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| **Abstract:** | This document contains the report of the ITU-T Industry Engagement Workshop, held in Geneva, 19 April 2024. TSAG is invited to note the report. |

ITU-T Industry Engagement Workshop

Report

# 1 Introduction

The first Industry Engagement Workshop was held on April 19, 2024 in Geneva as an in-person event to allow for frank discussions. The Industry Engagement Workshop was held under the approval of TSAG from its June 2023 meeting, and under the guidance of a steering committee (ToR in TSAG-TD257R1) led by Didier Berthoumieux (Nokia).

The goal of the workshop, as agreed in the ToR, was to:

– attract relevant industry decision makers in regard to standardization where the ITU-T can provide value,

– contribute to the dialogue between all the parties,

– provide valuable feedback on the industry engagement action plan,

– inform the WTSA-24 preparations.

Last year TSAG also approved an industry engagement action plan (TSAG-TD256)

– to attract intensive industry participation in order to take account of latest technical trends and market needs.

While one objective was to hold this workshop, most of the objectives focused on identifying a set of measures to advance and strengthen the engagement between industry and Member States in the fulfilment of the purposes of the Union and goals of the Strategic Plan from both developed and developing countries.

Some of the notable action points, that the chair identified as being part of the discussion included:

– for those not members, is there a lack of awareness of standardization or of ITU-T?

– for existing members, what is the value proposition to participate?

– Would more/better coordination with other SDOs encourage more industry participation?

– Would a strategy to bridge the gap between technology, policy, and strategy encourage more industry participation?

– Is this complementary to the current activities being undertaken as part of the CTO/CxO process as outlined in Resolution 68?

The workshop aims to advance the discussion about enhancing industry engagement in ITU-T by exchanging views and gathering input from members and non-members.

The workshop started with the vision of the TSB Director, Seizo Onoe, on the value of industry in ITU-T. It was followed by a keynote from Ulrich Dropmann (Nokia) on how industry values ITU‑T.

This was followed by four sessions to further explore the objectives and thematic priorities identified in the industry engagement action plan ([TSAG-TD 256](https://www.itu.int/md/T22-TSAG-230530-TD-GEN-0256/en)).

These four sessions considered current perspectives on industry participation in ITU-T activities; explored metrics to quantify and qualify engagement; brainstormed the ITU-T value proposition; and reviewed trends in standardization processes of particular interest to industry.

The workshop was successful in bringing together industry thought leaders to share diverse opinions on how to raise awareness, encourage participation, and foster a platform for building a strong value proposition for the ITU-T. The landscape of telecommunications is more and more impacted by compute and cloud (which is relatively new to ITU-T). Therefore, further workshops providing an opportunity for engagement is key to ensuring the relevance of the ITU-T in the ecosystem as technologies for pervasive and continuous connectivity evolve.

The presentation material and list of participants of the workshop can be found at <https://itu.int/go/iew24>.

# 2 Keynotes

## 2.1 Seizo Onoe, Director, ITU Telecommunication Standardization Bureau

Seizo Onoe highlighted the significant gap in deployment of mobile networks between developed and developing countries, with up to 10 years difference. ITU-T is the best place to help to bridge this gap. In this spirit, Seizo Onoe mentioned the series of webinar with CTOs, CxO meetings, and this Industry Engagement workshop. The next Global Standards Symposium will also take place before WTSA in New Delhi. He introduced the new Bridging the Standardization Gap program. A great success of telecom standards has been mobile standards in the last 40 years, moving from 6 different geographical standards to a unified world standard.

Onoe-san finally shared his vision:

– The value of standardization is derived from the implementation and wide spread of standards.

– Industry plays a crucial role in the implementation of standards.

– Standardization is a powerful tool for business to succeed in the market.

– Standardization is a powerful tool for creating a world that meets one's demands at an affordable price.

