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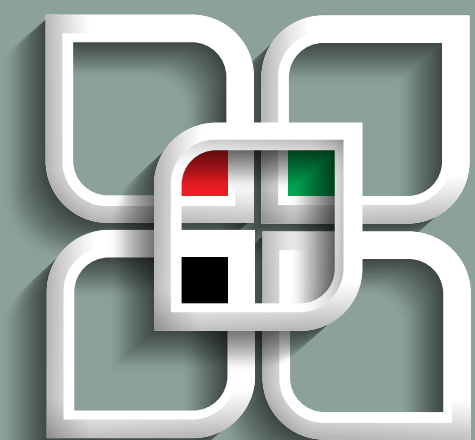
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WTDC
2014

UNITED ARAB EMIRATES
DUBAI, 30 MARCH - 10 APRIL



Special report from Dubai

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From left to right: François Rancy, Director of the ITU Radiocommunication Bureau; Mohamed Nasser Al-Ghanim, Director General of the Telecommunications Regulatory Authority of the United Arab Emirates and Chairman of WTDC-14; Brahim Sanou, Director of the ITU Telecommunication Development Bureau; Dr Hamadoun I. Touré, ITU Secretary-General; Mohamad Ahmad Al-Qamzi, Chairman of the Telecommunications Regulatory Authority of the United Arab Emirates; Houlin Zhao, ITU Deputy Secretary-General; and Malcolm Johnson, Director of the ITU Telecommunication Standardization Bureau



Mohamed Nasser Al-Ghanim,
Chairman of WTDC-14



BDT Director Brahim Sanou and
Dr Abdulqader Al Khayyat, Chairman of the Executive
Committee overseeing the hosting of WTDC-14



Paarock VanPercy, Chairman of
Committee 2 (Budget Control)



Mário Canazza, Chairman of
Committee 3 (Objectives)



Nur Sulyna Abdullah, Chairman of
Committee 4 (ITU-D Working Methods)



Laurence Barriac, Chairman of
Committee 5 (Editorial Committee)



Fabio Bigi, Chairman of the Working Group on ITU-D
Strategic Plan and Declaration



Carmen Ball, a Vice-Chairman of the Working Group
on ITU-D Strategic Plan and Declaration



Cosmas Zavazava, ITU/BDT, Secretary of the Plenary
and Committee 1 (Steering Committee)



► Executive summary

Dubai Action Plan charts a broadband-powered future for all

The sixth quadrennial World Telecommunication Development Conference reaffirmed ITU's commitment to the delivery of universal and affordable access to telecommunications and information and communication technologies (ICT) as an essential element of socio-economic advancement in an increasingly interconnected world.

Convened under the theme *Broadband for Sustainable Development* in Dubai, United Arab Emirates, from 30 March to 10 April 2014, the conference charted a course to accelerate and expand broadband uptake and digital literacy worldwide, particularly in the least developed countries.

In adopting the Dubai Action Plan, a blueprint for telecommunications/ICT development over the next four years, the more than 1300 participants, including over 1100 government delegates from 137 countries and 9 representatives from Palestine; 89 representatives from 42 public and private-sector entities; 32 participants representing 14 telecommunication-related entities; and 73 representatives from 33 regional and international organizations,

renewed their pledge to spread connectivity to all corners of the planet.

The message — one that resonated throughout the conference — was clear: in a world in which ICT play an increasingly important role in socio-economic development and in building a knowledge-based information society, no one should be left offline, regardless of their circumstances or the remoteness of their place of origin.

Opening of the conference

Mohamad Ahmad Al-Qamzi, Chairman of the United Arab Emirates Telecommunications Regulatory Authority, bid a warm welcome to all delegates and expressed the hope that WTDC-14 would achieve its lofty goals and noble aims of promoting sustainable development through the optimum use of information and communication technologies (ICT), notably broadband (see related article on pages 31–32).

Conference participants were then shown a documentary featuring concrete examples of how ITU is helping countries

around the world to ensure that all segments of their societies have access to the benefits of ICT.

Filmed in Bulgaria, Costa Rica, Japan, Jordan, Moldova and Tanzania, the documentary illustrated the role of ICT in saving lives, particularly in the immediate aftermath of disasters. As an example, the documentary showed how ITU assistance in providing mobile satellite communication equipment helped Japanese authorities coordinate the relief operation in the wake of the earthquake and tsunami which struck the country in 2011. ITU assistance is helping remote schools and communities in developing countries to access the Internet, to bridge the gender connectivity gap by enabling increasing numbers of girls and women to acquire ICT skills, and to enable persons with disabilities to better integrate society was also highlighted. In another example, a man in Costa Rica explained how he was able to quit smoking through access to an m-health initiative known as m-cessation, implemented jointly by ITU and the World Health Organization (WHO).

Speaking at the opening ceremony, ITU Secretary-General, Dr Hamadoun I. Touré



WTDC-14 presiding officers

Chairman of the Conference: Mohamed Nasser Al-Ghanim (United Arab Emirates)	Vice-Chairmen of the Conference: <ul style="list-style-type: none">▪ Ms Margaret Chalwe-Mudenda (Zambia)▪ Ms Hillary Stuart-Alexander (Jamaica)▪ Ms Nermine El Saadany (Egypt)▪ Mr Chakrya Moa (Cambodia)▪ Mr Rashid Ismailov (Russian Federation)▪ Mr Frédéric Riehl (Switzerland)
Committee 1: Steering Committee	
Composed of the Chairman and Vice-Chairmen of the Conference and of the Chairmen and Vice-Chairmen of the Committees	
Committee 2: Budget Control	
Chairman: Mr Paarock VanPercy (Ghana)	Vice-Chairmen: <ul style="list-style-type: none">▪ Mr Meshari Al Saab (Saudi Arabia)▪ Mr Soichiro Seki (Japan)▪ Mr Sohrab Yarahmadov (Azerbaijan)
Committee 3: Objectives	
Chairman: Mr Mário Canazza (Brazil)	Vice-Chairmen: <ul style="list-style-type: none">▪ Mr Patrick Mwesigwa (Uganda)▪ Mr Mohamed Ben Amor (Tunisia)▪ Mr Kishore Babu (India)▪ Mr Almaz Tilenbaev (Kyrgyzstan)
Committee 4: ITU–D Working Methods	
Chairman: Ms Nur Sulyna Abdullah (Malaysia)	Vice-Chairmen: <ul style="list-style-type: none">▪ Ms Lolia Emakpore (Nigeria)▪ Mr Cecil McCain (Jamaica)▪ Mr Adel Darwish (Bahrain)▪ Dr Vadym Kaptur (Ukraine)
Committee 5: Editorial Committee	
Chairman: Ms Laurence Barriac (France)	Vice-Chairmen: <ul style="list-style-type: none">▪ Mr Paul Najarian (United States)▪ Mr Babiker Saeed (Sudan)▪ Ms Yapeng Wang (China)▪ Prof. Vladimir Minkin (Russian Federation)▪ Ms Blanca Gonzalez (Spain)
Working Group on ITU–D Strategic Plan and Declaration	
Chairman: Mr Fabio Bigi (Italy)	Vice-Chairmen: <ul style="list-style-type: none">▪ Mr Abraham Djékou (Côte d’Ivoire)▪ Ms Jinane Karam (Lebanon)▪ Ms Carmen Ball (Australia)▪ Mr Daryn Tuyakov (Kazakhstan)

called on participants to work together with ITU to ensure universal broadband connectivity, stressing the importance of public-private partnerships towards achieving this goal. "ICT — and in particular broadband networks — offer perhaps the greatest opportunity we have ever had to make rapid and profound advances in global social and economic development," he said.

High-Level Segment Policy Statements

Interest in the High-Level Segment of WTDC-14 was remarkable, with a total of 72 registered speakers. All in all, 62 high-level speakers addressed the conference (with nine having their statements delivered on their behalf). Speakers for the most part were ministers, deputy ministers or vice-ministers, the remainder being ambassadors, chairmen or directors-general of regulatory bodies, and secretaries-general and chief executive officers from ITU-D Member organizations. The High-Level Segment provided a platform for these high-ranking officials to express their views on emerging trends and on matters of strategic importance to the development of the telecommunication and information and communication technology sector.

Policy statements are available at <http://www.itu.int/en/ITU-D/Conferences/WTDC/WTDC14/Pages/PolicyStatements.aspx>



APF

Progress in implementing Hyderabad Action Plan acclaimed

The conference applauded ITU's achievements over the past four years in implementing the Hyderabad Action Plan adopted at the World Telecommunication Development Conference in Hyderabad, India, in 2010. In his progress report to the conference, ITU's Telecommunication Development Bureau (BDT) Director, Brahim Sanou, singled out many achievements, noting in particular that ITU had:

- ▶ continued to convene the world's largest gathering of regulators and to track and influence the ICT regulatory environment;
- ▶ continued to provide assistance in disaster-risk reduction, preparedness and response through the design of national emergency telecommunication plans, the setting up of emergency early warning systems and the development of emergency telecommunication equipment;
- ▶ trained over one million women in the use of ICT under a women's digital literacy campaign launched in partnership with the Telecentre.org Foundation;
- ▶ quantified for the first time the size of the digital gender gap;
- ▶ assisted 25 countries in transitioning from analogue to digital broadcasting and 43 countries on spectrum management and monitoring.

The BDT Director also highlighted three initiatives launched since WTDC-10 which have met with considerable success, namely the m-Powering Development Initiative to extend the benefits of mobile technology to all segments of society; the Smart Sustainable Development Model to establish a link between rural telecommunication/ICT development and disaster-risk reduction and management; and the ITU Academy which integrates all ITU training activities under one umbrella.



