Bermuda. Over the years the CTO has developed expertise and competencies in cybersecurity and in particular the “Commonwealth Approach to Developing National Cybersecurity Strategies” model. The agreement for this project was signed in March 2018 and the project commenced. The engagement with Bermuda involved conducting a cybersecurity maturity assessment for Bermuda, prior to developing the national cybersecurity strategy. The strategy has now been developed and validated. A final review has been conducted and the strategy has submitted to the Government of Bermuda for adoption and implementation.

Cyber Standards for SMEs

Recognising the importance of standards in cybersecurity, FCO approved a project jointly proposed by the CTO and IASME, which is one of the accreditation bodies appointed by the UK Government to develop “Cyber Essentials”, which is mandatory for any entity that wishes to transact business with the UK Government. The project aimed to promote Cyber Essentials across the Commonwealth and to create a pool of local assessor organisations who would assess and grant Cyber Essentials standards in selected countries. In 2017/18, the CTO delivered capacity building workshops in the following beneficiary countries including Uganda, Trinidad & Tobago, Nigeria, and Montserrat. This was building on the 2016/17 capacity building work undertaken by the CTO in Botswana, Cameroon and Jamaica. In addition, a number of assessors are being trained in selected beneficiary countries.

Cybercrime

In view of the success of the project delivered in Nigeria in 2015, FCO provided grants for two new projects to be carried out in Bangladesh and Pakistan, aimed at building the capacity of the telecom sector to tackle cybercrime, similar to the work in Nigeria. The workshop for Bangladesh took place on the March 2017 and the workshop for Pakistan in March 2018. A number of actions were identified by each of the beneficiary countries, and implementations of these actions are ongoing at different levels.

ICT Applications

Establishment of a Centre for ICT for Development, Innovation and Practice

In 2017-18, Jaeno Digital Solutions Limited in partnership with the Commonwealth Telecommunications organisation won an open tender by the Digital Bridge Institute (DBI) to develop a comprehensive framework document which will enable the establishment of the Centre for ICT for Development, Innovation and Practice (CICTDIP). This project promoted innovation and ICT usage, as well as leverage ICTs to spur socio-economic development in Nigeria.

To achieve the overarching objective, the consulting team will seek to:

- ▶ Identify and develop appropriate vision, mission statements and objectives for the CICTDIP;
- ▶ Develop a comprehensive organisational structure for the management of the CICTDIP;
- ▶ Identify and prescribe the required skill set and staffing levels for the CICTDIP;
- ▶ Identify the competencies required for particular roles;
- ▶ Outline the activities to be done within one year which would enable the CICTDIP to take effect;
- ▶ Develop a strategy that will clearly define the role and responsibilities of DBI in the management of the CICTDIP;
- ▶ Develop a strategy that will guide the positioning of CICTDIP as an African centre of excellence for ICT4D;
- ▶ Identify national socio-economic issues in health, agriculture, education, and security etc. and show opportunities for ICT innovations and creativity therein, that will enable national productivity and competitiveness;
- ▶ Identify local and international opportunities for collaboration and partnerships that can enable grants, investments, and capacity building.

The project is ongoing and is expected to be completed by the end of Q3 2018-19



Former Minister of IT and Telecom Anusha Rehman addressing the “Tackling cybercrime in Pakistan” workshop in Islamabad, Pakistan on 15 March 2018.

National Cybercrime

Pakistan

The Commonwealth Telecommunications Organisation facilitated a workshop on tackling cybercrime in the telecommunications sector in Pakistan. The workshop took place on the 15 - 16 March 2018 in Islamabad and was hosted and organised by the Ministry of Information Technology and Telecommunications. The event featured participation from the Commonwealth Secretariat as well as key local stakeholders, including amongst many others the Ministry of Information Technology and Telecommunication, Pakistan Telecommunications Authority, Pakistan Telecommunications Company Limited, the National Forensic Science Agency and the National Response Centre for Cyber Crime.

The event was opened by The Honourable Anusha Rehman Khan, Pakistan's minister of information technology and telecommunication and His Excellency Thomas Drew, high commissioner of the UK to Pakistan. Citing as an example Pakistan's ICT for Girls programme, Ms Rehman Khan highlighted efforts by the Government to promote ICTs in a manner that is both economically inclusive and socially desirable. She referred to the need for child protection online and measures against targeting women online, stressing that people in cyberspace should have the same rights and protections they are entitled to in the physical world. She reminded that cybercrime was a rapidly growing and increasingly complex phenomenon that threatened the country's potential for ICTs and called on all national ICT institutions taking part in the workshop to use this opportunity to find ways to help address this challenge most effectively.

For his part, Mr Drew said that cybercrime was borderless and global, that the risks to Pakistan's potential to benefit economically from technological evolution were significant, and that the British Government was delighted to support the workshop as well as Pakistan's broader efforts for ICTs.

In the opening remarks of the workshop, the CTO said that Pakistan already had in place some of the building blocks needed to address cybercrime, including the country's Prevention of

Electronic Crime Act 2016. But just as with most other countries, national collaboration and coordination were essential.