## 2.2 Ulrich Dropmann, Nokia

Dr Dropmann highlighted the importance of having global standards amid any geopolitical tensions, and as a UN organisation ITU is one of the best platforms to keep global coordination of standardization. ITU-T is only one among many standards organizations, and we need to better define its role in this landscape. The market has clearly recognized the excellence of ITU-T in the domains of Transport and access, and video codec, and observed a limited market adoption and a limited regional diversity in the work on Cloud, protocols, and Security. 3 examples of future ITU-T roles in emerging domains as part of the global landscape in Environment, Quantum networking and Metaverse. The importance of FRAND IPR rules is key to fuel a virtuous cycle of innovation. ITU should coordinate and leverage technical work in other specialized forums, maintain and improve the technical excellence acquired in some domains and address issues in domains with limited success, and improve decision process and metrics to assess efficiency.

# 3 Session 1 on ​Current Perspectives on Industry Engagement

This session was moderated by Mr. Didier Berthoumieux, Nokia

## 3.1 Bruce Gracie, Chair, WTSA-20

Bruce presented a summary of the current rights and obligations of Sector Members of ITU-T from the basic texts of the union (Constitution, Convention, Resolutions) and a summary of financial obligations. He highlighted a few challenges and opportunities to improve sector member rights within limits of current texts, to continue to build mechanisms on collaboration with other organizations with Rec. A.5, A.18, A.25, to improve decision process on the creation of new work items, to explore best practices from other standard organizations.

## 3.2 Chang Xin, Huawei

Ms Xin exposed the important activity of Huawei in standards and industry organizations, highlighted the evolution path from the current “digital economy” towards the “intelligent economy” era and identified all the benefits world can expect from the intelligent revolution, in particular in the domain of energy saving. She showed the benefits that on-going cooperation between ITU and other organizations can provide, defining the evolution for wireless (ITU, 3GPP, GSMA, GSA, etc.) towards beyond fifth generation wireless (B5G), and for fiber networks (ITU, IEEE, IETF, etc.) towards fifth generation fixed networks (F5G).

Ms Xin proposed to develop ITU-T private partnerships on specific technology areas, to develop flexible participation models for private sector entities, to enhance communication and marketing in order to highlight benefits of ITU-T participation (ex: AI for good), to evolve standardization work towards agile processes, and to engage early and proactively with innovators.

## 3.3 Stephen Palm, Broadcom (remotely)

S. Palm proposed an analysis of the efficiency of standardization activity through the return-on-Investment aspect of contribution to standards for the industry. His personal experience in ITU-T activity allows him to analyse the success/failure of 3 networking eras of the past (voiceband modems, Home networking, Broadband) mainly from SG15 activity, through the number of deployed devices. The analysis shows the big success xDSL and cable (in cooperation with CableLabs) recommendations, reasonable success of Voiceband modem, and the limited market adoption of ITU-T Home networking activity.

As indicators of success, in addition to business goal perspective (deployment at scale, RoI), he proposed 4 indicators of success (practicality, originality, ubiquity, singularity) to be used on a qualitative basis.

## 3.4 Eliot Lear, Cisco

Eliot Lear explained the limited participation to ITU-T by the limited relevance IUT-T activity for Cisco market. Cisco mentioned the good work made in the past in SG15,5,12, but over the past 15 years, real work has occurred elsewhere. Cisco has stopped participation in SGs 11, 13, 17, 5, 12, 2, 3, as the world has changed. GitHub may be considered as one of the main “standard” organisations. The way the Cloud Security Alliance is working is a good example of how modern standards are progressing much faster. Some negative experiences of technical excellence got traded of by policy objectives were detrimental to the reputation of ITU-T. Industry goes to some highly verticalized forums for industry automation (e.g., ODVA OPC) in IEC for IoT. Mr Lear recommends ITU-T not to develop new protocols and not to manage internet resources done by ICANN. ITU-T should develop its recognized skills for data acquisition to provide statistics (e.g., internet usage) for definition of measurement technologies, for its unique capability of bringing all members together and create cooperation with the global ecosystem.