Conference results in a nutshell

Dubai Action Plan

While recognizing the progress made in helping developing countries to harness the benefits of ICT since WTDC-10, however, the conference emphasized the need to close the remaining connectivity gaps between and within countries that condemn millions of people, particularly women youth, children, indigenous people and persons with disabilities to digital exclusion.

The Dubai Action Plan adopted by the conference is the culmination of regional preparatory meetings that took place in Chisinau, Moldova, for the Commonwealth of Independent States; Phnom Penh, Cambodia, for Asia-Pacific; Montevideo, Uruguay, for the Americas; Accra, Ghana, for Africa; Manama, Bahrain, for the Arab States; and Belgrade, Serbia, for Europe.

The plan consists of a package of activities designed to help countries promote sustainable development of their ICT networks and services. Five fundamental objectives were set for ITU's Telecommunication Development Sector (ITU-D) as the main focus of its work for the next four years.

- ▶ **Objective 1:** Foster international cooperation on telecommunication and ICT issues.
- ▶ **Objective 2:** Foster an enabling environment conducive to ICT development

and the development of ICT networks as well as relevant applications and services, including bridging the standardization gap.

- ▶ **Objective 3:** Enhance confidence and security in the use of information and communication technologies and the roll-out of relevant applications and services.
- ▶ **Objective 4:** Build human and institutional capacity, promote digital inclusion and provide concentrated assistance to countries in special need.
- ▶ **Objective 5:** Enhance climate change adaptation and mitigation, and disaster management efforts through telecommunications and information and communication technologies.

These objectives together with their 15 corresponding "outputs" are featured in both the Dubai Action Plan and the ITU-D draft strategic plan for 2016–2019. Outputs were defined by the conference as "all the products and services ITU-D will develop and deliver to members through the implementation framework agreed in the Dubai Action Plan". This framework encompasses regional initiatives, programmes, study group questions (see related articles on pages 46–50, 51–59, and 60–61, respectively), WTDC resolutions and recommendations and facilitation of World Summit on the Information Society (WSIS) action lines.

The Dubai Action Plan is premised on a results-based structure, with outcomes defined for each objective, and key performance indicators defined for each output. The results-based management methodology is being implemented throughout the United Nations system and aims to improve effectiveness, efficiency, transparency and accountability. A special session was held on 29 March 2014 on the eve of WTDC-14 to inform conference participants on how the shift in focus from activities to results will help to better articulate strategic goals, objectives, outcomes and outputs, and to better evaluate their achievement using indicators and targets.

Results-based management is defined as "a management approach that directs organizational processes, resources, products and services towards the achievement of measurable results. It provides the management frameworks and tools for strategic planning, risk management, performance monitoring and evaluation and financing activities based on targeted results".

Outcomes provide an indication as to whether the objective is being achieved. Outcomes are usually partly, but not entirely, within the control of the organization.

Performance indicators are the criteria used to measure the achievement of outputs or outcomes. These indicators may be qualitative or quantitative.

Dubai Declaration reinforces support for ITU–D mission

Another major outcome is the Dubai Declaration reinforcing political support for ITU's development mission and strategic objectives (see article on pages 39–42). The Dubai Declaration states, *inter alia*, that "promoting and making available, affordable and accessible broadband infrastructure, with appropriate policy and strategy, is a fundamental enabling platform that fosters innovation and drives the development of national and global economies and the information society".

Strategic plan outlined for development

WTDC-14 developed and adopted a draft strategic plan for ITU–D (see article on pages 43–45), which will feed into the overall ITU draft strategic plan for 2016–2019, to be adopted at the forthcoming Plenipotentiary Conference to be held in Busan, Republic of Korea, from 20 October to 7 November 2014.

Closing ceremony and the challenge to connect everyone to broadband by 2020

WTDC-14 ended on an upbeat note with the showing of a video clip featuring conference delegates going about their business and joining in a "Broadband makes me happy" refrain reflecting the Broadband for Sustainable Development theme of the conference.



"The decisions we have taken, reflected in the Dubai Action Plan, will pave the way forward for our work. They will give us direction, a shared vision and a clear plan of action."

Brahima Sanou, Director of the ITU Telecommunication Development Bureau



Mohamed Nasser Al-Ghanim, Chairman of WTDC-14, and Director General of the Telecommunications Regulatory Authority of the United Arab Emirates, being presented with the ITU Gold Medal by Dr Hamadoun I. Touré, ITU Secretary-General

Speaking at the closing ceremony, Dr Touré noted that the conference had forged a common vision and plan of action, a strategic plan and a financial plan for the coming years. In emphasizing the critical role of broadband for national development, he said: "My view is that it is about time we challenged ourselves to connect everyone to broadband by 2020."

Mr Sanou noted that WTDC-14 had broken several records, including a record participation of 1311 delegates representing 137 Member States and 82 Sector Members, along with 52 VIPs. Captioning was provided for plenary and committee meetings. ITU offered members a mobile application for accessing WTDC-14 documents and consulting them offline, as well as an application for accessing the conference webcast on tablets and smartphones. Finally, the conference finished its work half a day early.

All speakers warmly praised the United Arab Emirates and ITU for the smooth running of the conference.

Dr Touré honours WTDC-14 Chairman

The Secretary-General awarded the ITU Gold Medal to Mohamed Nasser Al-Ghanim, Chairman of WTDC-14 and Director General of the Telecommunications Regulatory Authority of the United Arab Emirates, praising him for his wisdom, punctuality, wit and humility. Mr Al-Ghanim thanked participants for their efforts, in particular the ITU Secretary-General, the Deputy Secretary-General, the three Directors of the Bureaux, and the chairmen of the conference's five committees and the working group (see table of WTDC-14 presiding officers on page 26). ■



► ***Sustainable development – challenges and opportunities***

Mohamad Ahmad Al-Qamzi

Chairman of the Telecommunications Regulatory Authority of the United Arab Emirates



The World Telecommunication Development Conference 2014 (WTDC-14) addressed development challenges on a huge scale. Its lofty goals and noble aims were nothing less than to promote sustainable development through the optimum use of information and communication technologies (ICT).

This gathering of experts and specialists, representing various regional and international groups, States, the private sector, international organizations and academia, was successful in adopting resolutions that established firm foundations on which to build the programmes and plans to support development in regions that are in dire need of help. These outcomes will enable countries to employ their resources in order to serve their peoples and build their future.

In this regard, I am reminded of the words of the great Arab poet, Abu at-Tayyib al-Mutanabbi, who wrote that “Resolutions are measured according to those who take them”. Many communities labouring under a whole range of problems gaze upon ITU’s resolve and look to its resolutions and initiatives. The successes of previous WTDCs, the last of which was held in India in 2010, as well as the numerous events and meetings held under the auspices of ITU,

provided a sound basis for the discussions and deliberations at WTDC-14, leading the conference to decide on general principles, programmes, strategic goals and development strategies for the different regions, as well as the Dubai Action Plan, which is tantamount to a road map for the future.

Closing the digital divide

The different radio frequencies are a resource for people across the world to make use of in sustaining the Earth and supporting development programmes. The use of this scarce resource is a basic human right, so it is regrettable that destabilizing social unrest and other problems continue to prevent many communities from benefiting from this fundamental natural resource.

The lack of equal opportunities to access and use modern digital technologies is an obstacle that must not be ignored or glossed over. The huge discrepancy between countries in this area has created what has come to be called the digital divide, which represents an impediment, indeed an impenetrable barrier, to the development programmes that developing societies desire. Add to

that the problems of poverty, unemployment, social marginalization, illiteracy and natural disasters, and we find ourselves faced with considerable challenges that require of us a high degree of cooperation and solidarity, as well as innovative solutions that are practical and realistic.

With regard to the scale of the challenges, it is fortunate that in today's world we have a number of strengths to help us achieve many of our human aspirations. Perhaps a brief glance at the ICT sector today might help to spread a generous measure of optimism about the possibility of achieving the success to which we aspire. Thus, by the end of 2013, the number of mobile telephone subscriptions had exceeded 6.8 billion. The number of Internet users was over 2.7 billion, which is 40 per cent of the Earth's population. Turning to broadband use, which was the theme of the WTDC-14 discussions, we find that it is steadily growing, with 2 billion users by the end of 2013.

Together, these developments represent a positive feature of the world today. They provide us with the means of making it possible to help communities caught up in social unrest and other problems. And extending the hand of assistance to these communities is a humanitarian duty, given concrete form through the successive sessions of the conference.

We hope for much more than what has been achieved in the past. The list is long. In the sphere of health, for example, the possibility exists of using advanced telecommunication systems to provide solutions remotely and across borders, ensuring the continuous improvement of health systems and practice. The same

applies in education, social integration, bridging the digital divide, interaction and information exchange programmes, upgrading systems, disaster management and relief operations.

Supporting ITU's mission

The lofty mission of ITU, based upon fostering links between people through ICT, is one that strikes a chord with the Emirati people. As a Member State and prominent player, the United Arab Emirates will continue to work effectively with ITU in many of the Union's bodies. We shall spare no effort to benefit from the experience of others in the interests of our society and country, and to place our own successful national expertise at the disposal of others as a concrete expression of the global human dimension on which the mission of ITU is founded.

