COMMONWEALTH
TELECOMMUNICATIONS
ORGANISATION

ANNUAL REPORT
2018-19

Partnerships for
development
through ICTs
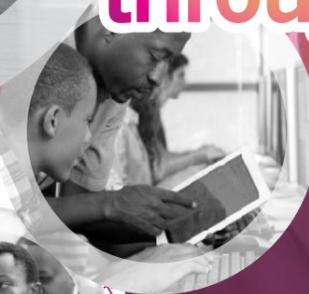
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Chairman's message

Honourable Aiyaz Sayed-Khaiyum
Chairman

Dear Members,

The Commonwealth Telecommunications Organisation (CTO) continues to support its members on Information and Communications Technology (ICT) issues and challenges. This is even more important to the CTO given the emergence of new technologies and trends, such as the Internet of Things (IoT), Blockchain, 5G, Artificial Intelligence (AI), and Cloud, to mention a few. The CTO's work in the areas of capacity development and knowledge sharing brings much needed support to member countries. However, as countries have signed up to the UN Sustainable Development Goals (SDGs) there has, now more than ever, been greater emphasis in ICT being a key driver of economic development and social inclusion.

Providing technical support and advisory services to members will be essential to fulfilling the 2016-2020 Strategic Plan as well as more Commonwealth dialogue on ICT issues.

Over the years, the CTO has provided development assistance support to its members. In addition, the Executive Committee has provided guidance and worked closely with the Secretariat to ensure that its processes are focused on efficiency, and that its resources are effectively used to deliver added value to its members through the effective use of ICT in their social and economic development plans.

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 forums such as the Internet Governance Forum (IGF), The Internet Corporation for Assigned Names and Numbers (ICAAN), International Telecommunication Union (ITU) and Global Conference on Cyberspace (GCCS).

CTO is an organisation that is at the centre of the Commonwealth's ICT landscape, representing members' interests in the global ICT arena and providing guidance and support to its members. I see a platform that will facilitate the flow of technology, expertise and information to bring the benefits of the ICT revolution to all corners of the Commonwealth. Above all, CTO must be an organisation that is premised on transparency, accountability and with integrity which promotes the capabilities of technology that is people-centric, where ICT brings our most marginalised into the economic fold.

As Chairman, I thank the Council and the Executive Committee for their support. I also wish to convey my appreciation to the Secretariat for their commitment to shaping an organisation that has become a key player in the global ICT space.

Honourable Aiyaz Sayed-Khaiyum

Chairman, Commonwealth Telecommunications Organisation
Attorney General and Minister for Economy, Civil Service and Communications, Fiji

Secretary-General's introduction

> My ambition is to drive a high performance culture of effective ICT development and knowledge putting digital transformation and inclusiveness at the heart of CTO while remaining true to our values, vision and mission to achieve our purpose of taking the Commonwealth family to the next level of the digital economy
>
> Gisa Fuatai Purcell, Acting Secretary-General, CTO

Gisa Futai Purcell, Acting Secretary-General. CTO

Dear members and partners,

I am delighted to be introducing the 2018-2019 Annual Report. I would like to thank you all for your support during this challenging period. While this year came with particular challenges, I am pleased to report much progress has been made throughout the course of the twelve months. Since I was appointed as Acting Secretary General on 29 June 2018, it became very clear to me that while the information and communication technologies (ICT) is at the core of the Commonwealth Telecommunication Organisation's (CTO) work, it is no longer enough to add value to members. ICT is entering a period of significant change bringing both opportunities to Members and challenges. It means that the CTO must do more in order to remain relevant as an organization its members can be proud of. It is also very clear that a culture of so long as we have a surplus is no longer good enough, it is about driving value for members and it is about ensuring that ICTs can help members embrace digital transformation in order to improve the delivery of public services and thereby achieve the 17 goals of the Sustainable Development Goals (SG) 2030.

To do this CTO will strive to be the provider of effective digital transformational tools to improve public services its members provides for their citizens. This transformation will achieve digital inclusion that goes is beyond affordability and ICT networks. It is about helping members move towards integrated systems using artificial intelligence to reform its services and products through development of e-Government and other much needed e-applications such as e-health, e-environment and so forth.

I am passionate about ICT development in the developing countries and in particular the least developed countries (LDCs) the landlocked developing countries (LLDCs) and small island developing states (SIDS) because I have studied these categories of countries and while there are the challenges of lack of doctors and teachers in rural areas for instance, ICTs

can bridge this gap.

This why in this period I made sure that in every opportunity when attending international forums and conferences my team made sure that bilateral meetings are booked for me to meet with member country Ministers or senior representatives on a one on one basis to discuss what the priority needs are. One of the most important outcomes of these discussions is the need for members to move towards the digital economy in the hope that their government's vision and mission are achieved through accountability and transparency. While the issue of outstanding fees remains a challenge, these bilateral meetings have been excellent especially at the Ministerial level in resolving these issues.

I am happy to say that the CTO Secretariat has increasingly improved its services as a trusted partner for sustainable development for all through ICTs. Guided by this vision, as well as the Sustainable Development Goals (SDG) 2030, the CTO Secretariat continued to successfully implement the six strategic goals of the Strategic Plan 2016-2020. While there are targets that remain to be actioned these targets will be the focus in the coming years. I am pleased to report the CTO Secretariat has developed the draft Strategic Plan for 2020-2024.

The future of the CTO will be an exciting time as the CTO leads the way forward towards a resilient future by increasing its assistance in capacity building and training to members on social, economic and environment governance through embracing the digital transformation and at the same time minimizing risks. Let me take this opportunity to thank the Executive Committee and the Council for the support they had provided this year.

Strengthening membership value

While there have been no new Commonwealth countries joining CTO this financial year, every effort has been made to ensure the visibility

of CTO is highlighted at CTO events and during key international conferences. As a result, some members have agreed to join CTO. These members include Saint Kitts and Nevis and the British Overseas Territory of Saint Helena, Ascension and Tristan da Cunha. The CTO Secretariat ensures that each and every one of our members derives value from their membership of the CTO.

The Secretariat continues to promote the Programme for Development Training (PDT) to member states. PDT has been reformed to ensure good governance, quality of services, in addition to improving the knowledge, skills and practices of participating PDT members.

Enabling conducive regulatory environments

Adopting the right national regulatory environment is a recurring challenge. Through a range of capacity development programmes, technical support and consultancy services and events, the Secretariat has actively promoted and facilitated the development of modern regulatory frameworks, including licensing, spectrum management, quality of service, digital broadcasting and over-the-top services, with the aim to create an enabling and conducive national environment for investment and development of the digital space.

The expansion of the Information and communication technology (ICT) marketplace will aid social and economic development globally. Members must continue to review the regulatory requirements that will meet the future needs of the sector. The CTO ICT Round Table series is popular among members as the platform for promoting capacity building for improving skills and knowledge, as well as, providing a platform to review the latest global regulatory trends. The ICT Round table series had another successful year with participation from newly appointed ministers, regulatory board members and executives involved in ICT policy

and regulation. The diversity and depth of this programme, meets the growing role and scope of most regulatory agencies in member countries. I have no hesitation in recommending this programme to member states. In addition, through our capacity development programmes, including those delivered in-country from the portfolio of courses training has been delivered on a range of issues including licensing, costs and tariffs, mobile money regulation, broadcasting content regulation, cybersecurity awareness, and spectrum management.

Separately, as part of the CTO post-WRC-19 activities, the third Commonwealth Spectrum Management Forum took place on 4 - 6 September 2018 in Mauritius to address implementation issues faced by members and to start identifying areas of possible support for agenda Items proposed by Commonwealth members to take to WRC-19.

Universal and affordable broadband

The Commonwealth with a population of over two billion people, makes it a unique brand on the world stage with a mix of developing and developed states. Out of the 54 Commonwealth countries there includes 14 least developing countries (LDC), 25 small island developing states (SIDS) and seven landlocked developing countries (LLDC). These countries have their own unique needs with different levels of ICT development, and this poses a challenge in ensuring universal affordable broadband for all. The CTO Secretariat continues to work with member countries in developing liberalisation and privatisation policies, broadband policies and universal access policies to assist members achieve much greater access but it is proven a challenge for some countries that need more investment than others. In this regard, the CTO provide assistance to member countries in developing their proposals for investments

Safe cyberspace

The CTO continues to assist member countries to develop national cybersecurity strategies and adopt and promote cyber standards. This year CTO has been awarded contracts to tenders posted by member countries and has partnered with organisations to deliver the cybersecurity projects.

As we move towards embracing the digital economy, cyber challenges will increase and become more complex. The CTO must continue to work with members to ensure the digital economy is made safe for all.

Promoting a coordinated Commonwealth for ICTs

It was agreed that CTO would be the Secretariat for Commonwealth coordination at international ICT meetings, in line with CTO's 2016-2020 strategic plan. CTO coordinates the Commonwealth member positions at side meetings in partnership with Commonwealth governments in attendance. I am pleased to report that the Commonwealth coordination meeting held at the ITU Telecom World 2018, in Durban, South Africa, was co-chaired by the UK and Ghana. There were also coordination meetings held during the ICANN meeting in Kobe, Japan (March 2019), ITU's Plenipotentiary Conference (November 2018), ITU's Conference Preparatory Meeting (February 2019) and IGF (November 2018). CTO plays its part in accepting speaking invitations and highlighting the Commonwealth ICT and digital economy needs that will result in helping countries, achieve the Sustainable Development Goals.

Linking ICTs to SDGs

CTO's ultimate challenge is to ensure that ICTs applied effectively in all areas of social and economic development. This is why the Secretariat provides capacity building initiatives, events and participate in international conferences highlighting the current situation in the Commonwealth and foster collaboration with sister organisations. With the advent of the digital economy, the CTO is in a position to ensure Commonwealth countries are not left behind but instead, embrace the digital world as a platform for transformation of public services, improving the delivery of public services in line to achieve the SDG goals. The CTO is a position to promote the digital economy in all members through developing policies, strategies and implementation plans.

A more efficient Secretariat for the CTO

Finally, in addition to the above strategic areas, it is clear that the CTO must continue to adapt to changes in its wider technological, economic and institutional environment. That is why we have embarked on partnering with UK universities to accredit the courses and training provided to member states. I am happy to report that the Secretariat has worked hard in improving the morale of staff through holding regular staff meetings, staff training on various topics and promote the use of the training budget which was hard used in previous years. Schemes to promote staff welfare and increase motivation have been introduced.

