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# Conclusions of the Second Global Standards Symposium

These are the conclusions of the second Global Standards Symposium held in Dubai, UAE on 19 November 2012.

## Introduction

The rapid change of the information and communication technology (ICT) landscape creates an opportunity to review the standards landscape for ICT and take note of the industry dynamics driving this rapid change. The ITU membership adopted Resolution 122 of the Antalya Plenipotentiary Conference and Resolution 1272 (MOD) of ITU Council. Both Resolutions led to the planning and holding of the inaugural Global Standards Symposium (GSS) in 2008, preceding the World Telecommunication Standardization Assembly in Johannesburg, South Africa (WTSA‑08).

The discussions and conclusions of the inaugural GSS have contributed to a successful ITU‑T study period during 2008-2012.

GSS-2012 provided a forum for high-level ICT standardization policy discussion, bringing together ministers, standards and policy makers, and industry champions from all around the world. The Symposium discussed how developing countries can bring innovative locally crafted ICT services and products to the global stage by participating in global standardization activities. It addressed the multiplicity of industries interfacing with the ICT sector and explored the evolving role of standards in bringing new experiences to citizens and societies around the world. In this changing environment, the Symposium noted that increasing collaboration among industries has led to remarkable innovations and noted the importance of strong intra- and inter-sectoral collaboration mechanisms.

The 2012 GSS was chaired by **H.E. Mr Nasser Bin Obood Al Falasi,** Chief Government Relations & Communications Officer, Etisalat Group.

Opening remarks were given by: **H.E. Mr Mohamed Ghanim,** Director General, Telecommunications Regulatory Authority, United Arab Emirates; **Dr Hamadoun Touré**, Secretary-General, ITU; **Mr Malcolm Johnson**, Director, ITU/TSB; and **H.E. Mr Nguyen Thanh Hung**, Vice-Minister, Ministry of Information and Communications, Viet Nam, and Chair of GSS 2008.

The opening session was followed by three sessions addressing the main themes of the Symposium. Finally, a closing session adopted this report. The programme, speaker biographies, presentations and webcasts are available on the GSS website, at <http://itu.int/en/ITU-T/wtsa-12/gss/>.

In accordance with Resolution 122 (Antalya, 2006), these conclusions are transmitted for consideration by WTSA‑12.

## Main Conclusions

This section summarizes the main conclusions of the three content sessions of the Symposium.

### Bridging the standardization gap: from innovation to standards

Recognizing that the market size of developing countries provides unique opportunities for leveraging network effects to drive innovation, and that developing countries have the potential to play an increasingly important role in ICT innovation and the development of global ICT standards.

* Standards education both at the professional and higher education level in developing countries is important to promote innovation and the development of global ICT standards through the creation of a critical mass of human resources skilled in ICT standardization.
* Developing countries need to establish a standardization secretariat to define technical requirements for standardization and to coordinate and develop their participation in standardization work at the national and international level;
* Developing countries’ policy makers need to put in place policies and measures to encourage the establishment of an ecosystem which will enable innovation to thrive.
* Flexible and collaborative multi-stakeholder partnerships should be established, especially between industry and academia to overcome the challenges to the establishment of innovation ecosystems.

### Global Standards Challenges

Recognizing the steadily growing role of ICT in other economic sectors, notably the healthcare, transportation, and utility sectors, and the resulting challenges for global standards makers:

* Although the common thread between all of these efforts is the IP-based network that transports information from anywhere to anywhere, and the cross-segment architectural components that enable multiple industrial sectors, it is important that SDOs take account of the fact that each of these sectors has its own ecosystem, with distinct characteristics and requirements, differing product life cycles and standards landscapes, policy and regulatory aspects, issues related to ownership of data, safety, security and privacy requirements, that are different but equally important to those faced by the ICT sector.
* Interfacing with industry and standards makers outside the ICT ecosystem requires effective, flexible and collaborative mechanisms. Standards development organizations and forums should provide open and inclusive processes attracting key players from the different sectors and sector-specific subject matter experts, as well as public sector stakeholders and national governments where appropriate, if they are to succeed in addressing industry needs and developing relevant standards. Inclusiveness is also expressed by addressing the needs of people with disabilities, and by making standards accessible and available in various languages
* Common architectural building blocks should be developed that can be used across all sectors, in an inclusive forum to transparently exchange views and work among stakeholders on sector-specific ICT aspects.