We in the United Arab Emirates feel enormously grateful for all the appreciation we received for hosting WTDC-14, and we are supremely proud because we consider it a testament of trust. We look upon our hosting of the conference as crowning our close cooperation with ITU and the members of the Union, and consider that our successful hosting of three major ITU events in 2012 — ITU Telecom World, the World Telecommunication Standardization Assembly and the World Conference on International Telecommunications — is evidence of our belief in the mission of ITU as the pre-eminent organization that leads the world in the ICT field. ■



► **Chairman of WTDC-14 offers his views**

Interview with Mohamed Nasser Al-Ghanim

Director General of the Telecommunications Regulatory Authority of the United Arab Emirates and Chairman of WTDC-14



ITU News catches up with Mohamed Nasser Al-Ghanim, Chairman of the sixth ITU World Telecommunication Development Conference (WTDC-14), which was held in Dubai, United Arab Emirates from 30 March to 10 April 2014. Mr Al-Ghanim is Director General of the Telecommunications Regulatory Authority of the United Arab Emirates, a country that successfully hosted three major ITU events in 2012 – ITU Telecom World, the World Telecommunication Standardization Assembly and the World Conference on International Telecommunications.

Why has Dubai become such a popular venue for ITU global events?

Mohamed Nasser Al-Ghanim: As you know, the United Arab Emirates is centrally located and is becoming a hub where countries from the east and west, north and south, can come to exchange ideas and do business. At the same time, telecommunications have been advancing very fast in the United Arab Emirates, and we are now one of the world leaders in telecommunications infrastructure,

services and even regulations. And of course it is a huge advantage for all visitors that the United Arab Emirates is a safe country, with airlines that connect it to countries all over the world. The United Arab Emirates is also one of the most attractive tourist destinations.

Back in 2006 our aim was to start attracting ITU events by hosting ITU Telecom World. Although we competed to host that prestigious event, we were unsuccessful in 2006 and again in 2009. But we kept on trying, and at last we were successful



in 2012. Because the World Telecommunication Standardization Assembly (WTSA) and the World Conference on International Telecommunications (WCIT) were to take place at around the same time as ITU Telecom World, we decided that we should offer to host those events as well, and make the United Arab Emirates a hub for ITU events in 2012. We had the support of the Board of Directors of our Telecommunications Regulatory Authority, who had the foresight to envisage a future partnership with ITU.

What do you see as the most significant achievements of WTDC-14?

Mohamed Nasser Al-Ghanim: Everybody came together in a spirit of agreement to move forward on the agenda that was established for the conference. We approved over 60 revised and new resolutions, five recommendations and several study topics. There was a huge difference between the spirit of participants at WCIT, which I also chaired, and WTDC-14.

The resolutions touch on so many fronts. One, for example, deals with information and communication technologies (ICT) and climate change. A second looks into cybersecurity and combating spam. Another resolution deals with people with disabilities, and so on and so forth. So WTDC-14 took many important decisions and approved important resolutions that will guide the future work of the Telecommunication Development Bureau (BDT) and the next study period in the ITU Development Sector (ITU-D).

What were the greatest challenges you faced in conducting this conference?

Mohamed Nasser Al-Ghanim: My greatest challenge was ensuring the cooperation of the administrations involved in any decision. The role of the chairman of a conference is to facilitate dialogue between different parties. When you are chairing a small meeting, you generally have to deal with just two or three people who have different opinions, coming from different backgrounds with different positions. When you chair a world conference, you are faced with a large number of participants — taking WTDC-14 for the sake of an example, nearly 140 administrations. So you really need to bring them all around the table. You need to give them the chance to be heard, and allow them to give their opinion, and you need to make them listen to the opinions of others. You have to be very balanced in your approach in order to make things happen. And you need to be very positive.

Sometimes the chairman has to come up with a solution and recommendations to the meeting in order to bridge differences. Respect for the chairman is so important in this regard. If the meeting respects the chairman's opinion, this can help in moving forward. I was lucky to have chaired WCIT, which was a very difficult conference — possibly the most difficult conference ITU has ever held — yet we came up with a treaty that was signed by 89 countries. In my opinion WCIT was a big success because, although it raised such difficult questions, it achieved a positive outcome.

For me, chairing WTDC-14 was a very good experience. At WTDC-14, there was much less stress on me to do things, compared with my role at WCIT. The chairmen and the vice-chairmen of



ITU/I. Wood

the committees did a great job at this conference. In general, the debates moved along very smoothly. There were only one or two resolutions that I had to get seriously involved in, where I had to sit with different administrations and try to resolve things.

The first was the Palestine resolution, which was negotiated between the Arab countries and the United States. They sat around the table in good faith and they negotiated the resolution — and we concluded it very quickly, and the matter was closed. That result is great and positive.

The second was the cybersecurity resolution, which took a very long time to resolve. People stayed in the meeting rooms until the early hours of the morning. This matter also came to a successful conclusion. Some of the difficulties popped up again in the plenary meeting but were resolved very quickly, and the text was approved.

There were a lot of contentious opinions about these two resolutions, but the good thing is that all the administrations involved were positive and they reached agreement on the texts in a timely manner.

ITU held regional preparatory meetings in the six regions of its Development Sector — Africa, the Americas, the Arab States, Asia-Pacific, the Commonwealth of Independent States, and Europe — where many topics were discussed. Did the interplay between these regions help to achieve the progress that we saw at WTDC-14?

Mohamed Nasser Al-Ghanim: Yes of course. Instead of negotiating with more than 190 countries at a world conference, you negotiate with regional groups. In each region, the countries get together and



agree on their common position. They then go to the other regions and try to negotiate. Opinions become consolidated, with two or three regions taking one position, and maybe three regions taking another position. We then come to the conference, where we all have to reach agreement with each other. On the agenda of any conference there will be common agreement on a lot of items, and there will be some issues on which there is no agreement among the regional groups. So, in the end, the conference will decide.

Without the regional groups, any conference would be very tough for a chairman. Regional

group meetings make it easier for conferences to conduct their business because administrations come along at least with an agreement among themselves at a regional level, before they present their views to the other regions. At conferences, we normally see regional coordination meetings between different groups. We have seen it at WTDCs and at world radiocommunication conferences, and even at WCIT and WTSA. The regional groups meet to resolve their differences, reducing the amount of work for the conference as a whole.

There is one thing I want to add — ITU itself plays an essential role. In particular, the Directors of



the Bureaux work with the regional groups prior to conferences. So, for example, the Director of BDT, Brahim Sanou, played a massive role in WTDC-14 in bridging a lot of the differences between regional groups. Mr Sanou did a fantastic job, resolving many issues himself, trying to coordinate the regional groups and helping to bridge any gaps.

How do you see the future of the partnership between Dubai and ITU?

Mohamed Nasser Al-Ghanim: WTDC-14 is our fourth event in a row with ITU, following ITU Telecom World, WTSa and WCIT in 2012, and both parties — the United Arab Emirates and ITU — recognize that we have a very successful partnership. These major conferences concluded very successfully. Previously, by the way, we hosted the Global Symposium for Regulators (GSR) in 2007.

Although I would not want to try to predict the future, I think that the United Arab Emirates will continue to work closely with ITU. We are putting forward our candidature for the Council. We cooperate with the ITU management team during Council meetings, as well as in the study groups, and so on and so forth. We have representatives in Geneva who work full time with ITU. We have supported the Secretary-General and the Deputy Secretary-General and the Directors of the Bureaux over the past eight years. The Plenipotentiary Conference, to be held in Busan, Republic of Korea, in October-November this year, will elect (or re-elect in some cases) an ITU management team for the next four years. Of course we will need to sit with the new team and discuss the future of our partnership with ITU. We hope to continue working

with ITU on topics of importance, and to host further meetings in the United Arab Emirates, whether major conferences like WTDC-14 or study group meetings (which we have also hosted previously).

The overarching theme of WTDC-14 was “Broadband for sustainable development”. In Dubai, and in the United Arab Emirates in general, a lot of effort has gone into broadband. Could you tell us about your country’s experience with broadband?

Mohamed Nasser Al-Ghanim: Broadband is one of our success stories. More than 85 per cent of households have fibre connectivity. We have an average speed today which is in excess of 4 megabits per second, and we expect to double it soon. Speeds exceeding 100 megabits per second — and even 300 megabits per second — are now being deployed for individuals. We have one of the most widely deployed 4G networks globally, with more than 90 per cent population coverage (and 100 per cent 3G coverage). We will soon be going beyond 4G. The theme for our national policy is “broadband”, and we have a high penetration rate both for mobile and for triple play (voice, data and television on one platform).

The Government of the United Arab Emirates understands the importance of broadband and has decided to adopt this technology in its day-to-day business. The Prime Minister has declared that all government services will migrate to become smart government services available on smart phones. This is a huge step forward in transforming government services — even their look and feel — into something very innovative. We have issued guidelines for



Dr Hamadoun I. Touré, ITU Secretary-General (left); Houlin Zhao, ITU Deputy Secretary-General (right); and Mohamed Nasser Al-Ghanim, Director General of the Telecommunications Regulatory Authority of the United Arab Emirates and Chairman of WTDC-14 (centre)

launching smart services, and we already have plans for 110 apps for government institutions, including a specialized app that is available on iPhone and Android smartphone platforms. The Prime Minister has also declared that Dubai is going to be a smart city very soon. Over the next 12 months we will see a lot of advances in the United Arab Emirates.

What is your message to ITU top management?

Mohamed Nasser Al-Ghanim: I would like to thank ITU for entrusting the United Arab Emirates with the responsibility of hosting WTDC-14 in Dubai. The Secretary-General, the Deputy Secretary-General and the Directors of the Bureaux did a fantastic job. This is the last term of office for Dr Hamadoun I. Touré as Secretary-General of ITU. What he has done with the management team over the past eight years is a story to tell. He has given a good example of how a team can work together as one. ■



► **Dubai Declaration**

What it says

The Dubai Declaration is one of the major outcomes of the sixth ITU World Telecommunication Development Conference (WTDC-14), which took place from 30 March to 10 April 2014 in Dubai, United Arab Emirates.