Overall, the event was highly engaging, with the 60+ participants making significant contributions to the two-day discussions on how best to address cybercrime in the country and beyond.



CTO Over-The-Top Study

Following a mandate issued by Commonwealth ICT Ministers at the Commonwealth ICT Ministers Forum in London in June 2016, The Commonwealth Telecommunications Organisation conducted a study to understand the market dynamics and policy and regulatory issues of Over-The-Top (OTT) services, both in the context of their impact on traditional business models and of opportunities for innovation and stimulating economic growth. According to a number of sources, OTT refers to applications and services, which are accessible over the Internet and ride on Operators' networks offering Internet access services.

The main objective of this study was to develop, based on consultations with relevant stakeholders in a sample of representative jurisdictions, a better understanding of the dynamics of OTTs by service providers, policy makers, regulators, OTT service providers and consumers of OTT services. The output of the study will enable future deployment of OTT services to be conducted in a manner that addresses the priorities and concerns of all stakeholders to the benefit of consumers

The findings of a study showed that the majority of stakeholders recognize and appreciate the innovative nature of over-the-top services (OTTs) and do not want innovation to be stifled as OTT services offer numerous benefits to consumers.

The report recommends further consultation to involve all stakeholders at national level in the countries surveyed, but also at regional and international level, given that the issues raised in the survey are not peculiar to any specific country. While it is understood that countries will vary in terms of existing policies and regulations, cross-border collaboration is especially also highlighted as useful in sharing experiences and learning from mistakes and best practices.

The European Union broadly regards over-the-top service

providers as online services that can potentially act as substitute for traditional telecommunications and audiovisual services such as voice telephony, SMS and television. It further distinguishes between OTTs, online services and managed services noting that OTTs represent a subset of online services, which also differ from managed services.

Among the key OTT challenges identified by the study were:

- ▶ Licensing obligations
- ▶ Taxation (jurisdiction)
- ▶ QoS/QoE
- ▶ Data protection and privacy
- ▶ Net neutrality
- ▶ Interconnection
- ▶ Universal service fund (USF)

Recommendations of the report included:

- ▶ Using the report to create favourable ICT environment in terms of policies, regulations and legislations;
- ▶ Adopting OTT services as being part of the App economy as innovation needs to be encouraged;
- ▶ Encouraging countries to determine suitable frameworks through regional and international considerations; and
- ▶ Developing a national cybersecurity strategies, to include robust legal structures/instruments and governance to address data protection and privacy.

The CTO has committed to assist the commonwealth countries to develop further internal OTT frameworks for the Commonwealth Countries.



Events

Events held during 2017-18 reflected the CTO's new Strategic Plan for 2016-2020. With greater focus on key issues e.g. universal broadband access or cybersecurity, Spectrum or Big Data these events attracted participation from leading national, regional and global bodies.

Events featured in this section:

- 23 Commonwealth ICT Invest 2017
- 24 Commonwealth Broadband Pacific Forum 2017
- 24 Commonwealth ICT Forum 2017
- 25 Commonwealth Spectrum Management Forum 2017
- 26 Commonwealth Human Resources & ICT Forum 2017
- 26 Commonwealth Digital Broadcasting Forum 2017
- 27 Commonwealth Data Forum 2018
- 28 Commonwealth ICT Ministers Forum 2018



Commonwealth ICT Invest 2017

10 – 12 April 2017, Dubai, United Arab Emirates

April 2017 saw the CTO launch a new series of events – the Commonwealth ICT Investment Forum. The inaugural Commonwealth ICT Invest 2017 took place in Dubai, UAE, on 10 – 12 April 2017.

This series was introduced to explore ICT investment opportunities and the initiatives needed in order to combat the significant gaps in access to the Internet between Commonwealth countries caused by insufficient investment in ICTs and, in particular, in affordable technologies. ICTs play a crucial role in national socio-economic development and in achieving the aims of the Sustainable Development Goals (SDGs) and so ICT Invest was convened, not only to discuss opportunities for investment, but also to facilitate partnerships and collaboration.

The theme of the Forum *Partnerships for connecting the next billion* discussed how innovative investment mechanisms and secure policy and regulatory frameworks can enable technologies to achieve their full potential. Specific opportunities and challenges in areas such as spectrum management and cybersecurity were also examined and there were a number of project showcases demonstrating ICT projects ready for investment.