### Global Standards Collaboration

Recognizing that different standards bodies often identify emerging standardization issues, mobilize relevant experts and structures, establish programmes to develop standardized solutions, and address the needs of the ICT and vertical sectors independently:

* Standards bodies should adhere to due process, broad consensus, transparency, balance, and openness in standards development; commitment to technical merit, interoperability, competition, innovation and benefit to all; availability of standards to all; and voluntary adoption of standards; in future collaborative relationships.
* Bi- or multilateral collaboration should be established between standards organizations, through for example the establishment of Memoranda of Understanding, which outline their specific, yet complementary, roles and responsibilities to achieve mutually defined objectives.
* A collaborative mechanism should be developed between related standards bodies to identify new work areas at an early stage, and agree on a common approach so as to bring the relative skills of the different bodies together in a cooperative manner in order to develop common international standards or suites of standards.

## Detailed Findings

A detailed report of the discussions held in each session is reproduced in this section.

### Session 2: Bridging the standardization gap: from innovation to standards

The session on Bridging the standardization gap: from innovation to standards was moderated by **Mr Gift Buthelezi**, Deputy Director General, Department of Communications, South Africa.

Panelists included both, representatives of the ICT sector: **Mr Ajay Ranjan Mishra**, Chairman, ITU-T Focus Group on Bridging the Gap: from Innovation to Standards; **Mr Mondher Makni**, Networks and Telecoms Director, Telnet as well as representatives of regional telecommunication standardization bodies: **Mrs Khédija Ghariani**, Secretary-General, Arab Information and Communication Technology Organization (AICTO) and **Prof. Ramjee Prasad**, Founding Director CTIF, Aalborg University and Founding Chairman of GISFI, India.

#### ICT innovations as an engine for economic growth

The global economy crisis has increased the need for countries to identify new sources of growth and develop a sustainable path for economic success. Innovation is the engine for growth and a driver of socio-economic transformation and progress leading to sustainable development. ICT innovation will be a game-changer in enabling emerging economies to sustain their economic growth in the future. Innovation is becoming more global, involving players from both developed and emerging economies. Emerging economies are well poised to rapidly becoming the hotbeds of innovation.

Standardization is one of the essential building blocks of the Information Society. There should be particular emphasis on the development and adoption of international standards. The development and use of open, interoperable, non-discriminatory and demand-driven standards that take into account needs of users and consumers is a basic element for the development and greater diffusion of ICTs and more affordable access to them, particularly in developing countries. International standards aim to create an environment where consumers can access services worldwide regardless of underlying technology.

Throughout the world, public policies increasingly rely on innovative and interoperable ICT solutions to implement major projects for the benefit of society in domains such as e-health, e-payments, efficient energy use, cloud computing, integrated transport systems and smart grids. The effectiveness of the proposed solutions depends to a large extent on the level of interoperability between the various ICT components of the systems which in turn depends on the effectiveness and consistency of the set of ICT standards underpinning the application.

The GSS took note of the work being carried out in the ITU-T Focus Group on Bridging the Gap: From Innovation to Standards. This focus group provides an initial platform for recognition and identification of innovations emerging in developing countries that may benefit from standardization. The main objective is to support the activities of ITU-T Study groups to further enhance innovation and close the digital divide. The benefits need to reach those that are at the bottom of the pyramid. Innovation should be a catalyst to bring those at the bottom of the pyramid the benefits of ICT and to bridge the standardization gap.

Innovation in emerging economies is not about being sophisticated, but about cost-effectiveness and mass-appeal. There is a potentially huge market waiting to be tapped in the emerging economies if consumer behavior and needs are well understood and if specifically designed products can be made available for them.

The GSS noted that M-PESA has been very popular in Kenya and has seen a phenomenal growth since it was first introduced in 2007. Only about 26% of the population in Kenya has a bank account. By enabling people who have no bank accounts to use their mobile phones for financial transaction, M-PESA has engineered a new wave of innovation for mobile payments in Africa. Today, the amount of money transferred in Kenya through M-PESA amounts to nearly 20% of Kenya’s GDP.

The GSS emphasized that what works in the developed world does not always work in the emerging markets. Products have to be redesigned to suit the needs of the emerging economies. It involves incremental changes to an existing product or service to tailor it to local needs.