Overall, the declaration reinforces political support for ITU's development mission and strategic objectives. It recognizes, among other things, the essential role of telecommunications and information and communication technologies in the world's economic, social and cultural development. It also notes that widespread conformance and interoperability of equipment and systems can increase market opportunities and reliability, and encourage global integration and trade.

Participants at WTDC-14 considered that governments, in collaboration with other stakeholders, should provide applications such as e-government, e-health, e-education and e-waste management. Applications like these improve transparency and accountability, and optimize access to and use of public services.

While welcoming the innovative and beneficial services for users that telecommunication and information and communication technology applications provide, the declaration draws attention to the ethical dimension of the information society and warns that the increasing spread of such applications also increases the challenge of building confidence and trust in their availability, reliability, security and use.





The declaration acknowledges that with the implementation of the five previous four-year action plans since 1994, the Connect the World initiative, and follow-up to Action Lines C2 (information and communication infrastructure), C5 (building confidence and security in the use of information and communication technologies) and C6 (enabling environment) subsequent to the World Summit on the Information Society, the ITU Telecommunication Development Sector (ITU-D), together with partners and other stakeholders, has made significant progress towards universal access and to the emergence of a global economy and information society.

Yet despite this progress, the digital divide still remains, with disparities in access, use and skills between and within countries, especially between urban and rural areas. Women, youth, children, indigenous people and persons with disabilities (including age-related disabilities) tend to be particularly disadvantaged in terms of accessible and affordable telecommunications and information and communication technologies.

Looking ahead to the next four years, delegates at WTDC-14 declared their continued support for ITU's work on various fronts, in particular the following.

Social and economic progress

Affordable and accessible broadband infrastructure fosters innovation and drives the development of national and global economies and the information society. More generally, access to affordable, reliable and secure telecommunication and information and communication technology networks, services and applications has the power to facilitate economic, social and cultural development, and achieve digital inclusion.

ITU-D must therefore focus its resources on reducing significant disparities in access, particularly to broadband, experienced by developing countries, especially the least developed ones. Delegates at WTDC-14 committed themselves to accelerating the expansion and use of telecommunication and information and communication technology infrastructure, services and applications, in particular broadband, because these are powerful tools for economic growth and innovation.

Policy and regulation

Policy-makers and regulators should promote access to telecommunication and information and communication technology infrastructure, services and applications, in particular broadband. In the context of convergence, this means implementing fair, transparent, stable, predictable and non-discriminatory policy, and legal and regulatory frameworks

that create enabling environments. These should include common approaches to conformance and interoperability that promote competition, increase consumer choices, foster continued technological and service innovation, and provide investment incentives at national, regional and international levels.

To ensure that developing countries experience the economic benefits associated with technological development, and to better reflect their requirements and interests when standards are being set, these countries should increase their participation in ITU activities.

Radio-frequency spectrum and satellite orbits are limited resources, yet they are subject to increasing demands. Policy-makers, regulators, operators, broadcasters and others must therefore focus on effective and efficient spectrum management, including measures for avoiding harmful interference, and for implementing the transition from analogue to digital broadcasting.

Digital literacy and employment

Digital literacy opens the door to the knowledge society and enables people to contribute information and ideas. More training is needed, including in local languages. This can take place not only through international initiatives, but also through the educational capacity of local facilities, such as schools, libraries, content

providers, multipurpose community centres and public access points. It should be borne in mind that the telecommunication and information and communication technology ecosystem offers new opportunities to empower youth for employment or self-employment.

Technical support

To assist in formulating national policies, and to monitor the digital divide as well as progress towards achieving

internationally agreed goals in the post-2015 development agenda, indicators and statistics are needed to measure the adoption of telecommunication and information and communication technologies, and to analyse their role in supporting socio-economic growth.

ITU-D study groups should continue to share knowledge and build capacity in the international community. Enhanced cooperation among the three ITU Sectors (Radiocommunication, Standardization and Development) — and with other

organizations and expert groups — will support this objective.

Building confidence, trust and security in the use of telecommunications and information and communication technologies is a priority. This calls for all stakeholders — governments, and relevant organizations, private companies and entities — to cooperate in building capacity and exchanging information on best practices for developing public policies and legal, regulatory and technical measures to address personal data protection and child online protection.





Disaster-risk response

Telecommunications and information and communication technologies play a critical role in disaster-risk reduction, prediction, preparedness, mitigation and response. ITU Member States should develop disaster preparedness plans and strategies, taking account of the need for resilient and redundant infrastructure and systems.

ITU should support Member States in building capacity for responding to disasters, including in the area of early warning. ITU should also encourage regional and international cooperation and information sharing.

All countries, particularly small island developing States, least developed countries, landlocked developing countries and low-lying coastal countries, which are vulnerable to global climate change and rising sea levels, should have the means to use telecommunications and information and communication technologies to mitigate and address the effects of climate

change, and to reduce the negative impact of human activities on the environment.

ITU-D will continue to address special needs of these countries, because they are generally the ones that face the most challenges in the development and use of telecommunications and information and communication technologies.

Regional initiatives and public-private-partnerships

At WTDC-14, the regions articulated their specific priorities in a set of regional initiatives, reflected in the Dubai Action Plan. ITU-D and other development partners should give high priority to implementing these regional initiatives (see article on pages 46–50).

Public-private-partnerships need to be strengthened in order to explore and further develop new and innovative ways of investing and financing development initiatives and projects. International, regional

and national financing and investment institutions need to collaborate closely in such partnerships.

A call to join hands in implementing the Dubai Action Plan

The Dubai Action Plan (see pages 51–59) is acclaimed in the Declaration as a “comprehensive package” that will promote equitable, affordable, inclusive and sustainable development of telecommunication and information and communication technology networks, applications and services. It consists of a set of five strategic objectives supported by 15 outputs.

In the Dubai Declaration, WTDC-14 calls upon ITU Member States, Sector Members, Associates, Academia and all other partners and stakeholders to contribute towards the successful implementation of the Dubai Action Plan. ■



► **Strategic objectives**

The forthcoming Plenipotentiary Conference — to be held in Busan, Republic of Korea, from 20 October to 7 November 2014 — is expected to approve a strategic plan for ITU for the four-year period 2016–2019, consisting of an ITU-wide vision, mission and values for the better world the organization wants to see. The plan will also contain ITU-wide strategic goals and targets, as well as objectives, outcomes and outputs of the individual ITU Sectors and of the General Secretariat.

In the case of ITU's Telecommunication Development Sector (ITU-D), the World

Telecommunication Development Conference (WTDC-14) in Dubai developed and agreed on five objectives and fifteen associated outputs (see box) that form the Sector's component in the overall draft ITU strategic plan. WTDC-14 also endorsed the ITU-wide vision and mission, as cited below.

ITU vision

"An information society, empowered by the interconnected world, where telecommunication/information and communication technologies enable and accelerate

social, economic and environmentally sustainable growth and development for everyone."

ITU mission

"To promote, facilitate and foster affordable and universal access to telecommunication/information and communication technology networks, services and applications and their use for social, economic and environmentally sustainable growth and development."



Development Sector objectives in the draft ITU strategic plan for 2016–2019

Objectives	1	2	3	4	5
	Foster international cooperation on telecommunication/ ICT development issues	Foster an enabling environment conducive to ICT development and foster the deployment of telecommunication/ ICT networks as well as relevant applications and services, including bridging the standardization gap	Enhance confidence and security in the use of telecommunications/ ICT, and roll-out of relevant applications and services	Build human and institutional capacity, provide data and statistics, promote digital inclusion and provide concentrated assistance to countries in special need	Enhance environmental protection, climate change mitigation and adaptation, and disaster management efforts through telecommunication/ ICT
Outputs	1.1 World Telecommunication Development Conference	2.1 Policy and regulatory frameworks	3.1 Building confidence and security in the use of information and communication technologies	4.1 Capacity building	5.1 Information and communication technologies and climate-change adaptation and mitigation
	1.2 Regional preparatory meetings	2.2 Telecommunication/ ICT broadband networks, including conformance and interoperability and bridging the standardization gap	3.2 ICT applications and services	4.2 Telecommunication/ ICT statistics	5.2 Emergency telecommunications
	1.3 Telecommunication Development Advisory Group	2.3 Innovation and partnership		4.3 Digital inclusion of people with specific needs	
	1.4 Study groups			4.4 Concentrated assistance to least developed countries, small island developing States and landlocked developing countries, including countries in special need	

Scope and thrust

Goals

WTDC-14 endorsed the goals of growth, inclusiveness, sustainability, innovation and partnership. The conference defined growth as enabling and fostering access to, and increased use of, telecommunications and information and communication technologies. It understood inclusiveness to mean bridging the digital divide and providing broadband for all.

Growth

Telecommunications and information and communication technologies are increasingly being recognized by governments around the world as the key engine for economic growth and social development. The work of ITU, as the United Nations specialized agency in this area, has become even more vital in recent years, given that advanced telecommunication technologies now underpin every aspect of human life.

To continue the progress that has been made since the establishment of the United Nations Millennium Development Goals in 2000 and of the connectivity targets set by the World Summit on the Information Society in 2003 and 2005 requires the development of infrastructure (in particular

for broadband), the provision of applications and services, human capacity building, and a predictable, enabling regulatory environment to ensure that technological development is sustainable.