I want to thank the management and all staff of the CTO for their patience and support during this financial year.

Above all, I would like to express my profound gratitude to all Members of Council, the Executive Committee and the Affiliate and ICT Sector Members for their support over the past year.

Gisa Fuatai Purcell
Acting Secretary-General

> In addition to working on broadband, applications and cybersecurity, we will also assist our members to create forward-looking regulatory environments that will encourage investment, facilitate innovation and maximise resources.

Gisa Fuatai Purcell, Acting Secretary-General, CTO

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 ICT 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, 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 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.

Governance

Executive Committee

Honourable Aiyaz Sayed-Khaiyum
Chairman, Republic of Fiji

Dr Jones Killimbe
1st Vice-Chair, United Republic of Tanzania

Professor Americo Muchanga
2nd Vice-Chair, Republic of Mozambique

Gilbert C. Peterson SC
Former Chair Person, Republic of Trinidad and Tobago

Carol David
Chairperson of the CTO PDT Management Committee, Republic of Trinidad and Tobago

Philémon Zo'o Zame
Development Partners Representative, Republic of Cameroon

David Harmon,
Industry Partners Representative, Huawei

Regional advisors

Philip Cross, Regional Advisor for the Americas

Anusha Rahman Khan, Regional Advisor for South and South East Asia

Management

Gisa Fuatai Purcell
Acting Secretary-General

Dr Martin Koyabe
Manager, Technical Support and Consultancy

Robert Hayman
Manager, Events

Nikisha Joshi
Manager, Finance and Pensions

Letang Kekwaletswe
Manager, Capacity Development and Training

Dorothy Elangot
Manager, HR and Admin

Coordination of Commonwealth efforts: a push for investment and safety
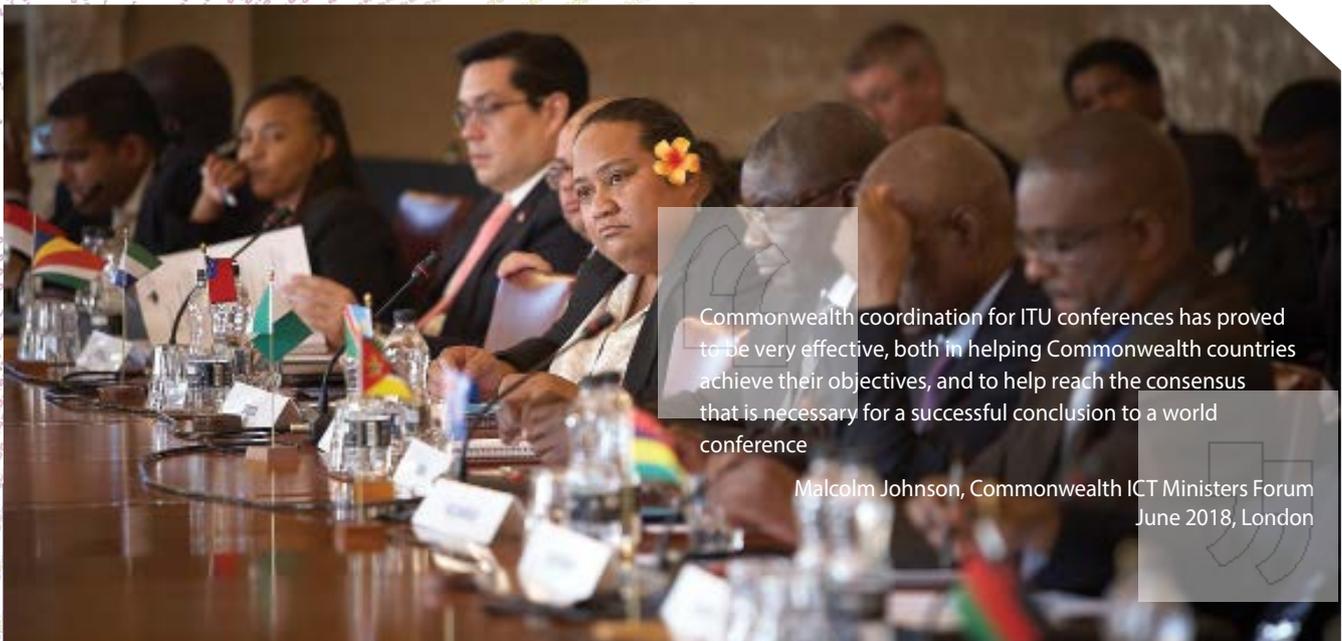
> Commonwealth coordination for ITU conferences has proved to be very effective, both in helping Commonwealth countries achieve their objectives, and to help reach the consensus that is necessary for a successful conclusion to a world conference
>
> Malcolm Johnson, Commonwealth ICT Ministers Forum June 2018, London

Information and Communication Technology (ICT) now serves as the foundation for the development of every modern and progressive society, allowing for integration into the global information economy. Despite the benefits and opportunities offered by ICT, cyberspace presents several risks and challenges. Safety, security and resilience are critical for Cyberspace to deliver its potential impact. Cyberspace and the digital economy are rapidly shifting around the world, both in engineering and in terms of policies. Coordination and promotion of Commonwealth views at international negotiations and forums is critical in ensuring that the Commonwealth perspectives form part of the inputs for international consensus of various ICT policies and agenda globally. Coordination ensures that CTO fully plays a part in supporting Commonwealth Countries in their participation at international forums.

Commonwealth ITU Coordination

The Commonwealth ITU meetings are an invaluable platform for sharing views and experience and building understanding and shared goals on ITU matters for the Commonwealth countries. The CTO facilitates Commonwealth ITU Coordination meetings on the margins of ITU events. On 26 February 2019 the CTO organised a Commonwealth ITU meeting at the second ITU WRC-19 Conference Preparatory Meeting (CPM19-2) in Geneva, Switzerland. The aim was for the countries to discuss views in preparation for the upcoming World Radio Conference 2019 (WRC-19). The objective of the meeting was to identify the needs of member countries in relation to the upcoming WRC-19 Conference. The meeting was co-chaired by NCA (Ghana) and Ofcom (UK). The meeting discussed a number of issues related to WRC-19 and spectrum management in general among the Commonwealth Countries. The outcomes provided input that will be consolidated into a report to the WRC-19 Conference in October 2019 at Sham El-Sheik, Egypt.

Commonwealth GAC at Internet Corporation for Assigned Names and Numbers (ICANN)

The CTO facilitated Commonwealth Government Advisory Committee (GAC) meetings at ICANN62, ICANN63 and ICANN64 in Panama, Spain and Japan respectively. Currently the Commonwealth GAC is co-chaired by Pua Hunter, Director of ICT in Cook Islands and Annaliese Williams, Director Internet Governance at Department of Communications and the Arts in Australia. The GAC serves as the voice of Governments and International Governmental Organisations (IGO) in ICANN's multi-stakeholders representative structure. This has helped Commonwealth Countries to fully contribute to the GAC framework and identify key member needs. Commonwealth GAC provides a platform for Commonwealth Countries to understand better the current issues at ICANN among them:

- WHOIS and Data Protection Policy
- Domain Name system (DNS) Abuse Mitigation
- 2-Characters Country Codes
- New Generic Top-level Domain (gTLD) Subsequent Rounds
- Geographic Names as Top-level Domains (TLD)
- IGO Name Protections
- Universal Acceptance
- Human Rights

"Given that our spectrum is, in fact, the core resource for provision of Internet and digital services, it is imperative that it is managed as rationally and scientifically as possible, I am pleased to note that the deliberations of this f orum will also evolve around the deployment of 5G, dynamic spectrum sharing and the preparation towards the World Radio Communication Conference (WRC-19). Despite the fact that Mauritius is an island the agenda items of the WRC-19 are fully of relevance to us, in particular, the agenda items related to the identification of frequency bands for the deployment of 5G and also Maritime issues.

Honourable Mr Yogida Sawmynaden, Minister of Technology, Communication and Innovation, Republic of Mauritius

Commonwealth Coordination at IGF 2018

The 13th Annual Meeting of the Internet Governance Forum (IGF) was hosted by the Government of France at the headquarters of UNESCO in Paris from 12 to 14 November 2018. The CTO organised a Commonwealth open forum at the IGF 2018 in the thematic area of data protection.

One of the key outcomes was to enhance digital identity management to increase data privacy, in particular, where data sharing is made mandatory under national digital identity programmes. While countries are working towards creating digital societies, there is an urgent need to ensure the protection of data by implementing appropriate legal frameworks and raising awareness on this. The entry into force of the EU General Data Protection Regulations (GDPR) and its global impact also underscores the need for countries to pay attention to this issue.

For many Commonwealth countries, especially developing countries, there exists no or inadequate legislation to address data protection. For those countries which have legislation, it may only be partially enacted as some states grapple with establishing the necessary institutional structures to give effect to the laws. Protection of personal data from hacks and misuse is important and privacy protection is key for the most disadvantaged and vulnerable members of society who are at greater risk of discrimination.

The session served as a platform to provide information on making data protecting laws relevant for the digital age and raise awareness of the impact of GDPR on Commonwealth member states, as well as discuss the challenges faced in drafting and implementing data protection laws with a view towards overcoming these challenges, through sharing of good practices and facilitating partnerships to build the required capacity.

The IGF serves to bring people together from various stakeholder groups as equals, in discussions on public policy issues relating to the Internet. The IGF facilitates a common understanding of how to maximize Internet opportunities and address risks and challenges that arise. CTO brings the Commonwealth perspective to the discussions, organisations represented in the group discussion included the Information Commissioner's Office, United Kingdom, the Lebanese Information Technology Association (LITA), ICANN, Jaeno Digital Solutions (Nigeria) and the South Pacific Computer Society.