Education on ICT standards is an area which can help developing countries to bridge the standardization gap. Lack of professionals with expertise in ICT standards is one of the major hurdles identified by the study ‘ICT standardization capabilities of developing countries’ carried out by the ITU in 2010. ITU could develop an e-learning platform on ICT standards education targeting academia in developing countries to enhance the ICT curricula in these universities.

The GSS observed that concerted efforts are required to address key issues such as:

* Establishing innovation ecosystems in developing countries to spur innovation in ICTs
* Strengthening the standardization capabilities of developing countries so they can take part in the global ICT standards development process. ITU could play a role to facilitate setting up of regional standardization centres of excellence which would play a role in developing educational programmes on ICT standards at a regional level
* Need for developing countries to establish a standardization secretariat to define technical requirements for standardization and to coordinate and develop their participation in standardization work at the national and international level
* Enhancing education on ICT standards in developing countries
* Providing a framework to facilitate the standardization of initiatives resulting from innovations from the emerging markets.

### Session 3: Global Standards Challenges

The session on Global Standards Challenges was moderated by **Mr Hatem Bamatraf**, EVP for Network Development at UAE telecommunications company Du.

Panelists included both, representatives of the ICT sector: **Ms Monique Morrow**, CTO Asia Pacific and Distinguished Consulting Engineer at Cisco Systems; as well as representatives of other economic sectors: **Dr Najeeb Al Shorbaji**, Director of the Department of Knowledge Management and Sharing at World Health Organization (WHO); **Mr Chuck Parker**, Executive Director, Continua Health Alliance; **Dr Yuji Inoue**, Chairman of Toyota Info Technology Centre; and **Mr Richard Schomberg**, VP for Smart Energy Standards at Électricité de France (EDF) Group.

#### e-health

Across the world, health services and systems are changing to reflect the need for improvements in the quality, safety, and accessibility to enable equity and cost-effectiveness of healthcare. The use of information and communication technologies in healthcare – e-health – has already demonstrated its value and contribution to enabling these changes. Panelists noted that health sector standardization and interoperability goes beyond hardware connectivity and includes systems and data. It was also noted that The Global Survey on “Legal frameworks for eHealth” and the report on “Management of Patient Information” found that, apart from use of the International Statistical Classification of Diseases, the adoption of other standards specific to the e-health sector has been very low.

As countries adopt e-health they will need to integrate a patchwork of legacy systems with medical devices and information systems. At the same time, they will need to ensure there is a foundation on which stakeholders can innovate, since e-health can only meet its potential for achieving seamless, personalized and integrated care accessible to all, if based on open and interoperable global standards.

The GSS noted the cross-cutting nature of e-health, involving communities not limited to ‘e’ and ‘health’. The requirements of public institutions, private sector stakeholders and users need to be identified and met. In this regard the GSS welcomed a workshop organized by ITU and WHO in April 2012 to initiate a dialogue towards a comprehensive roadmap on global standards development and interoperability to enable the sustainable development of e-health services. In this workshop countries, SDOs and industry forums active in e-health standardization (including Continua Health Alliance, IEEE, IHE, ISO, ITU-T, and HL7), academic institutions representatives and experts, shared their programs and pilots experiences, as well as innovation that could transform delivery of healthcare in the years to come.

The GSS observed that concerted efforts are required to address key issues such as:

* The necessity of stakeholder collaboration and harmonization of activities and standards in order to foster interoperability and to facilitate more efficient adoption of e-health standards
* The need of sharing best practices in e-health standards adoption
* The importance of making e-health standards available free of charge

It was noted in particular that fears about security and privacy were often cited by healthcare professionals and policy makers as reasons for not adopting e-health solutions. Accordingly technical e-health standards which address privacy and security issues could help drive significant uptake of e-health.

The GSS invited WHO and ITU and other relevant standards organizations and industry forums to accelerate work on these issues and to provide a truly global and open environment to facilitate the development and promotion of e-health standards through multi-stakeholder collaboration.

#### Intelligent transportation systems (ITS)

Intelligent Transportation Systems utilize a combination of computers, communications networks, sensors, positioning and automation technologies that generate and collect data in order to increase road safety and the efficiency of freight and public transportation, to reduce vehicle wear, pollution, and fuel consumption, while providing other services to road users. ITS have economic, environmental and societal benefits.