Inclusiveness

Generating local content is an enabler for the deployment and penetration of broadband services. Countries with similar or common culture and language — especially those facing cultural and linguistic barriers — should get together to construct local content, in particular for e-health, e-learning and e-commerce, to satisfy demand for local content.

Sustainability

In view of the borderless nature of cyberspace, international cooperation is important in enhancing reliability, availability and security in the use of modern technologies. ITU-D will facilitate such cooperation, recognizing the urgent need to support countries in implementing their national cybersecurity frameworks in the light of best practices.

Other priorities in ITU-D work include least developed countries, small island

developing States, landlocked countries and countries with economies in transition, as well as emergency telecommunications and gender equality.

Given the magnitude of the tasks facing ITU-D, success will depend on working closely with ITU members and mobilizing resources through public-private partnerships.

Innovation

ITU-D and in particular the Telecommunication Development Bureau (BDT) should continue to be innovative in order to remain competitive. ITU-D aims to promote innovative uses of telecommunications and information and communication technologies to improve people's lives.

Innovation is also essential for countries and firms if they are to recover from the global economic downturn and thrive in today's highly competitive and connected global economy.

Innovative broadband-fuelled services such as m-payments, m-health and m-education can empower individuals, communities and societies, especially in developing countries, to enhance their own social and economic well-being. ■

► Regional initiatives

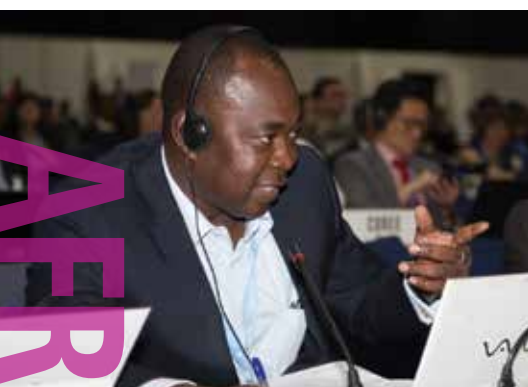
Regional initiatives guide ITU and countries themselves in developing and implementing specific projects to address priority needs in the area of telecommunications and information and communication technologies. The Dubai Action Plan includes 30 regional initiatives, five for each of the six regions of ITU's Telecommunication Development Sector (ITU-D) as described in this article (see also box on pages 48–49).

Development of broadband access and adoption of broadband

All regions accord priority to the initiative for the **development of broadband access and adoption of broadband**. This initiative has, for all regions, the objective of assisting Member States in the development of broadband infrastructure and access thereto. The regions nevertheless adopted this initiative with some nuances.

For Africa, there is a particular emphasis on subregional and continental interconnection, as well as on urban and rural areas. Increasing uptake is a particular objective of the Americas.

The Arab States and Asia-Pacific are concerned with urban and rural areas, while the objectives of the Arab States also include a focus on least developed countries and issues related to conformance and interoperability. The Asia-Pacific region





wants support for system construction with a view to resolving social issues by leveraging the benefits of telecommunication and information and communication technology applications. The Commonwealth of Independent States (CIS) is concerned with remote areas and with using energy-efficient technologies.

For Europe, the objectives are prompted by the significant differences in European countries, leading to an urgent need to assist administrations in every aspect of the practical implementation and development of high-speed networks. This action may also comprise the establishment of local or regional broadband roll-out plans. The development of communication networks would be boosted by using the experience in infrastructure sharing with the energy sector (smart grids) and should aim to benefit from cross-sectoral synergies. Because the degree of progress in this field varies considerably between Member States in the European region, sharing best practices and regulatory policies and providing assistance would help countries to use resources most effectively.

Capacity building

Capacity building was another priority for all regions. For Africa, the initiative of **strengthening human and institutional capacity building** was set with the objective of providing stakeholders in that region, on a sustainable basis, with human

resources and skills needed for harmonious development of the telecommunication and information and communication technology sector. For the Americas, the initiative of **capacity building was set to engage in global policy for information and communication technology, with a special focus on improving cybersecurity and the participation of developing countries in the existing Internet governance institutions**. The objective is to enhance the capacity building of Member States in that region with a view to promoting an enabling environment, supporting the implementation of initiatives related to information and communication technology, and encouraging developing countries to participate actively in forums on global policy for information and communication technology, in close collaboration with existing institutions.

The CIS favoured a specific approach with an initiative to **introduce training technologies and methods using telecommunications and information and communication technologies for human capacity building**, with the objective of assisting ITU Member States in the CIS region in setting up and developing national programmes for introducing telecommunications and information and communication technologies into education.

A related initiative for **harnessing the benefits** of new technologies was set for the Asia-Pacific region with the objective of

assisting Member States in the use of new technologies to address human and technical capacity challenges.

Similarly, the **smart learning** initiative was set for the Arab States, with the objective of bringing about a shift from traditional methods of teaching in schools and universities, using books and paper-based sources, to smart learning with the use of tablet computers, the latest software and modern telecommunication and information and communication technology techniques to provide access to a range of academic information, resources and subject matters.

Building confidence and security

With the exception of Asia-Pacific, the other five regions accorded priority to **building confidence and security in the use of telecommunications and information and communication technologies**.

The Africa region set the objective of assisting Member States in defining and implementing appropriate strategies for the protection of information and communication technology infrastructure, and building confidence in the use of these technologies and their applications. The objective set by the Arab States focuses on building confidence and security in the use of e-commerce in the Arab region, and on combating all forms of cyberthreats, including the misuse of information and

communication technologies. The focus of the European objective is on children and young people in Europe.

For the CIS, the objective is to build the capacity of Member States in the region to implement the initiative, within the framework of the concept of information ecology for sustainable development and combating the potential negative consequences of the impact of the information environment. A separate but related CIS initiative is to **create a child online protection centre for the CIS region**, with the objective of providing ITU Member States in the CIS region with centralized advisory and technical assistance on various aspects of child online protection. In the Americas region, improving cybersecurity will receive special attention under the initiative on capacity building to engage in global ICT policy, as stated above.

Spectrum management and transition to digital broadcasting

An initiative common to Africa, the Americas and Europe concerns **spectrum management and transition to digital broadcasting**, with the objective of assisting Member States of these regions in these areas. The European slant on this objective is to foster regional cooperation, mainly supplemented by direct assistance to administrations in the process

Regional initiatives at a glance

Africa	Americas	Arab States
Strengthening human and institutional capacity building	Emergency telecommunications	Development of broadband access and adoption of broadband
Strengthening and harmonizing policy and regulatory frameworks for the integration of African telecommunication and information and communication technology markets	Spectrum management and transition to digital broadcasting	Building confidence and security in the use of telecommunications and information and communication technologies
Development of broadband access and adoption of broadband	Development of broadband access and adoption of broadband	Use of telecommunications and information and communication technologies for smart and sustainable development and protection of the environment
Spectrum management and transition to digital broadcasting	Reduction of telecommunication service prices and Internet access costs	Smart learning
Building confidence and security in the use of telecommunications and information and communication technologies	Capacity building to engage in global ICT policy, with special focus on improving cybersecurity and developing countries' participation in the existing Internet governance institutions	Ensuring access to telecommunication and information and communication technologies, in particular for persons with disabilities

Asia-Pacific	Commonwealth of Independent States (CIS)	Europe
Special consideration for least developed countries, small island developing States, including Pacific island countries, and landlocked developing countries	Creating a child online protection centre for the CIS region	Spectrum management and transition to digital broadcasting
Emergency telecommunications	Ensuring access to telecommunication/ICT services for persons with disabilities	Development of broadband access and adoption of broadband
Harnessing the benefits of new technologies	Introduction of training technologies and methods using telecommunications and information and communication technologies for human capacity building	Ensuring access to telecommunications and information and communication technologies, in particular for persons with disabilities
Development of broadband access and adoption of broadband	Development of broadband access and adoption of broadband	Building confidence and security in the use of telecommunications and information and communication technologies
Policy and regulation	Building confidence and security in the use of information and communication technologies	Entrepreneurship, innovation and youth

of analogue television switch-off, and management of the frequencies in the digital dividend bands, which are to be used bearing in mind the most effective use of radio spectrum.

Persons with disabilities

The Arab States, CIS and Europe all have as an initiative **ensuring access to telecommunications and information and communication technologies, in particular for persons with disabilities**. The Arab States set the objective to ensure the right of access for persons with disabilities in the Arab region. The objective of CIS is to assist ITU Member States in the CIS region in developing regulations and technical solutions, as well as in implementing specialized training programmes, to ensure the accessibility and user-friendliness of these technologies for persons with disabilities. In Europe, the objectives are to further promote e-accessibility in the information and communication technology ecosystem, and provide the administrations with the most suitable solutions available. Both objectives may comprise assistance to national regulatory authorities and sharing of best practices in cooperation with relevant institutions.



Emergency telecommunications

Emergency telecommunications is an important initiative for the Americas and the Asia-Pacific regions, and was set with the objective to provide assistance to Member States at all phases of disaster management, for example in disaster preparedness including early warning, disaster response and relief, and rehabilitation of telecommunication networks. To that objective, the Americas add a particular focus on small island developing States and the least developed countries in the region.

A mixed bag

The remaining initiatives reflect priorities set by different regions. An initiative for Africa seeks to **strengthen and harmonize policy and regulatory frameworks for the integration of African telecommunication and information and communication technology markets**. The objective is to facilitate and promote the reform of Africa's national telecommunication and information and communication technology sectors, and the implementation of

strategies relating to those sectors, in order to achieve subregional and regional integration of related infrastructure, services and markets.