"In the age of borderless data flow there has never been a more important time for a global coherence on data protection and data privacy. The divergence of data across jurisdictions leads to the uneven levels of protection between jurisdictions, which leads to the need for legal controls over data across border flows and this is to prevent the growth of a more autocratic regime." Alain Kapper, Senior Policy Officer – International Engagement, Information Commissioner's Office, United Kingdom of Great Britain and Northern Ireland

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Cybersecurity Capacity Building

A number of countries are developing and adopting respective National Cybersecurity Strategies (NCS) and implementing laws to address the increasingly complex cyber threat landscape, as well as greater demands from citizens for data protection and privacy. These changes are quickly creating new requirements for businesses, NGOs, and government agencies. Many experts have issued new calls to action for the International development community to mainstream cybersecurity, by incorporating it into their normal operations and joining forces with the cybersecurity capacity-building community.

The CTO recognises that an effective National Cybersecurity Strategy is critical for each country to establish fully in the increasingly cyber-dependant trade and commerce. It enables individuals, companies and nations to realise the full potentials of the cyberspace, without fear or reservation. In addition, it enables countries to provide secure and resilient digital infrastructure.

Developing the National Cybersecurity Strategy for the Government of Bermuda

In 2018, the CTO provided technical assistance to the Government of Bermuda in developing 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 engagement with Bermuda also involved conducting a Cybersecurity Maturity Assessment for Bermuda, prior to developing the National Cybersecurity Strategy (NCS).The strategy development was based on proven strategies from across the world, in assisting Bermuda build capacity and capability. In addition, the CTO assisted Bermuda to develop a National Plan to facilitate coordination mechanisms among stakeholders.

Ensuring Critical National Infrastructure Protection (CNIP) within the Commonwealth

Critical Information Infrastructure Protection (CIIP) is a key component in ensuring a country's Critical National Infrastructure (CNI) is protected against cybersecurity threats and has been included as an overarching strategic goal within the National Cybersecurity Strategies developed by the CTO for countries within Africa. The CTO has conducted awareness raising workshops on CIIP for Botswana, Cameroon, Malawi, Mozambique, Rwanda, Tanzania and Uganda, which has enabled these countries to understand the need for CIIP, and developed awareness of the methods of ensuring CIIP. Following these workshops, there were requests from stakeholders within these countries for further technical assistance for ensuring CIIP

The CTO developed a proposal to the Foreign & Commonwealth Office (FCO), United Kingdom to fund a project to provide a collaborative approach with effective measures in ensuring more secure and resilient Critical Information Infrastructure (CII) for all Critical National Infrastructure (CNI) relevant stakeholders. The outcomes of the project, which is yet to be funded, will contribute towards ensuring a safer, secure and resilient cyberspace for selected countries and to some extent of the region, which in effect translates into reduced cyber threats and risks to the country.

United Kingdom

Gibraltar

Bermuda

Jamaica

Barbados

Trinidad & Tobago   Grenada   Montserrat

Guyana

Sierra Leone   Ghana   Nigeria   Cameroon

Rwanda

Zambia

Botswana

South Africa
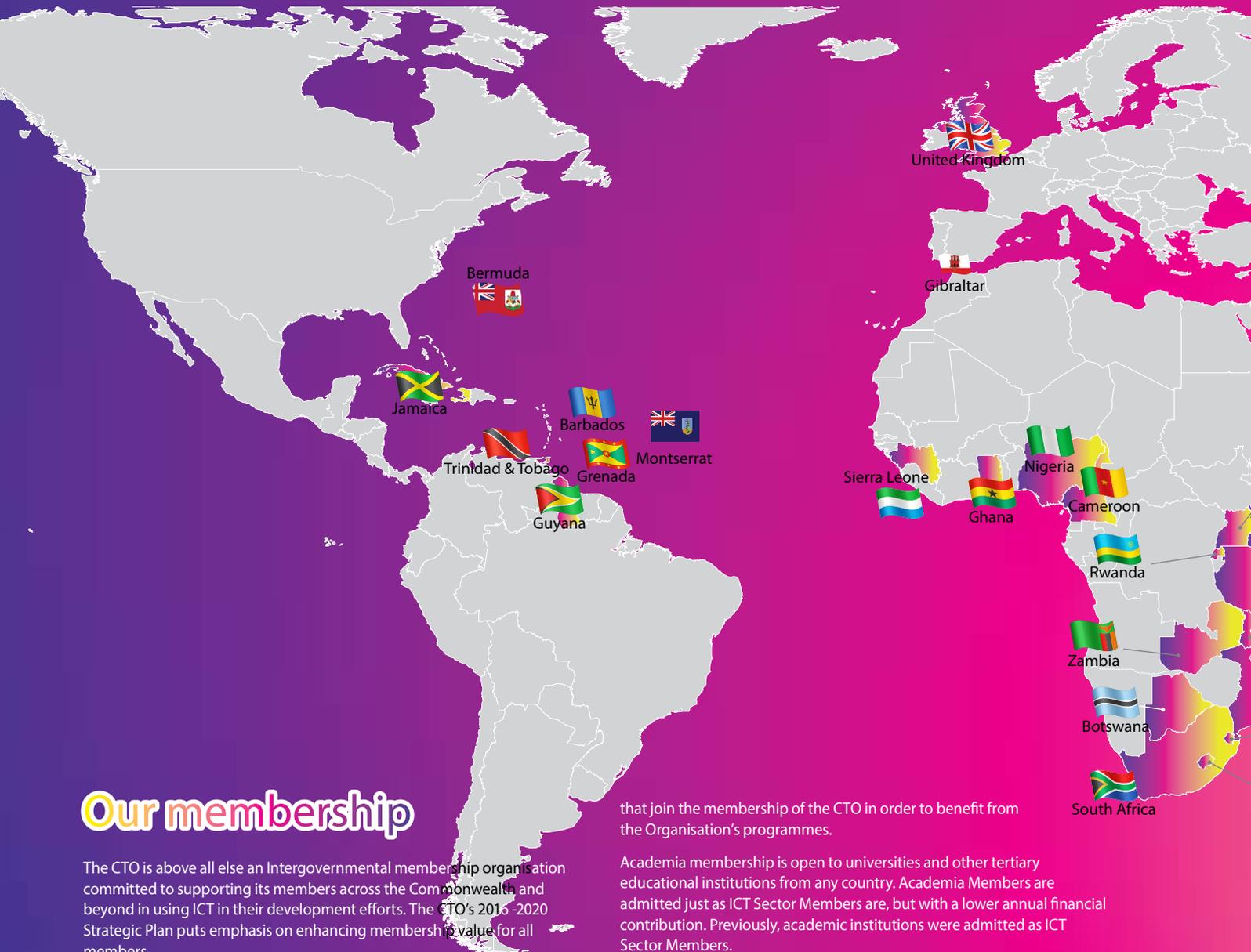
Our membership

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

The CTO currently has two categories of members: Full Member Countries and ICT Sector Members. In 2018 CO proposed two new types of membership: Affiliate 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.

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);

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.

Academia membership is open to universities and other tertiary educational institutions from any country. Academia Members are admitted just as ICT Sector Members are, but with a lower annual financial contribution. Previously, academic institutions were admitted as ICT Sector Members.

CTO ICT Sector Members

Regulatory Agencies

▶ Postal and Telecommunications Regulatory Authority of Zimbabwe
▶ Utilities Regulation and Competition Authority (The Bahamas)
▶ Gibraltar Regulatory Authority
▶ Communications Regulatory Authority of Namibia

Specialised National Agencies

▶ National Agency for Information and Communication Technologies (Cameroon)
▶ National Information Technology Authority (Uganda)

Governments

▶ Ministry of Telecoms and Postal Services (Republic of South Sudan)

Industry

▶ Avanti Communications Group
▶ Bitek
▶ Digital Bridge Institute
▶ Galaxy Backbone Limited

▶ Gibtelecom
▶ Huawei
▶ Safaricom
▶ CentralNic

Pakistan
India
Bangladesh
Sri Lanka
Malaysia
Uganda
Kenya
Tanzania   Seychelles
Malawi
Mozambique   Mauritius
Eswatini
Lesotho
Tuvalu
Vanuatu   Samoa
Fiji
Tonga
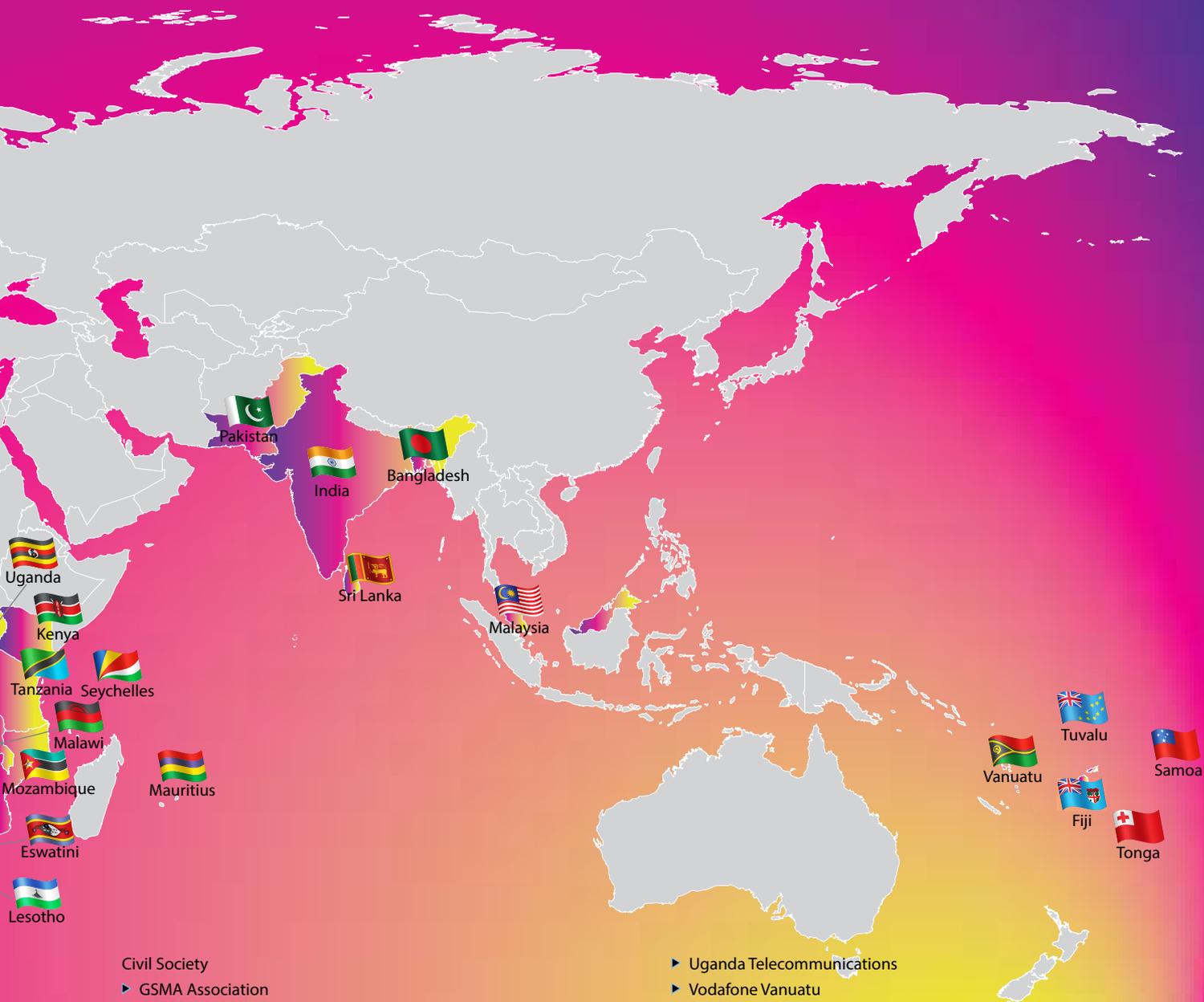
Civil Society
▶ GSMA Association