Investment in the ICT sector is what is most lacking when it comes to ensuring that people around the world benefit from the Internet

Gilbert Peterson, Chairman, Telecommunications Authority of Trinidad & Tobago and Chairman of the CTO Council

Key outcomes:

- ▶ Noting the number of ICT projects requiring financing, and noting the observation of the Africa Finance Corporation that the main challenge to funding ICT projects is poor project preparation, it was recommended that the CTO should look for appropriate capacity building solutions to address this gap.
- ▶ Stakeholders from emerging market and especially governments should take a more active part in Internet Government discourse, as these discussions often have important implications for distribution and use of critical Internet resources.
- ▶ Noting the increasing cyber threats, the Forum recommended that:
 - Businesses, governments and other connected institutions should take concrete steps to protect themselves against cyber threats
 - CTO should provide cybersecurity training for law-enforcement and judiciary in emerging markets
- ▶ CTO should provide frequency management training and in particular handling of spectrum auctions.
- ▶ Policy makers and Regulators should develop forward-looking policies and regulations that will not unduly restrain future technologies and services.
- ▶ Noting that the revenues of Universal Services Agencies are reducing as most of them are dependent on declining telco revenues due to OTTs and traffic diversion by unlicensed operators, there is need to look for other funding models. The CTO is requested to undertake a study on Universal Service funding frameworks across the Commonwealth and beyond and make appropriate recommendations to its members.
- ▶ Emerging markets should adopt a “Build It Once” approach where infrastructure development should cover as many services (ICT, power, transport, water, etc.) as are practically possible.
- ▶ Noting that availability of power is one of the hindrances to connecting the last one billion people, the CTO was requested to facilitate the exchange of experiences in appropriate legislation to facilitate mini-power generation and distribution.





Commonwealth Broadband Pacific Forum

25 – 27 July 2017, Apia, Samoa

The Commonwealth Broadband Forum was hosted by the Ministry of Communications and Information Technology, Samoa. The Forum was opened by Honourable Fiaame Naomi Mataaafa, Deputy Prime Minister, Ministry of Natural Resources and Environment, Independent State of Samoa. Ministers from Kiribati, the Solomon Islands, Tokelau, Tuvalu and the Kingdom of Tonga, joined Honourable Afamasaga Lepuia'i Rico Tupa'i, Minister of Communication and Information Technology, for a Pacific Commonwealth ICT Ministers meeting following the conclusion of the Forum, to discuss the needs of not only individual countries but the region.

The forum was attended by over 200 delegates.

Key takeaways:

- ▶ Broadband infrastructure and services contribute to economic growth and promote job creation
- ▶ Partnership is important for developing the innovative policy frameworks, business models and financing arrangements needed to facilitate growth in access
- ▶ Expanding access to broadband infrastructure and services is a top priority for Pacific countries
- ▶ Development of national broadband highways and marine cables connectivity within the Pacific region, is a statement of the impact of rapid ICT developments in the Pacific region
- ▶ Greater access to Broadband Internet applications and services help accelerate achievement of internationally-agreed development goals, including the Sustainable Development Goals (SDGs).

We welcome the opportunity to host this event and contribute to strategies to develop broadband not just in Samoa, but throughout the Pacific region

**Honourable Afamasaga Rico Tupa'i, Minister of
Communication and Information Technology, Samoa**

Commonwealth ICT Forum

11 – 13 September 2017, Maputo, Mozambique

The CTO ICT '17, is an annual event organized by the Commonwealth Telecommunications Organisation (CTO), hosted in 2017 by the Autoridade Reguladora das Comunicações – INCM, under the auspices of the Ministry of Transport and Communications of the Republic of Mozambique.

The event took place on the 11th and 13th September at the Radisson Blu Maputo, Mozambique, under the theme Digital Nations, Digital Wealth. The three day event was attended by over 150 delegates, with 40 speakers from 21 countries.

The event, was open by His Excellency Carlos Agostinho do Rosário, Mozambique's Prime Minister. The forum theme, *Digital nations and digital wealth*, was chosen to ensure that all citizens of the Commonwealth benefit fully from ICTs and the information revolution. A high-level panel including ICT ministers from Gibraltar and the Kingdom of Lesotho, examined how government policy should leverage ICTs for inclusive growth.

The digital future is both individual and collective, public investment is a necessity to connect the unconnected; countries must develop coordinated multi-sectoral strategies for ICTs.

Key takeaways:

- ▶ Governments should play a crucial role in creating an enabling environment for infrastructure investment, creation of local content and human capacity building, privacy and security is fundamental to allow fair usage of services in the cloud environment.
- ▶ Countries need to enhance the digital ecosystem and its adoption to the new digital future.
- ▶ Ushering the Digital future requires enhancing the national digital ecosystems. However it faces two key challenges: transfer of knowledge and the high cost of technology.
- ▶ It is crucial to create agile regulatory frameworks that govern the challenges created by the Digital revolution such as artificial intelligence and the need to balance open data with privacy.

Big Data, Cloud computing, artificial intelligence, the Internet of Things and 5G will all shape our digital future. They are important steps on the journey towards a digital nation

Malcolm Johnson, Deputy Secretary-General, International Telecommunications Union, Commonwealth ICT Forum 2017

Commonwealth Spectrum Management Forum

25 – 27 October 2017, London, UK

The 2017 Commonwealth Spectrum Management Forum took place in London, November 3-5, 2017. The forum was hosted by Inmarsat. Dignitaries at forum included Honourable Anusha Rahman Ahmad Khan, Minister of State for Information Technology, Pakistan and Honourable Paul Lewis, Minister of Communications, Works & Labour, Montserrat.