The Americas have the **reduction of telecommunication service prices and Internet access costs as an initiative**, with the objective of providing assistance to Member States in the region in defining and coordinating policies, ways and means to reduce the cost of access and interconnection, as well as the prices of telecommunication and Internet services and Internet for users, through necessary investments.

The Arab States set as an initiative the **use of telecommunications and information and communication technologies for smart and sustainable development and protection of the environment**.

The objective of this initiative is to raise awareness of the importance of sustainable development and environmental protection, and formulate legislation and regulatory frameworks in order to achieve smart and sustainable development.

The Asia-Pacific region gives priority to an initiative on **special consideration for least developed countries, small**

island developing States, including Pacific island countries, and landlocked developing countries, with the objective of providing special assistance to these countries in order to meet their priority requirements regarding information and communication technologies. Further, in its **policy and regulation initiative**, the Asia-Pacific region sets the objective to assist Member States in developing appropriate policy and regulatory frameworks, enhancing skills, increasing information sharing and strengthening regulatory cooperation.

Finally, the initiative set by Europe on **entrepreneurship, innovation and youth** has the objective of fostering the creation of an enabling environment and building capacities at the regional level, aimed at growth of entrepreneurship and increased innovation in the information and communication technology ecosystem, while encouraging empowerment of young men and women and creating new opportunities for them in the sector. Strengthened cooperation with diverse stakeholders, including academia and the private sector will be necessary. ■



APF

► Programmes as an implementation framework

The sixth World Telecommunication Development Conference (WTDC-14) approved the programmes outlined below as a concrete framework for the fulfilment of the five objectives and fifteen associated outputs (products and services) set for ITU's Telecommunication Development Sector (ITU-D) to fast-track global connectivity over the next four years.

When implementing these programmes, the Telecommunication Development Bureau (BDT) will, where appropriate, collaborate with other organizations, including Sector Members, academia, non-governmental organizations and other United Nations agencies, in order to combine expertise and avoid duplication of work.

Programme: Policy and regulatory environment

Under this programme, research and analysis will be conducted at global and regional levels on the latest policy, regulatory, economic, financial and market trends in telecommunications and information and communication technologies (ICT). Annual surveys and other means will be used to measure the social and economic impact of being connected.



Along with reports, studies and benchmarking tools, ITU will produce recommendations and guidelines, and identify best practices. ITU will also assist individual countries in specific matters of interest to them, such as regulatory and institutional reform, competition, investment and financing, new business models, high- and ultra-high-speed broadband deployment, consumer protection (online security and safety), data (including Internet of Things and machine-to-machine), cost modelling for cost-based regulated services (wholesale and retail), scarce resources (such as spectrum), telephone numbering and signalling point codes, infrastructure sharing (including use of smart grids), cost-effective solutions for remote and rural areas, number portability, Internet protocol (IP) interconnection, mobile roaming, universal and affordable access to ICT services and smart cities.

Publications will include the annual *Trends in telecommunication/ICT reform* report, the ICT regulation toolkit, the broadband series of thematic reports, and the regulatory and tariff policies database.

ITU will provide global platforms (face-to-face and online) for policy-makers, regulators and the private sector to address topical issues, share experiences and best practices, and discuss ways to help countries achieve their goals of growing digital economies. In this context, ITU will continue to organize global and regional events, forums, training workshops and

seminars, such as the Global Symposium for Regulators.

Programme: Telecommunication/ ICT networks, including conformance and interoperability

This programme will assist ITU Member States and ITU–D Sector Members and Associates in maximizing the use of appropriate new technologies for the development of their information and communication infrastructure and services. Some specific areas of work are listed below.

Spectrum management and radio monitoring

BDT provides assistance in various aspects of spectrum management, including producing specialized tools for this purpose. BDT will, in particular, continue to maintain, update and expand the Spectrum Management for Developing Countries (SMS4DC) software, providing technical assistance and conducting training activities for its deployment and use. It will provide spectrum management assessments and recommend action plans for the further development of spectrum management structures, procedures and tools, including new spectrum sharing approaches, such as dynamic spectrum access. It will also provide assistance on spectrum fee regimes, the harmonization of regional

spectrum allocations (including coordination procedures in border areas), and the use of spectrum monitoring systems and networks.

Broadcasting

The transition from analogue to digital broadcasting, already begun in many developing countries, is expected to peak over the next few years in Regions 2 (Americas) and 3 (Asia and Australasia), and to be completed in Region 1 (Africa and Europe) by the June 2015 deadline set in the GE06 Agreement. BDT will assist developing countries to achieve smooth migration from analogue to digital broadcasting and offer support in post-transition activities, such as the introduction of new broadcasting services and allocation of the digital dividend. In particular, BDT will continue to provide assistance on policy and regulatory frameworks for digital broadcasting, and will organize regional meetings between ITU members on the use of spectrum for broadcasting or other services.

Future BDT activities will focus mainly on policy and regulatory frameworks for digital terrestrial broadcasting, including frequency planning and optimization of spectrum use; digital broadcasting guidelines and master plans for the transition from analogue to digital broadcasting; conversion of analogue to digital archives; and new broadcasting services and technologies.



Next-generation networks

The architecture of information and communication infrastructure is continuously changing to accommodate new requirements for new services and applications, along with evolution to next-generation (and future) networks. BDT will assist Member States in moving to future network architectures and technologies, applying the standards (Recommendations) developed in the ITU Telecommunication Standardization Sector (ITU-T) and the ITU Radiocommunication Sector (ITU-R).

BDT will, in particular, assist Member States to deploy and migrate their existing

networks to next-generation networks and beyond and to digitize analogue networks, applying affordable wired and wireless technologies, including interoperable infrastructure.

Broadband networks: wired and wireless technologies, including IMT

BDT will provide developing countries with an understanding of the different technologies available for broadband using both wired and wireless technologies for terrestrial and

satellite telecommunications, including International Mobile Telecommunications (IMT).

Specific activities will include providing assistance to developing countries in planning the implementation and development of national broadband networks; collecting and disseminating information and analyses on the current status of broadband backbone and submarine cables, in order to assist members in network planning, avoiding duplication of efforts and resources; and promoting Internet exchange points, as well as supporting the transition to IPv6.



Rural communications

Rural areas remain sparsely covered, and telecommunication operators do not consider rural coverage a viable business case. Recent growth of teledensity in urban areas, fuelled by mobile technology, has widened the digital gap between rural and urban areas. Setting up backhaul connectivity remains a high-cost exercise. Erratic power supply or complete lack of energy sources is a major barrier, although photovoltaic power is increasingly becoming a viable alternative.

BDT's focus will be to provide information on suitable technologies for access, backhaul and source of power supply to bring telecommunications to rural, unserved and underserved areas; implement projects on public/community broadband access points; and disseminate information and analyses of the latest technologies (including satellite) and best practices.

Conformance and interoperability

Conformance with international standards maximizes the probability that an ICT vendor's products will interoperate with those of other vendors. This interoperability is addressed by international standards such as ITU Recommendations, which enable communications between the ICT of different manufacturers, countries

and continents. Mutual recognition arrangements between the test centres of different countries or regions give consumers confidence in tested products, increase market opportunities, encourage trade and technology transfer, and contribute to the removal of technical barriers to trade. The ITU Conformance and Interoperability Programme seeks to increase conformance with ITU Recommendations and, in turn, the interoperability of ICT globally (assessed according to global standards such as those of the International Organization for Standardization and International Electrotechnical Commission — ISO/IEC).

BDT will educate technicians, policy-makers and businesses on the importance of conformance and interoperability procedures and testing, and of mobilizing resources for regional and national programmes. BDT will help developing countries to establish conformance and interoperability programmes, assessing the possibility of establishing regimes at national, regional and subregional level, and preparing guidelines on this process.

Programme: Innovation and partnership

This programme will identify best practice and coherent policy approaches to ICT innovation, to be integrated into national

development agendas. It will also identify ways and means to develop partnerships among various organizations, in line with the focus of the post-2015 development agenda on a new global partnership.

Along with developing internationally comparable measurements of innovation capabilities for use at national level, guidelines will be drafted on fostering innovation in the public sector at all levels of government to enhance the delivery of public services, improve efficiency, coverage and equity. Guidelines will also be produced on creating ICT incubators that are sustainable and on how to enhance the competitiveness and sustainability of small and medium-sized enterprises.

A study will be carried out on resource mobilization and access to investment financing, with the objective of developing a strategy for building effective partnerships and furthering ITU-D's objectives. Among other things, the study will examine ways of overcoming challenges in translating memoranda of understanding and partnerships into actual resource mobilization and project implementation. It will also look into how to obtain favourable lines of credit for developing countries from various sources, including international and regional financial and developmental institutions. The study will also recommend a strategy for building effective partnerships.

Programme: Cybersecurity

This programme aims to support the ITU membership, in particular developing countries, in building trust and confidence in the use of information and communication technologies, taking into account the global, transnational nature of cyberthreats. Assistance will be focused on capacity building and outreach activities on legal, technical and procedural measures, organizational structures and international cooperation.

The programme will collaborate with all relevant organizations to avoid duplication of effort. In particular, it will support ITU Member States in developing their national or regional cybersecurity strategies as an essential step towards building national capabilities for dealing with cyberthreats. It will also support ITU Member States, in particular least developed countries, in their efforts to build capacity, and will facilitate their access to resources developed by other international organizations working on national legislation to combat cybercrime.