PDT Members

Governments and Government Agencies
▶ Ministry of Communications & Digitalisation (Ghana)
▶ Ministry of Communications & Digital Economy (Nigeria)
▶ Ghana Investment Fund for Electronic Communications
▶ Universal Service and Access Agency of South Africa

Operators & Telecommunications Companies
▶ Botswana Telecommunications Corporation
▶ Botswana Fibre Networks
▶ Eswatini Post & Telecommunications Corporation
▶ Gambia Telecommunications Company
▶ Vodafone Ghana
▶ Malawi Telecommunications Limited
▶ Mauritius Telecom
▶ Mozambique Telecommunications
▶ Cable & Wireless Seychelles
▶ Sierra Leone Telecommunications Company
▶ Our Telekom (Solomon Islands)
▶ Telikom PNG (Papua New Guinea)
▶ Telkom South Africa
▶ Telecommunications Services of Trinidad & Tobago

▶ Uganda Telecommunications
▶ Vodafone Vanuatu
▶ Zambia Telecommunications Company

Regulators
▶ Bangladesh Telecommunication Regulatory Commission
▶ Botswana Communications Regulatory Authority
▶ Telecommunications Regulatory Board (Cameroon)
▶ Eswatini Communications Commission
▶ Office of Utilities Regulation (Jamaica)
▶ Communications Authority (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

PDT Suppliers
▶ Bharat Sanchar Nigam Limited (India)
▶ Modern Concepts Consultancy Services Inc (Canada)
▶ Eagle Photonics (India)
▶ Development Consulting Centre (Trinidad & Tobago)
▶ Local Consulting (Cameroon)
▶ SLTMobitel (Sri Lanka)

Technical support and consultancy

During 2018-19 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:

ICT Applications

Over-the-top (OTT) Report

The CTO produced an Over-the-top (OTT) report following the survey and consultation with stakeholders. This report was adopted at the CTO ICT Ministers Forum in June 2018, before disseminating to CTO members and affiliates. It was also submitted for consideration to the UN High Level Panel on Digital Cooperation (UN HLPDC). The CTO is currently reviewing the OTT report and aims to publish an updated version of the OTT Report during the financial year 2019-20.

CYBERSECURITY

Bermuda Cybersecurity Strategy

The National Cybersecurity Strategy for the Government of Bermuda. The agreement for this project was signed in March 2018 between the CTO and Government of Bermuda. The en-gagement with Bermuda also involved conducting a Cybersecurity Maturity Assessment for Bermuda, prior to developing the National Cybersecurity Strategy (NCS). The strategy has been developed and validated. It is undergoing final review before submission to the Government of Bermuda for adoption and implementation. The project was successfully completed by the end of quarter two of 2018-19.

From left: Dr Marisa Stones, Director of IPI; Minister Jamahl Simmons; Ronnie Viera, Chair of the Cybersecurity Working Group; Minister Walter Roban; Minister Wayne Caines; Stu Daniels, Security Manager, IDT; Minister Lovitta Foggo; Dr Martin Koyabe, Manager, Technical Support and Consultancy, CTO; Michael Tucker, Deputy Chair, E-commerce Advisory Board.

CYBERSECURITY

Global Forum for Cyber Experts (GFCE) Working Group meeting

In June 2018, a mission was conducted to The Hague, Netherlands to participate and present a paper at the Global Forum for Cyber Experts (GFCE) Working Group meeting. The discussion focused on sharing experiences and lessons learnt in developing effective cyber capacity building. During the mission, methods on streamlining cyber capacity building partnership towards an effective and sustainable cooperation model against donors, partner countries, organisations and implementers involved in concrete initiatives were specified. Key issues included developing sustainable partnership in the cyber domain, development of partnerships in cyber capacity building and a discussion on both donor and partner country's perspectives.

Global Forum on Cyber Expertise (GFCE)

The CTO also participated at the Global Forum on Cyber Expertise (GFCE) Annual Meeting held in Singapore, from 18-20 September 2018 during the mission, the CTO participated in a closed door Africa Regional meeting which was organised by the World Bank in collaboration with the GFCE Secretariat. This closed session succeeded the first GFCE - World Bank Africa Regional meeting held in Uganda, in June 2018.

The meeting aimed to bring together different GFCE stakeholders who are active in cyber capacity building (CCB) in Africa. Several experts introduced topics with a focus on Cyber Security Strategy, Computer Emergency Response Teams and Cybercrime Legislation. This was followed by a discussion on a mapping exercise, which aims to assess needs and to direct the discussion towards assistance from the GFCE community.

CREDIT: GFCE @LINKEDIN

Regulation

Eswatini Strategic and Business Plan

The Final Strategic and Business Plan was delivered to Eswatini Posts and Telecommunications in March 2019. The manager Technical Support and Consultancy met and engaged with key ICT stakeholders in Eswatini and discussed both on-going and upcoming CTO activities in the country.

Malawi Universal Service Fund

CTO further met with the Malawi Public Private Partnership Commission on 21 - 22 March 2019 for a contract negotiation meeting with their board members and directors. The CTO presented its vision, objectives, approach and methodology it intends to adopt in assisting Malawi to establish a Universal Service Fund by implementing strategies and best use and practices the CTO can assist them with. Malawi was pleased that the CTO was keen to go ahead with the negotiation, which is funded by the World Bank.

Commonwealth coordination for ITU conferences has proved to be very effective, both in helping Commonwealth countries achieve their objectives, and to help reach the consensus that is necessary for a successful conclusion to a world conference

Malcolm Johnson, Commonwealth ICT Ministers Forum
May 2018, London

ANNUAL
REPORT
2018-19

COMMONWEALTH
TELECOMMUNICATIONS
ORGANISATION

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Events

Events held during 2018-19 reflected the CTO's n 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:

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      TELECOMMUNICATIONS
      ORGANISATION

      ANNUAL
      REPORT
      2018-19

Commonwealth ICT Ministers Forum 2018

18 – 20 June 2018, London, United Kingdom

The Commonwealth ICT Ministers Forum took place on the 18 June 2018, the closed door Minister meeting took place at Marlborough House, London the seat of the Commonwealth Secretariat. Held every two years, the event also included a two-day Open Forum, at the Copthorne Tara Hotel, Kensington, that which provided industry and government leaders with an opportunity to discuss challenges and solutions to ICT adoption in the Commonwealth and beyond.

Over three days the Commonwealth ICT Ministers convened 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 warm environment for constructive debate. A set of recommendations and agreements were 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.

113 Delegates attended the event from 26 different countries.

Key outcomes of the two-day open conference were as follows:

▶ Commonwealth countries have to work hard to change business mindsets and increase capacity for collaboration creating sustainable ICT in businesses, especially the small to medium enterprises. Given that these businesses are high-risk, business stakeholders have to absorb the risks and protect against the businesses against such risks.

▶ Blockchain technologies are important as the current attention and energy being used to develop blockchain by the crypto-currency community is advancing our understanding of how blockchain can be built upon. Concerns about crypto-currency maybe well-justified, but this is the cutting edge of an underlying technology that cannot be ignored.

▶ Bridging the digital divide is profoundly important if we want to transform our global economy to a digital economy. The Internet of Things will see 20 billion devices connected, possibly by the end of the decade.

▶ With crimes being committed at an alarming rate online, the need for accountability in cyberspace is fundamental.

▶ 5G technology will require

large blocks of spectrum within the frequency bands identified by ITU WRC-2015; in addition, the C band, the Ka band and the Ku band spectrum will need to be protected due to the large investments that satellite companies have made in satellite systems in these frequency bands.

▶ Gender-balance in ICTs remain low and must be increased.

▶ Telcos need to work more closely with Over the Top (OTT) service providers as increased Internet traffic results in increased GDP. Switching off OTT service providers because they create competition is detrimental for the economy, but also bad for ISPs. New business models need to be developed for this collaboration.

Companies that took part in the Open Forum ranged from service providers and manufacturers, such as Avanti, Huawei, Eutelsat, ICANN, Inmarsat, GSMA to carriers and operators. International organisations and leading associations such as the ITU and ITSO also took part in the event.

During the event, the CTO issued the results of a report on OTT service providers which was mandated by the ministers in 2016. The main objective of the study is to develop, based on consultations with relevant stakeholders, a good practice operational framework for OTT service providers, policymakers and regulators. The finding of this study shows that the majority of stakeholders recognise and appreciate the innovative nature of OTT service providers and do not want innovation to be stifled as OTT services offer numerous benefits to consumers. There is, nonetheless, widespread support for regulatory responses although, predictably, less so from the OTT sector itself.

Houlin Zhao, Secretary-General of ITU said that "We have set a lot of goals and they are ambitious, however they quickly change, because technology moves so rapidly. We should focus more on bringing the benefits of ICT to e-commerce. You can't be left behind. Supporting innovation in ICT is a must."