## 3.5 Jun Shan Wey, Verizon

Ms Wey highlighted some successes of ITU-T with NG-PON2 which has been the foundation for Verizon FiOS service and enabled Verizon iEN architecture, and with Distributed fiber optics sensing which allowed improvements in networks reliability and early detection of fiber cuts. A key factor from these successes was the initial requirements issued from several tier 1 operators from several regions. ITU-T should consider the work item creations processes from 3GPP, IEEE 802, MEF to minimize limited market adoption. As a conclusion, Ms Wey mentioned that ITU-T is the only global SDO guiding the development of E2E standards essential to the telecom industry, that Verizon network deployments and services are enabled by ITU-T standards, that a rigorous project initiation process with concrete operators’ requirements and multi-regional support would enhance the value of ITU-T and benefit the industry, and that Verizon supports ITU-T’s core mission to develop international ICT standards.

## 3.6 Panel discussion

Technical excellence traded of by policy objectives: the example quoted by Cisco was MPLS-TP vs TMPLS in 2012, where member states voted clearly on topics without any technical understanding, only on a political basis. Dr Bilel Jamoussi gave some details about this 2012 difficult vote, explaining this was a deadlock in a technical debate between industry camps, and the final vote was not initiated at the political level. It was noted that this “political” decision has not happened any more since.

Interaction with policy makers: when standards have to be made by industry experts, it is recognized that administrations cannot participate to the hundreds of forums and organizations, so ITU-T is the place where all stakeholders can speak together.

IEEE standard board chair mentioned the 3 criteria to launch a new project: broad market potential, economic feasibility and technical feasibility.

Panellist **Uwe Baeder, Rohde&Schwarz** mentioned that ITU-T has several groups with good technical reputation. Some groups can leverage works done in other organizations where more expertise is available. The criteria to launch new work items could certainly be improved to secure better market adoption. Another improvement suggested is to limit the duration of SG meetings to one week, to facilitate industry participation.

## 3.7 Summary of Session 1

The main take aways of the session were:

– Evolution towards digitalisation, intelligence, green. Proposal of ITU-T Private partnership, flexible participation models, evolve towards agile standards.

– Indicators of Success of Recommendations: Practicality, Originality, Ubiquity, Singularity

– ITU-T little relevance for enterprise market, GitHub and open source implementations are the new world. ITU-T is the place to interact with policy makers. Some were of the view that ITU-T should be reinvented.

– ITU-T is the only E2E standard organisation for operator's market. Work items should be based on requirements from identified customers (i.e., operators).

# 4 Session 2 on Metrics and Industry Engagement

This session was moderated by Mr. Hiroshi Yamamoto, NTT.

## 4.1 Christopher Clark, ITU

“Industry participation trends and Internal Tracking”

This presentation provided an overview of the ITU-T ‘s internal tracking / metrics for engagement, and trends in participation. In the first half, ITU-T’s efforts on quantifying members’ engagements and their tracking were introduced. This initiative calculates an engagement index based on information such as an attribute information and participation status in recent events and makes tracking possible by creating a dashboard. In the second half, the member participation trends were introduced. ITU-T industry participation is rising highest ever. Increasingly diverse membership such as SMEs, regional balance, developing/developed is being achieved. Participation and contributions are also rising overall, especially biggest gains in Asia/Pacific.

## 4.2 Hideyuki Iwata, TTC

“Proposing Metrics and Industry Engagement through standardization activities at TTC.”

This presentation provided the ITU standards localization efforts and its utilization status at TTC, a Japanese domestic standards organization. Quantitative information was provided on how many localized standards have been downloaded and upstream proposals to ITU-T. Through these analyses, it was shown that localization trends among domestic organizations and the number of downloads can be effective measures of understanding the interest of the industry. It was also introduced that TTC also holds various workshops, and that the trends of participants in these workshops can be an effective means of learning about industry interests.