ITS is a quickly evolving field of work. Initially located at the intersection of automotive and ICT, today’s ITS are multi-facetted and can involve stakeholders from many other sectors, such as utilities (in the context of electromobility), health and insurances (in the context of road safety). This variety holds challenges such as different business models and philosophies, diverging product lifecycles and liabilities, which need to be overcome.

The GSS noted the crucial role of global standards for ITS which can ensure interoperability, promote the development and adoption of ITS and contribute to economies of scale and cost reduction. However, harmonization of regional efforts in a global effort driven by industries, regulators and governments involved are prerequisite to making ITS a success story and the fully-networked car a reality.

In this regard, the GSS expressed its appreciation for the promising initial outcomes of the Collaboration on ITS Communication Standards. This open group was established to provide a globally recognized forum for the creation of an internationally accepted, globally harmonized set of ITS communication standards of the highest quality in the most expeditious manner possible to enable the rapid deployment of fully interoperable ITS communication-related products and services in the global marketplace. Past meetings of this flexible initiative enjoyed input and active participation from various SDOs dealing with ITS communications, the ICT and automotive industries.

#### Smart grids

ICT are used in electric grids as means to improve the efficiency, reliability and economics of the production and distribution of electricity. Key elements of smart grids include automated metering infrastructure (smart meters), power system automation for rapid diagnosis of grid disruptions and outages, and dynamic power generation to efficiently balance electricity production and demand. Electricity generation, transmission and distribution being considered a critical infrastructure in many countries, the utility sector is subject to special constraints and regulations. As a consequence, national standards initiatives have taken off rapidly, most notably in the USA.

Panelists noted that on the global stage the domain is addressed from two directions: most of the power electric know-how and related standards are based in organizations such as the International Electrotechnical Commission (IEC), most of the communications-related aspects are addressed in ITU-T, IEEE and alike. In order for smart grids to becoming a global success story, for vendors and consumers, barriers must be overcome and collaboration be increased. In ITU-T, the outcome of a Focus Group on Smart Grid has been handed over to its successor mechanism, a Joint Coordination Activity, which focuses on enabling two-way data communication across the grid. Global standards would contribute to interoperability and facilitate economies of scale, in particular for smart meters deployed in each household.

Smart grids and energy efficiency are often named in the same breath with climate change mitigation. Panelists took note of the ICT sector’s efforts to improve its role as enabler for sustainable change. The session concluded by encouraging concerted standardization strategies and collaboration between all the main players for the deployment of systems for reduction of greenhouse gases that will lead to a “green ICT world”.

### Session 4: Global Standards Collaboration

**Dr Bruce Gracie**, Chairman of ITU-T’s Telecommunication Standardization Advisory Group, moderated a high-level roundtable discussion on global standards collaboration. The roundtable was composed of senior representatives from a variety of standards development organizations (SDOs), including **Mr Jim Matthews**, Vice‑President and SMB Chairman, International Electrotechnical Commission (IEC); **Mr Rob Steele**, Secretary-General, International Organisation for Standardization (ISO); **Dr Reinhard Scholl**, Deputy to the Director, ITU Telecommunication Standardization Bureau; **Mr Zemin Yang**, Secretary-General, China Communications Standards Association (CCSA); **Dr Kyu Jin Wee**, Vice President, Telecommunications Technology Association (TTA), Korea; **Mr Yoichi Maeda**, CEO, Telecommunication Technology Committee (TTC), Japan; **Mr Russ Housley**, Chair, Internet Engineering Task Force (IETF); and **Mr Steve Mills**, President, IEEE-Standards Association.

In this session, which took the form of a roundtable discussion, senior representatives from the standards-making community discussed current issues and demonstrated how their organizations were addressing the challenges of collaboration in an intersecting world of ICTs and the verticals discussed in Session 3, e.g., M2M, e-health, smart grid, cloud computing, intelligent transportation systems, and resilience of networks to disasters.

As the business of standards-making becomes increasingly more complex and costly, SDOs must form partnerships and work collaboratively in the interest of avoiding duplication of effort, as well as optimizing the use of resources. The need for such collaboration has only increased since the GSS held at WTSA-08. This year, the meeting affirmed the importance of standards organizations collaborating between and among themselves in order to improve efficiency in standards work, reduce risk of market confusion, and improve interoperability.