Victor Zhang, President of Global Government Affairs Huawei said that "The spread of 5G technologies and the expansion of the fibre backbone network will improve current efficiency. Industry and governments should coordinate their efforts to ensure that cybersecurity remains an absolute priority. Huawei is working with partners in all countries to build stronger digital infrastructure like the cloud and 5G."

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, hosted by the Commonwealth Foreign Office. The Commonwealth ICT Awards are intended to recognise major achievements in ICTs by member countries and organisations and to share knowledge amongst stakeholders in key areas.

Safaricom won the award for best wireless broadband initiative for Rural Star, 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 to 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, has been introduced to ensure 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 recognised 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.

Commonwealth Spectrum Management Forum 2018

4 – 6 September 2018, Port Louis, Republic of Mauritius

The Commonwealth Spectrum Management Forum 2018 was held from 4 - 6 September 2018 in - Port Louis, Republic of Mauritius and was hosted by the ICT Authority and the Government of Mauritius. Representatives from several member countries, as well as private organisations, attended the Forum. The event was held at an opportune moment, when member countries were finalising their country positions in view of the upcoming World Radiocommunication Conference 2019 (WRC-2019). Various aspects of spectrum management including spectrum harmonisation strategies and planning, commercial aspects of spectrum and new advances in technology and innovation were covered during the three-day forum.

During the opening ceremony key speakers made the point that the Commonwealth Spectrum Management Forum 2018 was an opportunity for all participants to assess the current spectrum management methodologies in their respective countries and to evaluate them against best international practices. The programme focussed mainly on spectrum harmonisation, planning, policy and regulatory strategy, as well as, the commercial aspects of frequency spectrum. Deliberations during Day Two were mostly geared towards technology and innovation while Day Three tackled the issue of spectrum efficiency with topics such as Digital Broadcasting Switchover. The Forum concluded with discussions on the preparation for WRC-19.

Finally, the importance of global spectrum harmonisation across all member states was emphasised upon. The Commonwealth Spectrum Management Forum 2018 successfully geared participants to focus on fair distribution of spectrum resources amongst all stakeholders to bridge the digital divide. The use of technology and innovation in the management of spectrum was also encouraged.

Key takeaways:

▶ Mobile networks have evolved from 1G (Analogue) to 5G in the span of 25 – 30 years. For over 30 years, the International Telecommunications Union (ITU) has been developing the standards and spectrum arrangements to support International Mobile Telecommunications (IMT).

▶ Global standards and harmonized frequencies have enabled massive economies of scale, hence driving down the prices of handsets, global roaming and the development of innovative applications and services.

▶ The next generation of mobile network, is 5G networks and these are expected to provide a substantial increase in bandwidth and speed and a decrease in latency hence enabling the 'Everything smart / Everything connected' to become reality. The use of MIMO technology and self-organizing core networks as well as availability of enough spectrum and a robust fibre backhaul are considered important to enable the successful implementation of 5G networks.

▶ Wi-Fi technology has also constantly evolved over the last 25 – 30 years. While WI-FI Networks require lower CAPEX to be deployed, these networks provide limited ubiquity, higher latency and less connected devices as compared to 5G networks. In the future 'connected world' Wi-Fi and 5G are expected to be complementary rather than competing technologies.

▶ There is a need for member countries to coordinate and harmonise at the level of WRC-19 so that additional globally harmonised spectrum for broadband mobile networks is made available.

▶ It has been also found that IPv6 addressing scheme is a prerequisite for 5G networks and it is a challenge to convince end users to shift from IPv4 to IPv6 given that these users are more comfortable with the use of the IPv4 addressing scheme.

> When it comes to cybersecurity, we are only as strong as our weakest link. The CTO is committed to assisting our members in developing and implementing their national cybersecurity strategies for the benefit, not only of their national ICT sectors, but also the international community.
>
> Gisa Fuatai Purcell, Acting Secretary-General, CTO

International multi-lateral organisations must continue to work more closely to help combat the digital divide that exists in the world today. This digital divide exists in all countries in the world but sadly it exists to a greater extent in some countries than in others. Governments must learn from one another in terms of the initiatives that need to be taken so that this digital divide can be comprehensively tackled."

Mats Granryd, Director-General, GSMA and member of the UN Broadband Commission

Commonwealth ICT Forum 2018

1 – 3 October 2018, Port of Spain, Republic of Trinidad and Tobago

The Commonwealth ICT Forum 2018 hosted by the Commonwealth Telecommunication Organisation in collaboration with the Telecommunications Authority of Trinidad and Tobago took place over three days at the Hyatt Regency Trinidad from October 1 - 3, 2018. Delegates from member nations around the Commonwealth and other ICT stakeholders gathered for discussions around the theme, Digital Transformation for Development: People, Processes and Technology. The United Nations has identified global connectivity as a catalyst for social and economic development, particularly within marginalised communities. The Forum provided a context for information sharing and knowledge exchange as relates to existing and emerging technologies, regulatory and policy issues, as well as strategies for effecting change and fostering national development through the use of Information and Communication Technology.

The Forum sessions took a sequential approach in addressing the various subject areas. The programme outlined the relevance of broadband planning in changing the socio-economic landscape and quality of life and the significance of collaboration in realising development plans. Discussion focused on the need for open dialogue toward creating a favourable investment and development culture. The programme also focussed on the orbiting impact of Net Neutrality, OTT Services and Universal Service Funds on one another and included some dialogue on existing symbiotically, though traditional service providers raised some objection to the idea.

The forum also concentrated heavily of the issue of privacy and data security, as well as, Cybersecurity Strategy and Implementation, Blockchain and Cryptocurrency Opportunities, General Data Protection Regulation and Artificial Intelligence, which all broker in data, centred on the issue of consumers' rights to personal data protection while discussing advances made in each sector, consumer and industry benefits and leveraging strengths to avert risk.

The final day wrapped with sessions on Spectrum Management and the upcoming World Radiocommunication Conference 2019

(WRC-19), the Internet of Things, ICT Innovation – Youth in ICTs and a final session on The Way Forward.

Primary themes arising out of the three days of discussion were collaboration, capacity building, innovation and political will. Participants were urged to innovate and approach challenges with new perspective. The digital landscape has changed the functionality of the world and governments have a responsibility to prepare and equip citizens for these imminent changes. Educational opportunities aligned to the emerging new world are important to building human capacity and promoting sustainable development. Public Private Partnerships is one way that governments can access additional funding to finance some of the projects necessary to transition citizens to the new age, as collaborators leverage one other's resources for mutual benefit.

In the keynote address, Malcolm Johnson, Deputy Secretary General of the International Telecommunication Union (ITU) reiterated ITU's role in advocating broadband access - bringing the benefit of the technology to everyone, everywhere. He discussed its importance to nation development and the role that Public/Private Partnerships play in facilitating universal access.

The forum concluded that the CTO should further support its members to address the proposed recommendations by facilitating ongoing communication, possibly through online forums, to allow members to share their experiences, best practices and solutions. Equally the discussion on building capacity centred on identifying the direction of growth of ICTs and making a determined push to educate the citizens to get them ready for the next level of ICT opportunities. The ICT Forum was identified as an effective tool towards enhancing capacity building within member countries.

Key takeaways arising from the forum:

▸ The importance of broadband access to the socio-economic development of nations

▸ The need for buy-in at the highest political levels to advance the rollout of broadband in nations

▸ The need to work together to bring our competencies together for the common good

▸ The risks associated with resisting digital transformation

▸ The benefits to embracing and adopting the digital revolution
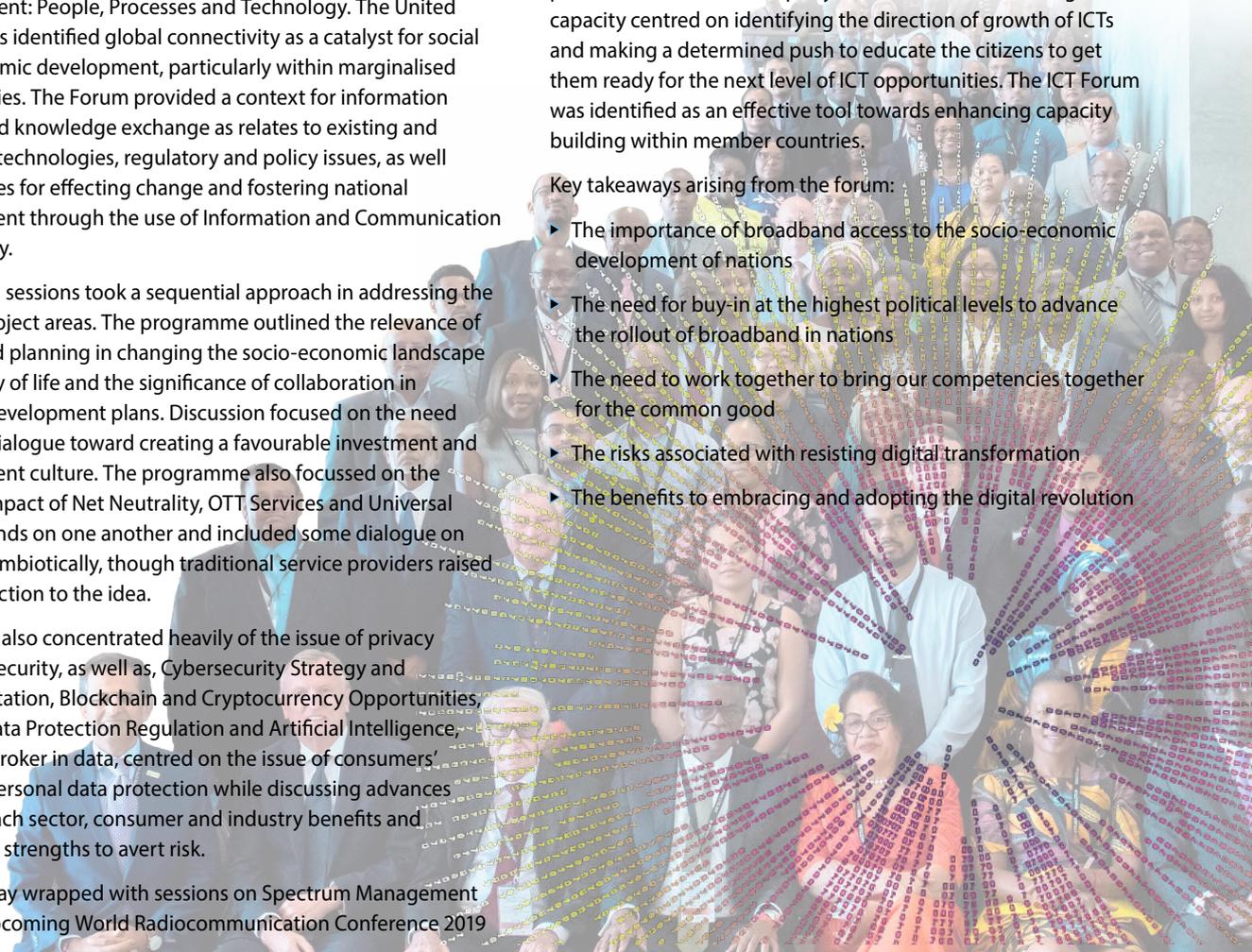
Commonwealth HR&ICT Forum 2019

19 – 20 February 2019, London, UK

The Commonwealth Human Resources and ICT Forum in 2019 is an annual event organised by the Commonwealth Telecommunications Organisation (CTO) to cater to the needs of CTO members to link the processes in human resources and the constantly changing ICT landscape. The theme of the forum was Streamlining organisational development.