## 4.3 David Law, IEEE Standards Association

“Industry Metrics”

This presentation provided the latest trends in standardization activities at IEEE and considerations based on case studies regarding industry engagement metrics. As examples of recent activities IEEE 7,000 series (on Artificial Intelligence) addresses ways to protect personal data and safety in AI systems, and IEEE 11073 for Health Informatics that enables communications between medical devices and computer systems to enable the automatic capture of vital signs information, and other cutting-edge actives were covered. In the second half, a discussion on industrial engagement and its metrics was introduced from the perspective of the IEEE SA board, and it was pointed out that the number of recommendation downloads alone may misjudge the needs and true value for industry, and the importance and difficulty of measuring engagement in industry were introduced.

## 4.4 Summary of Session 2

This time, three representatives from industry recognized SDOs presented their metrics-related initiatives. While quantification and tracking of metrics for measuring industry engagement are already underway, examples of issues for the future were also identified.

* Lack of indicators to quantify cross-industry collaboration and collaboration between SDOs, which will become increasingly important.
* Lack of means to know where and to what extent the established standards are being used and what impact they have on business.
* While the means of obtaining metrics-related data are improving, restrictions due to privacy concerns are increasing.
* The need for further development of statistical processing that takes into account the objectives of various standardization activities.

Further discussion and research are needed to identify the effectiveness of metrics and create criteria to compare one metric to another.

# 5 Session 3 on Value Proposition for Industry Engagement

## 5.1 About Session 3

Session 3 was moderated by Mr. Arnaud Taddei, Broadcom.

## 5.2 Dr. Bilel Jamoussi, TSB

Dr. Jamoussi highlighted a few successful aspects for the current value proposition:

ITU-T gathers representants of 193 countries including all developing countries which aligns to market reach. The numbering resources of phone subscribers and IoT machines, the Public-key and attribute certificate frameworks, the Optical Fiber transmission standards, the video codec are among the most widely used recommendations. Our well-established processes based on consensus is fully compatible with WTO on technical barrier to trade. Our IPR policy, common with ISO/IEC are stable and have proven to successfully encourage innovation.

ITU-T is essential for many developing countries who do not have industry but have universities, who participate to advanced focus groups and study groups.

ITU-T standards communities through Study Groups, Focus Groups (pre-standardization studies on Health and AI, AI for Good, agriculture, new authentication, and security mechanisms, etc.) and Workshops, in liaison with other UN agencies.

Dr. Jamoussi shared we as well should better explain the advantages of ITU-T unique position on previous aspects, on the recognized successes for 159 years, the efficiency on our processes and of the support from TSB.

He concluded to promote the WTSA-24 as an opportunity for the industry to communicate on products and services.

## 5.3 Per Beming, Ericsson

Mr. Beming recognized that in the standardisation ‘raison d’être’ resides a balance between interoperability and innovation and not everything is done in technical specifications side, and not everything can be done at the ITU.

The value proposition of ITU-T should be the safeguard of global alignments of the different standards organisations. It benefits from a world-leading process based on consensus, balanced IPR policy, inclusivity, and is a unique industry-government bridge, and should focus on existing Centres of Competence

The ITU allows global market access and should focus on existing centres of competence (e.g. optical networking, media codecs, sustainability) and maintain backward compatibility of stable standards. ITU should promote what ITU has and should not go on all new topics already addressed in other organisations. The role that ITU can have on AI is still unclear.

## 5.4 Graeme Burns, BCG

Mr. Burns shared the significant consultancy work that BCG performed for the ITU and how in 10 rigorous steps including 70 interviews and their conclusions are that ITU-T is at risk of losing some of its relevance, and that some legacy structures limit ITU’s value potential. It also concluded that ITU is missing opportunities to play its unique role in the ecosystem (SDG, AI, cybersecurity, climate change, etc.) and private sector desires streamlined interactions with ITU and better communication and delivery value. It recognizes there is a lack of segments untouched like hyperscalers, software, IoT, other space technology, navigation technology.

As a conclusion, BCG proposed 8 key themes to help boost resource mobilisation from private sector.

