



CxO MEETING

11 December 2019, Dubai, United Arab Emirates

COMMUNIQUÉ

High-level industry executives (CxOs) met with the senior management of the ITU Telecommunication Standardization Bureau on 11 December 2019 at the Telecom Review Summit in Dubai, UAE, to exchange views on industry needs and related standardization priorities.

The CxO meeting's discussions revolved around industry preparations for IMT-2020/5G.

CxOs discussed the innovation required to achieve 'self-driving' 5G networks; the importance of collaboration in the interests of 5G security; the benefits and practical aspects of network infrastructure sharing; the concept of 'open' radio access networks (RANs); and the insights gained from early 5G deployments and trials of 5G-enabled industrial IoT applications.

CxOs also discussed the monitoring and assessment of AI performance in the context of autonomous driving; conformance assessment for radiocommunications supporting Intelligent Transport Systems; and the harmonization of approaches to the measurement of quality of service (QoS) perceived by users.

Self-driving networks

The optimization of network management and orchestration is becoming increasingly challenging, and increasingly important, as networks gain in complexity to support the coexistence of a diverse range of ICT services.

CxOs highlighted that real-time network monitoring, artificial intelligence / machine learning and automation will form the foundations of 'self-driving networks'.

The optimization of network management and orchestration – capitalizing on real-time network performance data, artificial intelligence / machine learning for prediction and self-learning, and the automated build and configuration of virtual network functions – will improve ICT services and introduce new cost efficiencies, said CxOs.

CxOs encouraged ITU to study the evolution of network operation and maintenance in view of increasing network complexity and the resulting importance of automation informed by machine learning.

Security

CxOs highlighted that 5G security will demand significant industry collaboration and well-coordinated contributions from a wide range of standards bodies.

CxOs discussed the progress achieved in responding to the 'Ottawa Accord' considered by ITU's annual Chief Technology Officer (CTO) meeting in Budapest, Hungary, 8 September 2019.

The Ottawa Accord is a set of security priorities developed in June 2019 by network operators, standards bodies and industry associations.

The Budapest CTO meeting endorsed the findings of the Ottawa Accord in relation to three security priorities:

- Global threat exchange: Common understanding of security threats and common terminology to enable the sharing of threat intelligence.
- Best practices for operational security: Best practices for 5G security and widespread commitment to infrastructure protection.
- Security Incentives: Measurement schemes based on agreed metrics could bring attention to prevailing levels of security and create incentives for investment in security.

CxOs echoed the sentiment of the Budapest CTO meeting that a holistic approach to 5G security could receive valuable support from a global centre for the development of security solutions and their testing and assurance. Such a 'living lab' open to multiple vendors, said CTOs in Budapest, could bring cohesion to 5G security efforts as well as reduce the costs of testing security solutions.

Lessons learnt

CxOs with experience in the early commercial deployment of 5G reiterated the importance of investment in fibre. Fibre-optic networks form the 'backbone' of the ICT ecosystem. Investment in fibre continues to rise, recognizing the importance of this investment to the 5G vision.

Experience with industrial IoT applications as part of the development of 5G-enabled use cases such as smart sea ports and smart factories, said CxOs, has highlighted the importance of network slicing and shown edge computing to be capable of supporting low latencies. CxOs' experience with 5G-enabled smart factories has shown such factories to be capable of highly efficient production and quality control.

With lessons learnt from initial 5G deployments, CxOs agreed that industry's focus should be on 5G use cases responding to market demand (considering the usage scenarios of IMT for 2020 and beyond: enhanced mobile broadband, massive machine type communications, and ultra-reliable and low latency communications).

Network infrastructure sharing

Infrastructure sharing can potentially assist network operators in reducing time-to-market for new solutions, gaining cost efficiencies and increasing coverage in certain network deployment scenarios.

CxOs illustrated possible scenarios for consideration with respect to the sharing of infrastructure such as core networks, central offices, backhaul infrastructure, towers, and RANs. CxOs also highlighted the need to consider different country-specific requirements.

CxOs considered an example of 'Multi-Core Operator Networks', networks said to be capable of reducing an operator's infrastructure investments through sharing, while improving network performance.