The digital divide within the Commonwealth remains prominent and questions arose on how to bridge this divide at an organisational level. The younger generations, who have grown up in the digital age, now make up a major part of the workforce, it was agreed HR practitioners must change the way HR is conducted and focus on the employee experience, to appeal to this distinct workforce demographic. However, there was also a call to up-skill the current workforce, particularly the generations' raised prior to the digital age, to ensure they adapt to the changing reality.

Overall, the HR and ICT Forum 2019 provided lessons, approaches and a platform that member countries will find as an invaluable source to facilitate addressing the many challenges that they are facing as organisations, ministries and regulatory bodies.

The keynote address was given by The Right Honourable Patricia Scotland QC, Secretary General of the Commonwealth Secretariat. Her address emphasised the importance of organisation-al development and how this helps in strategic future of Human Resources.

The Minister of Ministry of Information and Communication from Sierra Leone and the Minister of Communications, Works, Energy and Labour from Montserrat were in attendance.

There were 51 participants from 19 member countries, representing governments, regulatory bodies, organisations involved in ICTs and organisations involved in HR management.

Key takeaways:

▶ There needs to be a shift in focus on maximising the employee experience and employ-ee development. ICTs are the perfect tools to improve HR processes and efficiency.

▶ There was general consensus that AI and automation should not be seen as a threat but rather as another tool to help HR management.

▶ It was agreed that graduates and entry-level employees are not always best equipped to handle the constant evolution of the ICT sector, more could be done.

Leadership within organisations must embrace the digital transformation fully. This must go hand in hand with full engagement between leadership and employees and stakeholders, building a strong and ethical culture.

> "This forum is analysing how new technologies can deliver stronger broadband capabilities in rural areas. New technologies will support job creation in rural communities. Agricultural production will be boosted in a more environmentally friendly manner"
>
> Martin Koyabe, Manager, Technical Support & Consultancy, Commonwealth Telecommunications Organisation

Capacity development

For our members, ICT capacity development is a key priority. During 2018-19, 13 courses were delivered, mainly through the Programme for Development & Training.

Showcase

Commonwealth ICT Round Table Series

nterest in the Commonwealth ICT Round Tables series has continued unabated, with participation from parliamentary committees, regulatory agencies, governments and operators from 27 countries. Three successful workshops took place this financial year, at the CTO headquarters in London both roundtables had more than 20 participants, countries participating included British Virgin Islands, Botswana, Kenya, Lesotho, Cameroon, Tanzania, Bermuda, Ghana, Vanuatu, Malawi, Mauritius, Nigeria, Sierra Leone, South Africa, Swaziland, and the United Kingdom.

The ICT roundtables target government ministers, board members, policy and law makers of national regulating authorities. They also provide other high-level delegates in ICT, such as members of parliamentary committees on ICTs, with an opportunity to better understand ICT regulation. The programme focuses on addressing current issues participants and their organisations face and includes presentations and discussions on areas such as Internet governance, spectrum management, Universal Service Funds (USFs), Broadband development, Cybersecurity and Emerging technologies. Experts from the ICT sector work with delegates to identify the key challenges faced by the sector and develop solutions that can be easily implemented.

These roundtables are traditionally held in London, UK, although can be remodelled to be hosted in other member countries, and include industry visits to organisations such as the UK regulator

Ofcom, GSMA, Huawei, and Avanti. The visits give 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.

Capacity building amongst regulators is vital not just for officials but also for board members and other senior stakeholders in ICT regulation.

Brian Goulden, Director Strategy & Capacity
Pygma Consulting

Delegates at the ICT Round Table June 2018.

This round table series is a key pillar of our four year strategy to assist member countries in their efforts to improve their regulatory environments for ICTs

2019 Courses

Risk Management and Business Continuity Planning
04 - 08 March 2019

South Africa
This five day course gives insights on the factors involved in risk management and business continuity planning. Identifying potential risks to a business, how to assess these risks and put a plan on place to manage and deal with them accordingly should they arise.

Artificial Intelligence
1 - 3 April 2018

Kenya
Artificial intelligence (AI) is the simulation of human intelligence processes by machines, especially computer systems. These processes include learning (the acquisition of information and rules for using the information), reasoning (using rules to reach approximate or definite conclusions) and self-correction. Particular applications of AI at this time include expert systems, speech recognition and translation as well as machine vision. This 3-day Course explores AI and its applications in functional, non-technical terms.

It also explains why there is an urgent need for Regulators and Nations to become involved now in global discussions about Rules and Regulations governing ethical development and deployment of AI.

MARCH   MARCH   APRIL   APRIL

Introduction to Big Data Analytics
4 -10 April 2019

Kenya
This seven day course delves into Big Data and Advanced Analytics which are two of today's most ubiquitous business phrases. The consensus is growing: this is not just another fad – there is real business and societal value to be derived from big data and advanced analytics, for private and public sector organisations alike, since it provides a real time insight as opposed to historical view gained from the analysis of structured data. Data can be taken from any source and can be analysed to find answers that lead to smart decision making.

Developing a High Impact Learning Culture
11 - 15 March 2019

South Africa
The program provided detailed view of the various aspects of developing learning culture, organisational learning, and its significance in making an organisation a learning one.

2019 Courses

Regulatory Approaches on New Emerging Services such as OTT, IoT, etc.
13 - 17 May 2019
Tanzania
This is a three-day course designed to provide the tools and methodology to perform ICT regula-tory impact assessments (RIA). Licensing, consumer interests, quality of service (QoS), compe-tition and other key regulatory areas are analysed and reviewed from a social and economic im-pact viewpoint. This course is highly recommended as an in-house programme combined with a pre-assessment of the national policy and regulatory environment of communications services is key.

Performing a Regulatory Impact
13 - 17 May 2019
South Africa
This course is designed to provide participants with the necessary tools and methodology to perform ICT regulatory impact assessments. Licensing, consumer interests, quality of service, competition and other key regulatory areas will be analysed and reviewed from a social and economic impact viewpoint.

MAY   MAY   MAY   JUNE

Talent and Knowledge management
17 - 21 June 2019
Tanzania
This Talent and Knowledge Management in the Dynamic and Changing Communications Sector course is designed to help both senior and aspiring managers to develop a strategic approach to talent management that suits their business and gets the best from their employees. The value of a tailored organisation-wide talent and knowledge management process is that it provides a focus for investment in human capital and places the subject high on the corporate agenda. It can also contribute to other strategic objectives, including: A highly experienced consultant will work with delegates to develop a profile of their organisation, the value of a tailored organisation-wide talent and knowledge management process that provides a focus for investment in human capital and the management of change in a dynamic environment.

Consumer Protection and Child Online Protection
27 - 31 May 2019
Kenya
The first part of the course introduces the need for consumer protection framework in general, highlighting why consumer protection is so invaluable in a well functioning and market-led sectors. It covers and highlights the typical different types of "consumer harm", including financial and physical harm. The courses stresses the importance of given care to the needs of vulnerable consumers like the disabled, older people or children, or even those on low incomes.(QoS) policies and management.

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2019 Courses

Cryptographic Techniques in Relation to Cybersecurity and Cyber Criminality
17 - 21 June 2019

Nigeria

This five day course focuses on implementing cyber security has software, hardware, and human components. Cryptography is essential to many models of cyber security. Cryptography applies algorithms to shuffle the bits that represent data in such a way that only authorised users can un shuffle them to obtain the original data. Cryptographic algorithms use mathematics to achieve effective shuffling. Most common cryptographic standards are open where the algorithms are known and published, but one make it impractical to decode the shuffled bits. Open standards help ensure cryptography is secure. Certificate authorities issue digital certificates that validate the ownership of encrypted keys used in secured communication and are based on a trust model.

Digital Sound Broadcasting Standards
24 - 28 June 2019

Tanzania

Analogue sound broadcasting using AM and FM has been ubiquitous around the world since 1930s. The scenarios for consumption of broadcast sound have evolved from a wireless set in the corner of the sitting room through portable handheld radio sets to enjoyment of sound broadcasts in vehicles while on the move. Further, as the number of broadcast services have increased, there arose a need to evolve sound broadcast technology from analogue to digital.

JUNE   JUNE   JUNE   SEPTEMBER   OCTOBER

Cybersecurity at the National level CERT/CSRT
9 - 20 September 2019

Cameroon

This training course aims to deliver insights regarding the best cybersecurity governance practices at the national level, including methods, practical examples and lessons learned. All teaching material is based on illustrative real-life cases, lectures, case studies, and roundtable and group play methods. In addition, the participants will benefit from two site visits, one to the Digital Government facility and another to the state of the art Tier4 data centre.

Fibre Optic Access Network
17 - 21 June 2019

Botswana

This course is designed to introduce the participant to optical fibre fundamentals, optical fibre access network architectures and standards, designing and building of optical fibre access networks, and applications of optical fibre access networks

Diploma in Telecommunications Management Studies
16 September - 25 October 2019

Cameroon

The fast moving telecommunications industry driven mainly by rapidly changing technologies, evolving services and increasingly complex consumer demands, generate new business challenges, requiring the professionals in the industry to be constantly updated. This six week course is designed to provide participants with tools that will enhance their ability to master the changes in the business and technical environment to assure operational and business success for their organisations. This course will examine 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 will be adopted to suit the ICT sector. The course utilises a practical, hands-on approach and is designed to be challenging and thorough.