## 5.5 Judy Zhu, Alibaba, recording

Ms. Zhu presented Alibaba’s vision of the evolution towards AI age, and positioned ITU-T value proposition today as:

– ITU-T provides a unique cooperative platform for industry, academia, and regulators.

– Bring together a wide range of Stakeholders and on

– A wide range of diverse technologies

She provided categories of examples of standards where Alibaba sees value from ITU standards in ITU-T on Security (e.g., for e-commerce, logistics data security, watermarking), for AI, IoT Interconnectivity, Environment.

Ms Zhu suggested ITU-T should define the value proposition around the 3 topics: Focus on technology, Inclusiveness, and contribute to the AI age in collaboration with other SDOs.

## 5.6 Xiaoya Song, China Mobile, remote

Mrs. Song focused on key values recognizing that standardisation:

– Makes the world connectable and accessible, supports common and mankind prosperity

– Reduces the technology gap and promotes technology equity vs equality

– Supports transformation and integration

– Where new and emerging technologies are centric

## 5.7 Debora Comparin, Thales

Mrs. Comparin presented the important role of standards team in Thales, highlighting the difficulties:

– in terms of jobs, standardisation is not seen as a recognized role in corporate environments,

– it is something you need to discover, there are no books, no trainings and it is hard for management to align,

– you need a significant amount of skill (not just technical) and you have to understand it all,

– Opensource vs Standardisation as part of pop culture change and pushed by other forces (e.g., Linux Foundation),

– need to be fast (processes and procedure are too slow),

– internal tracker, yearly review vs strategy indicates more and more participation to industry consortia vs plain SDOs,

– ITU-T activities are not in scope/aligned with Thales DIS

There were different expressed views from the floor:

– The action from BroadBand Forum (BBF) supporting for 15 years ITU-T SG15 Recommendations with open source reference implementations and architectures was mentioned as an example of good cooperation, and this should be considered for when new work items are established.

– TSB mentioned the existing initiatives to collaborate with opensource communities (Linux Foundation, GitHub, etc.), there is recognition of the role of the ITU as a bridge with governments and private sector.

– GitHub is a key factor of success with a hockey stick effect measured in number of downloads. SG17 established its first repository for a Recommendation in the ITU-T GitHub. SG17 sent an LS to encourage use of GitHub tool.

– The Moderator noticed that only editors are listed in the ITU system, not contributors. This is a bias which prevents contributing delegates from getting recognition from their management. There is no recognition of the contributors in the final output of the document approval process. A collaboration tool such as GitHub could allow this and an entire new KPI and metrics approach.

– It was also noticed that ITU-T produces standards but also other documents which are excellent reports, guidelines. A standard should be industry relevant where it maintains interoperability. New work items established as Technical Reports, or Guidelines shouldn’t lead to retaliation but should be better incentivised.

## 5.8 Session 3 panel

Panellists: in addition to in person presenters above, **Bret Jordan, Afero**, and **Ulrich Dropmann.**

* Bret Jordan

The current cybersecurity model is broken and the 90s model will not scale to new world when moving to a 2-3 orders of magnitude amount of devices per person in an hyper connected edge model. AI model on top of actuators and sensors at the scale of 10-100 billion per metropolitan area.

The ITU is the place where this work needs to be done as consortia do not have the level of process required. Consortia are good for one technology solution, but not for the global picture.

Some suggested improvements: the cost for small companies, the vote process as the TAP veto power vs private sector where consensus should prevail.

* Ulrich Dropmann

We should clearly identify the domains of strength of ITU-T, probably more in the CSP market than in enterprise. We need to improve the measurement of success, and the contribution to a meaningful landscape as the cooperation with BBF is seen positively by the industry. The non-technical work made by ITU-T on emerging domains is the uniqueness of the ITU platform to exchange views but must be well scoped.

* Per Beming

Per expects stability of the technical work at the ITU-T, is opened to changes and improvements in the process. Per considers writing code in standards and writing standards should be treated and recognized the same way.

* Moderator

We need to have a story for ITU-T value proposition, and we don’t have it yet.