Philip Marnick, Group Director, Spectrum, Ofcom, UK, welcomed delegates to the UK, and commended the CTO for convening a forum to discuss the key issues of spectrum management. Mario Maniewicz, Deputy Director, Radiocommunications Bureau, ITU, stressed that spectrum is key to the development of the digital economy. He outlined the role of the ITU and urged all countries to increase their participation in ITU-R Study Groups. He praised the CTO for organising the forum, as events like this contribute to consensus building.

Michele Franci, Chief Technology Officer, Inmarsat, welcomed delegates and stated that Inmarsat was proud to host a CTO event, and noted that all the topics of the Forum are key to economic growth. He said that the work of Inmarsat is principally to bridge communication gaps, often in life-saving situations.

The theme of the forum was *Internet of Things & Basic Broadband Access: Spectrum Implications* with discussion also covering subjects such as the future of broadcasting and spectrum implications, efficient spectrum utilisation, spectrum auctions, and 5G issues.

We are also looking to the future deployment of 5G and new technologies, so the use of new bands and spectrum sharing are ideas we will need to initiate. I call on the CTO to lead the way in sharing good practices and bringing different stakeholders together to collaborate.

Anusha Rahman Ahmad Khan, Minister of State for Information Technology, Pakistan

Key outcomes of the event were:

- ▶ 5G may be an opportunity to do some things differently
- ▶ On spectrum sharing, there is need for change of mindset that avoids confrontation and develops a cooperative approach
- ▶ Higher frequency bands offer new opportunities
- ▶ Current international frameworks are slow and bureaucratic
- ▶ Greater flexibility and more responsive national and international frameworks
- ▶ A move away from large co-ordinated clearance programmes to making spectrum available when and where needed
- ▶ Speeding up global identification work to better keep pace with industry developments
- ▶ Regulators should license spectrum that is already available for 5G/IMT
- ▶ Cooperation between industry players is key and must be fostered
- ▶ Change in mind-set is required to see different technologies as complementary
- ▶ 360° view is required on how to achieve 5G





Commonwealth Human Resources & ICT Forum

14 – 15 November 2017, Port of Spain, Trinidad & Tobago

The Commonwealth Human Resources and ICT Forum 2017 was organised by the CTO with the support of the Telecommunications Services of Trinidad and Tobago, the Telecommunications Authority of Trinidad and Tobago and the Government of Trinidad and Tobago. The Forum brought together 87 participants from 12 countries.

The contribution of big data to aid recruitment, employee development and productivity was examined in detail at the Commonwealth Human Resources and ICT Forum'17.

The Forum was officially opened by the Senator the Honourable Robert Le Hunte, Minister of Public Utilities, Trinidad and Tobago, who welcomed participants to Trinidad and Tobago and wished everyone a successful forum. He said that big data helps to develop human capital and therefore the Human Resources process should take into consideration the use of big data. He stressed however that an appropriate framework should be in place.

The theme for the Forum was *The Impact of Big Data on Human Resources*. The main topics discussed included the harmonising and leveraging of big data, the impact of technology on human resources, data security, ethical challenges of big data, using big data for recruitment of personnel and creating a talent pool using big data.

"This data can be used to aid socio-economic development at a national level, but is also extremely useful in human resources management."

Senator the Honourable Robert Le Hunte, Minister of Public Utilities, Trinidad & Tobago



Commonwealth Digital Broadcasting Forum Caribbean

21 – 22 November 2017, Kingston, Jamaica

The Commonwealth Digital Broadcasting Caribbean Forum 2017 was held in Kingston, Jamaica, from 21 to 22 November 2017. This Forum was organised by the Commonwealth Telecommunications Organisation (CTO) in conjunction with the Jamaica Broadcasting Commission. The theme for the event was *Reinventing broadcasting for a new generation*.

The main focus of the Forum was the examination of issues faced by Commonwealth countries in the transition from analogue to digital broadcasting. The Forum brought together participants from Commonwealth and non-Commonwealth countries as well as organisations and companies involved in digital transition, who shared experiences recommended best practices and provided information, advice and recommendations on the way forward.

The ITU and its members from ITU Region 1 had agreed on a timetable for the transition from analogue to digital transmission, thus ending television broadcasting in the UHF band. UHF broadcasting transmissions would be phased out over a reasonable period of time and all countries are required to make



the necessary effort to switch to digital television broadcasting within the agreed time frame. For countries in ITU Region 2, no timetable was established. However, countries in the region are expected to transition to digital transmission at their earliest convenience. Some countries have already transitioned, but the vast majority have not. Technical support for analogue equipment is expected to be phased out.

The aim of this CTO Forum was to bring together organisations involved in broadcasting and Caribbean countries as well as countries from other regions in order to discuss experiences related to the transition process and to start planning for Caribbean countries to end analogue television broadcasting and move to digital transmissions. The transition to digital transmission is inevitable, but for this to happen, countries will have the option of dual transmissions (simulcasts) until full transition is achieved.

Issues covered included the global situation regarding the Digital Switchover (DSO) international standards for digital broadcasting, frequency coordination, digital switchover case studies, over-the-top operators and their implications for broadcasting, innovations in broadcasting, spectrum policy options and the future of public broadcasting.