Current models for collaboration between standards bodies have taken several forms. The World Standards Cooperation (WSC), which was established in 2001 by ITU, ISO and IEC, responded to the need to promote the adoption and implementation of international consensus-based standards worldwide.

At the international/regional level, the Global Standards Collaboration (GSC) was created to provide a venue for the leaders of the Participating Standards Organizations and the ITU to freely exchange information on the progress of standards development in the different regions vis-à-vis global standards development overall. Close collaboration in planning future standards development is recognized as a catalyst in generating synergies, and perhaps most importantly, reducing duplication of effort.

A number of standards organizations have recognized that cooperation with other standards organizations is an essential component that has fuelled innovation and the success of the Internet. The panel noted the importance of principles including adherence to due process, broad consensus, transparency, balance, and openness in standards development; commitment to technical merit, interoperability, competition, innovation and benefit to all; availability of standards to all; and voluntary adoption of standards; in future collaborative relationships. These paradigms are the cornerstones of the OpenStand initiative launched by IEEE, IETF, IAB, Internet Society and W3C. ITU has a long history of open standards development. ITU-T’s Telecommunication Standardization Advisory Group (TSAG) back in 2005 endorsed a definition of “Open Standards”. According to this definition, “open standards” are standards made available to the general public and are developed (or approved) and maintained via a collaborative and consensus driven process, facilitate interoperability, are intended for widespread adoption, include collaborative process, balance, due process, intellectual property rights, quality, public availability and on-going support.

Bi- or multilateral collaboration between standards organizations may be guided through the establishment of Memoranda of Understanding, which outline specific, yet complementary, roles and responsibilities of Parties to achieve mutually defined objectives. Examples given in the discussion in this Panel included the recently concluded MoUs between ITU and ETSI, as well as between ITU and ARIB, CCSA, TTA, and TTC. The ITU-T and IETF have also recently updated their guidelines for collaboration in Supplement 3 of the ITU-T A-Series of Recommendations and RFC-6756. The IETF and IEEE have codified their relationship in RFC-4441.

In an interactive discussion among the panelists, the GSS was given insight into the state of global ICT standards collaboration and the support mechanisms in place. Panelists recognized the GSS as an important venue for high-level standards policy discussion.

In exploring the strengths and weaknesses of the current collaborative arrangements, a key objective of the session was to address a number of important questions, including the following:

1. How should the ITU evolve its approach to collaboration with other standards bodies, given the accelerated rate of change in the worldwide standardization landscape, and the rapidly evolving needs of consumers/users of global standards?
2. Is there a need to build on existing models, and identify new modalities for cooperation and collaboration based on mutual respect and recognition of evolving roles and responsibilities in the standards sphere?
3. Given the pace of convergence, and the blurring of issues involving both the ICT and IT communities of interest, what needs to be done in the future, not only to strengthen collaboration, but also to ensure that issues are addressed in such a way as to avoid duplication of effort and market confusion, and to maximize interoperability?
4. Are the current procedures in ITU-T, i.e. in general Recommendation A.4 (Communication process between ITU-T and Forums and Consortia), A.5 (Generic procedures for including references to documents of other organizations in ITU-T Recommendations) and A.6 (Cooperation and exchange of information between ITU-T and national and regional standards development organizations), and specifically Supplement 3 to A-series Recommendations (IETF and ITU-T collaboration guidelines) and A.23 (Collaboration with the ISO and IEC on information technology) sufficient to ensure that close collaboration continues in an efficient and effective manner in the future?
5. What structural challenges exist that inhibit collaboration? Different organizations have different governance structures. What responsibilities do standards body participants have to improve collaboration?

Participants agreed that the collaborative process of development of standards is most effective when there is broad consensus among all stakeholders. While development of that consensus can sometimes require substantial back and forth by different groups, the reward in the end is a commonly accepted practice that will propel adoption of emerging technologies. When multiple standards organizations are involved, the importance of collaboration amongst different SDOs to facilitate development of broad consensus, cannot be overstated. Participants agreed to continue efforts to improve cross SDO-collaboration that the full strength of the ICT sector can be most effectively be brought to bear.