* Debora Comparin

We have to take the hat of the next generation and aligning with expectations. We need to improve, but we will have to be able to convince the companies to engage for the strategic reasons.

* Bilel Jamoussi

Bilel retains from the exchanges the importance of stability, of the process evolution towards open source, AI, Quantum, etc. Each Study Group has a unique value proposition (SG2, SG3 have no equivalent anywhere else). At high level it is the only UN organization with private sector as members, the only SDO with 193 countries, more than 500 industry members, and 170+ academic and research institutions, and this is a unique richness.

* Floor expressed views

David Law proposed to clarify consortia vs SDOs. Often a consortia is based on a single technology to address a particular technical problem and joining implies signing to support this technology so there is already a consensus. SDOs are more wholistic and should perhaps support.

Stephen (Q12/15 Rapporteur). Engagement with 20 standards bodies. For ITU we only participate in SG15 as our product relies on it. When we start work items what would be helpful make sure there is a high barrier to be established: does it move bits. This guarantees the standard will be made and the technology will be built

Ahmad (Huawei). We have many SDOs that are competing. People go in consortia to collaborate vs competition and foster the adoption. Other SDOs are trying to improve too. This is not just a resource issue but as well a unique value proposition in identifying the right gaps.

# 6 Session 4 on Standardization Process and Industry Engagement

This session was moderated by Mr. Scott Mansfield, Ericsson

## 6.1 Presentation by Malcolm Betts, ZTE

Process to develop standards in the ITU-T - A personal view from the perspective of WP3/15.

This presentation provided an overview of the ITU-T standards development process. Demonstrating the breadth and depth of the options for the document development and approval, indicating the maturity of the process. The value to Industry is that the process is tailorable and can be used to produce various types of deliverables. The consensus-based culture of the ITU-T requires delegates that have the impartiality and flexibility to drive compromise.

## 6.2 Presentation by Kam Lam, CICT

Industry engagement in developing ITU-T standards - A personal experience from the perspective of Q14/15

Industry engagement is essential throughout the standardization process. Collaboration with subject matter experts across the ecosystem is key for implementable international standards. One area being explored in ITU-T SG15 is the use of open-source tooling and software development practices to speed the development and maintenance of standards. The use of traditional and open-source engagement practices enhances cooperation and the value to industry.

## 6.3 Presentation by Paul Doolan, Infinera

ITU-T standards development lifecycle in the context of the broader standards ecosystem   
- A personal view from the trenches.

The standards ecosystem has gone through a significant shift since the 1980’s. The current standards ecosystem has many actors, including Multi-Source Agreements, “Open” Initiatives, Open-Source, and the Traditional standards bodies. The traditional standards bodies are losing subject matter experts to the other bodies, which is leading to inefficiency and regionalization instead of international standards. One potential option is to institute a change in the way the ITU-T builds standards. Providing an international view but an agile software-style culture that would attract the subject matter experts and industries back to the ITU-T.

## 6.4 Interventions

An intervention was made to highlight that the bar to start new work in the ITU-T is too low. Value to industry is demonstrated by consensus that new work is necessary to start. Having cross sector members from different region supporting indicates international interest and provides more value to industry once the work is finished.

## 6.5 Summary of Session 4

The ITU-T has very mature processes that enable Industry to effectively create international standards. The ITU-T is most effective when subject matter experts are engaged and supportive of the standards ecosystem. Speed and agility in the process is lacking, but there are efforts underway to bring in Industry friendly working methods. Establishing a tooling environment that brings together best practices from traditional standards organizations and the open industry community would provide an attractive space for the ITU-T to become an industry recognized center of competence. Thus, reducing duplication and providing a driver for participation.

# 7 Conclusions

While the outcome of this workshop can be viewed as simply executing the action plan, an update of the action plan will be progressed based on the details of this report.

The workshop had a diverse exchange of views. And engagement from those who have been involved in ITU for multiple decades with considerable leadership experience, to those who have only been engaged for a decade in standards and never in ITU-T.