The event heard about the digital switchover experiences of countries from across the Commonwealth and beyond: the Bahamas, Barbados, Dominica, Haiti, Nigeria, Samoa, South Africa, Suriname, Trinidad & Tobago, the UK and the USA. The event also examined the technical considerations of digital broadcasting, opportunities for innovative services and the role of public broadcasting in the digital age.

Key takeaways

- ▶ Caribbean countries need to register their stations with the ITU so that they can be recorded in the master international frequency register and therefore receive international protection from other stations which may cause interference.
- ▶ In countries which have completed DSO, significant sums were spent by the government and broadcasters on consumer outreach and assisting persons with consumer coupons to help defray cost.
- ▶ Caribbean countries need to set a timetable for the Digital Switchover

Commonwealth Data Forum

21 – 23 February 2018, Gibraltar

The agenda for Commonwealth Data Forum 2018 was notably diverse and hugely demanding. However, the conference delivered the desired results and outcomes, which reflects the high quality speakers and panels, and the diversity, eclecticism and dynamism of the delegates.

In opening the Forum, the CTO and Gibraltar Government urged everyone to exploit opportunities and tackle head-on challenges in the data space, noting that education, information sharing and risk management should feature heavily in emerging solutions. Day one focused on two core themes of Big Data governance (legal, jurisdictional and regulatory) and the operator's perspective, with the EU's GDPR (General Data Protection Regulation) featuring prominently. Day 2 analysed 'data' in the round through the prisms of social development, protection and security, with cybersecurity bringing the conference to a close.

The size, speed and complexity of all forms of data (and associated applications) is almost too great for the human intellect to fathom, with change occurring exponentially to the extent that we may be facing a free flow of data cliff edge. The time to act is now. Countries like India are to be applauded for their ambition in attempting to capture and exploit the intrinsic value of data.

The forum reviewed the GDPR legislation and discussed the gaps in both individual and collective preparation that need to be plugged, noting that the regulation will influence non-EU States data domains that are global, yet truly border-less. The data protection evolutionary journey should be embraced as it will shine a light on dark practices. In the context of a looming BREXIT, data divergence is neither wanted nor helpful. The nexus between Data Protection and national security needs more work to get the balance right; the arrival of 5G may expedite licencing and net neutrality solutions. Similarly, decisions are needed to determine which entities should be mandated to adhere to regulation, and those that should be subjected to voluntarily adopted standards.

The importance of stakeholder engagement cannot be over-emphasised in all areas of data, but especially in the social



The Commonwealth has a global reach like no other and we need to work together to develop our data protection laws. Data was always there, however we now need to develop new ways of mining and using it in a safe and responsible way, to derive value and improve quality of life of our people

The Honourable Sir Joe Bassano, Minister for Economic Development, Telecommunications & the GSB, Gibraltar

development arena, including tackling the digital divide. Big Data should be exploited to solve new problems, and it should never be forgotten that data is turned into information to promote understanding, which ultimately enables our leaders to improve their decision-making. Safeguarding citizens in Data Protection terms is critically important; success here involves education, transparency and empowerment in pursuit of securing meaningful trust. Over-the-top services (OTTs) are a thorny issue that merits further – CTO led – work. Data risks are being adequately identified and captured, including the “weaponisation” of data by state and non-state actors. However, the performance in mitigating these risks is patchy, which is not unexpected given the daunting challenges faced.

We need to hold social network sites to account, but by working with them not against them, and acknowledging that they are active in areas such as child protection. Finally, the threats to cybersecurity are well known, but as it is impossible to nullify them all in short order, we should prioritise ruthlessly, with the protection of CNI (critical national infrastructure) high on the list.

The event heard about data protection laws and regulations experiences of countries from across the Commonwealth and beyond, including India, Montserrat, Gibraltar, United Kingdom, the European Union and Nigeria.

Key outcomes from the event included:

- ▶ Agreement that developing uniform international data protection legislation is necessary
- ▶ Privacy is a human right and accountability to protect that right is key. Over-the-top services need to work together with telcos to provide safe flow of data. Regulation is important in order to ensure the data is used in a safe way where users feel that their privacy is respected.
- ▶ Commonwealth regions should work together on the protection of data as there are no centralised global laws or regulations for protecting the individual user.
- ▶ An opportunity for the CTO to develop a framework that can be adopted to Commonwealth countries, enabling them to work together and ensure that data flow is continuous and safe, with legal processes in place to ensure safety.



Commonwealth ICT Ministers Forum 2018

18 – 20 June 2018, London, United Kingdom

Over three days the Commonwealth Telecommunications Organisation convened the ICT Ministers of the commonwealth to discuss vital matters around security, safety, policy and development. With input from a range of experts and stakeholders from the public, private and third sectors, a diversity of views fostered a convivial environment for constructive debate. A set of recommendations and agreements has been proposed by the ministers in the closed sessions of the first day, and opportunities for sharing experience and learning dominated the second and third days.

Held every two years, the event also included a two-day open conference which provided industry and government leaders with an opportunity to discuss challenges and solutions to ICT adoption in the Commonwealth and beyond.