CTO Financial Papers

THE COMMONWEALTH TELECOMMUNICATIONS ORGANISATION			
INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31 March 2019			
INCOME **Contributions from the Government / national body represented on the Council:** **(Full membership Contribution)**	**Notes**	**2018-19** £	**2017-18** £
Bangladesh		25,000	25,000
Barbados		25,000	25,000
Botswana		25,000	25,000
Cameroon		25,000	25,000
Fiji		25,000	25,000
Ghana		25,000	25,000
Grenada		6,250	6,250
Guyana		25,000	25,000
India		25,000	25,000
Jamaica		25,000	25,000
Kenya		25,000	25,000
Lesotho		25,000	25,000
Malawi		25,000	25,000
Malaysia		25,000	25,000
Mauritius		25,000	25,000
Mozambique		25,000	25,000
Nigeria		25,000	25,000
Pakistan		25,000	25,000
Rwanda		25,000	25,000
Samoa		6,250	6,250
Seychelles		6,250	6,250
Sierra Leone		25,000	25,000
South Africa		25,000	25,000
Sri Lanka		25,000	25,000
Swaziland		25,000	25,000
Tanzania		25,000	25,000
Tonga		6,250	6,250
Trinidad and Tobago		25,000	25,000
Tuvalu		6,250	6,250
Uganda		25,000	25,000
United Kingdom		25,000	25,000
Vanuatu		6,250	6,250
Zambia		25,000	25,000
Total of Full Membership Contribution		**712,500**	**712,500**

INCOME	Notes	2018-19 £	2017-18 £
Affiliate Membership Contribution		18,750	18,750
Sector membership Contributions		125,000	182,292
Technical Support & Consultancy*	2	230,401	366,118
Programme for Development and Training Membership Contribution **	3	255,000	415,000
Portfolio of courses and Commercialisation***	4	104,000	155,241
Income from events****		66,818	172,545
Fellows - British Council		-	15,200
CTO Parking Fees		6,500	6,500
Interest receivable	5	2,600	1,000
Other income	5	-	5,665
Commonwealth Co-ordination		-	26,408
TOTAL INCOME		**1,521,569**	**2,077,220**

* Earlier named as Research and consultancy

**Earlier named as PDT Partner Income

***Earlier named as PDT Portfolio of Courses

****Earlier named as International event income

THE COMMONWEALTH TELECOMMUNICATION ORGANISATION					
STATEMENT OF INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31 March 2019					
	Notes	2018-19		2017-18	
		£	£	£	£
Expenditure					
Operation Expenditure					
Capacity Development	7	285,089		367,810	
Events		70,879		127,761	
Technical Support & Consultancy	8	156,020		192,830	
Membership and Support		28,655		45,728	
Total Operation Expenditure			540,643		734,129
Council					
Contribution for Defined Benefit Pension Scheme		135,437		138,898	
SG's emoluments		115,442		127,299	
Council expenditure		11,416		18,370	
Bad and doubtful debts		425,701		-	
Total Council			687,996		284,567
Headquarters					
Staff	9	572,284		567,235	
Buildings	10	64,488		63,954	
Communications		9,468		10,109	
Publications and website		5,927		2,315	
Travel		52,086		64,582	
Equipment		30,358		30,175	
Professional		30,674		51,576	
Loss/(gain) on foreign exchange		12,221		(336)	
Other		(146,533)		35,281	
Total headquarters			630,973		824,891
Total expenditure			1,859,612		1,843,588
Operating (deficit) surplus for the year	21		(338,043)		233,633

- The income and expenditure account has been prepared on the basis that all operations are continuing operations. There are no recognised gains and losses other than those passing through the income and expenditure account. No statement of comprehensive income or statement of changes in equity is included in these financial statements as all movements are reflected in the income and expenditure account and balance sheet.

THE COMMONWEALTH TELECOMMUNICATION ORGANISATION						
STATEMENT OF FINANCIAL POSITION AS AT 31 March 2019						
		2018-19		**2017-18**		
	Notes	**£**	**£**	**£**	**£**	
Fixed assets						
Tangible assets	**6**		1,357,652		1,382,565	
Current assets						
Debtors	**12**	660,610		1,192,048		
Cash at bank and in hand	**13**	935,300		822,413		
		1,595,910		2,014,461		
Creditors: amounts falling due within one year	**14**	(1,012,366)		(1,037,864)		
Net current assets			583,544		976,597	
Total assets less current liabilities			1,941,196		2,359,162	
Creditors: amounts falling due after more than one year	**15**		(598,746)		(679,192)	
Net assets			1,342,450		1,679,970	
Reserves						
Main reserve	**21**		1,342,449		1,679,970	
Total reserves			1,342,450		1,679,970	

THE COMMONWEALTH TELECOMMUNICATION ORGANISATION						
STATEMENT OF CASHFLOWS FOR THE YEAR ENDED 31 MARCH 2019						
	Note	**2019**		**2018**		
		£	£	£	£
Cash flows from operating activities					
Cash provided by operations	**i**		194,305		(239,853)
Investing activities					
Purchase of tangible fixed assets		(972)		(2,562)	
Net cash used in investing activities			(972)		(2,562)
Financing activities					
Repayment of long term bank loan		(80,446)		(77,793)	
Net cash used in financing activities			(80,446)		(77,793)
Net increase (decrease) in cash and cash equivalents			112,888		(320,208)
Cash and cash equivalents at beginning of year			822,413		1,142,619
Cash and cash equivalents at end of year			**935,300**		**822,411**
Notes to the cash flow statement					
Cash provided by operations		**2019**		**2018**	
			£		£
Operating (Deficit) surplus		(338,043)		233,633	
Depreciation of tangible assets		25,885		23,489	
Movements in working capital:					
Decrease /(Increase) in debtors		531,438		(283,783)	
(Decrease) in creditors		(24,975)		(213,192)	
Cash provided by operations (i)		**194,305**		**(239,853)**	

THE COMMONWEALTH TELECOMMUNICATIONS ORGANISATION
NOTES TO THE FINANCIAL STATEMENTS ENDED 31 MARCH 2019

1.   Accounting policies

The Commonwealth Telecommunications Organisation (CTO) is responsible for the preparation of the accounts in accordance with the accounting records and satisfying the requirements of Council's Rules for Financial Control. The principal accounting policies are set out below.

1.1   Accounting convention

These financial statements have been prepared in accordance with FRS 102 "The Financial Reporting Standard applicable in the UK and Ireland" (FRS 102) with the following modifications:

- The latest retirement benefit triennial valuation deficit has been disclosed by way of a memorandum note (Note 10). FRS102, Retirement Benefits, has not been applied.
- The organisation has taken the exemption under FRS 102 not to include a Statement of Changes in Equity.
- The financial statements are prepared in sterling, which is the functional currency of the organisation. Monetary amounts in these financial statements are rounded to the nearest pound.

1.2   Accounting basis of preparation

These financial statements are prepared on a going concern basis, under historical cost convention.

The preparation of financial statements in conformity with FRS 102 requires the use of certain critical accounting estimates. It also requires management to exercise judgement in the process of applying the organisation's accounting policies. The areas involving a higher degree of judgement or complexity, or areas where assumptions and estimates are significant to the financial statements are disclosed in note 1-11.

The principle accounting policies adopted are set out below.

1.3   Going concern

The members have at the time of approving the financial statements, a reasonable expectation that the organisation has adequate resources to continue in operational existence for the foreseeable future. Thus, they continue to adopt the going concern basis of accounting in preparing the financial statements.

1.4   Contributions from Governments represented on Council

Contributions are primarily mandatory, payable by Governments and/or National Bodies, in accordance with the approved budget in order to meet Council's administrative expenses and expenditure. These contributions are accounted for as Income on a receivable basis.

1.5   Programme for Development and Training (PDT)

PDT income is recognised in the period in which a requesting partner commits to receive courses. PDT expenditure is recognised as soon as there is a legal or constructive obligation committing the organisation to make a payment, it is probable that a transfer of economic benefits will be required in settlement and the amount of the obligation can be measured reliably.

1.6   Building fund contributions

The organisation received income in the form of contributions towards the cost of purchasing its freehold property in the year ended 31 March 2009, In accordance with Statement of Standard Accounting Practice 4 "Accounting for government grants" which also applies as best practice to grants and assistance from other sources, the organisation has deducted the amount of the contributions, £388,000 from the purchase price of the freehold property.

1.7   Tangible fixed assets and depreciation

Tangible fixed assets other than freehold land are stated at cost less depreciation. Depreciation is provided at rates calculated to write off the cost less estimated residual value of each asset over its expected useful life, as follows:

-        Land and buildings freehold 2% straight line (excluding land)
-        Computers and peripherals 15%-33% straight line
-        Fixtures and fittings 30% straight line

1.8   Foreign currency translation

The approved budget for contributions receivable and PDT expenditure is in sterling. Contributions receivable are made in sterling; PDT expenditure in foreign currency is translated at the exchange rate ruling at the date of the transaction.

1.9   Financial Instruments

Financial assets

Basic financial assets, including trade and other debtors, cash and bank balances and investments in commercial paper, are initially recognised at transaction price, unless the arrangement constitutes a financing transaction, where the transaction is measured at the present value of the future receipts discounted at a market rate of interest.

Such assets are subsequently carried at amortised cost using the effective interest method.

At the end of each reporting period financial assets measured at amortised cost are assessed for objective evidence of impairment. If an asset is impaired the impairment loss is the difference between the carrying amount and the present value of the estimated cash flows discounted at the asset's original effective interest rate. The impairment loss is recognised in profit or loss.

If there is a decrease in the impairment loss arising from an event occurring after the impairment was recognised the impairment is reversed. The reversal is such that the current carrying amount does not exceed what the carrying amount would have been had the impairment not previously been recognised. The impairment reversal is recognised in profit or loss.

Other financial assets are initially measured at fair value, which is normally the transaction price.