As a conclusion for the summaries of each session, these points were noted:

– ITU-T has a stable, mature and predictable process for producing international standards – at least for the telecom ecosystem. However, this can be too slow and misaligned with new agile methodologies beyond software applications, and this can be a hurdle in attracting the next generation.

– ITU-T has an excellent relationship with members states. However, subject matter experts and competence are being drawn into partnerships and forums that are often dedicated to a focused solution.

– The end-to-end nature of ITU-T should be better leveraged to help industry identify solutions. However, work items should be based on customer requirements and ITU-T should provide a venue also for industry product management people to discuss these requirements.

– There are various operating models within ITU-T for producing international standards. However, without a requirement for regional diversity or some identification of global applicability, it is often too easy to start new work.

– There is little awareness of the products and value of ITU-T, so industry is drawn to other venues that have competence. Development of an “ITU-T story”, coupled with marketing and promotion of what ITU-T has can change this.

– While available metrics (attendance, contributions, downloads) can give a quantitative indication, other useful metrics (implementation of standards) are typically not available. As a result, only a qualitative analysis can measure industry impact of ITU-T.

On the action plan, noted in the introduction, there were points touched on during the workshop that can be used to update the key outcome indicators, implementation strategy and enablers for many of the action points. So where are we on our action points:

– From non-members, we heard that there is a lack of awareness -- not of standardization but of ITU-T. Even members have indicated that we do not promote or market the success of ITU-T standardization enough.

– For existing members, there are diverse views on the value proposition to participate from “it’s only a defence against threats to their business”, to “strong support of centers of competence and the need to keep those stable”, to “exploring new work”. So perhaps there needs to be several value propositions created depending on specific contexts to be defined.

– More/better coordination with other SDOs and open source was suggested to avoid duplication and so that ITU can be the coordinator to benefit industry.

– The bridge between technology, policy, and strategy was noted as a strength for ITU, and that ITU-T needs to identify topics where this would be the most value. Like defining data transfer between countries.

– The assessment of the value of industry engagement and our efforts to improve the value for industry is complementary CTO/CxO process. There was support for the process, but more industry input to the discussion on the new work item bar in TSAG should be reflected. And as a result, it would be appropriate to reflect this at WTSA in perhaps a new resolution or a modified Resolution 68.

In summary, many delegates expressed that this workshop was a success and provided a useful exchange of views from industry. It was suggested that TSAG should hold such a workshop again as a follow-up, or even regularly, either separate or joint with the CTO/CxO meetings.