The closed-door meeting, focussed on ICT regulation, broadband development, the Commonwealth's engagement in the global ICT agenda, cybersecurity and ICT applications: the CTO's priority areas adopted in the Strategic Plan. Rt Honourable Patricia Scotland QC, Commonwealth Secretary-General, addressed Ministers in attendance highlighting the progress of member countries and also the role CTO has played in assisting the development of ICTs across the Commonwealth.

The conclusion of the closed-door meeting saw papers on Broadband, OTT, Cybersecurity and Commonwealth Coordination endorsed by those present, and the following action points which were outlined in the papers were approved:

- ▶ Broadband: Ministers to endorse the paper and instruct CTO to work with Member States in advancing policies and implementation at the national and regional level.
- ▶ OTT: Request CTO to assist member states in creating conducive and enabling frameworks to enable the provision of OTT services to benefit all stakeholders, including governments and regulators.
- ▶ Cybersecurity: Instruct CTO on the projects to be undertaken by the CTO in relation to cybersecurity.
- ▶ Commonwealth Coordination: Reaffirm support for the CTO in coordinating the positions of the Commonwealth at international ICT and telecommunications gatherings

The theme of the two-day open forum was *Committed leadership: harbouring a roadmap for ICT enabled growth*. Among the top agenda items for the open-forum was a robust discussion of the role and challenges of OTTs, a debate on the progress towards 5G implementation, and opportunities to learn important strategies around cybersecurity and safety. The impacts and implications of the data privacy regulations which have recently come into force in Europe, called GDPR, were discussed from both a regulatory and economic perspective. Extended discussion about the upcoming WRC-19 and the CTO's recommendations for that conference next year capped off the final day.

Capacity development

For our members, ICT capacity development is a key priority. During 2017-18, 30 courses were delivered, mainly through the Programme for Development & Training.

- 30 Commonwealth ICT Round Table Series
- 31 Competition Regulation in the Telecommunication Industry
- 31 Talent Management, Knowledge Management and Change in a Dynamic Environment
- 31 Cloud Technology and Solutions
- 31 Competition Regulation in the Telecommunication Industry
- 32 Principles of Optical Multiplexing
- 32 Transforming Customer experience
- 32 IP Multimedia
- 32 Quality of Service Monitoring
- 32 Customer Care
- 33 Regulating ICTs: A Bespoke Roundtable for Eswatini
- 33 Diploma in Telecommunications Management Studies
- 33 Frequency Planning and Spectrum Management Studies
- 33 Licensing in a Converged Environment
- 33 Cybercrime Management: A Proactive Approach

- 34 Introduction to ICT Policy and Regulation
- 34 Talent Management, Knowledge Management and Change in a Dynamic Environment
- 34 Telecommunications Business Process Re-engineering
- 34 Diploma in Telecommunications Management Studies
- 34 Telecommunications Business Process Re-engineering
- 35 Finance for Non Finance Managers in Telecommunications
- 35 Competition and Convergence
- 35 Management Excellence
- 35 Strategic Planning for ICT Policy and Regulation
- 35 Diploma in Telecommunications Management Studies



Showcase

Commonwealth ICT Round Table Series

Interest in the Commonwealth ICT Round Tables series has continued unabated, with participation from parliamentary committees, regulatory agencies, governments and operators from 27 countries. Five successful workshops took place this financial year, four at the CTO headquarters in London and one in Kampala, Uganda. The April 2018 round table alone had a total of 15 countries participating: Bangladesh, Botswana, Cameroon, Ghana, Jamaica, Malawi, Malaysia, Mauritius, Nigeria, Namibia, South Africa, Seychelles, Eswatini, Trinidad and Tobago and the United Kingdom.

These bespoke workshops are designed for board members and other senior staff members of national regulating authorities. They also provided other high-level delegates in ICT, such as members of parliamentary committees on ICTs, with an opportunity to better understand ICT regulation. The programme focused on addressing current issues participants and their organisations face and included presentations and discussions on areas such as Internet governance, spectrum management and national broadband strategies. Experts from the ICT sector worked with delegates to identify the key challenges faced by the sector and develop solutions that can be easily implemented.

The events held in London also included industry visits to organisations such as the UK regulator (Ofcom), GSMA, Facebook, BBC and BT. The visits gave delegates an overview

of the work of these organisations and the opportunity to learn about the latest policy, regulatory and compliance initiatives they are developing.

This course will help her create a 'think-tank' for knowledge sharing that will look at the heart of regulation in convergences regulation through strategic collaboration

Pamela Ankunda, Head of Public and International Relations, Uganda Communications Commission



Delegates at the ICT Round Table December 2017.

This round table has provided us with the opportunity to network and enable us to service our clients effectively in this fast growing ICT sector. I am taking home a lot of awareness on emerging issues that I will share with my team, and allow me to map out service offerings in ICTs for our clients

George Kashindi, Partner, Munyao Muthama & Kashindi Advocates



2017 Courses

Competition Regulation in the Telecommunication Industry

15 January - 14 February 2017

South Africa

This bespoke four-week programme was delivered to 32 employees and was designed to enhance delegates' ability to master the changes in their business and technical environment in order to ensure operational and business success in their organisations. The course provided participants with an in-depth knowledge of the essential principles, theories and frameworks that underpin technology deployment, regulation /competition and the challenge of value creation through enterprise and applied management. A blended learning approach involving lectures, case studies and hands-on application of key concepts has been adopted for the course to enhance the learning experience and outcomes.