The programme will assist Member States, in particular developing countries, in elaborating appropriate and workable legal measures on protection against cyberthreats; establishing technical and procedural measures aimed at securing national ICT infrastructure; and establishing organizational structures, such as computer incident response teams, to identify, manage and respond to cyberthreats. In addition, the programme will help Member States to contribute to the implementation of ITU's global initiatives to combat cyberthreats and to protect children online — currently, the Global Cybersecurity Agenda (GCA) and Child Online Protection (COP).

Member States are encouraged to share, through the programme, both their best practices for implementing ITU Recommendations (such as Recommendations ITU-T X.1057 and ITU-T X.1055) and their national experiences in preventing, mitigating, responding to and recovering from cyberincidents. This will assist developing countries in protecting their telecommunication/ICT networks against cyberattacks and cyberthreats.





Programme: ICT applications and services

The purpose of this programme is to support ITU Member States in the use of telecommunications and ICT to develop the various facets of the information society, in particular in underserved and rural areas, in order to attain the United Nations Millennium Development Goals and the targets of the World Summit on the Information Society (WSIS). Such support will be given in collaboration and partnership with other United Nations organizations and the private sector.

Three approaches will be taken. In the first, support will be provided in elaborating national strategic planning frameworks and associated toolkits for selected ICT applications and services, in close collaboration with the relevant United Nations specialized agencies and other international organizations.

The second approach will involve supporting the deployment of ICT/mobile applications to improve the delivery of value-added services in high-potential areas, such as disaster management, e-health, education, agriculture, governance, environmental protection and mobile payment applications. The programme will launch appropriate partnership platforms — involving public and private partners — in order to foster the deployment of innovative ICT applications.

The third approach will consist of continuing to conduct detailed studies and facilitating the sharing of knowledge and best practices on various ICT applications, particularly using broadband, mobile communication, open source, and new technology advances and innovations, taking into account the means available for implementation (be they wireline, wireless, terrestrial, satellite, fixed, mobile, narrow-band or broadband).

Programme: Capacity building

Under this programme, ITU expertise will be used to enhance capacity-building policies, especially in developing countries and to provide guidelines to implement such policies. The programme will raise awareness among governmental and private-sector decision-makers of the importance of capacity building.

BDT will implement a wide range of practical measures, including face-to-face learning, training of trainers, and disseminating high-quality training materials. BDT will continue to enhance the ITU Academy portal and to promote the Centres of Excellence network and Internet Training Centres as indispensable components of ITU capacity building. It will also continue to be organize periodic regional and global meetings, workshops and seminars as platforms for knowledge sharing.

A training programme will be developed through the ITU regional offices in collaboration with relevant stakeholders to provide human capacity building in order to equip ITU members with greater knowledge about Internet governance.

The programme will encourage the establishment of cooperative partnerships with all stakeholders specializing in telecommunication/ICT education, training and development activities, and the engagement of qualified and experienced experts from academia, private sector, government and international organizations, in order to build human and institutional capacity.

The programme will further promote and support research on and analysis of the latest sector trends and priorities through regular surveys and data collection. It will also promote linkages between educational institutions and the telecommunication/ICT sector to ensure that graduates are better matched with sector needs.

Programme: Telecommunication/ICT statistics

This programme will seek to ensure that ITU maintains its current global leadership as the main source of international telecommunication and information and communication technology data and statistics. This will be done in the following ways.

The programme will collect, harmonize and disseminate data and official statistics using a variety of data sources and dissemination tools, such as the World Telecommunication/ICT Indicators Database, the ICT Eye ITU online portal, and the United Nations data portal.

BDT will analyse trends and produce regional and global research reports, such as *Measuring the Information Society*. This will include benchmarking developments in the telecommunication and information and communication technology sector, and clarifying the magnitude of the

digital divide using such tools as the ICT Development Index.

BDT will continue to develop international standards, definitions and methodologies on telecommunication and information and communication technology statistics, in close cooperation with other regional and international organizations, including the United Nations, Eurostat, the Organisation for Economic Co-operation and Development (OECD) and the Partnership on Measuring ICT for Development.

BDT will also continue to organize the World Telecommunication/ICT Indicators Symposium and its related statistical expert groups, providing a global forum enabling ITU members and other national and international stakeholders to discuss measurement of the information society.

ITU will encourage Member States to bring together different stakeholders in government, academia and civil society to raise national awareness about the importance of producing and disseminating high-quality data for policy purposes.





The programme will contribute to monitoring — and to developing frameworks for measuring progress towards — internationally agreed goals and targets, including the United Nations Millennium Development Goals and WSIS targets, as well as the targets set by the Broadband Commission for Digital Development.

ITU will maintain a leading role in the global Partnership on Measuring ICT for Development and its relevant task groups.

Countries will be encouraged to produce high-quality data based on internationally agreed standards and methodologies. The data will serve to quantify national digital divides, the impact of efforts to close the gaps and, as far as possible, the social and economic effects associated with being connected.

Programme: Digital inclusion

This programme will develop policies, strategies and guidelines to ensure universal access to telecommunications and ICT, in particular for persons with disabilities, ageing populations, indigenous communities, and women and girls. These measures will address social and economic challenges, such as the need to promote youth employment and entrepreneurship and the empowerment of women and girls.

More specifically, the programme will produce public policy recommendations for the development of telecommunications and ICT in indigenous communities. It will also provide model national strategies to ensure that women and men enjoy equal access to ICT and that these technologies are used for the social and economic empowerment of women and girls. Outputs will include gender mainstreaming guidelines for regulatory agencies and ministries of communication, guidelines for gender-sensitive project development and evaluation in the telecommunication sector, and guidelines on updating universal access/service mandates and funds to promote accessibility and digital inclusion of people with specific needs.

The programme will draft comprehensive digital inclusion policies, strategies and guidelines, including input to national broadband plans. It will develop products and services to enhance the ability of members to provide digital literacy training to people with specific needs; and develop national programmes on the use of telecommunications and ICT for social and economic development. The programme will also raise awareness of the need for digital inclusion.

Programme: Concentrated assistance to least developed countries, small island developing States and landlocked developing countries

Under this programme targeted assistance will be provided to least developed countries, small island developing States, landlocked developing countries, and countries with economies in transition for the development of broadband infrastructure, ICT applications, cybersecurity, policy and regulatory frameworks, and human capacity building. Through the programme, universal access to telecommunications and ICT will be promoted in all these countries, and assistance will be provided to them in disaster monitoring and mitigation, with the aim of helping them attain, by the year 2015, internationally agreed objectives such as the Millennium Development Goals.

Programme: Climate-change adaptation and mitigation using ICT

As part of its mandate, BDT will assist developing countries in using ICT to mitigate and address the effects of climate change, while taking care to avoid damaging the environment.

Assistance will include mapping areas vulnerable to natural disasters; developing information systems for such areas; and using data from active and passive



satellite-based remote sensing systems and other systems or applications for climate monitoring, disaster prediction, and detection and mitigation of the negative effects of climate change.

Assistance will also be provided to help Member States to participate in bilateral, regional and global research, assessments, monitoring and mapping of climate impacts, and the development of response strategies; and adopt metrics and common standards for evaluating the environmental impact of the use of telecommunications and ICT and their positive contribution to the broader economy. In evaluating the impact on greenhouse gas emissions, e-waste will be taken into account.

Programme: Emergency telecommunications

Emergency telecommunications is a priority area for all ITU Member States, and this programme will provide assistance in the use of telecommunications and ICT in preparing for, and responding to, disasters (including early warning and disaster preparedness plans). Regional and international cooperation, collaboration and information sharing will be encouraged.

Other programme activities include ensuring that disaster-resilient features are incorporated in telecommunication networks and infrastructure; assessing infrastructure damage after disasters strike, and assisting countries to reconstruct and

rehabilitate telecommunication infrastructure; providing training on the use of emergency telecommunication equipment when disaster strikes; strengthening and expanding initiatives such as e-health to provide humanitarian assistance in disasters and emergencies; and developing partnerships with vendors dealing with emergency telecommunication equipment and renewable energy solutions.

The programme will promote and support research on, and analysis of, the latest sector trends and priorities through regular surveys and data collection. ■



▶ ITU–D study groups and their areas of study

The conference agreed to maintain the two study groups of ITU's Telecommunication Development Sector (ITU–D) and decided on their terms of reference. It also agreed on new and revised questions (see box) for the 2014–2018 study period, starting in September this year.

ITU–D study groups are responsible for developing reports, guidelines and recommendations, based on input from the membership. Information is gathered

through surveys, contributions and case studies. The study groups examine specific task-oriented matters relating to telecommunications and information and communication technologies. The questions are of priority to developing countries, and the findings of the study groups support these countries in achieving their development goals. These findings also serve to strengthen the shared knowledge base of the ITU membership.

Participation of countries, particularly developing countries, in spectrum management

Apart from the study questions, ITU–D Study Group 1 will also take on board the tasks in revised Resolution 9 (Rev. Dubai, 2014) on "Participation of countries, particularly developing countries, in spectrum management".