# Annex – List of Participants

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| --- | --- | --- | --- | --- |
| **Title** | **Surname** | **Given name** | **Organization** | **Country** |
| Mr. | Adolph | Martin | International Telecommunication Union | Switzerland |
| Mr. | Amon | Cedric | Konrad-Adenauer-Stiftung | Germany |
| Mr. | Baeder | Uwe | Rohde & Schwarz GmbH & Co. KG | Germany |
| Mr. | Beming | Per | Telefon AB - LM Ericsson | Sweden |
| Ms. | Berndtsson | Gunilla | Telefon AB - LM Ericsson | Sweden |
| Mr. | Berthoumieux | Didier | Nokia Corporation | Finland |
| Mr. | Betts | Malcolm | ZTE Corporation | China |
| Mr. | Burns | Graeme | Boston Consulting Group | United Kingdom |
| Mr. | Carugi | Marco | Huawei Technologies Co., Ltd. | China |
| Ms. | Chang | Xin | Huawei Technologies Co., Ltd. | China |
| Mr. | Clark | Christopher | International Telecommunication Union | Switzerland |
| Ms. | Comparin | Debora | Secure Identity Alliance EEIG | France |
| Mr. | Costello | Tim | British Telecommunications Plc. (BT Plc) | United Kingdom |
| Mr. | Doolan | Paul | Infinera Corporation | United States |
| Mr. | Dropmann | Ulrich | Nokia Corporation | Finland |
| Mr. | Frojdh | Per | Telefon AB - LM Ericsson | Sweden |
| Mr. | Girard | Olivier | Office fédéral de la communication (OFCOM) | Switzerland |
| Mr. | Goy | Fred T. | Permanent Mission of the Republic of Vanuatu to the United Nations in New York | Vanuatu |
| Mr. | Gracie | Bruce | Ericsson Canada, Inc. | Canada |
| Mr. | Gross | Johann | Federal Ministry for Digital and Transport | Germany |
| Mr. | Hogewoning | Maarten | Ministry of Economic Affairs and Climate Policy | Netherlands (Kingdom of the) |
| Mr. | Huber | Christopher | Federal Network Agency for Electricity, Gas, Telecommunications, Post and Railway | Germany |
| Mr. | Iwata | Hideyuki | Ministry of Internal Affairs and Communications | Japan |
| Mr. | Jamoussi | Bilel | International Telecommunication Union | Switzerland |
| Mr. | Jordan | Bret | International Information and Communications Policy (ICP) | United States |
| Mr. | Kato | Akihiro | International Telecommunication Union | Switzerland |
| Mr. | Kodai | Kota | International Telecommunication Union | Switzerland |
| Ms. | Labare | Emmanuelle | International Telecommunication Union | Switzerland |
| Mr. | Lam | Kam | China Information Communication Technologies Group | China |
| Mr. | Lang | Michael | Federal Network Agency for Electricity, Gas, Telecommunications, Post and Railway | Germany |
| Mr. | Law | David | Institute of Electrical and Electronics Engineers, Inc. (IEEE) | United States |
| Mr. | Lear | Eliot | Cisco Systems, Inc. | United States |
| Ms. | Linder | Neiva | Telefon AB - LM Ericsson | Sweden |
| Mr. | Mansfield | Scott | Ericsson Canada, Inc. | Canada |
| Mr. | Ma'ruf | Farid | Ministry of Communications and Informatics | Indonesia |
| Mr. | Mbulo | Collins | Zambia Information & Communications Technology Authority (ZICTA) | Zambia |
| Mr. | Mirsky | Gregory | Telefon AB - LM Ericsson | Sweden |
| Mr. | Mishra | Nitish | International Telecommunication Union | Switzerland |
| Mr. | Onoe | Seizo | International Telecommunication Union | Switzerland |
| Mr. | Ota | Hiroshi | International Telecommunication Union | Switzerland |
| Mr. | Palm | Stephen | Broadcom Corporation | United States |
| Mr. | Parsons | Glenn | Ericsson Canada, Inc. | Canada |
| Mr. | Pizzorno | Davide | ETEROM AG | Switzerland |
| Mr. | Riad Ismail | Ahmed | HUAWEI Technologies Switzerland AG | Switzerland |
| Mr. | Said | Ahmed | National Telecommunication Regulatory Authority (NTRA) | Egypt |
| Mr. | Salah | Aymen | Instance Nationale des Télécommunications (INTT) | Tunisia |
| Mr. | Sinicrope | David | Telefon AB - LM Ericsson | Sweden |
| Mr. | Sofiani | Yoseph | Ministry of Communications and Informatics | Indonesia |
| Ms. | Song | Xiaojia | China Mobile Communications Co. Ltd. | China |
| Mr. | Spoormans | Thomas | European Union | Belgium |
| Mr. | Taddei | Arnaud | Broadcom Europe Ltd. | United Kingdom |
| Mr. | Tian | Dao | ZTE Corporation | China |
| Mr. | Tschernutter | Frederick | ETEROM AG | Switzerland |
| Ms. | Utami | Desi | Ministry of Communications and Informatics | Indonesia |
| Mr. | Van der Putten | Frank | Nokia Corporation | Finland |
| Ms. | Wey | Jun Shan | Verizon Communication Corporation | United States |
| Mr. | Yamamoto | Hiroshi | Nippon Telegraph and Telephone Corporation (NTT) | Japan |
| Ms. | Yang | Xiaoya | International Telecommunication Union | Switzerland |

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