Competition Regulation in the Telecommunication Industry

16 August - 18 August 2017

Trinidad & Tobago

This bespoke course provided delegates from the Nigerian Communications Commission with a more thorough understanding of competition policy and the role of regulatory organisations within the telecommunications sector. The course was interactive and dynamic with sessions being adapted to the varying needs of the participants. The course addressed the rationale for the competition and its principles, anti-competitive agreements, abuse of dominance and merger control. It compared the relative advantages of the ex-ante and ex-post regulation

JANUARY

FEBRUARY

AUGUST

AUGUST

Cloud Technology and Solutions

21 - 25 August 2017

Mauritius

The course was designed and achieve the following specific outcomes: Created policies and processes regarding the management of security in their organization; Assessed and designed security programs based on international standards; Identified and repaired dysfunctional security processes; Developed business cases quantifying of the need for increased and relevant information security; Defined parameters for information security, including business continuity, disaster recovery, Physical and Environment Security; Defined and implemented security programs; Showed understanding of stakeholder relevance in the definition of a security program; Defined the key stakeholders in a security program

Talent Management, Knowledge Management and Change in a Dynamic Environment

26 - 29 February 2017

South Africa

This course examined the ongoing processes needed to be proactively managed and review talent management. It examined types of planning organisations need to identify for internal employees as potential candidates for filling future internal vacancies and start training them well ahead of time to perform those roles.

2017 Courses

Transforming Customer experience

18 - 20 September 2017

Ghana

The course ensured that customers had a good experience every time they interacted with a business which is very important. The course explained best practices for customer service and illustrated various skills and attitudes and the end result. The delegates gained a solid understanding of transforming customer experience by identifying and bridging expectation gaps.

Quality of Service Monitoring

20 - 24 November 2017

Botswana

Setting and enforcing service quality standards between networks as well as for consumers is a key mandate of regulators. This course provided the techniques used to monitor and enforce quality standards, from network transmission and interconnection to market intelligence gathering. All areas that affect quality of service (QoS) at the access or transmission level were covered in detail.

Principles of Optical Multiplexing

4 - 5 September 2017

Mauritius

This course explained broadband technologies and their applications, including multimedia services, as key-drivers of bandwidth demand. Broadband access and broadband service portfolio management were covered extensively, followed by discussions about competitive strategies and regulatory constraints. Pricing methodologies and scenarios were discussed throughout, including application pricing and packet-based pricing.

Customer Care

6 - 10 November 2017

Botswana

This was a critical and highly focused course for fixed and mobile operators, where key commercial issues such as customer account management and customer relationship management, strategies and plans were discussed in detail and illustrated with a range of landmark case studies. Customer loyalty and retention strategies, negotiation skills as well as revenue maximisation strategies for key customer accounts were covered through various role-play exercises.

IP Multimedia

18 - 22 September 2017

Mauritius

The Internet protocol (IP) multi-media subsystem (IMS) as defined by the third-generation partnership project (3GPP) is an architecture that enables network operators to offer their subscribers multimedia services consisting of applications, services and protocols over a next-generation network (NGN). This course provided participants with an understanding of how an NGN IP IMS enables the network to carry triple-play and quad-play multimedia services and how to plan for its introduction. The course covered IMS architecture and how it interacts with the NGN network, including quality of service (QoS) policies and management.

SEPTEMBER

SEPTEMBER

SEPTEMBER

NOVEMBER

NOVEMBER

2017/18 Courses

Regulating ICTs: A Bespoke Roundtable for Eswatini

20 - 21 November 2017

Eswatini

This bespoke in-country workshop was specifically tailored to meet the needs of Board Members at Swaziland Post and Telecommunications Corporation. Based on the CTO's ICT Regulating Roundtable series, this was specifically designed to give delegates a better understanding of ICT regulation. High-level discussions on areas such as internet governance, spectrum management and national broadband strategies were included as part of the agenda

Frequency Planning and Spectrum Management Studies

29 - 31 January 2018

South Africa

This course was designed to address the various areas that were required in managing spectrum, based on national requirements. The participants were introduced to technologies requiring spectrum management principles, national spectrum planning, engineering analysis, and computer-aided techniques. The course introduces technological and regulatory changes that affect spectrum management, such as digital broadcasting. Frequency assignment methods are emphasised and new market-forces, such as auctions, and spectrum fees and charges were also presented

NOVEMBER

JANUARY / FEBRUARY

JANUARY

FEBRUARY

FEBRUARY

Licensing in a Converged Environment

19 - 23 February 2018

Botswana

The growth in the use of social media has made it increasingly important to understand how to make the best possible use of it. Therefore this five-day course was developed to provide participants with the knowledge and understanding of how to use the many forms of social media (i.e. Facebook and Twitter) as a source of marketing their businesses.