Study Group 1 Questions	Study Group 2 Questions
Policy, regulatory and technical aspects of the migration from existing networks to broadband networks in developing countries, including next-generation networks, m-services, OTT (over-the-top) services and the implementation of IPv6	Creating the smart society: Social and economic development through ICT applications
Broadband access technologies, including IMT, for developing countries	Information and telecommunications/ICTs for e-health
Access to cloud computing: Challenges and opportunities for developing countries	Securing information and communication networks: Best practices for developing a culture of cybersecurity
Economic policies and methods of determining the costs of services related to national telecommunication/ICT networks, including next-generation networks	Assistance to developing countries for implementing conformance and interoperability programmes
Telecommunications/ICTs for rural and remote areas	Utilization of telecommunications/ICTs for disaster preparedness, mitigation and response
Consumer information, protection and rights: Laws, regulation, economic bases, consumer networks	ICT and climate change
Access to telecommunication/ICT services by persons with disabilities and with specific needs	Strategies and policies concerning human exposure to electromagnetic fields
Examination of strategies and methods of migration from analogue to digital terrestrial broadcasting and implementation of new services	Strategies and policies for the proper disposal or reuse of telecommunication/ICT waste material
Resolution 9: Participation of countries, particularly developing countries, in spectrum management	Identification of study topics in the ITU–T and ITU–R study groups which are of particular interest to developing countries

One of the most pressing concerns in the spectrum management of many developing countries, including least developed countries, small island developing States, landlocked developing countries and countries with economies in transition, is the difficulty in elaborating methods to calculate fees for use of the radio-frequency spectrum. Resolution 9 as updated by WTDC-14 considers that regional, bilateral or multilateral agreements could be a basis to foster cooperation in this area. It also highlights, among other things, the need to study spectrum-management best practices in order to make broadband access more affordable to lower-income populations, especially in these countries.

Under the revised resolution, a report will be prepared within the next study period on national technical, economic and

financial approaches to, and challenges of, spectrum management and spectrum monitoring, taking into consideration development trends in spectrum management, case studies on spectrum redeployment, licensing processes and best practices implemented in spectrum monitoring around the world. In addition, information available on national frequency allocation tables will be updated and Resolution 9 and ICT Eye portals will be made complementary. Case studies will be compiled and best practices collected regarding national uses of shared spectrum access, including new spectrum sharing approaches such as dynamic spectrum access (DSA). The economic and social benefits arising from the effective sharing of spectrum resources will be studied.

Telecommunication Development Advisory Group

During the four-year study cycle, the Telecommunication Development Advisory Group (TDAG) will periodically evaluate the working methods and functioning of the ITU-D study groups and find options to maximize programme delivery. TDAG will also approve any programme of work that may arise from the review of existing and new questions, and determine the priority and estimated financial implications and time-scale for the completion of the studies.

The Chairmen and Vice-Chairmen of the two ITU-D study groups and of TDAG are given in the table below. ■

Telecommunication Development Advisory Group	Study Group 1	Study Group 2
Chairman: Professor Vladimir Minkin (Russian Federation)	Chairman: Ms Roxanne McElvane (United States)	Chairman: Dr Ahmad Reza Sharafat (Islamic Republic of Iran)
Vice-Chairmen: <ul style="list-style-type: none"> Mr Elie Djerambete (Chad) Mr Ahmadou Traoré (Mali) Mr Nicolás Karavaski (Argentina) Mr Héctor Edmundo Valdés Moreno (Mexico) Mr Mohamed Saeed Ali Al Muathen Al Mazrooei (United Arab Emirates) Mr Al-Ansari Al-Mashagbah (Jordan) Dr Bohyun Seo (Republic of Korea) Mr Kishore Babu (India) Mr Rufat Taghizadeh (Azerbaijan) Ms Nurzat Bolzhobekova (Kyrgyzstan) Mr Fabio Bigi (Italy) Mr Dominique Würges (France) 	Vice-Chairmen: <ul style="list-style-type: none"> Ms Regina Fleur Assoumou-Bessou (Côte d'Ivoire) Mr Peter Ngwan Mbengie (Cameroon) Mr Victor Martinez (Paraguay) Ms Claymir Carozza Rodriguez (Venezuela) Mr Wesam Al-Ramadeen (Jordan) Mr Ahmed Abdel Aziz Gad (Egypt) Mr Nguyen Quy Quyen (Viet Nam) Mr Yasuhiko Kawasumi (Japan) Mr Vadym Kaptur (Ukraine) Mr Almaz Tilenbaev (Kyrgyzstan) Ms Blanca Gonzalez (Spain) 	Vice-Chairmen: <ul style="list-style-type: none"> Ms Aminata Kaba-Camara (Guinea) Mr Christopher Kemei (Kenya) Ms Celina Delgado (Nicaragua) Mr Nasser Al Marzouqi (United Arab Emirates) Mr Nadir Ahmed Gaylani (Sudan) Ms Ke Wang (China) Mr Ananda Raj Khanal (Republic of Nepal) Mr Evgeny Bondarenko (Russian Federation) Mr Henadz Asipovich (Belarus) Mr Petko Kantchev (Bulgaria)

► **Success breeds success**

Interview with Nasser A. Bin Hammad on WTDC-14 coordination

Senior Manager of International Affairs in the Director General's Office of the Telecommunications Regulatory Authority, United Arab Emirates, and Coordinator of WTDC-14



Negotiations are an important step in hosting an event. What was your experience in negotiating the Host Country Agreement with ITU for WTDC-14?

Nasser A. Bin Hammad: Three major ITU high-level events were held for the first time in the United Arab Emirates in 2012. These were ITU Telecom World, the World Telecommunication Standardization Assembly, and the World Conference on International Telecommunications, and all three events were successfully hosted in Dubai. Representing the Telecommunications Regulatory Authority of the United Arab Emirates, I had the honour of being the national coordinator for these three events. This provided me and my team with valuable experience

in responding to ITU's requirements for hosting a major event for the Union in 2014, namely the ITU World Telecommunication Development Conference (WTDC-14). The experience gained in 2012 enabled the Government of the United Arab Emirates, through its Telecommunications Regulatory Authority, to take a fast decision to offer to host WTDC-14.

The ITU's requirements were very familiar to us in the Telecommunications Regulatory Authority and this helped a lot in our negotiations with the ITU team. Another advantage was that WTDC-14 could be hosted in the same premises — the Dubai World Trade Center — where the three events had been held in 2012. This was an important factor in helping us to finalize the Host Country Agreement.



What was the biggest challenge you faced in making the event happen?

Nasser A. Bin Hammad: As you know, the original dates set for the conference were 31 March to 11 April 2014. The United Arab Emirates could only offer slightly different dates because of the availability of the Dubai World Trade Center. Furthermore, ITU had to consult the membership of the Union on the new venue and dates of the conference, according to due procedure. We had to wait for the official result of the consultation and the announcement that the United Arab Emirates would be hosting the event.

As project manager, I would say that time was the most critical constraint for me and my team in the Telecommunications Regulatory Authority. It was the biggest challenge we faced — having to fulfil all the requirements within the short time available, not only those arising from the Host Country Agreement with ITU, but also the internal requirements of the Telecommunications Regulatory Authority and the other entities in the United Arab Emirates that were also involved in the conference. We had a period of just three months of intensive work to organize this important international conference, with a huge number of participants, in a critical year for ITU because of the forthcoming Plenipotentiary Conference to be held in Busan, Republic of Korea, later in 2014 (20 October to 7 November).

What technical challenges had to be overcome?

Nasser A. Bin Hammad: According to the Host Country Agreement, we had to guarantee to meet many requirements relating to the operation of the event. In this respect, our biggest challenge was the short duration of time that suppliers had to equip the Dubai World Trade Center.

With regard to the logistical and protocol arrangements, which again were an obligation on the host country under the terms of the Host Country Agreement, we took advantage of the positive experience gained in 2012 and were successful in making timely arrangements. In fact, the Telecommunications Regulatory Authority hired the same logistics company, Pearl of Arabia, which was the official logistical organizer back in 2012.

How important was capacity building in preparing for the event?

Nasser A. Bin Hammad: In my opinion, capacity building was the key strategy that enabled the success of the conference. Success in holding such a prestigious event requires staff to have support, trust, confidence, encouragement and motivation at all times. This enabling environment very much exists within the Telecommunications Regulatory Authority, starting from its Chairman, who was strongly in favour of the United Arab Emirates hosting the event. The Director General and the top management of the Telecommunications Regulatory Authority were unfailingly supportive, monitoring progress and taking



a close interest in all the activities of the internal team involved. The support that we got from top management on logistical and technical matters, coupled with the commitment and efforts made by my team in the Telecommunications Regulatory Authority international affairs department, were the real assets that enabled us to host the conference successfully.

What were your expectations for this event, and have they been met?

Nasser A. Bin Hammad: Our expectations were very high from the beginning, even though they were tempered with a little fear. Participation was high, with over 1300 delegates, including 52 VIPs, representing 137 Member States. The running of the conference was smooth from beginning to end, and there were no complaints from the ITU membership. I think that these facts are evidence that WTDC-14 was another success story for both the United Arab Emirates and ITU.

How do you see the future of the relationship between the United Arab Emirates and ITU?

Nasser A. Bin Hammad: The cordial and long-term relationship between ITU and the Government of the United Arab Emirates, especially the Telecommunications Regulatory Authority, has certainly been enhanced by our experience of WTDC-14. The Telecommunications Regulatory Authority management's vision is to keep the United Arab Emirates at the forefront of the activities of the Union in all three ITU Sectors and in all areas. The Government of the United Arab Emirates is planning to participate actively in the upcoming Plenipotentiary Conference in Busan, as well as in the ITU Council. The Telecommunications Regulatory Authority will continue to work with all Sectors of the Union, doing its utmost to support and cooperate with the ITU membership in order to achieve the goals of the Union.

Any final thoughts?

Nasser A. Bin Hammad: The excellent coordination and preparations on the logistical and technical front by the staff of ITU and the United Arab Emirates Telecommunications Regulatory Authority paid off, and the conference went without a hitch. In my view, the mutual understanding, joint efforts and spirit of good will that were evident throughout the conference led to this most successful WTDC. ■