Open RAN

General-purpose 'white box' hardware, standardized interfaces and virtualized network elements are the foundations of the 'open RAN' concept, said CxOs.

The standardization of open, interoperable RAN interfaces and RAN functional architecture could support a diverse business ecosystem in deploying and operating RANs with considerable cost efficiency, said CxOs.

Open RAN could support industry in avoiding the challenges that may result from proprietary RAN interfaces, challenges such as RAN equipment vendor lock-in, limited interoperability between different vendors' RAN equipment, and limited scope for active RAN sharing.

CxOs highlighted the value ITU's work on machine learning applications for 5G and associated ITU collaboration with open-source communities.

CxOs suggested in addition that ITU take a proactive approach to the promotion of standards collaboration in support of the open RAN concept, an approach that could potentially be supported in partnership by ITU, the O-RAN Alliance and NGMN.

AI on the road

ITU has established a new Focus Group on 'AI for autonomous and assisted driving' to work towards the establishment of international standards to monitor and assess the performance of the AI 'Drivers' in control of automated vehicles.

The Focus Group's primary objective is to validate that the driving behaviour of automated vehicles presents evidence to justify public trust in these vehicles.

CxOs discussed the ITU Focus Group's aim to devise a 'Driving Test' for AI 'Drivers'. The proposed test could become the basis for an International Driving Permit for AI. The right to hold this permit would be assessed continuously, based on the AI Driver's behavioural performance on the road.

CxOs highlighted their support for the Focus Group's expected contribution to public trust in automated vehicles as well as the value of ITU collaboration with UNECE in this regard.

In addition, recognizing the importance of new radio technology and applications to Intelligent Transport Systems (ITS), CxOs highlighted the importance of conformance assessment based on harmonized test requirements.

Compliance, conformance and quality testing, said CxOs, will make a key contribution to industry and consumer confidence in safety-critical radiocommunications in the ITS context. Conformance assessment would also support ITS interoperability and cost efficiency, said CxOs.

User-perceived QoS

CxOs identified potential for improvement in standards' support for the measurement of QoS perceived by users, recognizing the leading role played by ITU in standards development for performance, QoS and QoE (Quality of Experience), which brings transparency to benchmarking.

CxOs identified six areas for further ITU study:

- The precise definition of priority ICT services and metrics.
- More focus on customer experience and associated metrics and measurement, in addition to technical performance.
- Leverage the practical knowledge and expertise of service operators and technology vendors, alongside that of regulators and vendors of testing equipment.
- Maintain existing standards or develop new standards to account for new network technologies (e.g., NFV, 5G network slicing, new transmission protocols, machine learning) and new service verticals (e.g., vehicle communications, IoT, mobile banking).
- Identify and utilize new, broader sources of QoS data (e.g., data crowdsourced from users, cross-usage of data from networks and devices), including QoE feedback loop.
- Present clear information on QoS to users, supported by open data and global metrics.

Director's update

Chaesub Lee, the Director of the ITU Telecommunication Standardization Bureau, updated CxOs on the evolution of ITU-T membership.

ITU-T membership has maintained strong growth in 2019, with the sector welcoming 51 new members (19 Sector Members and 32 Associates).

New ITU-T members include companies in energy and utilities, shipping and logistics, mobile payments, over-the-top applications, automotive, IoT/M2M connectivity, distributed ledger technologies, quantum communications, cybersecurity, AI, and quality of service and experience.

CxOs were also briefed on preparations for the ITU World Telecommunication Standardization Assembly (WTSA-20) in Hyderabad, India, 17-27 November 2020, and the preceding Global Standards Symposium (GSS-20) themed: 'International standards in support of digital transformation'. WTSA is the governing body of the ITU Telecommunication Standardization Sector (ITU-T), responsible for reviewing the strategy, structure and working methods of ITU-T.

The participating organizations were:

Arab Information & Communication Technologies Organization (AICTO), du, Etisalat, Facebook, Fujitsu, Korek Telecom, Krypton Security, Nokia, Orange, Roborace, Rohde and Schwarz, SES Networks, Telecom Review North America, Telecommunication Industry Association (TIA), TELUS