Such assets are subsequently carried at fair value and the changes in fair value are recognised in profit or loss, except that investments in equity instruments that are not publicly traded and whose fair values cannot be measured reliably are measured at cost less impairment.

Financial assets are derecognised when (a) the contractual rights to the cash flows from the asset expire or are settled, or (b) substantially all the risks and rewards of the ownership of the asset are transferred to another party or (c) control of the asset has been transferred to another party who has the practical ability to unilaterally sell the asset to an unrelated third party without imposing additional restrictions.

Financial Liabilities

Basic financial liabilities, including trade and other creditors, and bank loans are initially recognised at transaction price, unless the arrangement constitutes a financing transaction, where the debt instrument is measured at the present value of the future payments discounted at a market rate of interest.

Debt instruments are subsequently carried at amortised cost, using the effective interest rate method.

Fees paid on the establishment of loan facilities are recognised as transaction costs of the loan to the extent that it is probable that some or all of the facility will be drawn down. In this case, the fee is deferred until the draw-down occurs. To the extent there is no evidence that it is probable that some or all of the facility will be

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drawn down, the fee is capitalised as a pre-payment for liquidity services and amortised over the period of the facility to which it relates.

Trade creditors are obligations to pay for goods or services that have been acquired in the ordinary course of business from suppliers. Trade Creditors are classified as current liabilities if payment is due within one year or less. If not, they are presented as non-current liabilities. Trade creditors are recognised initially at transaction price and subsequently measured at amortised cost using the effective interest method.

Financial liabilities are derecognised when the liability is extinguished, that is when the contractual obligation is discharged, cancelled or expires.

1.10   Cash and cash equivalents

Cash and cash equivalents include cash in hand, deposits held at call with banks, other short-term liquid investments with original maturities of three months or less, and bank overdrafts. Bank overdrafts are shown within borrowings in current liabilities.

1.11   Critical accounting judgements and estimation uncertainty

In the application of the organisation's accounting policies, the members are required to make judgements, estimates and assumptions about the carrying amount of assets and liabilities that are not readily apparent from other sources. The estimates and associated assumptions are based on historical experience and other factors that are considered to be relevant. Actual results may differ from these estimates.

The items in the financial statements where judgements and estimates have been made include: Assessing the recoverability of membership contributions outstanding at the year end and the amount of provision needed for bad and doubtful debts.

THE COMMONWEALTH TELECOMMUNICATIONS ORGANISATION
NOTES TO THE FINANCIAL STATEMENTS ENDED 31 MARCH 2019 (CONTINUED)

2   Technical Support & Consultancy

Particulars	2019	2018
	£	£
Income from Consultancy Projects	230,401	217,959
Income from Development and Assistance Programme	-	148,159
Total Technical Support & Consultancy	**230,401**	**366,118**

3   Programme for Development and Training Membership Contribution

Particulars	2019	2018
	£	£
Income from Requesting Partner	175,000	340,000
Income from Offering Partner	30,000	40,000
Income from Additional Contribution	50,000	35,000
Total Programme for Development and Training Membership Contribution	**255,000**	**415,000**

4   Portfolio of courses and Commercialisation

Particulars	2019	2018
	£	£
Income from Portfolio of courses	62,604	146,184
Income from Commercialisation	41,396	1,610
Income from International Events	-	7,447
Total Portfolio of courses and Commercialisation	**104,000**	**155,241**

5   Interest receivable and other operating income

Particulars	2019	2018
	£	£
Bank interest	2,600	1,000
Sundry income	-	5,665
Total of Interest receivable and other operating income	**2,600**	**6,665**

THE COMMONWEALTH TELECOMMUNICATIONS ORGANISATION
NOTES TO THE FINANCIAL STATEMENTS ENDED 31 MARCH 2019 (CONTINUED)

6   Tangible fixed assets

Particulars	Land and buildings freehold	Computers and peripheral	Fixtures and fittings	Total
	£	£	£	£
Cost				
At 1 April 2018	1,574,222	43,015	4,569	1,735,712
Additions	-	399	573	972
At 31 March 2019	**1,574,222**	**130,145**	**32,317**	**1,736,684**
Depreciation				
At 1 April 2018	199,125	39,338	777	353,146
Charge for the year	22,125	802	2,958	25,885
At 31 March 2019	**221,250**	**126,871**	**30,910**	**379,031**
Net book value				
At 31 March 2019	**1,352,972**	**3,275**	**1,407**	**1,357,653**
At 31 March 2018	1,375,097	3,677	3,792	1,382,565

THE COMMONWEALTH TELECOMMUNICATIONS ORGANISATION
NOTES TO THE FINANCIAL STATEMENTS ENDED 31 MARCH 2019 (CONTINUED)

7   Capacity Development

Particulars	2019	2018
	£	£
Expenditure for PDT	222,210	295,538
Expenditure for POC & Commercialisation	62,879	72,272
Total Capacity Development	**285,089**	**367,810**

8   Technical Support & Consultancy

Particulars	2019	2018
	£	£
Expenditure on Consultancy Projects	156,020	74,902
Expenditure on Development Assistance Programme	-	117,928
Total Technical Support & Consultancy	**156,020**	**192,830**

9   Staff

Particulars	2019	2018
	£	£
Staff Salary & benefits	502,402	495,576
Insurance	29,350	29,451
Training & other costs	10,382	6,136
Recruitment	30,150	36,072
Total Staff Cost	**572,284**	**567,235**

10   Buildings

Particulars	2019	2018
	£	£
Mortgage interest	19,947	22,600
Service charges	37,305	24,958
Building repairs and reinsurance costs	7,236	16,396
Total Buildings	**64,488**	**63,954**

11   Taxation

Under the Headquarters Agreement between the Government of the United Kingdom of Great Britain and Northern Ireland and the CTO dated 30 March 1983, (article 7) within the scope of its official activities, the CTO and its property and income is exempt from all direct taxation.

THE COMMONWEALTH TELECOMMUNICATIONS ORGANISATION
NOTES TO THE FINANCIAL STATEMENTS ENDED 31 MARCH 2019 (CONTINUED)

12   Debtors

Particulars	2019	2018
	£	£
Trade debtors	1,047,003	1,014,590
Prepayments	12,273	11,261
VAT recoverable	20,813	15,330
Other debtors	6,222	150,867
Total Debtors	**1,086,311**	**1,192,048**
Less : Provision for bad & doubtful debts	(425,701)	-
Total debtors less provision	**660,610**	**1,192,048**

All debtors, apart from prepayments, are financial instruments measured at present value.

13   Cash at bank and in hand

Particulars	2019	2018
	£	£
PDT account	100,999	8,697
Current account	71,669	17,726
Deposit account	757,598	757,598
US Dollar account	(77)	18,361
Pensions fund impress account	4,661	19,552
Petty cash	450	479
Total of Cash at bank and in hand	**935,300**	**822,413**

The above are all financial instruments measured at present value.

14   Creditors: Amounts falling due within one year

Particulars	2019	2018
	£	£
Bank loan	100,393	100,393
Credit cards	1,256	4,578
Trade creditors	167,794	274,858
Other creditors	-	8,833
Accruals and deferred income	742,923	649,202
Total Creditors: Amounts falling due within one year	**1,012,366**	**1,037,864**

All creditors are financial instruments measured at present value.

15   Creditors: amounts falling due after more than one year

Particulars	2019	2018
	£	£
Bank loans	598,746	679,192
Analysis of loans		
Not wholly repayable within five years by instalments	699,139	779,585
Included in current liabilities	(100,393)	(100,393)
Total Creditors: amounts falling due after more than one year	598,746	679,192

The above loan is a financial instrument measured at present value. The loan is secured by a charge over the organisation's freehold property. The term of the loan is over 20 years and interest is payable at 2.05% per annum.

16 Secretary General's emoluments	2019	2018
	£	£
Emoluments for qualifying services	115,442	118,727

17   Key Management Personnel

Key management personnel listed as below, received emoluments (including BIK totalling £203,136 (2018: £228,543).

Secretary General;

Director of ICT Development;

Senior Manager Membership & Communications.

18   Related parties

There are no related parties in the year.

19   Legal status

Under the Headquarters Agreement between the Government of the United Kingdom of Great Britain and Northern Ireland and the CTO dated 30 March 1983, (article 3) the CTO has legal personality.

THE COMMONWEALTH TELECOMMUNICATIONS ORGANISATION
NOTES TO THE FINANCIAL STATEMENTS ENDED 31 MARCH 2019 (CONTINUED)

20   Pension costs

The group operated a defined benefit scheme until 31 October 2002, namely the Commonwealth Telecommunications Bureau Pension and Life Assurance Scheme (the Scheme). The Scheme provided benefits based on total service and final pensionable pay. The assets of the Scheme are held separately to those of the CTO in an independently administered fund. At 31 October 2002 the Scheme was closed to new members and also closed to additional benefits to existing members. A full actuarial valuation was carried out at 1 April 2013 by a qualified independent actuary.

The charge to the income and expenditure account in respect of the defined contribution scheme was £135,437 (2018: £138,898)

The major assumptions used by the actuary were:

	At 1 April 2016	At 1 April 2013
	%	%
Value of assets invested assumption	2.30 - 5.30	3.70 - 7.40
Inflation assumption	3.30	3.70

The values of the assets in the scheme are as follows:

	At 1 April 2016	At 1 April 2013
	£	£
Total market value of assets	1,655,000	1,150,000
Present value of scheme liabilities	3,379,000	2,841,000
(Deficit) in scheme	(1,724,000)	(1,691,000)

Contributions up to 31 October 2002 were charged to the Income and Expenditure Account to spread the cost of providing pensions over employees' working lives. The contributions were determined by a qualified actuary on the basis of triennial valuations. Previously, the triennial valuations indicated that the Scheme was over funded and therefore CTO was able to take a pension-fund contribution holiday. Following problems experienced with Equitable Life, the Scheme insurer, it was identified that the Scheme was significantly under-funded. A new money purchase scheme, the Commonwealth Pension and Life Assurance Scheme (2002) was therefore established with effect from 1 November 2002, with the funds being managed by St James Place.

21   Statement of movements on Income and Expenditure account

	Main Reserve	
	2019	2018
	£	£
Balance at the beginning of the year	1,679,970	1,446,337
(Deficit) /surplus for the year	(337,520)	233,633
Balance at the end of the year	1,342,450	1,679,970