Diploma in Telecommunications Management Studies

16 January - 16 February 2018

Nigeria

This course was designed to enhance delegates' ability to master the changes in their business and technical environment in order to ensure operational and business success in their organisations. The course provided participants with an in-depth knowledge of the essential principles, theories and frameworks that underpin technology deployment, regulation /competition and the challenge of value creation through enterprise and applied management. A blended learning approach involving lectures, case studies and hands-on application of key concepts was adopted for the course to enhance the learning experience and outcomes.

CyberCrime Management: A Proactive Approach

2 - 4 February 2018

South Africa

With governments, enterprises and individuals ever more dependent on the Internet for business, services and social interactions, criminals, from individuals to organised crime, gangs have found new opportunities and ways of committing crimes. Enterprises need to be aware of these emerging dangers so that they can protect the enterprises as well as their stakeholders. This course looked at all the above issues and provided cybercrime management prevention methods through workshops and proactive approach.

2018 Courses

Introduction to ICT Policy and Regulation

26 February - 2 March 2018

South Africa

This course provided an understanding of the basic trends in telecommunications reform, their drivers, and their implications nationally and internationally. Participants discussed the key process of how policies and regulatory models were developed, and the roles and functions of different stakeholders in their implementation.

Diploma in Telecommunications Management Studies

26 - 30 March 2018

Trinidad & Tobago

The fast moving telecommunications industry driven by changing technologies, evolving services and complex consumer demand, generate new business challenges which requires constant updating for professionals in the industry. This course was designed to provide participants with tools that will enhance their ability to master the changes in the operational and technical environment to assure success for their organisations. The course examined essential elements of technology evolution, the changing institutional/legal/regulatory frameworks and the challenges of creating value through enterprise and effective management practices. Essential management theories and frameworks were be adopted to suit the ICT sector. The course was designed to be challenging, thorough and practical.

FEBRUARY / MARCH

FEBRUARY

MARCH

MARCH

MARCH

Telecommunications Business Process Re-engineering

5 - 9 March 2018

Trinidad & Tobago

This course provided an overview of the structure of telecommunications businesses in a globalised industry, and effective methods to identify typical symptoms of business process dysfunctions. Discussions focused on the need for business process re-engineering and the role of automation, showing participants how to maximise service quality and customer satisfaction by matching process design to customer needs. This resulted in delegates to construct a model for re-engineering a business process.

Talent Management, Knowledge Management and Change in a Dynamic Environment

26 - 28 February 2018

Botswana

This course examined the ongoing processes needed to be proactively managed and review talent management. It examined types of planning organisations need to identify for internal employees as potential candidates for filling future internal vacancies and start training them well ahead of time to perform those roles.

Telecommunications Business Process Re-engineering

5 - 7 March 2018

South Africa

This three-day training program provided participants with essential knowledge about the structure of telecommunications businesses in a globalised industry and effective methods to identifying typical symptoms of business process dysfunctions. The training was particularly focused on how the business process re-engineering role can help maximise service quality and customer satisfaction by matching process design to organisational objectives and customer needs

2017/18 Courses

Management Excellence

16 - 20 April 2018

Botswana

A strong management team can have a very positive impact on the overall success of a business. As the aim of all businesses is to succeed, ensuring excellent management strategies and a strong management team is essential to achieving this goal. Participants will take part in in-depth discussions and studies to help them clearly understand how leadership affects overall business success. They will also evaluate their own specific style of leadership and how they can use this to communicate and engage with others more effectively.

Finance for Non Finance Managers in Telecommunications

26 - 30 March 2018

South Africa

This five-day training course covered vital concepts of practical financial management and how to review financial statements and analysis, along with best practice in budgeting, forecasting and project evaluation.

Diploma in Telecommunications Management Studies

12 May - 12 June 2018

Botswana

This course was designed to enhance delegates' ability to master the changes in their business and technical environment in order to ensure operational and business success in their organisations. The course provided participants with an in-depth knowledge of the essential principles, theories and frameworks that underpin technology deployment, regulation /competition and the challenge of value creation through enterprise and applied management. A blended learning approach involving lectures, case studies and hands-on application of key concepts were adopted for the course to enhance the learning experience.

MARCH

APRIL

APRIL

APRIL

MAY

Competition and Convergence

4 - 6 April 2018

Trinidad and Tobago

This course was designed to explain the policy and regulatory options and models designed to address the convergence of technologies, markets and services in the context of next-generation networks (NGNs) and long term evolution (LTE), and it provided a range of examples of emerging best practices. The delegates had the opportunity in identifying anti-competitive risks or behaviours associated with mergers and acquisitions in the ICT sector, and the resulting significant market power (SMP). They had practical exercises in developing model regulatory safeguards for access, interconnection and pricing.

Strategic Planning for ICT Policy and Regulation

4 - 8 April 2018

South Africa

This course provided an understanding of the basic trends in telecommunications reform, their drivers, and their implications nationally and internationally. Participants discussed the key process of how policies and regulatory models are developed, and the roles and functions of different stakeholders in their implementation.

